grand MA manual

full-size, light, ultra-light, micro, pico, replay unit, onPC.

Version 6.2  08.2009
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**NOTE:**

All text marked with *, does not apply to the micro / pico.  
All buttons marked with **, are located in the micro’s COMMAND WINDOW only.
1 Introduction

General Information
Combining an approved concept of operation, an outstanding product design and first-class quality with a host of new ideas and the latest technology, this new console offers ultimate control on larger shows. The grandMA range combines the best in mechanical design with a flexible and powerful software platform.

MA users will feel very familiar with grandMA from the very beginning. The basic operation modes, well known from the Scancommander have been well proven in the field as powerful tools for the control of intelligent fixtures and many are now the standard of the industry. Of course, there have been quite a few improvements as controlling hundreds of channels requires intelligent solutions to time consuming operations, but essentially, the grandMA is still an MA console – easy to operate, yet very powerful.

Displays
The first remarkable feature of the grandMA are the contrast-rich, full color TFT touch screens integrated into a panel with adjustable viewing angle. Optionally supported are two external monitors. They allow for clear and precise control along with multiple visual representations of group and preset operations, interactive output displays and different ways of cue listing.

Colors and gobos can directly be selected by labeled preset keys and allow for a fast and accurate control, while the encoders can be used anytime for fine tuning. By way of presets, stored positions can quickly be adjusted to changed arrangements.

Motorfaders*
How can a console like the grandMA with just 20 faders (10 on the grandMA light and micro/pico) possibly claim to control 4000 and more channels? It’s not a trick, it’s motorised faders. They automatically capture the actual values as soon as you switch over from one program library to another. Further special features are explained in the respective chapters following.

Programming features and data input
At first, the flexibility of the grandMA may surprise, but you have always the choice to do it “the old fashion way”. Dealing with huge amounts of data will make you want to use improved ways of programming and even an automatic effect synthesizer.

Flexible Setup configuration
Because of the grandMA’s flexibility, you will never lose direct access and control. View Macro keys allow to visualise current information at anytime. User profiles allow for differing window configurations to be recalled from previous shows to tailor the console for the particular type of show, Live Event, theater, Synchronised playback, nightclub, industrial, etc.

Hardware and Interfaces
The built-in Hard Disk Drive offers virtually unlimited storage capacity. The built-in flashdisk (not on the ultra-light, on which the software is on the HDD) contains the board’s software and makes the grandMA independent from any external PC.

General Comments
This manual describes the possibilities that the grandMA has in store for you. Step by step, you will be guided through the logical aspects of working with this console.

You will soon find out, that operating the grandMA is simple and straightforward in view of the vast variety of features and options available. Once you are familiar with the basics, you will realise that you can easily try out new functions, as all procedures and operational modes are clearly structured.

Consequently, this manual starts with a general introduction, followed by basic settings within the Setup menu, such as selecting fixtures and dimmer channels with DMX address, modifications, etc.

Chapter 3 is dedicated to the practical aspects of setting up a Show, while Chapter 4 will show you how to create and edit Cues and Sequences. Moving on to Chapter 5, you will learn how to execute Cues, Sequences and Chasers. In Chapter 6, you will learn how to create, store and execute effects, Chapter 7 with creating bitmap effects, Chapter 8 is dedicated to the Remote Control (abbreviated as “Remote”) and Timecode, while Chapter 9 explains the function of Macros and the Quikey. Chapter 10 deals with the Command Line. Saving and loading your show is described in chapter 11. Chapter 12 explains the updating of the operational software as well as the fixture library, while chapter 14 is dedicated to the operation of the grandMA replay unit. Chapter 15 deals with True Tracking Backup and Playback Functions, the options in a network environment, in chapter 16 Full-Tracking Backup, in chapter 17 how to use the Remote Control with PocketPCs, in chapter 18 you’ll find notes on the 3D Visualizer. Different usage of the MICRO is marked by * or **, and you can have a reference manual for the MICRO, too.

We are sure that you will enjoy working with the grandMA and we wish your show every success!

Technical Service and Hotline
MA Lighting and its extensive distributor network offer an unparalleled technical service. Call on our expertise for help with any problem, no matter if it is regarding operation, software features, software installations or trouble shooting.

Please check our Frequently Asked Questions first, that you can find online at www.malighting.com.

If there are any questions left, just send us an e-mail with your contact details and subject information at tech.support@malighting.com. We service your request within 48h on working days. This E-Mail Service is monitored during MA Lightings regular business hours in Germany from 8.30 a.m. until 5 p.m., Monday through Friday. Alternatively you can call our Technical Support during that time: +49.5251.688865-30.

For emergency services please contact your local distributor or contact the MA Lighting Service Hotline. Call: +49.5251.688865-99

Please note, this 24/7 hotline is strictly for emergency cases (so-called show stoppers) - for people being in trouble out in the field. Thank you for your understanding.
1.3 Specifications

Capabilities
- 2048 control parameters (HTP or LTP) with 8 or 16 bit resolution, (optional) also available with 4096 channels (ultra-Light:2048) With NSPs expandable to 16 384 parameters.(on the micro / pico only 1024 channels are possible)
- Virtually unlimited number of presets, memories, cue lists and effects

Ergonomics
- Full colour TFT touch screens with a wide angle of view and 2 external (one on the ultra-light) monitors (optional)
- Encoders for display setting, 5 master encoders for data entry
- 20 (10) motor faders and extra silent GO+ and GO– Buttons (10 non-motorized Faders on the ultra-light and micro / 5 on pico)
- Numeric keypad plus standard keyboard and mouse (only with grandMA)
- Trackball (ultra-light and micro/pico only extern)

General user functions
- Constant access to single units or groups
- Fixture library with updates supplied via the Internet
- Selective programming for free combination of memories and effects
- Free switching between stage-orientated movements and DMX control in combination with 3-D.

Hardware
- Hard Disk Drive* , resp. CF, and 3,5“ Floppy Drive
- 12 MB flash memory for self-contained operating system (not on the ultra-light and micro / pico)
- Protection against radio interference (CE-Norm)
- Inputs: MIDI, Sound, Remote Go, SM PTE, Analogue (+10 V), DMX 512
- Output: 4 Times DMX 512 (2 on the ultra-light and micro / pico), MIDI, Printer, Ethernet
- Full tracking backup and sync mode with second unit

Dimensions and Weight
grandMA full-size:
- Width 48“, height 6“, depth 26“ (1200 x 150 x 670 mm)
- Weight 104 lb. (47 kg) without flightcase

grandMA light:
- Width 29“, height 5“, depth 20“ (730 x 120 x 510 mm)
- Weight 46 lb. (21 kg) without flightcase

1.4 Installation

90–230 Volt, 40–60 Hz via Euro plug. No switching of voltage necessary.

DMX output: Complies with USITT DMX 512 (1990) protocol. The output is opto-insulated and exceeding RS 485 or RS 422. The pins in the 5 pin XLR plug are: Pin 1: ground, Pin 2: Data–, Pin 3: Data+ (pins 4 and 5: not used)
1.5 Safety Requirements (Important, read carefully!)

**Touchscreen**
Never use any sharp items when operating the touchscreens! Deep scratches will damage the screen. During operation, due to temperature fluctuations, the calibration of the touchscreens may change, so an adjustment may be necessary. See Settings in the Setup Menu (point 1)

**Sockets for keyboard and mouse**
These sockets are located on the rear of the unit and are very delicate; especially during transport, take care that these parts are not exposed to mechanic stress.

**Transportation/Case**
During transport, take care that the touchscreens are not exposed to mechanical stress. Flightcases not provided by MA Lighting have to be designed in a way that under no circumstances pressure can be exerted on the TFT displays.

**Panel** (grandMA only)
If the mechanical parts of the display panel have not been moved for a period of time (more than 24 hours typically), you may feel a stronger resistance when adjusting the angle. This is normal and related to the mechanics of the pannel.

**Battery** (not on the ultra-light and micro / pico)
In case of power failure, the console offers (with fully charged battery) an emergency backup of at least 12 minutes. In case of a power failure, the console will automatically switch off after approximately another 3 minutes or another 12 minutes when CONTINUE is pressed. If this occurs, the console will automatically save all data.

When switching off the unit via built-in power switch, all current show data is saved automatically.

In case of an automatic shut-down after a power failure (described above), the unit must be running for at least 10 minutes, in order to guarantee a proper SAVE procedure the next time the unit is switched off. By ignoring this advice the harddisk may be damaged.

The battery needs approximately 4-8 hours for a full recharge. Only then the battery is able again to bridge another power failure of up to 12 minutes.

According to manufacturer provisions, the battery has to be changed after 5 years.

**Harddisk**
Please attach a label on the unit, indicating the date of purchase, preferably update data etc. (choose a location, where this information can easily be seen).

During operation, do not push or knock the unit.

The built-in notebook harddisk is secured by a rubber-upholstery, however, mechanical stress can still damage the unit and lead to e.g. a complete loss of data.

Please read the appropriate notes and warnings given under „Autosave” and „Oops Settings”, if the unit is to be used in very loud environment! Not necessary for the MICRO, as a Compact Flash is used.

**Housing**
- Do not block or cover the ventilation. If there is a high ambient temperature, the display panel (grandMA only) should be at least 5 cm open to ensure sufficient ventilation.
- Do not place any drinks on the unit.
- Do not use excessive force when adjusting the viewing angle of the display panel (grandMA only).
1.6 **General Safety Instructions**

1. Read all the instructions in the user’s manual, especially the safety requirements see Safety requirements
2. Follow all instructions. Keep the user’s manual for later use.
3. Follow all cautions and warnings indicated on the unit.
4. Disconnect the mains plug before cleaning the unit; don’t use any liquid or spray cleanser. Clean with a dry cloth.
5. Do not use the unit near water. Do not expose it to a humid environment. Do not spill any liquid over the unit.
6. Unplug this apparatus during lightning storms or when unused for long periods of time.
7. Do not block or cover any ventilation slots in the housing - they guarantee the reliable functioning of the unit and protect it against overheating. Do not install the unit into a frame unless sufficient ventilation is guaranteed. Install in accordance with the manufacturer’s instructions.
8. Do not insert any objects through the slots of the unit, as these could get in contact with live parts or could cause short circuits. This may cause a fire and an electric shock.
9. Do not place the unit on unstable surfaces. It may fall and get damaged.
10. The unit is provided with a safety plug. This plug can only be used with safety sockets. These precautions should by all means be followed. If the plug should not fit into a given socket (e.g. the case with old sockets), the socket should be replaced by an electrician.
11. Do not ignore the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
12. Do not place any objects on the power cord. Protect it from being walked on or pinched particularly at plugs and the point where they exit from the apparatus.
13. If using an extension cord, make sure the rated output of all units connected in aggregate does not exceed the maximum rated output of the extension cord. The rated output of the units plugged into the socket should in aggregate not exceed 10 amperes.

14. If the power cord or the mains plug is damaged, let a qualified technician replace it immediately.
15. Only use power cords which are marked as safety-proof.
16. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. Besides others, you run the risk of suffering an electric shock.
17. All service work should be exclusively performed by qualified service technicians.
18. Do not use any high-power walkie-talkies or cellular phones near the unit.
19. If one of the following conditions occurs, please disconnect the mains plug and call your dealer or technical support!

- Power cord or mains plug is damaged or worn.
- Liquid penetrated the unit.
- The unit was exposed to rain or high ambient humidity.
- The unit does not function properly, even when following all the instructions in the manual. Only manipulate the controls as stated in the manual, wrong settings on the controls may damage the unit.
- The unit fell and the housing was damaged.

20. **WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.**

Please note that this console is based on complex software and as you probably know from your own computer experience, software crashes can occur on occasion. But be assured, that we will do our best to keep them rare exceptions.

**Electric shock warning on the rear of the grandMA**

The unit should be serviced by qualified personnel only, as live parts may be exposed when opening and/or removing coverings; besides others, you run the risk of suffering an electric shock.
Differences to the grandMA full-size

The software for the grandMA light and ultra-light and the grandMA full-size is nearly identical.

The product will not be delivered with a hardware keyboard and an external mouse. An additional external keyboard and a mouse, however, can be connected on the rear of the unit.

Using the KEYBOARD key on the TFT display, a Soft Keyboard can be brought up that can be operated via the touch screen. The Soft Keyboard will only appear, if entries are possible.

If the trackball is switched to mouse function (LED in the PAN / TILT key is off), you can perform mouse functions using the trackball or the LEFT-MIDDE- RIGHT keys. There are some limitations for the micro / pico.

1.7.1 Layout and Controls  grandMA light
grandMA ultra-light: Items 7 and 17 do not apply (keys inexisten). Item 22 (Wheel) does not apply, can be controlled by Trackball (item 25) and Wheel key (item 24).

1 Power switch
2 Blackout key for Dimmer channels
3 Grand Master for Dimmer channels
4 TFT Display touch screen
5 View / Macro keys
6 Encoder for moving / scrolling the respective window contents
7 Viewpool key for opening a window on the TFT display with all the created VIEWS in the show. These can then be recalled up directly by selecting the required view.
8 Background key - If on the TFT display, Views are being overlayed by a menu (ASSIGN, EDIT, ...), you can use this key to bring up or hide the menu.
9 Keyboard key to bring up the Soft Keyboard on the TFT display.
10 Manual setting of time for Presets
11 Encoder for setting the attribute values (e.g. Gobo, Pan/Tilt, times, etc.)
12 Keys to directly execute functions like Go+, Go-, etc. for arbitrary executors, locking executors, SELECT key
13 Page flipping for Channel fader, Executor fader and Executor buttons
14 Playback buttons can also be defined as e.g. Go, Go-, Pause, Flash, etc.
15 Executor faders can also be defined e.g. as Master, Swap Master, X-Fader, etc.
16 List keys Faders: will bring up small Executor windows for the EXECUTOR FADERS.
Buttons: will bring up small Executor windows for the EXECUTOR BUTTONS.
17 Go+, Go-, Pause button - Will only effect the default sequence. A default sequence can be assigned by using the Select key (indicated by the green title bar in the small EXECUTOR window displayed above).
18 Executor buttons can also be defined as e.g. Go, Go-, Pause, Flash, etc.
19 Manual setting of times for Executor buttons
20 Choosing Groups, Executors, etc. in combination using the numeric keypad
21 Numeric keypad
22 Intensity wheel*
23 Cursor keys NEXT, PREV. Groupwise Calling up of scanner or dimmer channels one after the other.
24 PAN / TILT key, changing over the function of the trackball to mouse functions (LED off) or to Pan / Tilt functions (LED on)
Left / Middle / Right key for Mouse functions
25 Trackball for Mouse or Pan / Tilt functions
26 Socket for console lamp 12V/5W

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1.7.2 Layout and Controls **grandMA full-size**

1. **TFT-Display** Touchscreen
2. **View / Macro keys**
3. **Encoders** - To move/scroll the respective window contents
4. **Encoders** - To set the attribute values such as Gobo, Pan/Tilt, times etc.
5. **Manual Time Setting** for Presets
6. **Yellow Knob** - To adjust the Touchscreen Panel
7. **Playback buttons** - Can be defined as Go+, Go-, Pause, Flash etc.
8. **Executor faders** - Can be defined as Master, Swap Master, X-Fader etc.
9. **Go+, Go-, Pause buttons** - Only effective for the selected sequence. The selected sequence can be assigned using the **Select key** (recognizable by the green title bar of the small EXECUTOR window above it).

**Ports and connections on the rear side**
a/ Lamps (1x on the top at micro/pico, light and ultra-light)
b/ LTC IN + AUDIO IN
c/ 4x DMX Out (2x at Micro and UltraLight) , 1x DMX In and 1x DMX Thru (not at Micro and UltraLight)
d/ Reset
e/ MIDI OUT / THROUGH / IN
f/ Remote (for touch board)
g/ Ethernet
h/ Extern Monitors (left and right) + System Monitor (center - for service only)
i/ 2x Serial Ports
j/ 1x Parallel Port (Printer)
k/ USB Ports (not Micro) For USB storage device and/or mouse. Do not use keyboard with this port!
l/ Main switch
m/ Power and fuse
10 Select key to address the Selected- Sequenz
11 Keys – To directly process Go+, Go- etc. for any Executor, or to lock Executors
12 Page change-over – For Channel faders, Executor faders and Executor keys
13 Executor buttons can be defined e.g. as Go+, Go-, Pause, Flash etc..
15 Select – Cues, Groups, Executors etc. in combination with numeric keypad
14 Manual Timing – Setting for Executor-Buttons
16 Blind, Freeze, Clear keys
17 Blackout key for Dimmer channels
18 Grand Master for Dimmer channels
19 Numeric keypad
20 Intensity wheel
21 Cursor keys NEXT, PREV. Choosing Fixtures or Channels one by one within Groups.
22 Trackball for Pan/Tilt- or mouse function
23 Trackball ON If the LED in the key is on, the trackball can be used to modify the PAN/TILT value; if the LED is off, you can use the mouse cursor arrow; if the LED blinks, the mouse function can also be controlled using the PREV/SET/NEXT keys. The functions can be switched on/off in the Default menu see 2.13.
1.7.2 Layout and Controls *micro*

An additional external keyboard, a mouse and an Trackerball however, can be connected on the rear of the unit.

**NOTE:** When using a mouse, you always have to connect an external keyboard, too.

1. Power switch
2. Blackout key for Dimmer channels
3. Grand Master for Dimmer channels
4. TFT Display touch screen
5. View / Macro keys
6. Encoder for moving / scrolling the respective window contents
7. Background key - If on the TFT display, Views are being overlayed by a menu (ASSIGN, EDIT, ...), you can use this key to bring up or hide the menu.
8. Keyboard key to bring up the Soft Keyboard on the TFT display.
9. MA key - without function
10. COMMAND key to bring up the Command menu
11. Manual Time Setting for Presets
12. Encoders - To set the attribute values such as Gobo, Pan/Tilt, times etc.
13. Keys - To directly process Go+, Go- etc. for any Executor, or to lock Executors
14. Page change-over - For Channel faders, Executor faders and Executor keys
15. Playback buttons - Can be defined as Go+, Go-, Pause, Flash etc.
16. Executor faders - Can be defined as Master, Swap Master, X-Fader etc.
17. List keys
   Faders: will bring up small Executor windows for the EXECUTOR FADERS.
   Buttons: will bring up small Executor windows for the EXECUTOR BUTTONS.
18. Executor buttons can also be defined as e.g. Go, Go-, Pause, Flash, etc..
19. Manual setting of times for Executor buttons
20. Socket for console lamp 12V/5W
1.7.4 COMMAND WINDOW (micro/pico)

This menu contains most of the functions of a „big“ grandMA desk. Pressing the Background - button the Command Window can temporarily be removed from the screen. Commands are still waiting for completion.

NOTE: Working with the REPLAY UNIT the COMMAND WINDOW is very useful. Start COMMAND WINDOW F7-fuctionkey on the external keyboard.

1.8 Replay-Unit

see Chapter 14
1.9 General Operation

Touch screen
- Keys can directly be selected.
- In charts, individual cells can be selected. By using the Lasso function on the touch screen, you can also select several cells.
- You can simultaneously select individual, but also several Fixtures or Channels by clicking and dragging with the mouse on touch screen.
- Directly activating title bars of windows or opening options for the individual window by touching the corner icon.

Encoder on the right of the Display
- In the active window, the focus (coloured frame) or a highlighted cell (red/blue background) can be moved upwards or downwards. By pressing the Encoder when turning it, you can move the focus to the left or to the right.
- If a pulldown menu is opened, you can use the Encoder to scroll through the list. When you reach the desired value, you can select it by pressing the Encoder.
- If in a chart, a cell is selected with a value or a time, you can open an entry window by pressing the Encoder. In this window, you can also use the Encoder to adjust the value, pressing the Encoder again will accept the new value.
- If a Fixture or a Channel is selected (coloured frame), you can open the options by shortly pressing the Encoder.

Encoder below the TFT Display
The currently chosen function is displayed above the appropriate Encoder.
The currently set value for the last activated lamp is displayed below the respective function. The values displayed (percent, decimal, ...) do always refer to the active window (e.g.: Fixture- or Channel-Sheet). Use the encoder to modify the values of this function. If you press the Encoder while turning it, you can modify its sensitivity.
- By pressing the respective button, you can select the next function (in this case Gobo1). Pressing on the arrow will open a menu in which all functions are displayed and can be selected directly.
- Pressing on “Align Off“ allows you to select the individual Align functions. Pressing on the arrow will open a menu in which the respective function can be selected directly.
- Default setting is “Values“; by pressing the button shortly, you can switch to “Fades“ and, pressing the button again, to “Delays“. Pressing on the arrow will open a menu in which the respective function can be selected directly.

grandMA Hardware keyboard or grandMA light, ultra-light and Micro Soft-(TOUCH) Keyboard
- Views, Groups, Presets, Sequences, Effect groups, Forms or Macros can directly be named within the respective pool.
- Cue names can be adjusted in the EDIT menu, in the Tracking or EXECUTOR Sheet.

If the “Scroll Lock“ function is activated, all entries on the keyboard will be entered directly to the comandline (Scroll Lock LED on keyboard is lit). By pushing “Scroll Lock“ briefly, you can toggle this function ON or OFF.
**grandMA Mouse or grandMA light and ultra-light and micro/pico-Trackball**

When using a mouse on the **micro/pico**, you always have to connect an external keyboard, too!
The most effective way of working with the grandMA is to use the touchscreen and the encoders which are located next to the respective displays. The only means to change the size of windows, work within the Tracking Sheet or edit forms, though, is the mouse (or the Trackball, if the mouse function is on).

**With the left key:**
- Keys can directly be selected,
- Individual cells in charts can be selected,
- Several cells in charts can be selected simultaneously by clicking, holding and dragging them,
- Fixtures or Channels can be selected,
- Title bars of windows can be activated or options for the individual window can directly be called up.

**With the middle key:**
- The values of selected Fixtures or Channels can be adjusted.

**With the right key:**
- The options for this window can be opened by clicking on the title bar,
- The options can be opened by clicking on an individual Fixture or Channel.

**OOPS Function**

By pressing the OOPS key, you can undo (step back) the last 20 operations.
Holding the OOPS key opens a window showing the 10 last entries on the right TFT display. Pressing the UNDO key will cancel the first entry on top of the list.

Note: Please, switch off the Oops function in loud environments, as otherwise, the build-in harddisk may not function properly.

**Entry window/Calculator**

Open by pressing on one of the 4 Encoders below the display or clicking on the Buttons above the Encoders. Or:
Click into a cell (indicated by the Focus - colored frame and/or blue background) and press on the Encoder on the right side of the display.
In this window, you can enter values or times and recalculate them.
Presets can be called up for the selected Fixtures or Channels.
If in the Executor Sheet or in the EDIT menu, a trigger call or time is selected, you can open this window by pressing the Encoder on the right side of the Display.
If Fixtures or Channels are selected, this window can be opened by pressing the respective keys for this function above the Encoder.
The title bar of this window will display the selected function. In the upper cell, the current value will be displayed.
Using the touch screen, the number pad or turning the encoder on the right of the display you can enter a different value or time, and accept it by pressing the OK key.
Left of the numbers, the following keys are displayed: H (for hours), M (for minutes), S (for seconds) and F (for frames). With these keys, you can directly enter times, if necessary.

or:
If a function is selected, keys for Clear, Deactivate and the individual presets are displayed in the lower part. If you
press CLEAR, the values of the selected Fixtures or Channels will be deleted. If you press DEACTIVATE, the active values of the selected Fixtures or Channels will be deleted.
If you select a Preset, it will be displayed in the upper bar, and you can select it pressing the OK key. Entries can be deleted using the OOPS-key.

**SOFT (TOUCH) Keyboard**
On the grandMA light and ultra-light and micro/pico you can call it up by pressing the KEYBOARD key. In the upper left cell, the entered text will be displayed. Using the touch screen, you can select individual keys. Pressing RETURN will accept your entry.

**COMMAND WINDOW**
On the grand MA, grandMA light and the ultra-light, you can open the Command Window using function key F7. On the MICRO, you’ll find a dedicated COMMAND button. This window contains the most important buttons, here displayed as Softkeys; on the grand MA full-size, grandMA light and ultra-light, the buttons can be used as alternative means of entry, on the micro/pico, you can only use the Command Window.
1.10 Quick Reference

After many years of experience we have lost our illusions about any user to be willing to read an entire manual before playing with a new toy. But here are some tips which may help you to find your way around.

Basics

The grandMA is a highly specialised computer with up to 5 monitors. Many functions will work as you are used to from your PC or MAC.

Main supply: 90–230V

The mouse in its drawer (grandMA only) or trackball on the grandMA light & grandMA ultra-light, Ultralight and Micro:

- Left click selects a field for keyboard or encoder input, etc.
- Right click goes to Modify (opens windows with options, sorting columns by clicking on the headline...)
- Pressing and holding the middle mouse key changes output values (Hold and Move)

The displays (select one by a click into empty space)

The grandMA offers different windows: Menus with information and control keys, spreadsheets, key groups, dimmer channel listings and fader symbols

- Clicking and dragging using the left mouse key on the headline moves a window, you can alter the size by clicking and dragging the left and bottom edges.
- Right clicking with the mouse on the headline of a window opens options menu for that window.

Spreadsheets (comparable to those used in Excel or Access):

- Click and drag with the left mouse key and you can select a range of cells (not on all screens possible)
- Left click on a column headline will resize or move the column
- Right click on a column headline will sort by this column

Emergency help: Like any computer, the grandMA may crash. To resolve a crash:

1. Perform a reset by pressing CTRL-ALT-DEL or the RESET key on the backside of the unit or Power Off on the Ultralight and Micro.
   Only if this doesn't help:
2. During the booting use „Delete ActShow“ to delete the current Show. See Utility Menu

In case of any further problem, please feel free to contact your dealer or our HOTLINE +49-5251-688865-99.

Setup and start

The easiest way is to use the BACKUP key and load a demo-show or start show. Alternatively:

1. SETUP key: Will allow you to select and patch the number of dimmers and fixtures, create presets, groups and effects.
2. Right click or touch in any empty display:
   - creates, moves and resizes a FADER or CHANNEL window for dimmer control and FIXTURE, GROUP and different Preset windows (PAN/TILT, GOBO...) for fixtures.

Direct access

The grandMA offers many different ways of controlling dimmer values and fixture attributes. For speed, we give you only one example for each of them.

Setting values for dimmers:

CHANNEL FADER “–” or “+” key toggles the motorised faders to control single dimmer channels.

- “+” and “–” scrolls in blocks of 20 (10 on the grandMA light) dimmers.
- The set fader values are shown in the dimmer display.
Channels can also be selected and modified by the mouse, wheel, encoder and the keypad.
With the LINK function (right on top of channel and fader sheets), the window will automatically scroll to show the channels set for the faders.

Controlling Fixture attributes:

GROUP window
Select a fixture by its key (or click on the name of a fixture in the fixture sheet).

GOBO, COLOUR ... window
Open a preset for the selected unit (if no presets are displayed, run the selected function via an encoder).
Pressing and turning the encoder allows for fine tuning

Storing Settings
The STORE key of the grandMA is very flexible.
If the STORE key is flashing, you can switch it off with a second press or use ESCAPE.
Example: Select some fixtures and set the color wheel
- STORE + one of the buttons above or below an EXECUTOR fader (make sure you have toggled back from CHANNEL to EXECUTOR): Stores the color setting as a cue on that Executor.
- STORE + one of the buttons of an EXECUTOR fader, where a cue was already stored, gives you the option to overwrite, merge information or create a second cue. See CREATE LIST
- STORE + a cell in the GROUP window: Stores the chosen Fixtures as a new group (enter a name via keyboard)
- STORE + any cell in the preset COLOUR window: Stores the values as a color preset (enter name via keyboard)
- STORE + one of the VIEW keys on the right hand side of the displays: Stores the layout of the screen, the mouse position, etc. as a view (enter a name ...)

With STORE + VIEW key you can store screens individually or all console wide.
In the ASSIGN menu, you can enter names sequences of cues.

Selecting and activating channels, fixtures and functions
Selecting and Activating have different meanings and are important terms and concepts when working with the grandMA.
Selected fixtures or channels are what you are currently working with, you can tell what is selected by their names in fixture / channel sheet being yellow. Active values determine which channels and parameters are to be stored in the next cue and will be controlled by this cue later on. Values with a dark red background will be stored in the next cue, values with a bright red background are currently under your control and will also be stored in the next cue. Channels not active when the cue is stored will not be affected by the playingback of this cue. Selected fixtures or channels are automatically deselected if a setting was altered and new fixtures selected (a single press of the CLEAR key will do the same).

Changing the selection:
- Any channel or function, being controlled in Direct Access mode, is automatically marked as selected.
- Pressing the CLEAR key several times, deletes the whole selection.
  1st CLEAR: deselects – 2nd CLEAR: deactivates – 3rd CLEAR: deletes all values set by direct access and returns the values to their defaults or to being controlled by playback.
- Selecting a channel, fixture or function multiple times can be used to modify an activation
  1st selects – 2nd activates all parameters – 3rd deactivates all parameters
  By holding the STORE key and selecting ALL, the activation will be ignored and the complete console output stored
  as a cue.

**Timing - Fade times (FADE) and Delays (DELAY)**

The grandMA offers two different ways of storing time settings for a cue:

1. **BASIC X-FADE and SNAP DELAY**
   - With STORE, a basic fade time can be set for all typical fader channels, whereas SNAP DELAY will only work for
     channels marked as snap channels in the Patch menu.

2. **TIME key for individual durations per channel**
   - With TIME, the status windows can be switched to the FADE or DELAY layer, where individual fade and delay times
     can be set for each channel. These durations will be stored in the cues and will overrule any basic duration.

**Create List**

When storing a cue to an Executor already containing a cue, the grandMA offers the option to create a second cue
and start a cue list, which may be replayed as a Chaser or sequence later on.

In the ASSIGN menu, you can preset the Cue list as tracking or non-tracking, respectively.

**TRACKING CUELIST** (typically for moving light control or theatre applications):

When working with a tracking cue list it only makes sense to store values that have changed. On playback, the
grandMA will hold a parameters value until it is given a new value by subsequent cues.

**NON-TRACKING CUELIST**

With a non tracking cue list, all values to be playback have to be stored in each respective cue, as all values not
stored within a cue, will be switched off (“0” or default).

**Playback buttons and faders**

- The motor faders allow to work on different pages simultaneously. With OFF, playback of cues loaded onto
  executors can be stopped.
- With the ASSIGN + EXECUTOR buttons, you can define, which sequences with which functions are to be
  playedback on executors.
- The 12 function keys can be used for any Playback (OFF - EXECUTOR1).

To call up a cue with a fader, it has to be activated via GO+, TOP or ON.

Watch out for the GRANDMASTER - or simply switch it off in the Setup menu.
2 Setup

The Setup menu is displayed only on the right screen (grandM A). In case of a failure of these screen press F3 to display the menus of this screen on an external screen.*

2.1 Selecting, patching, creating and editing of fixtures and dimmers, Stage Setup (Edit Show)

- press SETUP

FIXTURE SCHEDULE

Full Access

In the Full Access menu, you can define the number of Scanner and Dimmer channels and assign DMX addresses. Furthermore, the stage can be adapted and Scanners and Dimmers be positioned accordingly. Only in the Full Access menu can you modify the complete Show. If using the console in the Multi User mode, you can access this menu only from a console. See All Access

When adapting a Show, a copy will be used; the modifications will only be available when they are saved.

Accessing this menu will take a few seconds, as all Fixtures (approx. 300) will be loaded from the hard disk.

Live Access

There are certain limitations when it comes to modifying a Show. These modifications will be executed immediately. In the Multi User mode, the Show data can be adapted by multiple users simultaneously. In the Live Access menu, you can e.g. assign DMX addresses. Furthermore, the stage can be adapted and Scanners and Dimmers be positioned accordingly. Additionally, adaptations can be made in the Attribute Setup.

It is not possible, to sign on or delete new lamps in the Show.

The PDA remote control does have the status of Live Access only.

AUTO CREATE

In this menu, you can e.g. have presets automatically created for all your fixtures and dimmers, as long as those presets are already contained in the internal library. Premade Effects and Groups for each Fixture or Dimmer channel can also be created. See Creating presets, effects and groups automatically

NOTE:

All text marked with *, does not apply to the grandM A MICRO.

All buttons marked with **, are located in the grandma MICRO's COMMAND WINDOW only.
2.2 **Menu Full Access oder Live Access**

- **press Fixture Layer**

Here, you can create Scanner and Dimmer groups. These groups can be modified later without any problems, e.g.: increase number, change the lamp type etc. Additionally, you have an overview over the number of all signed-on lamps and their ID numbers for Channel and Fixture.

### 2.2.1 Creating groups with Scanners/Dimmers (Fixture Layer)

- **Press the “Add Line” key** (Fixture Layer must be active, i.e. header dark blue).

A window will open, where you can enter a name for the group and must confirm this action. Now, the “Create New Fixtures or Channels” window will open. When opened for the first time, only “From Library” will be displayed here and is already selected (indicated by its blue background).

- **When selecting “From Library”, the library window will open:**
  - By turning the Encoder, you can only choose a lamp type (blue bar).
  - Pressing the Encoder will accept the chosen lamp type and close the window.

For conveniently localizing scanners (fixtures), the list can be sorted by name, manufacturer or date. Example: Sort alphabetically: Make a right mouse click on NAME. Clicking once will sort the list A–Z, on the second click Z–A.

- You can use a search filter: Select the manufacturer column on the side of “Filter”, and enter the first character of a manufacturer. Now, only the models produced by this manufacturer will be displayed.

On www.ma-share.net, you will find a forum to setup and download self-created or altered Fixtures.

#### Channel Start Id:

- **Here, you can set the first ID number of the Dimmers.** These are then displayed in the Channel and Fader Sheet. The Dimmer channel of Scanners could also be used in the Channel and Fader Sheet. In order to do so, you would have to assign “Channel-IDs” for the Scanners first.

#### Fixture Start Id:

- **Here, you can set the first ID for the Scanners.** These are then displayed in the Fixtures Sheet. Dimmer channels can also be used in the Fixtures Sheet. In order to do so, you would have to assign “Fixture IDs” for the Dimmer channels first.

Both ID numbers are displayed in the „ID“ column in the fixture sheet, separated by a colon.

Example: 
- 4:- The lamp has the FIXTURE ID 4
- 6:8 The lamp has the FIXTURE ID 6 AND the Channel ID 8

**Qty (Quantity):**

- Finally, you have to set the number of selected fixtures under „Quantity“ (numeric keypad or keyboard...
Autopatch:
- displays the next available DMX-channel; in position ON this channel will be used after pressing CREATE; in position OFF (default) any other available channel can be used.
- Pressing “Create!” will accept the settings for generating fixtures later on.

2.2.2 Patching Scanners/Dimmers

In the lower part of the window shows the Scanners/Dimmers of the selected
- Select a fixture in the “Patch” column (blue background).
If all fixtures of these “Fixture Layers” are to be patched one after the other, you can select all of them together by clicking on the column title (in this case PATCH). Now, all fixtures are displayed on a blue background.

Pressing the Encoder will open this menu:
Below “Direct Patch”, the first free DMX channel is displayed.
- First, you have to set the DMX output (e.g.: A, B, ...), then the (first) DMX channel.
- Finally, press the “Patch!” key. That’s all.

or:
All free channels are displayed in the right column. By turning the Encoder, all invisible channels can be displayed and selected. Pressing the Encoder will accept the channel.
If the TEST OUTPUT button is pressed (green background), the selected DMX output channel is set to 100%. This accelerates the localizing of a patched channel in the stage setup.
This function will only affect fixtures, whose DMX signal is directly output by the console. Consoles in Slave operation or fixtures, whose signals are output over the MA-Net, cannot execute this function.
Now, the selected and patched fixtures can be positioned in a 3D stage display.
- Leave menu with X,
- press Save to save the modified settings
- Don’t Save will discard the modifications
- with Cancel you stay in this menu.

2.2.3 Position of fixtures

In the upper right part of the window, you’ll find a simplified representation of the stage that can be used to position the fixtures. Settings will also be taken over onto the grandMA 3D.
If this part of the window is active (title bar “Stage” is displayed in dark blue), you can modify the stage view by turning or turning plus simultaneously pressing the Encoder.
Setting the stage size
In the geometrical system of the grandMA (Stage window) or in the grandMA 3D, you can position objects in the three-dimensional space.
It is modelled on the geometrical system used in architecture: The X/Y level is defined as base area (stage) and the height as Z axis.
To adjust the stage size,
- press Stage Setup,
- Click on the values and enter a value in the entry window. (the values do always refer to the centre of the stage)
- By turning or turning plus simultaneously pressing the Encoder, you can change the stage views.
- Close menu with X.
Positioning fixtures:
You can only set the specific group selected in the Fixture Layer – it is not possible to select fixtures from the small Stage window. To gain a better control, click on the small STAGE window (title bar turns dark blue) and change the stage view using the Encoder right of the Display (turn or turn and press the Encoder).

- In the FIXTURE LAYER, select the fixture type
- In the FIXTURES AND CHANNELS IN LAYER, select one or more fixtures
- Set the positions and targets of the fixtures using the 3 Encoders (shift linear on the x, y, and z axis, or rotation around the x, y, and z axis) – check out results in the STAGE window. The values set will be displayed in the back part of the table. Press and simultaneously turn the Encoder (right of the Display), to change the table view. Turn it, until the columns for Position X, Y, Z and Rotation X°, Y°, Z° are displayed.

Or
- Highlight a value directly
- Press on the right Encoder
- Enter the value using the Calculator
- Confirm with ENTER

Shift linear (S/Gs have no importance)
- Select one or more fixtures
- Select the Linear icon
- Select the space-axis icon
- Shift the fixtures along the space axes using the Encoder

Shift linear tilted (S/Gs have no importance)
Only for rotated fixtures; if the fixtures were not rotated before, this function is equal to the one described above
- Select one or more fixtures
- Select the Linear icon
- Select the Axis icon
- Shift the fixtures along the fixtures’ axes using the Encoder

Rotation S(ingle):
- Select one or more fixtures
- Select the Circle icon
2.2.4 Adjusting the Fixture Layer

- **Fixture Layer must be active:** By shortly clicking on the title bar, it will be displayed in dark blue.
- **Select group of Fixtures (Layer).**
- **Add Line:** A new group can be inserted in front of the selected group. Proceed like indicated 3 pages earlier: Creating groups with Scanners/Dimmers.
- **Delete Line:** The selected group is deleted. All fixtures with all settings in this group are deleted.
- **Moves Lines:** The selected group can be moved to another position in the table. If the "Moves Lines" button was used, this will be displayed in red. By selecting a new position in the table, the group will be moved.
- **select the „S“**
- **rotate each single lamp by turning the encoder**

Rotation G(roup):
- **select multiple fixtures**
- **select the Circle icon**
- **select the „G“**
- **rotate the fixtures „in traverse“ around their virtual traverse using the Encoder**

- **Press „X“ to leave the menu.**
- **Press „Save“ to save the settings.**
- **Press „Don’t Save“ to discard the settings.**
- **Press „Cancel“ to stay in this menu.**

The „ALIGN“ function will be of great help and save you quite some time.
### 2.2.5 Adjusting individual fixture groups

Select a group in the "Fixture Layer"; this will now be displayed below:

**Adding identical fixtures**
- Select “New” (dark blue) and shortly press the Encoder (right to the Display). The “Create New Fixtures or Channels” window will open. In this window, all types of fixtures are displayed that are already present in this show.
- Select the type of fixture by turning the Encoder. Proceed like indicated, 3 pages earlier: Creating, patching and positioning groups with Scanners/Dimmers.

**Adding new fixtures**
- Select “New” (dark blue) and shortly press the Encoder (right to the Display). The “Create New Fixtures or Channels” window will open.
- Now, choose “From Library”: Proceed as indicated 3 pages earlier: Creating, patching and positioning groups with Scanners/Dimmers.

**Exchanging fixtures**
- Select the fixtures to be exchanged in the “Type” column (dark blue). You can also select several or all fixtures.
- Shortly press the Encoder (right to the Display). The “Choose Fixturetype” window will open.
- Select a fixture that was already present in the show by turning the Encoder, and accept it by shortly pressing on the Encoder. The fixture still has to be patched.
- or:
  - Select “From Library” for a new fixture, and shortly press on the Encoder. Proceed as indicated 3 pages earlier: Creating, patching and positioning groups with Scanners/Dimmers.

**Multipatch (assigning one DMX channel for multiple fixtures/dimmers)**

Makes sense, if several fixtures are always to be triggered at the same time (but cannot be dimmed individually).

To do so, you make a arbitrary number of „copies“ of a fixture.
- select the fixture that you want to „copy“
- press Create Multipatch
- In the entry window, enter the number of fixtures to be triggered by the same DMX channel

In the fixtures list, you will now find the copies below the fixture. In the TYPE column, you will find „Multipatch Dummies“ for the copies. And you can position the fixtures, to use them in the Stage window or on the grandMA 3D.

Note: After a Multipatch, you’ll find no DMX addresses for the dummies, as these will automatically be given the same DMX address, name and ID as the original fixture.

It is not possible, to enter the same address for different fixtures in the Layer Sheet. In the fixtures' Settings menu, the same addresses have also to be entered (see manual of the fixture manufacturer).

**TIP:** If you want to multipatch fixtures with different addresses (set on the fixture itself), you can enter these after the Multipatch in the Layer Sheet (of course only, if not used by other fixtures).
Inserting, deleting or moving fixtures

- Select Fixture Layer.
- Select a fixture. Pressing one of the buttons will have the following effects:
  - Add Line: Inserts a new fixture in front of the selected fixture.
  - Delete Line: Deletes the selected fixture. And all settings for this fixtures are deleted, too.
  - Moves Lines: Moves the selected fixtures to another position in the table. If using the “Moves Lines” key, this key will be displayed in red. By selecting a new position in the table, the fixture will be moved to that new position.

Assigning fixture names

- Click on the fixture’s name, enter a name directly, and confirm with Enter.

If a space and a number is added an automatically enumerate of the names is made.

Adjusting ID Cha and Fix

- Select one or more cells under ID Cha or Fix and press the Encoder. A window will open, in which you can enter the IDs that will then be accepted, when Enter is pressed. Pressing “None” will delete them. Please avoid any overlappings.

Switching the Master (GRANDMASTER FADER) off:

- Select one or more cells under Master and press the Encoder.
- Now, select “No” and press the Encoder one more time. If GRANDMASTER FADER is switched off, this will be indicated by a “No” in the respective cell.

Func. Pan / Func. Tilt

- Select one or more cells under “Func.. Pan” or “Func. Tilt” and press the Encoder. Now, select “Invert” and press the Encoder one more time. If a function is inverted, this will be indicated by a “Invert” in the respective cell.

DMX Pan / DMX Tilt

Here you can invert the DMX - signals for Pan and Tilt functions - the signals are only inverted in the DMX - Output, not for the visualizer; this means, that movements in the visualizer and on stage will differ.

Select one or more cells under “DMX.. Pan” or “DMX. Tilt” and press the Encoder. Now, select “Invert” and press the Encoder one more time. If a function is inverted, this will be indicated by a “Invert” in the respective cell.

Changing from PAN to TILT and vice versa

- Select one or more cells under “Swap” and press the Encoder. Now, select “Yes” and press the Encoder one more time. If PAN and TILT are changed, this will be indicated by a “Yes” in the respective cell.

This is where the useful “PAN/TILT trackball orientation” can be set.

This can only be done in the Live Access menu. Check it out! Select a fixture, press HIGHLIGHT and let the Trackball „run“. Modifications will only be available after they have been saved. In cases like these, the HIGHLIGHT key, among others, is very useful; if you keep the key pressed, selected lamps flashes for better identification.
Assigning colors for Dimmer channels
In the STAGE window or for the grandMA 3D, this is where colors can be assigned for the individual Dimmer channels (color filter foils).

- Select one or more cells under “Color” and press the Encoder.

The Change Color menu will open.

In this menu, you can choose between different color tables (Lee, Rosco, etc.). Above each color, the currently selected color table is displayed (here “Standard”).

- By shortly pressing the key, you can switch to another color table. Pressing the arrow will open a menu, in which all tables are displayed and can be selected directly.

Having decided for an individual table, you can choose a color using the Encoder and accept it by pressing the Encoder once. If a color has been assigned, this will be displayed in the respective cell.

- Close menu with X.

RGB-Lamps and LED-Beamer without dimmer
For this types of lamps grandMA can create a virtual dimmer. This means, that the software simulates the dimmer function. The user only has to choose this function and can operate these lamps as any other dimmer-type lamp.

- Sign on the new lamp in FULL ACCESS
  - If no lamp of this type is in the library, create your own lamp

- In CHANNELS of FIXTURE TYPES create 3 channels with attribut COLORMIX and switch the column INV to YES.
  - Create another channel with attribute DIM and select Virtual in the SELECT ATTRIBUTE menu. Confirm with OK.

In the Fixture Sheet the dimmer channel and the 3 colour channels are displayed and can be operated, although only 3 DMX-channels are covered; the virtual dimmer channel does not cover an own physical channel.

- If other channels than Colormix 1-3 should be affected by the dimmer, set column REACT on DIMMER to linear or invers.
2.3 DMX List - Single Channel-specific Adjustments for the Current Show

- Press the PATCH SHEETS key in the Full or Live Access menu to activate this menu.
This menu will only display the actually patched channels. All changes made here will only affect the current show!

- This column will show the individual, addressed DMX channel.
- Will show the ID for Channel and Fixture. The IDs can be changed without affecting the show, e.g. for a better display on the Fixture Sheet.
- The name of fixtures and dimmer channels assigned to the individual DMX channels.
- The functions of the individual DMX channels.
- In this column, a profile can be assigned to this channel. See Creating, Assigning and Deleting Profiles
- Within this column, the respective DMX channel can be inverted. A click into the cell will activate this function. Press the Encoder (right to the Display). Select Yes for „Inverted", No for „not inverted“ or Original (Library setting will be used) and accept them by pressing the Encoder one more time. An inverted channel will be indicated by a YES in the respective cell. These inverted channels are not used for the visualizer; this means, that movements in the visualizer and on stage will differ.
- DEFAULT: This value will be output if no CUE, Sequence, Preset or Direct Access addresses the fixture or dimmer channel.
This setting can be used for PAN/TILT so that a moving light can start being manipulated from a sensible and optimum position. You can change values by selecting the cell and adjust it by using the right Encoder (below the Display). These values can be set by selecting the respective cell with a click. n.
- The HIGHLIGHT function is used to temporarily override a fixtures current settings making it easier to see on stage and speed up the procedure of programming positions of the selected fixtures. The HIGHLIGHT values for individual DMX channels can be set by selecting the respective cell with a click. A value can then be entered within the activated window. You can adjust the value by using the second Encoder (below the Display).
- STAGE (not yet available in version)
- SNAP: New values for this channel will ignore cue timing and will execute in 0 seconds. Activate by a click on the cell. Press the Encoder (right of the Display). Select Yes for SNAP or No for FADE and accept by pressing the Encoder one more time. A YES in the respective cell will indicate that SNAP has been chosen for this channel. The default for all DMX channels is to follow cue timing.
- FADE: A value can be changed slowly (channel can fade).

This is only a pre-setting for each individual channel and can easily be changed during programming, if needed.

Fixture or Channel Patch menu
In both of these menus you can patch fixtures. And you can define standard settings for each fixture
- press SETUP
2.4 Adjustments in the ATTRIBUTE SETUP menu

In the „Attribute Setup“ menu, you can change the names of Preset and Features Groups. Furthermore, you can create or adapt new Features Groups. Furthermore, you can define, which attributes will be activated together or individually.

But first a short explanation about the differences between Presets, Features and Attributes:
Attribute: Attributes are individual functions of Fixtures like Gobo1, Focus, Iris, Pan, Tilt ...
Feature: Features are groups, in which several Attributes are combined. In the Fixture Sheet, the first line will display all Features available. Below the individual Features, the respective Attributes are displayed.
Presets: In a preset, the value of one or more Attributes can be stored. Presets are divided in different Preset Groups (Gobo, Colour, …). Features are allocated to the individual Preset Groups.

By pressing a FEATURE key with the function (in this case, Dimmer), you can select the different Feature Groups for the Preset Group selected to change the individual Attributes using the Encoder.

Here, the individual Attributes are displayed that can be changed with the respective Encoder.

2.4.1 Preset, Feature and Attribute Setup

Attention! This menu is important and can influence all of your programming!

- press Full- or Live Access
- open Attribute Setup

The number of Preset groups is fix and cannot be modified. Furthermore, the names displayed in red can’t either be changed or deleted.

Changing the names of Preset groups, Features and Attributes
Click on a name, change it using the keyboard, and confirm with Enter. The modifications will only be executed and saved after leaving the Full or Live Access menu and pressing the SAVE button.
Creating an additional Feature in a Preset group
When creating new scanners or adjusting of present ones, you possibly need additional Features and Attributes. Select a Preset group.

Click into the empty cell below the present Features. Enter a name for the new Feature using the keyboard (e.g.: Gobo 4) and confirm with Enter. The same name is automatically taken over and will be displayed in the Fixture window on the right side. If you want to use a different name, change it as indicated further above. Now, you still have to create Attributes for this Feature.

Click into the first cell below the name. Enter a name using the keyboard (e.g.: Gobo 4) and confirm with Enter. The same name is automatically taken over and will be displayed in the Fixture window on the right side. If you want to use a different name, change it as indicated further above. To create further Attributes, go to the next free cell and proceed as you did for the first Attribute.

Adding additional Attributes to a Feature
- Select a Preset group and then an Feature.
- Click into the free cell below the available Attributes.
- Enter a name for the new Attribute using the keyboard (e.g.: Gobo 4) and confirm with Enter. The same name is automatically taken over and will be displayed in the Fixture window on the right side. If you want to use a different name, change it as indicated further above.

Inserting, deleting or moving Features or Attributes
- Select a Feature or Attribute (blue background). Pressing the buttons below will have the indicated results:
  - Add Line will add a new Feature or Attribute in front of the selected one.
  - Delete Line will delete the selected Feature or Attribute. Only self-created Features or Attributes can be deleted.
  - Moves Lines will move the selected Feature or Attribute to another place in the table. The different ways to move Features or Attributes will be explained in the two following items.

Moving a Feature to another Preset group
- Click on a Feature, e.g.: Gobo1.
- Press the Moves Lines button, will be displayed in red.
- Select a Preset group, to which the Feature is to be moved.
- Select the position in the Features table by clicking on it. The Feature will now be displayed in this Preset group.

Some Features cannot be moved (e.g.: Color Mix). This is indicated by the words “Fixed Attributes” in the table on the right of the respective Feature.

The changes will take effect and will be saved only after leaving the Full or Live Access menu and pressing the SAVE button.

Moving Attributes to another Feature or Preset group
- Click on an Attribute, e.g.: Shutter.
- Press the Moves Lines button, will be displayed in red.
- Select a Preset group, to which the Attribute is to be moved, e.g.: Control.
- Then, select a Feature, to which the Attribute is to be moved, e.g.: Control.
- Select the position in the Attributes table by clicking on it. In this Preset group, the Attribute will now be moved into
Some Attributes cannot be moved (e.g.: Color M ix1). This is indicated by the word “Unmoveable” in the table on the right of the respective Attribute.

The changes will take effect and will be saved only after leaving the Full or Live Access menu and pressing the SAVE button.

2.4.2 Encoder (Activation) Grouping
All settings within this menu will affect the storing of Cues, Presets and creating of Presets (Create Preset menu).

Attention! This menu is important and can influence all of your programming!

- Call up this menu by pressing the „Encoder (Attribute) Grouping” key in the Preset and Feature Assignment. The Attributes combined in a group will be activated and stored when they are changed (e.g. Pan and Tilt).

In the Attribute Setup menu (see 2 pages earlier), open this menu by pressing the Encoder Grouping button.

By selecting a group, the appropriate Attributes will be displayed in the table on the lower left side.

- Pressing the „Add Group” key will create a new group.
- In order to delete a group, this group has to be selected first. Now, press the „Delete Group” key. The group will be deleted, the Attributes will automatically be added to the Free Attributes.
- In this column, the Attributes of the selected group will be displayed. By selecting an Attribute, this will be removed from this group and added to the Free Attributes.
- In order to assign Free Attributes to another group, this group has to be selected first. Selecting the Attribute will add it to the currently selected group.
- By pressing the „Default” key, all groups except 3 will be deleted. Almost all Attributes will be displayed as Free Attributes in the right column. In the remaining 3 groups, the fixed Attributes (Pan/Tilt, Col.Mix1-4 and Blade1A-4B) are allocated. These Attributes can not be moved into other groups (indicated by “fix” next the Attribute's name).

The changes will take effect and will be saved only after leaving the Full or Live Access menu and pressing the SAVE button.

2.5 Modifying Scanners (FIXTURE TYPES)
In the Full Access menu, open this menu by pressing the Fixture Types button.

The upper part of the Display shows all fixtures that are currently used in the Show.

- No: Numerical of the individual fixtures currently signed-on in this Show. If this number is displayed in red and with an asterisk, this fixture has been modified.
- Qty: Number of fixtures of this type.
- Name: Name of the fixture from the Library. By selecting it, you can change the name directly using the...
keyboard.
- Shortname: Here, you can enter an abbreviation or short name.
- Manufacturer: Manufacturer's name from the Library.
- Comment: Enter a comment here.
- Date: If you see “Original” here, this fixture is one from the MA Library. If a self-created fixture is used, you'll find the date of creation here.
- Type: Toggle between mirror or moving head Fixture. When using moving head Fixtures, the FIXTURE SHEET will show a square left of the PAN value, indicating the current head position.
- MIB Delay: To set a DELAY time for the MOVE IN BLACK function for this fixture. If Default is displayed, the set value from the DEFAULT menu is used. See Settings in the DEFAULTS menu.
- MIB Fade: To set a FADE time for the MOVE IN BLACK function for this fixture. If Default is displayed, the set value from the DEFAULTS menu is used. See Settings in the DEFAULTS menu.
- BeamAngle: Max. Beamwidth in degree (Zoom and Iris-function corresponds to this value).
- Power: For the 3D view; see 3D instructions.
- Lumen: For the 3D view; see 3D instructions.
- Weight: For the 3D view; see 3D instructions.

If you select a fixture, the individual functions of this fixture will be displayed in the lower part of the Displays.
- No: Listing of the individual DMX channels. If a number is displayed in red and with an asterisk, this channel has been modified.
- Break: If one cell contains a “Yes”, you can assign a different DMX address from the next channel onwards. To change the setting, select a cell and press the Encoder. Now, select “Yes” and press the Encoder one more time.
- Attribut: Listing of the individual functions. Press Encoder and choose function.
- Type: “Coarse” stands for a coarse channel, and “Fine” for a fine channel.
- Snap: FADE/SNAP function for the respective channel. 2.3 DMX List - Single Channel-specific Adjustments for the Current Show
- Inv: In this column, you can invert the respective channel.
- Default: This value is called up, if the Fixture or Channel is not controlled by CUE, Sequence, Preset or a direct access. Can be changed with the left Encoder.
- Highlight: This value is called up, if these fixtures are selected and the HIGHLIGHT key is pressed. Can be changed with the second Encoder.
- Stage: (No function assigned yet).
- MIB Fade: Allows you to set a FADE time for the MOVE IN BLACK function for this Fixture. Can be changed with the right Encoder.
- Profile: In this column, you can assign a profile to the channel. See Creating, assigning and deleting Profiles.
- Time: For the 3D view; see 3D instructions.
- React to Dimmer: depending to a virtual dimmer can be set

Functions of the individual buttons:
- Add Line: To insert a new fixture or function above the selected line.
- Delete Line: To delete the selected fixture or function.
- Decimal Values: To display the table values as percentages. By pressing the button, you can switch between decimal and hexadecimal representation.
- XYZ SUPPORT: Using CREATE, you can insert virtual X, Y, and Z axes into all Fixtures (necessary in order to use some of the STAGE features). Using REMOVE, you can remove the virtual axes - CAUTION, this will also remove all STAGE information contained in the current Show; sequences or effects containing these information, can then no longer be executed.

Updating the Fixtures Library
- Export to Library: The selected fixture will be saved to disk in the Library.
- Export to Floppy: The selected fixtures will be saved to floppy.
- Function Sets: Changes into this menu. See Function Sets.
- Import: You can insert a fixture from the Library or from a floppy.
- Function Sets: Here, you can enter and modify value-depending names and values for the visualization and representation in the Fixture Sheet. Furthermore, you can define how Presets are automatically created. See Function Sets - Names (Channel Values) and Presets.
- With this, you can leave this menu. The settings will only take effect and be saved after leaving the Full Access menu and after pressing the SAVE button.

2.6 FIXTURES TYPES (create new)
In the Full Access menu, open this menu by pressing the Fixture Types button. All fixtures that are currently used in the Show will be displayed in the upper part of the Displays.

Description of all functions See FIXTURE TYPES.
In the New column, click on the Name cell and enter a name for the new fixture and confirm with Enter. A new fixture is created and the basic settings are set to “Default”. These settings still have to be adjusted.

Please make sure that the chosen name does not already exist, because otherwise two with the same name can later only be recognised by their manufacturer or the date.

- Now, you can enter a name for Shortname, Manufacturer and, if needed, a comment.
- Type stands on Mirror and can be switched to Head by selecting the cell using the Encoders (to the right of the Display).
- Adjust the values for MIB Delay and MIB Fade, if needed.
- The settings for BeamAngle, Power, Lumen and Weight will only be needed for the visualization in the Stage window or on the grandMA 3D and can be adjusted, if need be.

In the New column, click on the Attribute cell and open the Select Attribute window by pressing on the Encoder (right to the Display).
Now, select the function for the first channel and accept it by pressing the Encoder one more time. Automatically, the next line will be selected.
The DUMMY Function is meant for fixed channels. The output value for this channel has to be set in the DEFAULT column. This channel can not be modified in the FIXTURE-SHEET.
If you finished selecting all Scanner functions, you can proceed with the presets.

Presets are:
- Type
- Snap
- Inv
- Default (can be adjusted with the left Encoder)
- Highlight (can be adjusted with the second Encoder)
- Stage (presently without any function)
- MIB FADE (can be adjusted with the right Encoder)
- Profil
- Speed

See Listing of the individual functions in the EDIT FIXTURE menu.

The values are displayed as percentages and can be switched to decimal or hexadecimal by pressing the Percent button.

For the individual functions (e.g. GOBO), so-called Channel Values can be created. These will then be displayed in the Fixture Sheet. You can switch to the menu by using the Function Sets button. See Function Sets.

You can leave this menu by using the [X] button. You could now use the created fixture in this Show.

The settings will only take effect and be saved after leaving the Full Access menu and pressing the SAVE button.

Momentarily, the created fixture can only be used for this Show.

If you want to have this fixture available in the general Library (on harddisk or floppy), too, you have to UPDATE them (save to disk or floppy).

See Updating the Scanner Library (USER-Library)

**Delete self created fixtures**

In the Tools-menu you can delete (permanent) self created or varied fixtures from the library. You can **not** delete fixtures from factory desk library.

- In the menu Tools press the button **Manage Fixture Library**
- Select the fixture and press **Delete Entry**
- With the filters you can display fixtures of the desired manufacturer or names
- With Harddisk/Floppy choose store medium, mostly its Harddisk.
2.7 Function Sets - Names (Channel Values) and Presets

In this menu, you can create or adjust so-called Channel Values (names) for the individual functions (e.g. GOBO). These names will then be displayed in the Fixture Sheet instead of the number value. Furthermore, you can assign different graphic parameters like e.g. colors or Gobos that will then additionally be displayed in the Fixture Sheet. These data will also be needed for the visualization on the grandMA 3D.

These names and values are used when creating Presets in the Auto Create menu (Auto Create - Creating Presets, Effects and Group buttons automatically). Presets will not be created automatically, if for the Ranges of Names and Visualize values from “X“ up to “Y“ are indicated (e.g.: 10-21)! Otherwise, always - see column AutoGen.

- Open this menu by pressing the Function Sets button in the Fixture Types menu (see 2 pages earlier).
- Listing of the individual columns and their functions:
  - No: Listing of the created names and appropriate values. If a number is displayed in red and with an asterisk, this line has been modified.
  - Name: This name will only be displayed, if the value indicated for Range is reached. There are exceptions that will be explained on the next page. You can select individual names using the left Encoder.
  - Range (Name): For these values, the names (Channel Values) will be displayed. The Start and End Ranges can be adjusted using the two Encoders in the middle.
  - AutoGen: By choosing a cell and pressing the Encoder, “No“ will be indicated, this means, that the presets will be not automatically generated.
  - Visualize: Here, you can define what else is to be displayed in the Fixture, Stage-Sheet or grandMA 3D. You can visualise either graphics (for Gobos) and colors or data plus units (e.g.: degrees for PAN/TILT or RPM for Gobo rotation).
  - Range (Visu.): These values will be displayed to indicate units (e.g.: with PAN/TILT degrees); e.g. Gobo rotation: for a value of 1 - 20, 1 RPM - 20 RPM will be displayed (Discrete values).
  - Extra: With this, you can define, what Gobos or colors will be displayed.
  - Mode: Here, you can set an additional condition for displaying the name.

Functions of the individual buttons:

- Add Line: you can insert a new name above the selected line.
- Delete Line: you can delete the selected name, i.e. the complete line.
- Percent Values: you can display the table values as percentages. By pressing the button, you can switch to decimal or hexadecimal display.

- to leave this menu. The settings will only take effect and be saved after leaving the Full Access menu and pressing the SAVE button.
Entering Names and Values
The Attribute, for which names and values can be entered, is displayed in the title bar or above the right Encoder below the Display. To select another one, rotate the Encoder, until the desired Attribute is displayed.
The first column contains the name (for Color e.g.: Color1). Click on this name and change it, if needed (e.g.: Close, Red, ...).
In the Range column, 0.00% - 100.00% is displayed. Using the second and third Encoder, you can enter the starting and end values for this name (Channel Values). By pressing the Percent Values buttons, you can switch to decimal or hexadecimal display.
For further names and values, repeat these two steps, using the next lines, respectively.

Examples:
Here are some examples for standard functions (e.g.: Dimmer, ...), variable functions (e.g.: Strobe, Pan, Rotation, ...) and functions with fix values (Gobo, Colors, ...). You can sign-on different fixtures for a trial, of course, or have a look at the given names and settings and use them for your own fixtures.
- **Standard function**: Closed will be displayed, if the set value is “O”. Open, if on 255. Between 1- and 254, only the value will be displayed.
- **Variable function**: (Discrete Values) The set value will be displayed. Furthermore, a value indication will be displayed together with „Degrees“ as unit. In this case, -270° to 270° would be displayed. For Strobe, “Hz” and for Gobo Rotate “RPM” would appear here.
- **Fixed values**: Open will be displayed, if the set value is „O“.
  Red between „8“ and „24“ and additionally a color will be displayed on the side. This color can be set in the Extra column. Sames applies for the other colors.
  Between the given values (e.g.: here 1 - 7), the color would be displaced by Open, and the color be inserted for Red. Only after reaching the value “8” would the color be displayed completely for Red.

2.8 Creating, Assigning and Deleting Profiles (see also: TOOLS-Menu)*
In the PROFILE TOOL menu, you can create individual profiles. The profiles created can be assigned to any Fixture parameter or dimmer channel.

Assigning a profile to a DMX channel
- press **Setup**
  - Open the FIXTURE TYPES menu (Modifying scanners (EDIT FIXTURE) or Creating Scanners (EDIT FIXTURE)). Here, you can assign a profile to all fixtures of one type simultaneously.
  - Or:
    Open the Patch Sheets menu (DMX List - Single Channel-specific Adjustments for the Current Show) Here, you can assign a profile to each individual DMX channel.
In the Profile column, select the cell for the fixture or DMX channel, and press the Encoder. The Select Profile menu will open. The table shows all created profiles. By selecting a profile, it will be activated and the menu be closed. The name of the selected profile will now be displayed in the cell.

**Un-assigning a Profile**  
Select the name of the assigned profile and press the None button. This will revoke the assignment.

### 2.8.1 EDIT PROFILES - Creating or modifying profiles

If you want to create a new profile, press the NEW button. The EDIT PROFILES menu will open. Additionally, a window will open, where you can enter a name for the profile and have to confirm it with Enter. To change a profile, select it using the Encoder and press the Edit button. The EDIT PROFILES menu will open with the selected profile.

At first, when creating a new profile, a linear profile is displayed that can then be modified. If an existing profile is selected, this will now be displayed.

The y-axis gives the value set on the grandMA, whereas the x-axis gives the DMX value that will be output. By pressing the PERCENT key, you can switch the scaling from percent to decimal or, when pressing the key once more, to hexadecimal.

- Clicking on a desired point in the diagram will bring up cross-wires. Above the diagram, the value of the current position is displayed. The value after IN is the set value on the grandMA, the one after OUT is the DMX value that will be put out.
  - **Add Point:** The profile line will automatically be connected with the new point. This way, you can set as many points as you wish.
  - **Delete Point:** To delete a point, select one and press the Delete Point button.
  - **Toggle Curve:** will create a waveform.
  - **PREDEFINED:** opens a menu with predefined profiles, these profiles can be altered and stored with a new name.
  - **MIRROR:** displays a selection to mirror the profile.
- Using the mouse, you can move points. Make a left mouse click on the point, draw it to the desired position and let the button go.

The modifications made will be saved to this profile directly. The table will show all existing profiles that can also be accessed and modified directly.

To create an additional profile, press the Add Profile button, name it and repeat the steps above.

To delete a profile in the table, select it and press the Delete Profile button. Deleting a profile is only possible when the profile is already deleted from the fixture (in Full Access / Fixture Types / Profiles).

- Pressing the X button will save the profiles and you leave the menu.

**Embedding self-created gobos**  
When using self-created Gobos, these graphics can be collected in a Gobo library; the Visualizer will, however,
show the „real“ Gobos. In stage view on the console, the light is indicated in a very simplified form, i.e. as a color line, and the Gobos do not appear.

**Saving a self-created Bitmap graphics**
- create a graphics and save it as a BMP file to a floppy
- FULL ACCESS
- FIXTURE TYPES
- activate the FIXTURETYPE menu (dark blue title bar) and the line of the fixture type
- activate the CHANNELS of FIXTURETYPE menu (dark blue title bar)
- use the Encoder to jump to the attribute cell GOBO
- FUNCTION SETS – the FUNCTION SETS menu of the respective fixture type (Gobo 1 or Gobo 2) will appear
- in the empty bottom line, enter a name for the Gobo – the line will be numbered automatically
- enter a range (environment in which the Gobo should completely be visible – depends on the fixture type)
- Visualize – using the Encoder, choose the Visualize Effect from the menu (in this case, Gobo 1 or Gobo 2)
- position the frame in the EXTRA column using the Encoder – the CHANGE GOBO menu will appear
- use the arrow to open the folder overview
- use the Encoder to choose and open the folder in which you want to save the bitmap
- copy the bitmap into the folder by using IMPORT IMAGE FROM DISK
  - or:
    - create a new folder using MAKE FOLDER ON DISK; enter a name and confirm
    - copy the bitmap into the folder by using IMPORT IMAGE FROM DISK

**„Inserting“ an already saved Gobo in a fixture**
When Gobos were exchanged within a fixture, you have to do the same for the „equipment“ in the library so that the 3D Visualizer can give a real representation of the Show.
- open the FUNCTION SETS menu of the respective fixture type (Gobo 1 or Gobo 2) – see above
- use the Encoder to go to the EXTRA cell and open the CHANGE GOBO menu
- use the arrow to open the menus of different manufacturers
- choose a manufacturer and a Gobo, and confirm using the Encoder – the chosen Gobo will be „inserted“ into the fixture
- using DELETE FOLDER FROM DISK to delete the chosen folder from the hard disk
- using DELETE IMAGE FROM DISK to delete the bitmap from the chosen folder

The bitmaps and folders for those bitmaps will be permanently deleted can not be „oopsed“ again
2.9 DMX Output and Ethernet Configuration

There are 4 DMX output sockets on the rear of the grandMA. These sockets can be assigned to any of the DMX universes A to H. It is also possible to output the same universe on more than one output socket.

By using Ethernet data transmission more DMX outputs can be assigned.
DMX universes E to H are only available with the optional channel expansion upgrade to 4096 channels. As of serial number 156, a dongle (hardware protection) has to be installed within the grandMA; for serial numbers under S/N 156, a plug-in card has to be exchanged.

For this operation, the unit can only be opened by a qualified technician. CAUTION: disconnect the mains power first!

There are some limitations for the MICRO and grandMA UltraLight

**DMX OUTPUT**

**DMX outputs A to D** (on the backside of the console)

In this menu, the DMX ports are assigned to the output sockets on the grandMA.

- Press the button for the required output (A - D) and select an Universe for this output. (only Universes having a green background can be assigned to an output)
- Green cells: in these Universes, channels are patched and can be put out by the console.
- Red cells: there are more DMX channels patched than the console can output.
- XLR (A...D): these Universes will be put out by the 4 sockets A - D (on UltraLight and Micro/Pico only A and B), if the cell has a green background.
- NSP: this Universe will be put out by a NSP
- Black cell: in this Universe, no channels are patched

Use **SAVE** to save the setting.

**DMX MERGE**

You can use DMX IN to mix the signals of a second console with those of the grandMA (MERGE) and route them on the same line to the stage. When triggering channels of the grandMA as well as of a second console, the higher value will be forwarded (HTP).

Furthermore, you can use the DMX IN as remote control input.

- Select the Universe, on which you want the incoming DMX signals to be output (in the graphics on the left, Universe 2(B) has been selected).
- Press the EDIT button, then on the Universe to be merged with the incoming signal; the Universe will receive a light background and **Merge Local** will appear - in the graphics on the left, the incoming DMX signal is merged with Universe 2.
- Use **SAVE** to save the setting.

Important: If in a Master Slave network environment, only the DMX IN of the master console will be connected to the internal DMX port. The DMX IN of the slave console can then only be use for remote control purposes.
By pressing a button in the CONFIGURATION column you can call up the respective menu for this DMX output.

**DMX INPUT**
By pressing a button in the PROTOCOL column you can define a protocol for the respective DMX Port 1(A) - 8(H).

By pressing the button below PROTOCOL, you can define the following:
- **Intern**: The DMX IN (on the backside of the console) will be used.
- **ARTNET**: The assigned DMX IN of an ARTNET device will be used. For further information on Assignments, see 2.9.3 ARTNET DMX-ETHERNET CONFIGURATION, on the next page.
- **PORTALL**: Not yet available in this software version.
- **PATH PORT**: The assigned DMX IN of a PATH PORT device will be used. For further information on Assignments, see PATH PORT DMX-ETHERNET CONFIGURATION, on the next page(s).
- **STRAND**: Pressing on the button below Configuration will open the respective menu.

If the button is on „Enabled if Standalone“, the DMX output via Ethernet is activated, as long as the device is not being used in a session (idle).

In a Master Slave configuration Full-Tracking or Multi-User session, the Slave will automatically switch to „Disable“ (off). If a Master fails, the Slave having the higher priority will automatically switch to „Enable“ (on). Consequently, the DMX will only be generated by the former Slave (now Master).

If you switch two devices to Enable, the data may possibly superimpose. This has to be avoided by all means!

Pressing the button will switch it to „disabled“ with the consequence that DMX output via Ethernet is generally blocked.

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**DMX OUTPUT via Ethernet**
In this menu, you can output the DMX ports via the Ethernet output using various protocols.

Press the button for the required output (A - D) and select a protocol. The configuration procedure is identical to that of the DMX IN menu.

**DMX CONFIGURATION on the Micro**
You can open this menu by pressing a button in the CONFIGURATION column; it contains a summary of all Tool menus of the „big“ grandMAs.

The „Ethernet Configuration Setup“ menu allows you to change the IP and name of the console and to start a session. This is the only way to make a connection to the grandMA 3D.

**NSPs and other grandMAs cannot be connected to the Micro.**

**ARTNET DMX-ETHERNET CONFIGURATION**
You can call up this menu by pressing a button in the CONFIGURATION column, if the PathPort protocol has been selected.

It is possible to connect up to 16 Ethernet DMX Converter. On the DMX converters, unique SUB NET addresses have to be designated accordingly. The address switches of the individual DMX sockets have to be set to four different addresses. The settings modified on the DMX converter, can be overwritten by software. Artnet - Note
You can call up this menu by pressing a button in the CONFIGURATION column, if the PathPort protocol has been selected.

Up to 64 DMX outputs can be triggered via the PathPort nodes. The IP address has to be adapted to the PathPorts Ethernet-DMX converter, something you can also do via the grandMA.

Choose an address for the DMX OUTPUT.

If PathPort Ethernet-DMX converter s are connected, they will be looked for when you call up this menu, and they are displayed in the table (only, if the first 3 digits of the IP address of grandMA and PathPort Ethernet-DMX converter are identical, e.g.: 192.168.0.x).

Artnet - Node Configuration:
First, choose a DMX converter to be edited in the table.
Pressing the Edit Nodes button for this Ethernet-DMX converter will open the menu.
As Shortname and Longname, you can enter any name for this converter.
The IP address of the grandMA does not have to be adapted to this IP address here.
For Manufacturer, IP and version, only internal data from the converter will be displayed.
For SubSwitch, the DMX converter SubNet number can be changed. This change will overwrite the settings in the converter.
In the Output table, the available DMX outputs of the Ethernet-DMX converters will be displayed.
In the Input table, the available DMX inputs of the Ethernet-DMX converters will be displayed (DMX input two pages earlier).
In the tables, you can adjust the SubNet and Channel addresses for every DMX output or input. This change will overwrite the settings in the Ethernet-DMX converter.
By pressing the Reset to Local Control button, the Ethernet-DMX converter will be reset to its standard setting (Defaults).
Pressing the Save button will save the modifications.

Pressing the X button, you will leave this menu.

PathPort DMX-ETHERNET-CONFIGURATION
You can call up this menu by pressing a button in the CONFIGURATION column, if the PathPort protocol has been selected.
Up to 64 DMX outputs can be triggered via the PathPort nodes. The IP address has to be adapted to the PathPorts Ethernet-DMX converter, something you can also do via the grandMA.
If the Node is activated after having opened the menu, you can look for the Node by pressing the **Scan for Nodes** button to be displayed in the table.

In the left table, all found DMX outputs are indicated by a number. These are the assigned xDMX slots (PATHPORT - Node Configuration, next page). The outputs can be distinguished by these numbers. Select an address for the DMX output.

In the right table, one line is displayed for each Node. The selected DMX output will be indicated by a green background.

If an output is indicated by a red background, this means that it is already assigned and cannot be used. If you press the **Identify by Backlight** button, the background lighting of the Display will blink. Pressing the **Save** button will save the changes.

Pressing the **X** button. Now, the converter for this DMX port is configured and the menu will be closed. If additional ports are to be assigned, repeat all steps as indicated. After all settings have been made, press the **SAVE** button in the DMX-OUTPUT CONFIGURATION menu. The changes made will be saved then. On the assigned Ethernet-DMX converter, **Active** will be displayed for the assigned DMX outputs and inputs.

**PATHPORT - Node Configuration:**

First, choose a DMX converter to be adjusted in the table. By pressing the **Edit Nodes** button, open the menu for this DMX converter. The data will be read from the Ethernet-DMX converter and be displayed. Aside from the name, a deliberate name for this node can be chosen.

**IP:** here, you can set the IP address. When pressing the **Save** button, you have to start the Ethernet-DMX converter transmission by pressing **OK** in the opened window. The converter will reboot and set the new IP address. Under Desk Config, the IP address and the Subnet of the console will be displayed. If the SubNet is not identical, this has to be adjusted. For further information, please contact you network administrator.

Gateway: For further information, please contact you network administrator. With the **Backlight** button, you can switch the background lighting on and off.

In the **Output** table, all available DMX outputs of the DMX converter are displayed. In the **Input** table, all available DMX inputs of the DMX converter are displayed (DMX input four pages earlier). In the tables, you can adjust the name, patch for every DMX output or input. In the xDMX column, you can assign a number for every DMX output or input. Each DMX output or input will be assigned by this number.

If you press the **Save** button, the changes are transferred to the converter. By pressing the **X** button, you close the menu.

**2.9.5 WYSIWYG**

To visualize the show, every desk (also onPC and offline) can connect with WYSIWYG visualization.

- Open the DMX & NSP-Configuration in the TOOLS menu
- Open the Configuration menu with the WYSIWYG Config button
- Set the mode onto ENABLED
- Enter an ID number; the same number has to be set in the WYSIWYG configuration.
- The button has to be on Enabled if Standalone (green) in the DMX via Ethernet (in TOOLS / DMX-Configuration) menu, otherwise no DMX signal is issued outside a session.

**There is an extra manual available for more information on installation of the grandMA / WYSIWYG drivers and the connection grandMA - WYSIWYG.**
To output a show via STRAND-DMX-converter you need a network and the converter must have a relevant IP-address.

- Open TOOLS - Menu and DMX-Configuration
- Press button DMX-Output via Strand Shownet to open the configuration menu
- Set Mode to ENABLED

- Priority (0 - 3) set priority
- First universe set the first universe (DMX-universe has to be within the range first-last for output)
- Last universe set the last universe (DMX-universe has to be within the range first-last for output)
- Delay after 3 Packets (active with dark background) set a short break after 3 packets - necessary for some older components to „take a breath”.
- Send unchanged packets (active with dark background) send all packets, even if no changes in the packets.
2.10 DMX Output Window
Create a DMX Output Window (DMX) using a TFT Display. See Creating windows

- **Open Options Menu**

In this window, each patched channel can be displayed showing the value it is currently outputing.

By briefly pressing the respective keys (A – H) (dark background), all DMX ports’ DMX channels will be displayed in this window (if needed, scroll through the window using the Encoder next to the Display.)

The first DMX channel of this row is displayed here.

If you position the mouse pointer on a cell, the DMX channel (possibly already patched channels with their fixture types and functions) will be displayed in the lower part of the window.

In the DMX sheet you can also change the DMX-Patch:

- **Change patch:**
  Press button Move (LED lights) and click on a channel with left mouse button, hold left mouse button down and move the fixture to an empty space. You can only move the complete fixture, therefore you need enough space (in a continuous row) at the new address.

- **Unpatch:**
  Press button Delete (LED lights) and select a channel (with mouse or touch). All channels of the fixture will be deleted.

- **New Patch of Fixtures:**
  Fixtures, which are present in the fixture-Sheet, can directly patched in the DMX-Sheet
  - select fixture in fixture sheet (with mouse or touch)
  - press button Assign (LED lights)
  - press empty space in the DMX-sheet, the fixture will be patched (if the fixture needs more channels as available in this area, the procedure will be stopped. Look for an area with enough empty channels in a row.

Note: when you take action in the DMX-sheet and Full Access is aktive, don’t press Save after closing Full Access - otherwise all changes in the DMX-shet will be rejected.

Direct DMX access to non-patched channels.
Using the CommandLine, you can also assign values to non-patched channels

- DMX x.y AT z (e.g. DMX 2.35 AT 50; channel 2(B).35 will be set to a value of 50)

This value will appear as „parked“ channel on the DMX sheet.

- De-parking values
  - GO DMX x.y

The non-patched values will disappear from the DMX sheet.

2.11 Auto Create - Creating presets, effects and group keys automatically
For most of the Fixtures in the library, there are ready-made presets that can be created in this window. Furthermore, ready-made effects and group keys for each Fixture and Dimmer can be also be created.

- open AUTO CREATE in SETUP-MENU

2.11.1 Creating Presets automatically

- Call up AUTO CREATE in the SETUP menu.

In the table, all Scanner and Dimmer types are displayed that are used in the current Show. On the right of each Scanner and Dimmer, you’ll find the Select column. By choosing a cell and pressing the Encoder on the right of the Display, you can select them and the display switches to Yes. When creating Presets, these will only be
2.12 Creating groups automatically

- If the Groups button is pressed (green background), you are in the Auto Create Groups menu.

In the upper table, all Scanner and Dimmers are displayed that are used in the current Show.
In the lower table, all “Fixture Layer” are displayed that are used in the current Show.
On the right of each Scanner and Dimmer, you'll find the Select column. By choosing a cell and pressing the Encoder on the right of the Display, these are selected and the display switches to Yes. When creating groups, groups will be created only for these Scanners or Dimmers.
By pressing the CREATE GROUPS button, one ODD button will be created for each Scanner type, with which you can select all odd-numbered Scanners simultaneously. One EVEN button to select all even-numbered Scanners, and an ALL button, to select all of the two.
By pressing the CREATE SINGLE GROUPS button, you can create a single button for each Scanner type in the GROUP window.

2.13 Clone Fixture - Copying Fixture data globally (cloning)

- Press Clone button (green background) to open the Clone Fixture Data menu.
You can clone (copy) all data of one or more fixtures globally. In this, all Preset, Group, Cue and Effect data are cloned from the first fixture/s (From Fixtures…) to the target fixture/s (…To Fixtures). If you select the same number of fixtures on each side, the data of the first will be transferred to the first, of the second to the second, etc.
Select the fixture/s that you want to clone (Fixture Sheet). If you want to clone several fixtures, you have to observe the sequence in which you select them. Pressing the left Take Selection button will display the fixtures in the left table (From Fixtures…).
Select the fixture/s, to which you want to clone the data (Fixture Sheet). If you want to clone several fixtures, you have to observe the sequence in which you select them. Pressing the left Take Selection button will display the fixtures in the right table (... To Fixtures).

By pressing the >>>! Clone!<<< button, you can clone all data.

**Attention:** All target fixture data created so far will be overwritten/deleted.

### 2.12.12.12.11.4 Auto Create Effects

Press **Auto Create Effects** button (green background) to open the Auto Create Effects menu.

By pressing the **Create Built-in Default Effects** menu, you can create preset effects that will then be available in the EFFECT pool. 6 Effects

By pressing the **Import Effects** button, you can load saved effects from floppy.

By pressing the **Export Effects** button, you can save the created effects to a floppy.

### 2.12.12.12.11.5 ASCII Show Import

If the Ascii Show button is pressed (green background), you are in the ASCII Show Import / Export menu. Before you load an ASCII Show, you should save the Current Show, as it could be overwritten.

If the FDD contains a floppy with a Show in ASCII format (file with the .ALQ extension), you can load the Show by pressing the button. It is not possible to transfer Scanner data. The Default User Settings (see Saving or Loading Profiles) will be loaded. The Show will be saved under the name AssciiShow and should be renamed and saved again. See Saving and Loading a Show.

The data will only be saved to the RAM - permanently only when saving the complete Show to disk or floppy. (Saving and Loading a Show)

### 2.12.12.12.11.6 ASCII Show Export

Export an ASCII - show (on floppy disc)

- press button **EXPORT SHOW FILE**
- insert empty floppy and confirm with **OK**
- Use the X button to leave the Auto CREATE menu.

### 2.12 Settings in the Setup Menu

By pressing this key **MSDBOX Mode**, you can set the confirmation menus (e.g. STORE) to be displayed on just the right-side TFT touchscreen or on all displays.

- Using the Executor Layout button on the grandMA light, ultralight or RPU, simulate the numbering of the grandMA’s executors (Executor Fader 1 - 20, Executor Button 21 - 60; the additional executors can only be triggered from the Command Line. This is the easier way to use shows created on the grandMA on smaller consoles.

- By setting the soft key “Executor Layout” to “Wide”, a grandMA light, ultralight oder RPU will use the same executor numbering as the „big brother“ grandMA does. Therefore the first button executor has number 21. Please have in mind, that in wide mode the printed labels on the consoles surface are wrong. The advantage of wide mode is, that all executors can be accessed by the command line. This is useful when porting shows from a grandMA into a smaller console.

- By clicking this key, four calibrating keys, numbered 1 to 4, will be displayed on the respective TFT display. Touch the keys using your finger or the supplied pen (special pen with soft rubber core). The display will automatically switch back after the last key is touched. The touchscreen is now calibrated and the settings will automatically be stored.
With the respective keys, the touch screens can be switched on or off. It is possible that a fault may cause the mouse to freeze in one position and can no longer be operated. In this case, the touchscreens can be switched off. For this, use function key F9 on the keyboard.

**F9 will switch off all three touchscreens (emergency switch). To switch the touchscreens back on use the mouse.**

To toggle the mouse function on both external monitors on and off. In AUTO mode, the software will recognize if a monitor is connected or not and will switch the mouse function for the external monitors on or off, accordingly.

**OFF will not allow** any mouse function, while **ON will keep the mouse function activated at all times.**

With this key, the grandMA's internal speaker be switched on or off (not available on older grandMAS).

To set the sensitivity of trackball and the encoders to coarse, fine or extra fine (16bit resolution).

With the PUSH key, you can set the Encoder's sensitivity when holding it down and turning.

Switching between the Motorfader functions (Executor Fader, Channel Fader)- not available on the MICRO

**AUTO:**
- Executor Faders: When switching between the Pages, the Motorfaders will automatically pick up the values stored last.
- Channel Faders: Faders adjust to the called-up values of the allocated channels.

**MANUAL:**
- Executor Faders: When switching between the Pages, the stored values will be called up, but the Faders will not follow. To change a stored value, you have to use the Fader to manually set it to a higher or lower value.
- Channel Faders: Faders do not adjust automatically to the called-up values of the assigned channels. To change a stored value, you have to use the Fader to manually set it to a higher or lower value.

**DISABLED:**
- Executor Faders: When switching between the Pages, the stored values will be called up, but the Faders will not follow.
- Channel Faders: Faders do not adjust automatically to the called-up values of the assigned channels.

After switching from MANUAL to AUTO, you have to change the PageNo once so that the motor fader work again.

The wheel's functions for the dimmers:
- Additive: All dimmer values will be changed simultaneously. If they reach “0” or “FF”, they will be aligned.
- Incremental: All dimmer values will be changed simultaneously. If they reach “0” or „FF”, the respective intervals will be maintained.
- Prop.+: All dimmer values will be changed in percentages and will reach “0” simultaneously.
- Prop.−: All dimmer values will be changed in percentages and will reach “FF” simultaneously.

**Please note, that with PROP+ a change of the value “0” is not considered a change.**
**Please note, that with PROP− a change of the value “FF” is not considered a change.**

- Switch between “Light” and “Dark” display background illumination.
- The desk lamp can be switched either on or off with the ON/OFF key. The brightness of the desk lamp can be changed using a left mouse click on the blue bar or using the touchscreen. On the ULTRALIGHT and MICRO, you can only switch the brightness of the console lamp from FULL to HALF and vice versa.
- **DEFAULTS**: By pressing this key, you will enter the DEFAULTS menu. All general presets can be set in this menu. See Settings in the DEFAULTS menu.
- By pressing this key you will enter the DATE and TIME menu. See DATE and TIME.
- By pressing this key you can change the display language.
- Change dimensions: Meter / Decimeter / Millimeter / Feet / Inch.
- Switch On / OFF the OOPS - function.
- To switch the screen saver off an on. By pressing the key briefly, a window will appear where you can select the time after which the screen saver will activate.
- By pressing this key, you will reach the UPDATE SOFTWARE menu. The operating system, the operating software as well as the console software and the fixtures can be updated from this menu. See Software Update.
- Close menu with X.

### 2.12.1 OOPS Function Options*

If the OOPS function is activated, the will be able undo commands or values that you set. This function requires a large amount of system resources. This requires a lot of processor power, what could slow down the console performance. This could interfere the execution of programs; that is why you can switch it of completely or for individual functions. See OOPS function.

**General Enabled**: If this key is set to Enabled, all OOPS functions are available – except for VIEWS commands and entries in the PROGRAMMER (both of which can be switched off separately; for further information see below).

**General Disabled**: Pressing the Enabled key next to General will toggle it over to Disabled and all OOPS functions will be switched off.

**Oops for Views**: If the key is set to Enabled, OOPS functions can be used for VIEWS calls and creating or deleting VIEWS keys. Pressing the Enabled key will toggle it to Disabled and the OOPS function can no longer be used for VIEWS commands.

**Oops for Programmer**: If the key is set to Enabled, OOPS functions are available for all entries in the PROGRAMMER (selecting/deselecting or activating/deactivating Fixture or Dimmer channels). Pressing the Enabled key will toggle it to Disabled and the OOPS function can no longer be used for entries in the PROGRAMMER.

In strong bass environments (vibrations), please switch off all OOPS settings and “Autosave” (disabled). See Saving and Loading a Show (Autosave).

- Close menu with X. Changes will be saved.

### 2.13 Settings in the DEFAULTS Menu

Pressing the DEFAULT key in the SETUP menu will bring you to the DEFAULTS menu.

**Programming**

This column will display the default times and settings that will be used when storing Cues and Sequences. Using the Encoders, you can adjust the individual times and trigger calls.

**DUAL DIGIT VALUE ENTRY**: Entries performed over the numeric block, have to be done in the conventional way; entry 2_0 will yield a value of 20.

**SINGLE DIGIT VALUE ENTRY**: Entries performed over the numeric block will be done in factors of ten; entry 2 will yield 20, 0_5 will become 5, and 1_5 will yield 15 (without switching to DUAL).

**Default AT**: Here, enter the percentage value that the selected fixtures or dimmers are to take when the 2x AT command is used.
Playback Timing
The duration set for the **OFF Time** will be used when switching off Executors (OFF key).

**GOTO & GO-** If a specific time is set when calling up a Cue using the GOTO or GO- function, the Cue will be called up with this duration. If Cue Timing was set, the Cue will be called up with the duration programmed in this Cue. You can overwrite the Goto Default duration at any time. See Default Sequence (Master Sequence) Here you can enter a Default time for MIB DELAY and FADE. See Move in Black Option

**Executor Defaults**
- **Default is Sequence/Chaser:** With this key, you can define, whether a newly programmed sequence will be created as a Chaser (one look after another running automatically) or as a Sequence (press go for cue 1 and then press go for ce 2 etc.) (default setting).

**Chase Fade:** Here, you can define the preset for Chase Fade.

**Chase Speed:** Here, you can define the default Chase Speed and Effect Speed.

**Readout:** By pressing the key, you can here switch the Chaser Speed between BPM (beats per minute), Hz (beats per second) and SEC (seconds).

The default Chaser Speed is also used as the default for the Effect Speed.

**Crossfade Reload/Permanent:** Here, you can define whether manual cross fading should be performed just in one direction (Reload) or in both directions (Permanent) when moving a fader set to cross fade.

**Remotes as stored / use commandline:**
- **as stored:** Its unpossible to merge commands from the desk with commands coming from a remote (e.g. MIDI or Touchboard). E.g. button GO+ and command OFF Exec 2.7 from touchboard = the OFF - command will be executed.
- **use commandline (default):** All remote commands (Touchboard, MIDI or REMOTE DMX-IN; not Pocket PC) will be registered in the commandLine. E.g. button GO+ and command OFF Exec 2.7 from touchboard = the GO+ command is assigned to the executor; the executor will be switched on!

**List Button normal /fixed:** (important for consoles having a monitor)
- fixed: you can now control the lower part of the monitor (on grandMAs of the right monitor) using the List button only.
  - Furthermore, you will not see any Encoder bars, and the PAGE buttons will be inaccessible.
- **MA Default Colours /Theatrical Colours:**
  - Default Colours: the colours in the sheets as hitherto
  - Theatrical Colours: Colour pattern for theater use: e.g. blocked values are are white (see chapter Colour Code)

**Sheet Sorting**
By the SORTING column, you define according to which aspects the fixtures and channels shall be sorted when setting up new windows. You can switch to the next option by clicking on the respective keys.

**Sheet Fontsize**
With the FONTSIZES column, you can define the type size of new windows.

**Sheet Readout**
Preset for the output of numbers in the OUTPUT, CHANNEL and PATCH windows.

**M isc**
- **Function of BLACKOUT key:**
  - **PUSH:** serves as push key (key)
  - **TOGGLE:** will remain active when pressed
  - **DISABLED:** switches the blackout function off
- **Function of the GRANDMASTER FADER:**
  - **ENABLED:** Grandmaster Fader active
  - **DISABLED:** Grandmaster Fader inactive
- **Highlight is Solo:** The button HIGHLIGHT has Solo- function (see page .75); **Highlight Normal:** The button...
2.14 Setting Sound Signals

The sound signal is used for triggering Chasers and Sequences. In other words, this is an electronic, graphic equalizer. In order to slowly balance any fluctuations of the audio signal, a specific compressor function has been integrated.

You will find an integrated adjustable HOLD-OFF function. This function will prevent any double triggers (for example: with fast BASSDRUM beats). Beats will be automatically recognized via the incoming sound signal (BPM).

- Press TOOLS
- Press Button **Sound Settings** to open the menu

To set an equalizer, pull the respective “slider” to the desired position. In the left lower corner, there is a visual trigger signal (monitor) for your orientation. The small dot on the left side of the HOLD Function will indicate the remaining HOLD time. The small dot on the left side of the GAIN indicator will show the compression rate of the audio signal.

The right small dot will indicate the state of compression of the audio signal. The sound signal is visualized in the lower left part of the display. The analysis of the sound signal will be indicated in the smaller right part of the window, including indication of the recognised BPM (Beats per minute). By moving the BPM slider, the beat can be set. The next-possible beat will be recognised from the incoming audio signal and will be used to control the BPM.

If the BPM key is ON, the currently recognised beat will be used. When switching the BPM to OFF, the last recognised beat at the time will remain unchanged and will be used. You can adjust the value using the BPM slider. If the Auto Stop key is on ON, the Chase or the effect will be stopped when there is no sound signal. If the Auto Fader key is also on ON, the Chase or the effect will be faded out when there is no sound signal.

When you switch the Auto Stop key to OFF, the Chaser or effect will continue with the latest BPM value measured. The AUTO GAIN function can be used for grandMA from serial no. 0055 and later (key will turn dark-grey, HARDWARE modification). grandMA ultra-light allows only Auto Gain.
For grandMAs with serial no. up to 0054, this key can not be used.
- You can leave this menu by pressing the X key; all settings will be stored.

2.15 TIME & DATE Menu
- Pressing the TIME and DATE key in the SETUP Menu will open the following menu.
- You can set TIME and DATE with the encoders below the display. (You can switch encoder functions by pressing the button Time).

Manual or automatic positioning via GPS
The times of sunrise and sunset change according to your geographical position. If you know your position, you can enter it in the LOCATION MANUAL mode; if moving around frequently (e.g. when travelling on a ship), it is advisable to determine your current position by a GPS receiver and let the values be inserted automatically.

Button display: Location Manual, fix entry of values.
Set position for the automatic control of (see Agenda Menu) sunrise and sunset calculation. Clicking on the respective keys will open a window, where the position can be set.
Information regarding the respective position can be looked up in a software program that can be downloaded from the internet at: www.djuga.net/winglobe.html.

or:
Button display: Location Auto, values are automatically used by a connected GPS receiver.
Pressing the button will open the GPS-Info menu. In this menu, you can modify the settings for a NMEA GPS receiver connected to the serial port. This receiver will then determine the position of the grandMA. This can be especially useful e.g. on ships cruising on the oceans. For best satellite reception, check for an unhindered view to the sky when setting up your equipment.

GPS recommended by MA Lighting:
HAICOM HI-203E with serial 9-Pol Sub-D with PS/2 connector (power supply)

If the key is set to Enabled the clock will automatically switch between summer and winter time. Pressing the key deactivates this function (Disabled). Pressing the respective key in the Begin/End field will open a window where you can set the beginning and the end of the summer time.
Pressing this key will open a sheet, where the calculated times for Dawn, Sunrise, Sunset and Dusk for yesterday, today and tomorrow are listed.
- Leave this menu with the X key.
2.16 User Management*

The new user management and security features include:
- Temporary simple desk locking mechanism.
- User management for up to 32 users.
- Users have privilege levels.
- These levels of privilege can prevent an inexperienced user from destroying show data.
- Users can have their own user profile.
- User profiles include views and default settings, even a set of default views that can be loaded into any show.
- Multiple users can share one user profile (although they can have different privilege levels).
- Forced login when the desk starts up as an option.

When you get a new desk, or you update your old version:

All user management features are disabled by default. If you do not touch them, you will not notice a difference to the older versions of grandMA software. Internally you will be automatically logged in as administrator, working with a default user profile.

The user management is not show-dependent. It is affecting all shows on your desk.
The Micro has only one default-user, no login and no User-profiles. Parts of the user profiles can be added from the loaded show. All following chapters marked with "*" are not available for the Micro.

2.16.1 Locking the Desk

Locking the desk is a method to temporarily protect your desk against misuse from inexperienced users. It is not suitable for permanent protection.

Locking the desk does not affect the output. All programs that are running continue to do so. But the surface of the desk is inaccessible, even moving the grand master fader will be ignored.

Activating Desk Lock:
- Press CTRL-PAUSE on the PC-Keyboard
- All touchscreens will show DESK LOCKED.
- Desk is locked.

Deactivating Desk Lock:
- Press CTRL-PAUSE on the PC-Keyboard again.
- All touchscreens will restore in the original screens.
- Desk is unlocked.

CAUTION:
Due to the fact, that the grand master fader is not motorised, master dimming may jump to an unwanted level upon deactivation of desk lock. So have a look at it before you deactivate the desk lock! For the grandMA ultra-light this is also valid for all faders.
2.16.2 Concept of User Profiles

- The desk has a list of users.
- Each user can have his own user profile, but he can also share a profile with other users.
- A user profile includes views, quickey arrangement and playback settings.
- Part of each user profile is global and independent of the currently loaded show. This part is used to store and load default Views, Setup and Default settings (Encoder and Trackball sensitivity and Wheel function. See Settings in the Setup menu. Furthermore Cue Timing, Executor Defaults, Sheet Sorting, Sheet Fontsize, Sheet Readout, Misc., Preset Colours, Attribute Grouping and Store Options. See Settings in the DEFAULTS menu).
- Each show contains a full set of local user profiles. These local user profiles can be stored as default in the global parts and they can be loaded from there.
- When saving a show on floppy disk, all users registered to this console will also be saved with all default settings. When loading a show from floppy disk to another console, all users including all default settings will automatically be transferred to the new console. Individual users can use these profiles for a particular show or for other shows in which this console is used.

2.16.3 Creating a new User

To create a new user, you need to have administrator privilege level:

- Go to Tools menu and User / Setup.
- Press the New in User List and type name and password. Select and confirm Rights and Profile by turning and pressing the encoder.
- Change the rights (privilege level) for the new user.
- By default, the new user utilizes the DEFAULT user profile. If the user utilizes a different or an independent user profile, it will change his user profile. If you create a new user profile in this way, it is initialised with the default profile.

Beside the users which are in the list, there is always one hidden administrator. You can not delete or change this administrator.

His user name is ADMIN and he is using the DEFAULT user profile. Login becomes enabled if at least one user is in the visible user list. The presence of the ADMIN user destroys any real security. On the other hand you will never really loose access to your desk.

2.16.4 Deleting an User

To delete a user, you need to have administrator privilege level:

- Go to TOOLS menu.
- Go to USER / CONFIGURATION.
- Select the user you want to delete.
- Press the DELETE USER key.
- The user will disappear. If he was the only one to use a certain user profile, this profile will also be deleted.

Please note, that you can not delete yourself from the list.
2.16.5 User Rights*

Only a user with Administrator privilege level can change the rights of a user (apart from his or her own) and create new users. A newly created user is always allotted the Administrator privilege level first. To restrict rights, the following privilege levels can be issued:

- Call up Tools.
- Setup User & Profiles
- Select the desired RIGHTS field with the encoder. Pressing the encoder opens the selection menu of the available rights:
  - DESIGNER:
    This user cannot execute any changes, solely the views can be switched over. Since no playback functions can be executed either (Fader, Go button etc. are disabled), the show must be started first by a user with higher rights.
    If the user logs in with DESIGNER privilege, he or she takes over the desk with these settings.
  - PLAYBACK:
    The user can use all playback functions and load shows.
    He or she can change playback parameters, but has no access to their functions that change the show.
    Even if playback settings were changed, these are not permanently saved.
  - EDIT PRESETS:
    The user can create additional presets, otherwise no other programming tasks are possible.
  - EDIT GENERAL:
    The user has access to all functions, with the exception of User Management and software update functions, and „Worlds“.
  - EDIT WORLDS:
    The user can create and change „Worlds“.
  - EDIT SETUPS:
    The user has in addition the right to execute changes in the SETUP mode (e.g. in the library)
  - ADMINISTRATOR:
    Along with all other functions, User Management and Update of Desk Software are enabled.
    Some grandMA operators may find it helpful to create an user with playback rights only, for their own personal use. After they have finished programming, they log in as this playback user, so they can be sure that they will not change anything in their newly completed show data (of course they should save their show before they log in as playback user!).
    It is not necessary to save the whole desk after you have changed something in the User Manager. All data of the User Manager is immediately saved when you leave the User Manager menu!

2.16.6 Login*

Login is only enabled if at least one user appears in the user list (TOOLS menu / User Configuration).
Manual login:
- Go to TOOLS menu.
- Press LOGIN key.

Never push Login without knowing the password! Otherwise you can only log in by “ADMIN”.

All touchscreens will show LOGIN, and you have to enter a valid user name. During LOGIN, the surface of the desk is locked. LOGIN does not affect playback. All programs that are running continue to do so.
After a successful login, the views of the corresponding user profile will appear on the screens. Furthermore, the user's saved setup and default settings will automatically be loaded, too.
If a user loads a show for the very first time (he has never used this show before), this show will be loaded with the previously used profile and NOT with his personal user profile. If needed, the personal user profile can be loaded afterwards.

2.16.8 Saving* or Loading Profiles
User profiles are saved independently from the show and can thus be loaded for any other show afterwards.

- Go to the Tool menu and User / Setup.
- Under User Profile List in the New line, enter a name for a new profile.
- Select the user cell under User List in the Profile column. Press the Encoder, select the profile, and take over by pressing it again.

If this user is logged in, the settings will be saved to this profile when saving the profile (Save User Defaults).
If this user is not logged in, he receives a message, that his profile is empty. Confirm this message and a selection menu pops up:

1) select a profile
2) select what to copy (button becomes dark green) or select Everything for complete profile
- confirm with LOAD SELECTED ITEMS

User with rights higher than PLAYBACK can press LOAD USER PROFILE from Show and change profiles of other user (not his own profile)

Save to Global User Profile: save current settings (independently from the actual show) in your User Default Profile
Restore from Global User Profile: load your User Default Profile (independently from the actual show)

Loading user profiles or part of profiles with the Micro:

- press TOOLS
- press Load User Profile List.
- select user an items in the Load to current User Profile menu
- confirm with Load selected Items.

World Filter*

You can assign a World for any User profile (see: chapter Worlds). By this, you cannot only assign Rights to a User, but also grant him access to (only) certain areas of the Show. By this, e.g. the Dimmer operator has full access to the Dimmers, but cannot access the Fixtures by chance, if these are saved to another World.

- In the User Profile List menu, click on the respective cell under World Filter and enter the name of the saved World.

2.16.9 Who is logged in at the moment?
- Go to the Tool menu.
- Look at the title bar of the window.
It says "Tools Menu, current user is ...

NOTE: IF POSSIBLE USE MAX 10 USER.
MISFUNCTION CAN OCCURRE IF MORE USER ARE LOADED
3 Creating a Show

3.1 Creating a window

- Clear the current screen content with Clear View (briefly press top and bottom View buttons simultaneously). If the two Clear View buttons are held longer than 2 seconds, all screens (also the external screens) are cleared.
- Pressing an “empty” space on one of the three TFT displays or the external monitors. The CREATE A WINDOW menu will open.

3.1.1 Listing of individual windows and functions

Sheets:
- CHANNEL: This window will display dimmer channels as figures. You have direct access to channels and values here. See Accessing Dimmer Channels directly
- EXECUTOR: Within this window, you will have the option to display a sequence, which is assigned to an EXECUTOR fader or an EXECUTOR button. Among other options, this is where global times can be changed. See EXECUTOR window
- FADER: Selected dimmer channels can be displayed as either bar or figure within this window. Here you will also have direct access to channels and values. See Accessing Dimmer Channels directly
- FIXTURE: Displays all fixtures and their various functions, values, status etc. Here you will have direct access to the fixtures, functions and values. See Accessing Fixtures directly
- TRACKING: In this window you can display a Sequence that is assigned to an EXECUTOR fader or EXECUTOR button. Here, as opposed to the EXECUTOR Sheet, all values or times can be displayed separately for an entire sequence. Cues are displayed vertically with channel and fixture data displayed horizontally. Any value/time can be modified separately for any channel. See TRACKING window
- DMX: In this window, all DMX output channels are displayed as values, as they are actually patched. It is also possible to perform drag and drop patching operations from within this window. See DMX Output window

CONTENT: This window can display a cue of a sequence with all values and times. It can display the current cue, the subsequent, or the previous cue.

COMPACT CONTENT: The content is identical with the CONTENT window, more values can be displayed through another mode of distribution.

Pools:
- GROUPS: Displays, creates new, edits and calls up fixture and dimmer groups. See Creating and Calling up Fixtures and Dimmer groups
- SEQUENCE: In this Pool, all the created Sequences are displayed. This way, assignments to Executors can be made very quickly. Sequences can be renamed, copied and deleted from within this window as well. See ASSIGN menu
- EFFECTS: Displaying and Calling up Effects. See Effects
- FORM: In this POOL, all created forms will be displayed. Here, you can rename, copy or delete forms. See Creating and Storing Virtual Forms (EDIT FORMS)
- MACROS: In this Pool, all the created Macros are displayed. It is also possible to store new macros and edit...
existing ones from within this window. See Macros and QUIKEY
- **VIEWS:** Displaying and Calling up Views. See View Pool
- **QUIKEY:** Displaying and creating soft versions of existing console keys and commands. See Macros and QUIKEY
- **TIME CODE:** Recording, Playing back, Editing and Storing SMPTE LTC Timecode controlled operations. See Timecode
- **MARKERS:** Here, you can create, save and directly call up different selection groups. And you can copy or move values that were set by the Circular Copy function from one fixture to another. See Markers
- **Worlds:** Here, you can create, call up or manage so-called „Worlds”. Worlds are important, when you e.g. want to work in the Multi-User Mode, or you just want to make some Fixtures „invisible”. See Worlds
- **Channel Pages:** In these pools, “buttons” will be displayed for all pages. The pages can be called up quickly
- **Button Pages:** you can copy or delete them. See Managing Pages
- **Bitmap Effects:** Here, you can create, call up or manage Bitmap-Effects.

**Presets:**
- **PAN / TILT, DIMMER, GOBO, COLOUR, BEAM, FOCUS, CONTROL, SHAPERS and ALL:** Creates new, edits and calls up individual PRESETS with name and number. See Creating and Calling up Presets
- **COMMAND LINE:** Lists executed commands by their names. Also to enter commands using the keyboard. See Command Line
- **CLOCK:** Display window analog or digital clock. Switch by pressing the Analog button. See Agenda menu
- **NETWORK MASTER:** Shows all stations in the network.

At the bottom of Desk Status Menu the NETWORK MASTER shows all stations in the network.
Numbers show the stations in this session; numbers in ( ) show the stations in this session prior to a change/failure (the buttons are always red or yellow).
Colors:
Green = OK; number of stations within the session is displayed.
Yellow = a new station has joined the session. After confirming (touch on this button) this button changes into green color (OK).
Red = Failure; After confirming (touch on this button) this button changes into green color (OK) or this button changes into grey color and displays „0” (no station of this type is in this session) or this button stays red (the station is still missing)
There are 3 ways to enlarge or reduce a window: Move the cursor carefully to the lower or right border or corner, until you will see a small double-arrow next to the cursor. Now click and drag holding the left mouse key. By moving the mouse, the window can now be resized according to your requirements.

One of the most effective ways to work with the grandMA is by using the touchscreen and the encoder which is located next to each display.

3.1.2 Deleting a window**
- Press the DELETE key once. Right click on the title bar of the window.
- Or:
  - Click into the left corner (yellow dot) of the title bar. In the next window, confirm with YES or DELETE.
- Or:
  - When pressing the top and bottom VIEW keys simultaneously, all windows on this TFT display will be deleted.

3.1.3 Scrolling with the UP and DOWN hard keys*
- Pushing the UP and DOWN hard keys will scroll a whole page up or down inside the menu or pool window that has the input focus (dark blue title).
- Pushing down the UP or DOWN hard key while holding down its opponent will scroll to the beginning or to the end.
- If there is an active popup dialog on screen, the UP and DOWN hard keys work as UP and DOWN cursor keys for navigation inside the dialog.

3.1.4 Temporary Opening of Windows*
Important windows can be opened temporarily and quickly on the right Display. This function is especially useful on the grandMA light and ultra-light.

- Hold the List key.
- By additionally shortly pressing the function keys, the respective window will open and the function be switched off again afterwards:

<table>
<thead>
<tr>
<th>Press 1x</th>
<th>Press 2x</th>
<th>Press 3x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel</td>
<td>Channel-Sheet</td>
<td>Fader-Sheet</td>
</tr>
<tr>
<td>Fixture</td>
<td>Fixture-Sheet</td>
<td>Stage window</td>
</tr>
<tr>
<td>Group</td>
<td>Group pool</td>
<td>World pool</td>
</tr>
<tr>
<td>Sequence</td>
<td>Sequence pool</td>
<td></td>
</tr>
<tr>
<td>Executor</td>
<td>Executor Sheet</td>
<td>Tracking Sheet</td>
</tr>
<tr>
<td>Page</td>
<td>Channel Pages</td>
<td>Fader-Pages</td>
</tr>
<tr>
<td>Macro</td>
<td>Macro pool</td>
<td>Button Pages</td>
</tr>
<tr>
<td>Preset</td>
<td>all preset windows</td>
<td></td>
</tr>
<tr>
<td>View</td>
<td>View pool</td>
<td></td>
</tr>
<tr>
<td>Effect</td>
<td>Effect pool</td>
<td>Bitmap Effect Pool</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Timecode pool</td>
</tr>
</tbody>
</table>

By pressing the ESC key, you can close the temporary windows at any time.
### 3.2 Storing VIEWS

The soft VIEW keys running down the righthand side of the touchscreens and external displays can be assigned with views.

The physical keys located beside the touch screens can be used for direct access to the VIEW soft keys on the screens.

What can a (soft) key be used for?
- You can store one or more displays on it,
- You can store all currently created windows on all screens and both external monitors on it,
- You can store a Macro. See Creating Macros
- Organize a display or monitor. See CREATING A WINDOW

- Press the STORE key once (STORE LED is on).
- Press a VIEW key or a VIEW soft key once. The SELECT VIEW window will open.
- Enter a name for the VIEW using the keyboard. The new name will be displayed in the top line.
- By pressing the keys 1–5 (selected key will turn dark-grey), you can select the display to be stored.
- Pressing the key ALL SCREENS will store ALL displays on one view key.
- With the OK or ENTER key you can complete the store and assign process.

### 3.2.1 Assigning VIEWS

All created views can be assigned to any view key.

Click on the view key with the right mouse key. The window SELECT VIEW will appear. In this window, make a left click on the VIEW you require:

- The table shows all created VIEWS.
- The QTY column shows the number of stored displays and external monitors for the individual VIEWS.
- Scrolling is possible by dragging the scrollbar on the right side.
- Selecting a VIEW in the table will assign this view to the chosen key.

### 3.2.2 View Pool

In the View Pool, all created Views are displayed and can be called up directly by selection.
3.3 Creating and calling up Fixtures and Dimmer GROUPS

Important and frequently used combinations of fixtures and dimmer channels can be stored in groups. (max. 999 groups) Makes selecting of group of lamps very easy and quick. The same lamp can be member of several groups.

3.3.1 Creating fixture or dimmer groups

Create a GROUP window on one of the TFT touchscreens. See Creating a Window

- Use the touch screen or make a left mouse click on the individual Fixture within the FIXTURE SHEET or click on the Dimmer channels in the CHANNEL or FADER SHEET.
- The Fixtures and / or dimmer channels that make up a group can be recalled one at a time in sequence. The order in which they are recalled is same as the order in which they were selected when the group was originally stored.

Or

- Press the FIXTURE key for a fixture group or the CHANNEL key for dimmer groups (LED is on).
- Pressing the ENTER key will lock the Fixture or Channel in the Command Line.
- Enter the number of first fixture or dimmer channel, using the numeric keypad.
- Now you can select the next fixture or dimmer channel to be selected by using the “+” key.
- The THRU key on the numeric keypad will select a range. All fixtures and dimmer channels from... to including the last number entered.
- Using the “- “ key, the fixture/dimmer channel with the number you input will not be selected.
- The selection can be confirmed with ENTER.

The selected fixtures or channels will be displayed in the FIXTURE or CHANNEL window in yellow characters.

- Press the STORE key once (LED within the key is on). Using the touchscreen or left mouse click, select the desired group key in the GROUP window on the display. The selected fixtures are now stored in this group (STORE LED is off).

You can now name this group using the keyboard. Enter the name or description and confirm with ENTER.

Press the CLEAR key once. This deselects the group of fixtures and dimmer channels.

For further groups, simply repeat the process.

Delete Groups

- press DELETE button
- press group button of relevant group

2.11 Creating presets, effects and group keys automatically

3.3.2 Calling up groups

Groups can be called up by:

- A left mouse click
- Direct touch on screen
Pressing the GROUP key once, entering the group number with the keyboard or keypad and confirming with ENTER.

Press the GROUP key once. Pressing the ENTER key once will lock GROUP as preset in the Command Line. Then, enter the group number on the numeric keypad and call it up pressing ENTER.

By pressing the CLEAR key once, all selected Fixtures and Channels are deselected (no longer displayed in yellow).

Proceed as follows to separately activate selected Fixtures/Dimmers or called-up groups in the desired/stored order:

- NEXT key once within a group or selection: forwards
- PREV key once within a group or selection: backwards
- Pressing the SET key once reselects all Fixtures and dimmer channels in the group.

If there are more groups than can be displayed in the GROUP window, you can scroll down within every “active” window (title bar in dark blue) on every screen, by using the encoder wheel on the right of the respective touchscreen or the up/down key.

### 3.3.3 Moving GROUP keys within a window**

- Press the MOVE key once (MOVE LED lights up)
- Using the touch screen or left mouse key, click on the GROUP key and hold it down (a small hand appears).
- Drag the key to another location within this window and then release it.

or

- press MOVE twice (LED flashes)
- Using the touch screen or left mouse key, click on the GROUP key and hold it down (a small hand appears)
- Drag the key to another location between two buttons within this window and then release it.

### 3.3.4 Copying groups**

- Press the COPY key once (LED is on).
- Select the Group Keys in the GROUP window. By selecting several groups one after the other, that set of groups can be copied together
- Press the AT key once (LED is on).
- Click on the position for the copied group in the GROUP window.
- Confirm with ENTER.

The functions Move, Copy or Delete can also be used for Executors, Pages, Sequences or Effects.
3.4 Accessing Fixtures directly (in the FIXTURE SHEET)

Individual fixture functions can always be accessed directly and multiple fixtures can be controlled at the same time. The selection will determine which fixtures react to Direct Access procedures (selected fixtures will be marked in yellow writing in the FIXTURE window).

Within the FIXTURE window, you can locate, select and execute all functions for all fixtures. Select the fixtures, where you wish to modify a value (the selected fixtures will be displayed in yellow characters).

**Selection:**

- Call up a fixture group. See Creating and calling up Fixtures and Dimmer GROUPS
- Select fixtures using the touchscreen.
- Select fixtures by using the Fixture key and the numeric keypad. See Creating and calling up Fixtures and Dimmer GROUPS
- A left mouse click on the individual fixtures.

Select the requested function by clicking on the relevent key on the Preset Control Bar. Switch on the Preset Control Bar. See Options in the Fixture Window.

Values can now be changed via the encoders, located below the right TFT display (all functions of the encoders will be displayed directly on the screen):

- The various functions can now be toggled by pressing the FEATURE key.
- The Trackball affects the PAN/TILT function only (if switched to Pan & Tilt). NOTE: Fixtures, the beams of which cannot reach the preset position, will go to Blackout; this way, no undefined positions will be triggered.
- The wheel affects dimmer values only.
- Any value may be altered by clicking and holding on it with the middle mouse key and moving the mouse. For storing settings. See Cues and Sequences
  For creating Presets. See Creating and calling up Presets
  To call up or create Effects. See Effects

If you wish to modify the selection or the activated values of the fixtures:

- Press the CLEAR key:
  When pressing the CLEAR key the **first** time, the selection of fixtures will be deselected from the OUTPUT window (yellow characters turn grey).
  The **modified** (active) values will be kept and displayed with red background.
- Press the CLEAR key again:
  When pressing the CLEAR key the **second** time, the activation of modified values will be canceled (they will no longer have a red background).
- Press the CLEAR key one more time:
  When pressing the CLEAR key the **third** time, all modified values will be reset (default or to their original setting prior to the activation).

After pressing the CLEAR key for the first time, the yellow LED in this key will flash. This means that only the selection was deleted. When you select other fixtures or dimmer channels now, the yellow LED will no longer flash.
The selection of single fixtures can be deleted.

- Press OFF key 1x (LED is on).
- Click on the Fixture key in the Group Window or on the Fixture Name in the Fixture Sheet.

You can also deactivate parameter values of individual fixtures (Output will be set to Default or to an outputing cue value).

- Press OFF key 1x (LED is on).
- Click on the activated value in the Fixture Sheet.

You can also delete activated values of entire function groups of selected fixtures (Output will be set to Default of activated cue value).

- Press OFF key 1x (LED is on).
- Press a key for the respective function on the Preset Control Bar or click on that function within the Fixture Sheet.

### Special feature in Multi User mode

If multiple users (having different user profiles) on different consoles or PDAs are connected within one session, the program will assign the changing of values to the very user who had actually made that specific change. That means: commands like CLEAR or STORE will only refer to the changes of the respective user, without affecting the programming work of another user.

Changes will be indicated by different colors in the Fixture, Channel and Fader sheet:
- red background = these values were set by the user of this console (only these values will be stored, OOPSed, etc.)
- grey background = these values were set by the user of another console (these values cannot be changed).

In order to modify grey, i.e. „alien“ values, you have to select them in advance.

When changing these values, they receive a red background and, thus, become „own“ values; on the other consoles of this session, these values will then immediately be displayed in grey.

So, if fixtures of multiple users are selected, the last modification will be assigned to the executing user (LTP mode).

### Compact Fixture Sheet

The Compact Fixture Sheet works in parallel to the Fixture Sheet, i.e. selections and changes are being displayed in both Sheets. The difference lies in the arrangement of the fixtures and features as well as the adjustable number of visible fixtures and features on the screen.

### Comp Fixture Sheet Options

As opposed to the Fixture Sheet, you can here make the following additional selections under OPTIONS / SETTINGS:

#### ORIENTATION:
Left - Right  the fixtures will be displayed with ascending ID numbers side by side; set the number of columns using COLUMNS.
Top - Bottom  The fixtures will be displayed with ascending ID numbers from top to bottom.

WRAP AROUND:
If “On” has been selected, the size of the Channels will be adjusted automatically, when the number of Channels changes.

NAME FIELD:
ON  The Fixture names will be displayed
OFF  The Fixture names will not be displayed

COLUMNS:
Here, you can enter the number of columns on display (1 - 60).
NOTE: If you choose too many columns, it will not be possible to display the values in the cells completely.

ATTRIBUTE MASK
With the MASK function, you can choose parameters to be displayed in the CompFixture Sheet. One touch on the parameter in the INCLUDE column will transfer this parameter to the EXCLUDED column and it will not be displayed in the Sheet any longer. Vice versa, you can beam a parameter from the EXCLUDED column to the INCLUDED column.

ATTRIBUTE SORT
With the SORT-function, you can change the position of the parameters.
- select Parameter (blue line)
- change position with UP or DOWN

3.4.1 The ALIGN Function
The ALIGN function allows you to apply ratios to ranges of parameters. Four different modes are available.
ALIGN key pressed once (LED is on). The values will be distributed between the first and last selected fixture; i.e. not the ID numbers, but the selection order will determine, what the „box“ will look like. Example: if you select the fixtures in the order 1 through 10, pressing ALIGN once will have the result displayed in the graphics on the left. The order 10 through 1 will result in a mirrored version. An irregular selection will yield an irregular graphics.

- ALIGN key pressed once (LED is on).

When changing the activated values, the value of the first selected Channel/Fixture will be taken as the starting value (will not be changed), while the value of the last selected Channel/Fixture value will be the one modified most, and all values in between will be distributed evenly.

- ALIGN key pressed twice (LED is on).

When changing the activated values, the value of the last selected Channel/Fixture will be taken as the starting value (will not be changed), while the value of the first selected Channel/Fixture will be the one modified most, and all values in between will be distributed evenly.
3.4.2 PAUSE Function

With the Pause Function you can temporarily freeze (park) entire fixtures or just individual parameters of fixtures. After the activation of the Pause Function, no further changes will be output by the console. But you can still change and store fixtures or single functions internally. Output is shown in the STAGE - window, but not on the real stage.

You can park single fixtures with all parameters. Parked fixtures are displayed by a blue bar on the side of the name and all functions.

- Press PAUSE key 1x (LED is on).
- Click on fixture or fixture key in the Group Window or click on fixture in the Fixture Sheet.

You can also park single parameters of the fixtures. Parked parameters are displayed by a blue bar on the side of the name and all functions.

- Press PAUSE key 1x (LED is on).
- Click on the functions in the Preset Control Bar (Switch on Preset Control Bar. See Options in the Fixture Window) or directly on the parameters in the Fixture Sheet.

Parked fixtures, functions or parameters can be released again either individually or together.

- Press GO+ key 1x (LED is on).
- Click on fixture or fixture key in the Group window or click on fixture in the Fixture Sheet.

or:
- Click on the functions within the Preset Control Bar or directly on the parameters in the Fixture Sheet.

When changing the activated values, the value of the selected Channel/Fixture(s) “in the middle” will be taken as the starting value (will not be changed). The value of the first and last selected Channel/Fixture will be the ones modified most, and all values in between will be distributed evenly.

- ALIGN key pressed 3 times (LED is on).

When changing the activated values, the middle value will be the one modified most, the values of the first and last will not change, and the values in between will be distributed evenly.
3.4.3 FADE and DELAY times in the FIXTURE window

Additionally to the standard (Basic) FADE and DELAY times, individual durations can also be set for the individual parameters in the FIXTURE window.

You will need these settings when creating Cues, in order to be able to work with different FADE or DELAY times for individual parameters.

- Press the Values/Fades/Delays key as displayed above in the „Fades“ picture.
- When you press the TIME key once, the fixture sheet will switch to FADE time mode.
- The second time, the fixture sheet will switch to DELAY time mode.

If in the windows options Automatic has not been selected, the display will not switch over. The currently selected FADE or DELAY function will be displayed only for the Encoder labels. See Options in the Fixture window Choose a function, where you wish to program a time, other than the Basic time. Now you can modify the IND. FADE time or IND. DELAY time (individual Fade/Delay Times) for the selected fixtures using the encoders. While modifying, you can use different options.

**Choosing options:**
Above the left Encoder, a second additional button with the currently chosen option will be displayed. By pressing this button, you can select the respective next option.

Or:
By pressing the right arrow, a menu will open, in which all options are displayed and can be chosen directly.
- Single (For Active): The time can be adjusted for each individual Function (Attribute). If “Single For Active” is chosen, only times for activated values can be changed.
- Feature (For Active): The time can be adjusted for the chosen Feature (e.g.: Gobo1, containing e.g.: Gobo1 and Gobo1 Rotation). If “Feature For Active” is chosen, only times for activated values can be changed.
- All (For Active): All times for all Attributes are adjusted. If “All For Active” is chosen, only times for activated values can be changed.
- Defined (For Active): The time can be adjusted for the fixed Attributes. Pressing the left arrow on the side of the Defined button will open the “Define Attributes to Set Time” menu.

**Selecting individual Attributes:**
In this menu, all Attributes are displayed with a green (selected) or black (deselected) background. Pressing on one of the functions will select or deselect it, respectively.
3.4.4 Modulator values in the Fixtures window
The 4 modulator columns of the respective features show the values on which the effects are based – the column having a violet background. The values will be inserted automatically when an effect is transferred to the modulators using the TOP command. You can, however, enter values directly into the modulator columns.

- Modulator Table: here you find the entered functions, e.g. SIN, SWING, etc.
- Modulator Size: here you find the entered size of a function, ranging from -200 to 200
- Modulator Speed: here you find the entered function speed
- Modulator Phase: here you find the entered angle to shift the effect

The TOP - button in combination with a target, will synchronize the effect modulators.

3.4.5 Deactivating values individually (Knock out)
Before storing, it is possible to select which parameters of which fixtures are to be stored. Values that are to be stored are indicated by a red background or by red numbers.

By default, parameters within functions are partly activated together. See Encoder (Activation) Grouping

In order to split the activation for a function, press Edit key and touch on the set activation (red background) before storing it.

- press EDIT
- choose function in Fixture Sheet

This will open the Input window. The title bar will display the chosen function (Attribute).
- Pressing the Deactivate button will cancel the activation of this function.
3.4.6 FIXTURE OPTION

In the Fixture Sheet, you can adapt different basic settings for each individual Fixture.

- press EDIT
- touch on a Fixture and the FIXTURE OPTION window will open.

The Fixture can be renamed using the keyboard.

Next to Type the type of Fixture is displayed, next to ID: the corresponding number, and next to Patch the start address for this Fixture.

- Pressing the PAN NORMAL key (display changes to PAN INVERSE) will invert the output of the PAN parameter.
- Pressing the TILT NORMAL key (display changes to TILT INVERSE) will invert the output of the TILT parameter.
- Pressing the NO SWAP key (display changes to SWAPPED) will swap the output of the PAN and TILT parameters so that the Pan parameter on the console controls the tilt of the fixture and vice versa.
- Pressing the WITH MASTER key (display changes to NO MASTER will be indicated by a dark blue background), the Dimmer value will be output without regard to the level of the GRANDMASTER.

If a Fixture was modified in this window, the Fixture's name will be displayed on a blue background in the Fixture Sheet. These changes can also be set while patching Fixtures.

- With the <<< key, you can switch to the previous Fixture. With the >>> key, you can switch to the next Fixture.

- With the X key, you can close the window.

3.4.7 AUTO-SORT Function in the FIXTURE Window

Pressing the „Auto Cols“ key (dark background) will move the function column, for which the value is currently being changed, automatically to the left.

Selecting Presets or functions in the Preset Window (Create Presets) will move the respective column in the Fixture Window to the left.

Pressing the „Auto Rows“ key (dark background) will move up those fixtures, selected via groups or directly by fixture key and numeric keypad.

3.4.8 SORT Function in the FIXTURE Window

Pressing the SORT key will update the sorting (see below) in the Fixture Window.

3.4.9 Options in the FIXTURE Window

- Touch the touch screen on the left corner of the title bar (yellow dot).

Or:

- Right click with the mouse on the headline bar.

The NEW FIXTURE SHEET OPTIONS window will open.

If pressing the Sorting & Readout button (displayed with a green font):

Layer Display: By pressing the respective function, the following values will be displayed as basic setting.

- Preset and Values: The FIXTURE window will show presets or values if no presets are used.
- **Fades**: FADE times will be displayed.
- **Delays**: DELAY times will be displayed.
- **Modulator Table / Size / Speed / Phase**: All modulators are shown.
- **Values Only**: Only values (without presets) will be displayed, but no effects and profiles.
- **Output**: The DMX output values will be displayed, but without taking any profiles into account!
- **Executor ID**: The Executor’s number and page will be displayed.
- **Cue ID**: The sequence’s number and the respective Cue will be displayed.
- **Automatic**: If this key is pressed, the display will automatically toggle between the different options when toggling with the TIME key.
- **Layer Control**: If “On” is chosen, a control bar appears below the Scanners. By pressing on the individual buttons on the control bar, the display in the window will be switched accordingly.
- **Preset Control**: If “On” is chosen, a control bar appears below the Scanners. For each function, there is a separate button. By pressing on the individual buttons on the control bar, the appropriate function will be activated and can be modified using the Encoders.
- **Display**: In the right upper corner of each button, you’ll find a small square. If this square has a black background, the respective function has not been modified. If the background is red, something has been changed in this function.
- **Sort by**: With the respective key, you can determine according to which criteria the fixtures within the column are to be sorted.
  - **Numbers**: Fixtures will be sorted by numbers in the FIXTURE window.
  - **Names**: Fixtures will be sorted by name.
  - **Selected**: The selected Fixtures will be moved upwards.
  - **Active**: Fixtures for which a value is activated, will be moved upwards.
- **Sort Directions**:
  - **Values**: Fixtures will be sorted according to highest dimmer value.
  - **Sort Upwards**: Sorting by ascending values.
  - **Sort Downwards**: Sorting by descending values.
- **READOUT**: Pressing this function, you can switch between the following display options.
  - **Percent**: Values will be displayed as percentages.
  - **Percent +**: Values will be displayed as percentage values; interim values will be displayed next to the figure in form of 3 dots.
  - **Decimal**: Values will be displayed as decimal numbers (0–255).
  - **HEX**: Values will be displayed as hexadecimal numbers (0–FF).
  - **FONT**: By pressing this function, you can switch the font size in the FIXTURE window between Huge (very big), Big and Small.
This window can be deleted by pressing the DELETE WINDOW key.

- Pressing the X key will close the Option Window.
  These settings will all be stored when VIEWS are stored (Storing VIEWS).
If the Settings button is pressed (displayed with text in green):
Using the respective button, you can display the following items:
- **Physical Values**: in P/T degrees can be displayed
- **Display Color Mix**: CMY can be displayed
- **Display Wheels**: Gobos can be displayed
- **Show Cue Colors**:
  - ON: Colors of tracked / blocked values are shown
  - OFF: Colors of tracked / blocked values are not shown. Numbers are shown in yellow and fader bars in grey.
- **Programmer only**: The Fixture sheet will only show those fixtures and their features, whose values were changed, to change values not displayed, press on the magenta PROGRAMMER ONLY button in the Layer Control bar so that the button turns grey, to display the complete Fixture sheet.

**Display Filter**:
- None: Filter is inactive; all fixtures are shown
- Programmer only: Only those fixtures are shown that are in the programmer
- Parked Only: Only the parked fixtures are shown
- Selected Sequence: Only the Selected Sequence fixtures are shown
  - Selected Sequence No Default Values: Only the Selected Sequence fixtures are shown, but without default values.

**Filter**:
When On, the display filter is shown as buttons in the fixture sheet. Use these buttons to switch over the display without calling up the Options menu.

**Multi Control**:
When On, the filters LAYER CONTROL and PRESET CONTROL bars are replaced by a line with 3 pull-down menus containing all buttons. This saves space on the screen.

- **LAYER CONTROL ON** (selectable in the Display Layer)
- **PRESET CONTROL ON** (selectable in the Display Layer)
3.4.10 SMART-Window

The SMART window offers you an overview of all features and attributes of the selected fixtures, as well as very fast way to change, save and delete Channel Values. Using the EDIT command and the respective feature, you can instantly jump into the FUNCTIONS SETS menu and, after exiting this menu, back into the SMART window. In the context of the MA-VIDEO software, the SMART window holds some especially interesting features.

NOTE: Although the SMART function, on first sight, might seem to be equivalent to the PRESET function, you should use SMART only for those hardware settings that remain unchanged most of the time. For show-depending settings that have to be adjusted quickly, you should use the PRESET function.

- Use CREATE WINDOW to open the SMART window. As long as no fixture has been selected, the window is empty; the fixture's features will only be displayed after having been selected. If different fixtures were selected at the same time,
  - green buttons: show features for all selected fixtures
  - yellow buttons: show features for some of the selected fixtures
  - grey button: Indicates an empty button to accept new settings to be saved

- Press the yellow button (upper left corner) and open the SMART WINDOW OPTIONS menu
- Set the desired views
  - Headline: here, features and attributes will be displayed as pull-down menus.
  - Direct Select: here, features and attributes will be displayed in a structured overview
- Select a fixture
  The SMART window will display all features and attributes belonging to this fixture. If, e.g. for Gobos, graphics are used as backgrounds, these are displayed in the upper part.

Editing Channel Values:
- press EDIT
- Press the desired Channel Value button
  If different fixtures were selected, you will be refused to edit them; in this case, select only one type of fixture.
- Perform the change from the Functions Set menu and afterwards, close the menu using the X (upper right corner).
  After having returned to the SMART window, the changes have been stored automatically.

Storing new Channel Values:
- Select a new fixture type
- Adjust the setting using the Wheel, Encoder, Calculator or Trackerball
- press STORE
- Press the grey (empty) button. Only the value of the selected feature will be stored. I.e. for dimmers, only the dimmer values will be stored, not e.g. the PAN values that were changed at the same time.
3.5 Accessing Dimmer Channels directly (in the CHANNEL SHEET)

The individual dimmer channels can be accessed directly at any time. Select the channels, which you wish to modify (selected channels will be displayed in yellow characters).

Selection:

- Select a dimmer group. See Creating and calling up Fixtures and Dimmer GROUPS
- Select dimmers via the CHANNEL key and the numeric keypad. See Command Line
- With Touchscreen or a left mouse click on the individual channels.
- Make a left mouse click on the first channel and drag with the mouse holding the left mouse key down (creates a Loop), all channels in this loop are selected.
- Values can be modified
  - with the encoders (Encoder assignment is displayed on the screen above) or with the wheel.
  - By direct entry into the Command Line (AT functions) you can also enter dimmer values. See Command Line
  - Select channels with a left mouse click and hold middle the mouse key down and drag; the value will be modified

- Enter the desired name and confirm with OK. The same name can be used for different fixtures types - therefore, use unique names!

Deleting Channel Values:
- press DELETE
- Press the desired Channel Value button

Renaming Channel Values:
- press ASSIGN twice
- Press the desired Channel Value button
- Enter the desired name and confirm with OK. The same name can be used for different fixtures types - therefore, use unique names!

Activating Channel Values:
- Select a new fixture type
- Select feature and, if needed, attribute (buttons will turn dark green)
3.5.1 CHANNEL Mode

Activate the CHANNEL Mode with the CHANNEL FADER keys this will toggle your executor faders so that they are now channel faders.

The assignment of Channels and Faders can be changed via the CHANNEL FADER keys (for example: 1–20, 21–40, etc.).

The assignment of a channel number to a Fader is listed on the TFT displays above the faders.

By pressing the individual CLEAR keys above each fader on the touch screen individual channels, which have been modified manually, can be deselected and deactivated.

The respective channel can be selected using the physical key above the Fader.

- In the TFT displays above the Faders, the assignment of channel numbers and Faders will be displayed along with any names that have been given to individual channels.
- In CHANNEL mode, the individual channel values can be set with the Faders.
- The respective channel can be hidden using the physical key under the Fader.*

In order to modify the selection or the active values of dimmer channels:

- Press the CLEAR key:
  - When pressing the CLEAR key the first time, the selection of dimmer channels will be deselected from the OUTPUT window (yellow characters turn grey).
  - The modified (active) values will be kept and displayed with red background.

- Press the CLEAR key again:
  - When pressing the CLEAR key the second time, the activation of modified values will be canceled (they will no longer have a red background).

- Press the CLEAR key one more time:
  - When pressing the CLEAR key the third time, all modified values will be reset (default or to their original setting prior to the activation).

After pressing the CLEAR key for the first time, the yellow LED in this key will flash. This means that only the selection was deleted. When you select other fixtures or dimmer channels now, the yellow LED will no longer flash.
3.5.4 FADE and DELAY times in the CHANNEL window

In addition to the standard (basic) FADE times, individual durations can also be set for the individual functions in the CHANNEL window (not in the FADER CHANNEL window).

These settings are needed when creating Cues, so that you can work with different FADE or DELAY times for individual channels.

- Open CHANNEL Window
- Press Values, so that the button displays Fades or Delays.

Or:

When pressing the TIME key once, this will switch the channel sheet to the FADE time mode. The second time, this will switch the channel sheet to the DELAY time mode.

If in the Window options Automatic was not selected, the display will not switch over. The currently selected function of the FADE or DELAY Command Line will be displayed only for the Encoder labels. See Options within the CHANNEL window.

Now you can modify the IND. FADE or IND. DELAY time for the selected dimmer channels using the left encoder (Individual Fade/Delay Time).

When carrying out modifications, different options can be used. These options can be necessary when times for Scanners and Dimmers are changed simultaneously.

Selecting options:

Above the left decoder, a second additional button will be displayed showing the currently selected option. By pressing this button, you can select the next option available.

Or:

Pressing on the right arrow will open a menu, in which all options are displayed and can be selected directly.

- Single (For Active): The time can be adjusted for each individual Function (Attribute). If “Single For Active” is chosen, only times for activated values can be changed.
- Feature (For Active): The time can be adjusted for the chosen Feature (e.g.: Gobo1, containing e.g.: Gobo1 and Gobo1 Rotation). If “Feature For Active” is chosen, only times for activated values can be changed.
- All (For Active): All times for all Attributes are adjusted. If “All For Active” is chosen, only times for activated values can be changed.
- Defined (For Active): The time can be adjusted for the fixed Attributes. Pressing the left arrow on the side of the Defined button will open the “Define Attributes to Set Time” menu.

Selecting individual Attributes:

In this menu, all Attributes are displayed with a green (selected) or black (deselected) background. Pressing on one of the functions will select or deselect it, respectively.
3.5.5 Link Fader-Function in the CHANNEL window
If the Link Fader function is activated, paging through in CHANNEL Mode will keep the current fader range in the Channel / Fader sheet.

3.5.6 AUTO-SORT-Function in the CHANNEL window
If the AUTO-SORT-function is activated (key has a black background), the selected channels in the CHANNEL window will automatically be moved to the left and upwards.
Using AUTO-SORT in conjunction with Link-Fader allows channel selections to be transferred to the faders when in channel mode (CHANNEL mode).

3.5.7 Options within the CHANNEL or Fader window
Touch the touch screen on the left corner of the title bar (yellow dot).

Or:
With a right mouse click on top line the CHANNEL SHEET OPTIONS window will open.
The Channel or Fader Sheet Options window will open.
The Display button must be pressed (displayed with green font).

Layer Display (only Values and Outputs in the FADER CHANNEL window possible):
By pressing the respective keys, the following basic values will be displayed:
- **Values only**: Values are displayed.
- **Fades**: FADE times will be displayed.
- **Delays**: DELAY times will be displayed.
- **Output**: The DMX output values are displayed.
- **Executor ID**: The Executor’s number and page are displayed (only valid for Executor keys).
- **Cue ID**: The Sequence’s number and respective Cue are displayed (only valid for Executor keys).
- **Automatic**: If this key is pressed, the display will automatically swap in this window when using the TIME key.
- **Layer Control**: If “On” is chosen, a control bar appears below the Scanners. By pressing on the individual buttons on the control bar, the display in the window will be switched accordingly.
- **Preset Control**: If “On” is chosen, a control bar appears below the Scanners. For each function, there is a separate button. By pressing on the individual buttons on the control bar, the appropriate function will be activated and can be modified using the Encoders.
In the right upper corner of each button, you'll find a small square. If this square has a black background, the respective function has not been modified. If the background is red, something has been changed in this function.
The Sorting & Readout button must be pressed (displayed with a green font).

Sort by:
With the respective key, you can define the channels’ sorting order in the window.
- **Numbers**: Within the CHANNEL window channels are sorted by numbers.
- **Names**: Channels will be sorted by name.
- **Selected**: The selected channels will be moved to left/above.
- **Active**: Channels for which a value is activated, will be moved upwards.
- **Values**: Channels will be sorted by highest value.
Sort Direction:
- **Sort Upwards**: Sorting by ascending numbers.
- **Sort Downwards**: Sorting by descending numbers.

Readout:
By pressing this function, you can choose the display criteria for the values.
- **Percent**: Values will be displayed as percentages.
- **Percent+**: Values will be given as percentage values; interim values will be displayed next to the figure in form of dots.
- **Decimal**: Values will be given as decimal numbers (0-255).
- **HEX**: Values will be given as hexadecimal numbers (0–FF).

Font: By pressing the function, you can switch the font size in the Channel or Fader window between Huge (very big), Big, and Small. The Settings button must be pressed (displayed with a green font).

Orientation: By pressing this function, you can choose between sorting the channels from left to right or from top to bottom.

**Wrap Around**: If “On” has been selected, the size of the Channels will be adjusted automatically, when the number of Channels changes.

**Namefield**: If “On” has been selected, the Channel names are displayed.

**Show Cue Colors**:
- **ON**: Colors of tracked / blocked values are shown
- **OFF**: Colors of tracked / blocked values are not shown. Numbers are shown in yellow and fader bars in grey.

**Column**: The figure indicates, how many channels will be displayed in one column. Clicking on that figure, you can enter a new number via keyboard; confirm with ENTER. The new number will automatically be taken over.

The Channel window can be deleted by pressing the Delete Window key.

With the X key, the Option window will be closed.

All these settings (excl. “LINK”) will be stored when storing the VIEWS (Storing VIEWS).

### 3.5.8 Dimmer Option

In the Channel Sheet, you can adapt different basic settings for each individual Dimmer channel.

Press Edit key and choose the channel on the Touchscreen.

The CHANNEL OPTION window will open.

The Dimmer channel can be renamed using the keyboard.

Next to ‘Type’ the type of Dimmer is displayed, next to ‘ID’ the corresponding number, and next to ‘Patch’ the DMX address for this Channel.

Pressing the WITH MASTER key (display changes to NO MASTER, will be indicated by a dark blue background), the Dimmer channel will be output without regard to the GRANDMASTER.

If a Dimmer channel was modified in this window, the Dimmer channel’s number or name will be displayed on a blue background in the Channel Sheet.

These modifications can also be defined while patching Dimmer channels. See Selecting DMX addresses for Dimmers.

With the <<< key, you can switch to the previous Dimmer channel. With the >>> key, you can switch to the next Dimmer channel.

With the X key, you can close the window.
3.6 SOLO function

The SOLO function is, so to say, the counterpart of the Highlight function. SOLO will bring all dimmers not selected to a value of 0. I.e. sequences, effects etc. will still run, but are no longer visible. This does not apply to Fixtures that had activated the NO MASTER function in SETUP / FIXTURE PATCH, and whose dimmer values will not be modified. The SOLO function can be activated as Quikey (see 9.2) or by using the HIGHLIGHT hardkey. In SETUP / DEFAULTS, set the Button to HIGHLIGHT IS SOLO;
The Hardkey will then have the SOLO function (LED is on) or no function at all (LED is off). The HIGHLIGHT Quikey will then also behave like the HIGHLIGHT hardkey.
If the Button is on HIGHLIGHT NORMAL, the Highlight Hardkey will execute its normal function, and the SOLO function can only be activated using the Quikey.

3.7 Creating and calling up Presets

There are certain values for the functions of fixtures, which will be needed again and again, for example the values for individual colours of the color wheel. These values can be programmed as presets in the respective PRESET window and then be reselected.
If you have presets for the fixtures be created automatically (CREATE PRESETS), these pre-recorded presets will be available in the respective windows. See Creating Presets automatically
- Create a window for all presets you want to use - select them from preset-pools.
- In the GROUP window, select those fixtures, for which you want to create a Preset, by a touch or mouse click (fixtures have to be displayed in yellow in the FIXTURE window).
- Select the Preset group for which you want to create a Preset on the display, using the Touchscreen or by a left mouse click on the title bar. For example: In the Preset window PAN/TILT.

Values and positions can be changed by:
- Encoders (all functions and the assignment will be displayed on the right display above the encoders),
- Trackball (only PAN/TILT), if activated,
- Level Wheel (only for dimmer values),
- Middle mouse key (left click on a value in the FIXTURE or CHANNEL window; drag the mouse while holding the middle mouse key will change the value).
- Switch on the Trackball by pressing the TRACKBALL ON button (the integrated LED must be on). Now you can control the selected fixtures via the trackball (PAN/TILT). Changed (active) values will be displayed in the OUTPUT window by a red background colour.

There are two types of Presets:
- Selective: Can only be used for those Scanners, for which it was saved. Will be indicated by a red triangle in the left upper corner of the saved Preset button.
- Universal: Can be used for all Scanners of the same type, even if not all will be saved.

Additionally you can store presets including several functions on one key. These presets can be created in any preset group. Preset Filter ON: only the functions (Attributes) of this Preset group will be stored into this preset; with Preset Filter OFF, all currently active functions will be stored into this Preset.
"Foreign", values that are stored in a preset are indicated through a white point on the bottom edge of the preset button. Each white point corresponds to a certain "foreign" value, according to the relevant position. The points correspond from left to right to the following parameters: PAN/TILT - DIMMER - GOBO - COLOR - BEAM - FOCUS - CONTROL - SHAPERS - VIDEO analog to the numerals in the preset windows.
Example: this PAN/TILT preset only contains values for dimmers and colors.

- ALLOW EMBEDDED: If the values contains a preset, an Embedded Preset will be stored.
- ONLY DIRECT: Embedded Presets are not possible
- While holding down the STORE key, make a preselection by pressing the appropriate button (Universal, Selective, Preset Filter ON or OFF).
- Release STORE key (STORE LED comes on). Select the required location in the PAN/TILT window on the display by a simple touch or with left click of the mouse. These Pan & Tilt values are now stored in this location (STORE LED is off).
- Enter a name for the preset using the keyboard: confirm with ENTER.

If you want to store more presets for the same fixtures and functions, start again with step \textbf{3} (Update Preset).

\subsection*{3.7.1 Moving Preset Keys within the Window}

\begin{itemize}
  \item Press MOVE key 1x (LED comes on).
  \item Activate the key in the respective window by either using the touchscreen or a left mouse click on the key and drag (a hand symbol appears) to the required location within this window.
\end{itemize}

You can also insert preset keys.

\begin{itemize}
  \item Press MOVE key 2x (LED flashes).
  \item Activate the key in the respective preset window using the touchscreen or make a left mouse click and drag (hand symbol appears) to the desired location between two other keys. The following keys will all be moved by one position to the right.
\end{itemize}

\subsection*{3.7.2 Presets Options}

In the Preset Options menu, you can define how Presets in the Preset Pool will appear.

- Icons Off
- Icons small
- Icons big

\begin{itemize}
  \item Use the right mouse button to click on the blue window and open the Options menu.
\end{itemize}

\subsection*{3.7.3 Selecting Presets}

\begin{itemize}
  \item Select the Fixtures or Dimmers, for which you want to call up a preset (Fixtures/Dimmers have to be displayed in yellow). Now, the individual presets can be called up for the selected Fixtures. The called-up presets and their names will be displayed in the FIXTURE windows.
  \item If you select a preset directly, without having selected Fixtures or Dimmer channels, all Fixtures and Dimmers, for which presets had been created, will be selected. The preset can now be called up by pressing the respective key. Using the Fader next to the right display, you can either define Preset Fade times or fade over presets manually.
\end{itemize}

Press the key above the Fader once (red LED is on). Select the desired Fade time using the Fader. The selected Fade time will be used when presets are being called up.

Press the key above the Fader once more (green LED is on). Select your Presets. With the Fader, you can now fade over towards the selected Preset. Default setting for the Fader to fade just upwards or in both directions. See Settings in the DEFAULTS menu below the Executor Defaults Crossfade.
3.7.4 FREEZE Function

By activating the FREEZE function, called-up Presets can be locked. As long as the FREEZE Function is switched on, the called-up preset can not be overwritten by any Cues, Sequences or Chasers.

- Press the FREEZE key once (LED is on).
- Select a Preset – the selected Preset will be activated and can no longer be modified by Cues, Sequences or Chasers.

In order to deactivate the FREEZE function, press the FREEZE key once more (LED is off).

3.7.5 Update Preset

In order to change presets

- Press the EDIT key (LED is on).
- Click on or touch one of the Preset Keys (the LED will blink, the preset key will display EDIT). The used fixtures/channels are being selected and the values will be activated.
- Make your required modifications.
- Press the UPDATE key.

A window appears, where you can either store the preset by pressing the OK key or cancel the modification by pressing CANCEL.

If you want to change more than one preset, you can select another preset by pressing the EDIT key right after the modification, followed by the NEXT key. Before the activation of the new selected preset, a window will open, where you can store the 1st preset by pressing the OK key or where you can cancel the modification by pressing CANCEL. The second preset can only be activated after this.

Or:

When executing sequences you can modify and store single values of presets directly.

- Play back a cue, in which presets are to be modified. Now you can modify this cue by direct access (the UPDATE key LED is on). See Accessing fixtures directly / Accessing Dimmer Channels directly
- Press the Update key once.

The UPDATE window will open.

By pressing this key, you can toggle between “only original contents” and “add new contents“.
- Only original contents: Upon updating the preset, only the changes on fixtures/channels which have already been used in this preset will be stored.
- Add new contents: Upon updating the preset, all changes will be stored regardless at to whether those fixtures/channels have already been used in this preset.

Pressing the “Update Preset” key will update that preset being displayed with a blue background. You can select another preset using the encoder.

Pressing the “Update All Presets” key will update all presets listed in the chart.

Pressing the Save as default key will store all (pre)- settings as default (e.g.: Only original contents oder Add new contents). These settings will be ready the next time you open the Update menu.
3.7.6 Embedded Presets

With this function, you can "embed" preset values into other presets, so you can quickly change multiple presets. As the embedded value is nothing but a link to the original preset, all changes of the original preset will be contained in all those presets containing this link. All Embedded Presets, as well as all presets having a link to another preset, can be distinguished by a black frame in the Preset Sheet.

Creating an Embedded Preset:
- call up a preset
- adjust additional values or positions
- use STORE to save the new preset to an empty button in the Preset Pool – mind the preset filter setting. The black frame around the new preset indicates an Embedded Preset.

Example:
- activate Preset 1 and save it with an additional value as Preset 2. In the Preset Pool, Preset 2 will be displayed with a black frame indicating an Embedded Preset. Create Preset 3 in the same way. If you change Preset 1, this will automatically change Presets 2 and 3.

Editing an Embedded Preset:
- press EDIT
- call up a preset – in the Fixture Sheet, all Embedded Presets will now be displayed with a black frame
- make your changes
- press UPDATE and confirm with OK

If you change the values of all Embedded Presets, they will become a „normal“ preset after an update. If an Embedded Preset or a part of an Embedded Preset (e.g. only the PAN channel) is kept, the character of the Embedded Preset will also be kept.

Preventing changes by previous Presets:
- call up the Embedded Preset
- press STORE (red LED is on)
- press the button of the Preset and confirm with OVERWRITE

The black frame around the Preset will vanish and the link to the Embedded Preset will be cancelled.

Example:
- Activate and save Preset 3. The link to value 1 will be cancelled, value 1 will be entered in Preset 4 (the black frame in the Preset Pool will vanish). If you now change Preset 1, Preset 3 will remain unchanged.

Copying an Embedded Preset:
- press COPY
- press on the Preset
- press on a free button, to which the Preset is to be copied

Example:
- COPY
- press on Preset 2
- press on a free button and rename the new preset to Preset 3

Important: The link to Preset 1 will be kept in Preset 3, even if you delete Preset 2 after the copying process (see graphics on the left).
Working with Command Line:
- press **DELETE**
- press button Preset / Page / Group / View / Executor or select Sequenz
- type in number on the numeric block (e.g. 1.16 for Executor 16 on Page 1)
- confirm with **ENTER**

writings in red are not possible; if no page number is typed the elements of the current page will be deleted

### 3.8 Deleting Groups, Sequences, Views etc.**

For all following Deletions, the **DELETE** key has to be pressed in advance (LED is on).

**Deleting Groups:**
Select the respective Group by touch or left mouse click.

or:
Press the **GROUP** key. Enter a Group number using the numeric keypad and confirm with **ENTER**.

**Deleting Presets:**
Select Preset in the respective window by touch or left mouse click.

or:
Press the **PRESET** key. Enter a Preset Function number (e.g.: 3 for Gobo) followed by „.“ and the Preset number; confirm with **ENTER**.

**Deleting VIEW Assignments:** Select a VIEW with the VIEW key on the side of the numeric keypad, via the Touchscreen or a left mouse click.

**Deleting a VIEW:** Press the VIEW key (LED is on). The SELECT VIEW window appears; now select the window to be deleted. The VIEW Name will be maintained, but without any contents. All assignments to VIEW keys are now deleted.

**Deleting a MACRO**:
Press the MACRO key (LED is on). The SELECT MACRO window appears; now select the macro to be deleted. The MACRO Name will be maintained, but without any contents. All assignments to MACRO keys are now deleted.

**Deleting an EXECUTOR**:
Press the desired EXECUTOR key.

or:
Deleting the EXECUTOR on the current page:
- Press the EXECUTOR button next to the numeric keypad (LED is on). Enter the EXECUTOR number via the numeric keypad and confirm with **ENTER**.

Deleting the EXECUTOR on another page:
- Press the EXECUTOR button next to the numeric keypad (LED is on). Now, enter the PAGE number. Then, press the full stop key and the number of the EXECUTOR and confirm with **ENTER**.

**Example:** EXECUTOR 5 on PAGE 3 is to be deleted:

**Entry:** [DELETE key] [EXECUTOR button] [3] [.] [5] [ENTER]

or:
- Press the EXECUTOR button next to the numeric keypad (LED is on). Enter the EXECUTOR number via the numeric keypad.
- Press the PAGE key next to the numeric keypad (LED is on). Enter the PAGE number via the numeric keypad and confirm with **ENTER**.

**Deleting Sequences:** Press the SEQUENCE key. Enter the number of Sequence via the numeric keypad and confirm with **ENTER**.

**Deleting CUES:** Press the SEQUENCE key. Enter the number of Sequence via the numeric keypad. Press the CUE key and enter the cue number via numeric keypad; confirm with **ENTER**.

If no sequence number is entered, the Cue of the Master (default) sequence is deleted.

**Deleting a PAGE:** Press the PAGE key next to the numeric keypad. Enter the PAGE number via the numeric keypad and confirm with **ENTER**. The complete PAGE with all EXECUTOR faders and buttons is deleted.
3.9 M Atricks

3.9.1 Intelligent Selecting

Here, you can create, store and directly call up different Selection groups. Find out, what the different combinations and the resulting options can be used for, by simply trying them out. The listing of the individual functions will only contain and explain a few of the many options.

Proceed as follows:

In order to create groups:
- open the MAtricks SETUP
- choose function and value (STORE button lights green)
- press STORE (LED lights red)
- press empty button in MAtrickspool and insert name

In order to apply groups:
- select lamps (the order of selection is the same order the Next / Prev. - buttons are working)
- press button (in MAtricksPool)
- press NEXT / PREV. to select lamps and set values

In the Matrix pool, press the “SETUP” button.

The "M Atricks Settings" menu will open.

Next/Prev: Move individual or several selected fixtures within the whole selection.

E.g. select fixtures. When pressing the “Next/Prev < “ or “ > “ key for the first time, the first/last fixture remains selected. When pressing the key once more, the next will be selected, and so forth. This function can also be operated by using the NEXT/PREV keys.

Groups: Here, you can define the number of fixtures that are to be moved simultaneously within the selection.

E.g. Press the “Groups > “ key, until a „3“ appears. Now, each time you press the “Next“ key, the next 3 fixtures of the whole selection will always be selected.

Interleave: To divide the whole selection into groups.

e.g.: If you select a 3 under „Interleave“, the next 6 fixtures (3 groups of 3 fixtures each) will be skipped, when pressing the “Next“ key.

To select the skipped fixtures, you can choose individual groups. If you had entered a value under “Interleave“, 1st will be displayed for the first group on the right of “Interleave Next/Prev“. Using the “ < “ or “ > “ keys, you can switch over to the next group. When moving the selection, the other fixtures will now be selected.

or:

Interleave Next/Prev: E.g.: You want to select each fifth fixture of the whole selection and move this subselection.

Next/Prev must be „Off“. Switch it off by shortly pressing into the center of “Next/Prev“ to “ < 2nd > “. The display will switch to “Off“.

Then, press “ > “ under “Settings“ next to “Interleave“, until a 5 appears. Now, you have selected only the first, sixth, eleventh, ... fixture.

By shortly pressing “ < or > “ next to „Interleave Next/Prev“, you can move the selection by one position up or down.

If you want to move several fixtures simultaneously, you can define this under “Groups“.

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Additionally:
Wings: Allows you to split and mirror the whole selection.
E.g.: When you have a setting of 2, the complete selection of fixtures will be split in the middle. The set selection will now be executed in the first half from the first fixture to the middle, and in the second half from the last fixture backwards to the middle.

3.9.2 Mirroring when Entering Pan/Tilt values
Mirror Wingstyle: When entering values for PAN/TILT, these can be mirrored individually or together.
E.g.: Take 10 Scanners (mounted in a row from left to right) and select them 1-10.
Now, set “Wings” on 2 digits and “Mirror Wingstyle” on Pan.
Now, when you modify the „Pan“ value, the first 5 Scanners move in one direction and the others into the other one.

3.9.3 Storing settings
The modified settings can be stored individually or together.
In the MAttricks Setup, you’ll find a “Store” button next to each function. If a function has been changed, this buttons will automatically be activated (dark green background). By shortly pressing the button, you can switch on (activated) or off (deactivated) the storing function. When storing, only the activated functions will be stored.
- To store, press the STORE key (LED in on).
- Now, choose the desired button in the MAttricks pool. Directly after storing, you can assign a name for the stored setting.
- By clicking on the button, you can call up the stored setting, and the button will be displayed with a dark green background. You can combine multiple stored settings by calling them up in sequence.
- By pressing the “Reset“ button, all settings in the MAttricks Setup will be switched off.

3.9.4 Selective Copying
With the Circular Copy function, you can copy or move set values of fixtures to other fixtures.

Copying values
Example:- Select a fixture and set the Dimmer value to 100%.
- Select the fixture and further fixtures.
- By pressing the “ > “ button, the Dimmer of the fixture that was selected as next one, will be set to 100%.
- With each pressing, the value will be copied to the next, selected fixture. When pressing “<“, the value will be copied to the last selected fixture.

Moving values
Example: Select a fixture and set the Dimmer value to 100%.
- Select the fixture and further fixtures, to which you want the Dimmer value to be moved to.
- By pressing 2x on the column title (here Dimmer), you can activate all Dimmer values für the selected fixtures.
- By pressing the “ > “ button, the Dimmer value of the first fixture will be moved to the next, selected fixture.
- When pressing “<“, the value will be copied to the last selected fixture.
Setting Filters, to just copy/move individual Functions

- Example: You have set different positions for 10 Scanners. Now, you want to just copy/move the “PAN” value from one fixture to the others.
- Pressing the “Filter” button will open “AT Filter Option” menu. In this menu, you’ll find all functions available. The functions are all displayed with a green background. Pressing on a function will deactivate it (will be displayed in black then).
- If you just want to copy/move the “PAN” value, deactivate “TILT” and leave the menu by pressing the “X” key. Now, only the “PAN” value will be changed, when you copy/move.

3.9.5 Shuffle select order and shuffle value

Using these two functions, you can randomly change the selection sequence (SHUFFLE SELECT ORDER) and the assignment of the values in respect to the selected fixtures (SHUFFLE VALUE). Using SELECT ORDER will only change the selection sequence, i.e. the change will only be visible, if you have selected a function in which a certain sequence is important. Using SELECT VALUE, the selection sequence is not important; only the values within the selected fixtures will be “shuffled”. NOTE: The functions can only be undone using OOPS! Both functions can be executed using the buttons in the MATricks menu or using the Quikeys.

SHUFFLE VALUE examples:
- Select the first 11 fixtures in the FaderSheet (from left to right)
- Press ALIGN once and increase the dimmer value
As dimmers were selected in ascending order, the values between the first selected fixtures (n° 1) and the last selected fixtures (n° 11) will also be aligned in ascending order (ALIGN function) – see graphics above. NOTE: Important for an alignment using the ALIGN function is always the order in which the selection takes place and not the channel number!
- Press Select Value once (either using the Button or the Quikey)
The values will be kept, but randomly assigned to the dimmers (graphics in the middle)
- Press Select Value once; the values will receive a new assignment (bottom graphics)
This procedure can be repeated at will.

SHUFFLE SELECT ORDER examples:
- Select the first 15 fixtures in the FaderSheet (from left to right)
- In the MATricks menu, set the groups of five
- Use NEXT to select the groups of five (for a better visualization, the groups have received different dimmer values)
As the dimmers were selected in ascending order, the groups will be formed in this order, too (1st group = n° 1 - 5; 2nd group = n° 6 - 10; 3rd group = n° 11 - 15).

Using the **SHUFFLE SELECT ORDER**, you can change the selection order, i.e. that will also change the group assignment.

- Press **SHUFFLE SEL.ORDER** once. Now, the first group will consist of the n°s 1, 2, 3, 12, and 15. With each NEXT command, you can call up the next group and the new assignment of the respective group will be kept; only when using the SHUFFLE SEL.ORDER command the next time will the assignment be changed.

You can also combine the SHUFFLE SELORDER with SHUFFLE VALUE.

- Press **SHUFFLE VALUE** once. This will exchange the values (n°s 1, 2, 3, 12, and 15) randomly within the group.

### 3.10 Blind Modus

The Blind mode will separate the stage output from the programmer, i.e. when changing values being in the Blind mode, the values of the stage output will remain as they are. You can program shows without changing the current stage lighting; by simply switching over using the BLIND key you gain a quick access to the stage lights.

- Hold the BLIND key, until you hear the beep and the key LED starts to blink.

The title bar of all Sheets affected by the Blind mode will change from blue to red.

The Blind mode differs as follows from the stage output:
- all other Sheets are available.
- changes in presets can be saved in Blind mode and when switching to stage output, the old value will still be visible.
- changes in SETUP will also be visible in the stage output.
- sequences, effects, groups, etc. that you delete while in Blind mode, will also be deleted in the stage output.
- PDA will show the respective mode without indication whether it is the Blind mode or the stage output.

To switch off the Blind mode:
- Hold the BUND key, until you hear the beep and the key LED goes out.

After switching over, all changes made in Blind mode will immediately be active in the stage output.
3.11 Stage window with SETUP and FOLLOW modes

The stage window can be used in the 3 different modes NORMAL / FOLLOW / SETUP:

NORMAL mode:
The window will display all fixtures in their stage positions, white lines indicating the direction and intensity of the light. The fixtures can only be selected here.

FOLLOW mode:
In this mode, you can focus individual fixtures or groups having virtual X, Y, and Z axes, on a deliberate point on the stage. These values will always refer to the stage geometry and will be displayed in the STAGE column on the Fixtures Sheet. The resulting PAN/TILT values will be calculated from the fixture position and also be displayed in the Fixtures Sheet. The focus will be kept even if you change the fixture position, and the respective PAN/TILT values will automatically be adapted.

- Enter the virtual axes in SETUP / FIXTURE TYPE / CHANNELS of FIXTURE TYPES using the SPECIALS button
- Select the fixtures in NORMAL mode
- Use the mouse or the touch screen to define the position on the stage floor (the Z value will always jump to 0), or set the spacial coordinates using the Encoders. (In this version, AREA is not yet assigned.) In the Fixture Sheet, the values will be displayed in a separate column (STAGE X Y Z) and can be set here, too.
The values do always refer to the stage size (definable in SETUP / FULL ACCESS / SETUP STAGE), 50% of the definable area are always the middle of the stage front edge.
If you create multiple intersections (see graphics on the left), the Encoders will always show the last entered value.
- Note regarding DMX / STAGE values: may not be mixed within one Cue or Sequence.

Effects using the X, Y, and Z parameters:
For creating effects, you can also use the stage parameters X, Y, and Z. They can help you, e.g. to easily create circles as effect outputs. Procedures as given in chapter 6 Effects and Modulators.
NOTE: you have to enter all 3 parameters for the effect, as otherwise, no vector can be created and the effect cannot run. Within an effect, stage values may not be mixed with other features.

- When editing the effect, enter the attributes X, Y, and Z (STAGE) in the PARAMETER column.
SETUP mode:
In this mode, you can position fixtures using mouse, Encoders or touch screen. Changes will automatically be saved to the SETUP menu.
- The SETUP menu may not be opened.
- Open STAGE and choose SETUP mode.
- Select fixtures (using the mouse or the touch screen).
- adjust the 3 axes using the Encoder die 3 Achsen verstellen,
- or modify the X and Y axes using the left mouse button; if you hold the left and right mouse button, only the Z axis will be modified.
- X, Y, and Z axes can be modified individually or groupwise (see also 2.2.3)
- after switching from POSITION to ROTATION, you can rotated fixtures individually or groupwise on the X, Y, or Z axis
NOTE: Perform changes preferably using the Encoders, as with the mouse, you run the risk of changing the stage setting just like that. Undo unwanted changes using OOPS (except with MICRO).

WIZARD in the SETUP mode:
Here, you can arrange fixtures in geometrical figures (e.g. square, circle, arc). You can, however, position each and every fixture manually (see above), but this function saves you a lot of precious time. A special highlight is the Calibration mode that you can use to transfer the actual fixture position to the console.
The SETUP menu may not be opened.
- Open STAGE and choose SETUP mode.
- Select fixtures (using the mouse or the touch screen) or enter the ID number area.
- In the WIZARD, choose the desired function.

- ARRANGE IN MATRIX:
- Select those fixtures to be embedded into the matrix (the number should be the sum from horizontal and vertical lines as otherwise no complete square will result)
- Enter the number of horizontal ROWS and vertical COLUMNS;
- Enter the horizontal and vertical distances of the fixtures; the resulting total value may, however, may not exceed the stage size.
- Confirm using the OK button
- use POSITION + to offset the formation on 3 axes, without changing the form itself.

- **ARRANGE IN CIRCLE:**
  - Select fixtures
  - Set starting and end angles; between 0 and 360 or more
  - Set the starting and finishing radius (if the two radi are unequal, a spiral will be the result, see graphics on the left)

- use POSITION + to offset the formation on 3 axes, without changing the form itself.

- **STRETCH POSITION:**
  - Select fixtures
  - Use Total Factor to change the magnitude of the complete figure without changing its proportion
    - the value Total Factor = 0 will place all fixtures in one point.
  - Use Factor X, Y and Z to change the figure's proportion on the chosen axis (see graphics on the left, the circle has been modified to an oval)
    - the value 0 will yield a straight line on the respective axis;

- use POSITION + to offset the formation on 3 axes, without changing the form itself.

- **CALCULATE FOLLOW:**
  With this function, you can transfer the real fixtures' positions to the SETUP of the grandMA console. The STAGE view will then display the actual position of the fixtures to the stage. This light setting procedure should always be performed, if it is not clear whether or not fixture positions had been exactly defined in the SETUP eingetragen wurde. Important for the FOLLOW FUNCTION.

Define the light setting frame:
- On the stage, mark the corners of a square (light setting frame)
- Enter the stage dimensions in SETUP / FULL ACCESS / STAGE SETUP.
- Enter the dimensions of the light setting frame and its position relatively to the stage as such in the STAGE CALIBRATION menu. The frame will appear as green square in the STAGE window
- Move the first fixture to point A of the stage (using the Encoder or track ball);
- Press STORE and Button A of the menu
- Move the fixture to B, C, and D and press STORE plus the respective button when you reach these points
- Repeat this procedure for all fixtures
- Then press the CALCULATE button. The true fixture positions will be inserted into the SETUP menu and the visualization in the STAGE window adapted accordingly.
3.12 Stage Flip

The Flip - Set in the stage values can avoid an unintentional flip of the fixture. This is only possible within a certain range, depending on the technology of the fixture - some multiple rotations without changing the Tilt - position are normally impossible.

Fix a flip - position:
- Select fixture
- Activate the STAGE - values and set Flip - value with the encoder. With Flip „-“, no specific flip position is forced. With flip position 1, 2 or 3 (depends on type of fixture) the specific flip position will retained, if this is physically possible.
- Set position in FOLLOW - mode
- Store cue as normal

4. Cues and Sequences

A Cue is an individual stage setting, which can be assigned and stored directly to EXECUTOR button or EXECUTOR Fader.

Several cues in line are called a sequence. Sequences of cues can also be assigned and stored on an EXECUTOR button or EXECUTOR Fader.

If cues are created using Presets, a modification of this Preset will automatically update all cues which use this Preset.

Thus, time-consuming checking and correction of individual Cues becomes unnecessary.

We recommend to use the Preset functions as often as possible.

EXECUTOR buttons or Faders can have multiple assignments for created sequences.

EXECUTOR Faders and buttons are organised in PAGES. You can work on all PAGES simultaneously. Changing pages only effects what you currently have physical access to, not what is currently playing back. When using motor faders, those motor faders will move reflect the status of the current PAGE.

With the EXECUTOR buttons it is possible to call up the Cues, Sequences and Chasers. See Buttons and Faders.

For dimmer channels, the respective MASTER FADER, Group fader and the Grandmaster have to be pushed up.

EXECUTOR buttons do not have a Master and are therefore are activated immediately. When dimmer values are playback via Cues or Sequences assigned to EXECUTOR buttons priority issues may arise then trying to control these same dimmer values from other EXECUTOR button and faders without first switching off the relevant EXECUTOR buttons. In practical terms this means that to work with Dimmers as on a conventional console (HTP), dimmer channels have to be assigned to the Executor Faders.
4.1 Creating Cues (separate memories)

The actual stage setting can be stored as a Cue and be called up via the EXECUTOR buttons or faders.
- All **changed** (active) values (recommended setting),
- all momentary settings (complete Output),
- or all values of the selected Fixtures and channels can be stored as Cues.

4.1.1 Creating new Cues

Create the look on stage by direct access or presets. See Accessing Dimmer Channels directly or Calling up Presets.

This look shall now be stored as CUE in the following way:
- Press the STORE key and **hold** it. The following options and encoder names will appear on the right TFT display:
  - **Active Values**: Store only the active values (all values in the FIXTURE/CHANNEL window which are shown with a red background colour).
  - **All**: Store all settings (all fixture and channel values).
  - **All for Selected Devices**: All values of the selected fixtures and channels will be stored (the fixture/channel numbers will be marked in yellow).
- Release the STORE key (LED stays on).

For this CUE, set the following parameters via the encoders:
- **Trigger**: Call of the CUE by GO, SOUND or FOLLOW (i.e. after previous cue in the sequence has completed) or automatically after an amount of time.
- **Fade**: CUE will be played back with the set time; this is only possible with “FADE” functions. See Single Channel-specific Adjustments for the Current Show (point 10) and EDITING FIXTURES (modify) (point 9)
- **Delay**: CUE will be called up delayed by the time set; only possible for the „FADE” functions.
- **Snap-Delay**: The Snap values of the CUE will be played back after the set period of time (only with “SNAP” functions).

Pressing the In Fades button will switch it over to Out Fades:
- **Out Fade**: Dimmer channels, which reduce their level in the next Cue, will be faded with the set period of time.
- **Out Delay**: delays the outfading

Cues can be stored on EXECUTOR faders or EXECUTOR button.
Define the assignment position of the Cue by pressing the EXECUTOR button once. When storing to an EXECUTOR FADER, press a button above or below the fader once.

The CUE is now assigned to this EXECUTOR button or EXECUTOR fader and stored in the Sequence Pool. This way it is possible, to assign the same Cue more often than once. See ASSIGN menu (Assignment to EXECUTOR)

Repeat all steps to create the next Cue.
- Pressing the CLEAR key: once - will delete the selection, twice – will delete the active values and reset all values then.
4.1.2 Store Options - Functions available when storing

The different settings in this menu have an effect on how Cues, but also Presets are stored. The settings modified in this menu can be stored as defaults. These (Pre) sets will then be used for storing, but can also be adjusted from case to case.

Press the STORE button and hold it. In the right TFT Display, the following selection will appear:

Press the buttons (selected button will be backlit in dark grey):

**Store Source:**
- Normal: Will store all values contained in the Programmer (mind the settings under STORE VALUES).
- Output: Will store all values output (as displayed in the DMX Sheet), i.e. also the position of the Master/Groupmaster will be accounted for. Assignments, e.g. to Presets, will be lost, as only the output value will be stored, not the source.
- DMX IN (DMX Capture): With this setting, you can store DMX signals coming in via the DMX-IN jack, e.g. to store a non-compatible Show of another console. You can also call up individual Cues on other consoles, if the SETUP and the patched channels on the grandma are identical, and store a new Cue on the grandMA.

You can set the DMX-IN in the TOOL menu / DMX&NSP configuration / Local DMX Input. The incoming DMX has to be merged with the DMX line, on which the fixtures of the imported Show were patched.

**Filter:**
- Define: Will open the attribute filter; all attributes having a green background will be saved. The settings in this filter will only be active for the following STORE process, afterwards, the filter will be reset to default again.

**Store Values:**
- Active Values: Will store only the active values (all values that have a red background in the FIXTURE or CHANNEL window).
- All: Will store all current settings (all values of all Scanner and Dimmer channels).
  - Very memory-demanding - problems when saving presets - only recommendable for special cases.
- All for Selected Devices: Will store all values of the selected Scanners and Dimmers (the Scanners or Dimmers are indicated by yellow names).

**If not empty:**
- Merge: When expanding Cues, all settings already stored will be kept. The newly set values will be stored to the Cue as additions, already existing ones will be overwritten.
- Overwrite: Cue will be overwritten completely.
- Remove: When removing, only those parts of the Cue will be cut (deleted) out of the existing Cue that are active (red).
- Release:
  - This option, no matter which settings are done, will store no values for the selected channels. RELEASE outputs no values and enables other playbacks to use this channel; this means: even though the sequence is running, this channel can be used by another sequence, chaser, etc., till this channel gets an value in a following cue. In the left shown example the dimmer no. 2 during cue 3 and 6 can be used by another playback (of course also in cue 1). If no other playback is running, using this channel, there is no output for this channel during this cue.
  - select a channel and set an dummy-value
Overwriting a Cue
If you wish to overwrite a Cue completely, simply use the same EXECUTOR fader or EXECUTOR button once again. The following window will appear:
In order to overwrite this cue completely, press the OVERWRITE key (If the executor contains more than one cue you will have to be specific about which cue you want to Store - 4.2 Programming Sequences).

Merging a Cue
When merging cues, all existing and stored settings will be maintained. The newly set values will be stored and added to the cue, while already existing values will be overwritten.
If you wish to merge a cue, simply use the same EXECUTOR Fader or EXECUTOR button once again. The SAVE (STORE) window will appear (as above). In order to merge this cue, press the MERGE key (If the executor contains more than one cue you will have to be specific about which cue you want to store - 4.2 Programming Sequences).

Removing a Cue
In the removing operation, the active values (red) will be subtracted from the already existing cue.
If you wish to remove from a cue, simply use the same EXECUTOR Fader or EXECUTOR button once again. The STORE window will appear (as above). In order to remove from this cue, press the REMOVE key (If the executor contains more than one cue you will have to be specific about which cue you want to Store - 4.2 Programming Sequences).
4.2 Programming Sequences

Sequence is the generic term for multiple of cues, with the option of various Fade and Delay times per channel and cue. Sequences can be stored either on an EXECUTOR fader or an EXECUTOR button.

- Store the first Cue (first step of a sequence) either on an EXECUTOR fader or an EXECUTOR button. See Creating Cues
- Create the second Cue (next step of the sequence) as before. When storing the second Cue, use the same EXECUTOR fader or EXECUTOR button. Now, the STORE window will appear:
- In order to create a Sequence (more than one Cue), press the CREATE SECOND CUE key. The Cue will now be stored in this Sequence as the second step (Cue 2). In the ASSIGN menu, you can define whether this Sequence should be executed in TRACKING or NON-TRACKING mode. See EXECUTOR SETTINGS
- Create the next Cue for any other step and use the same EXECUTOR fader or button when storing.

4.2.1 Copying Sequences

Once a Sequence has been created, it can be copied completely with all component Cues, Fade and Delay times.

- Press the COPY key once (LED is on).
- Press the SEQUENCE key once (LED is on).

Using the numeric keypad, enter the number of the Sequence to be copied. All sequences and their numbers will be displayed in the Assign menu. See ASSIGN Menu

- Press the AT key once (LED is on).
- Using the numeric keypad, enter the number of the new Sequence and confirm with ENTER.

Caution! In NON-TRACKING mode, only Dimmer channels of the first copied Cue are taken account of. For the following Cues, the Dimmer values are “0” and will have to be reprogrammed manually.

4.2.2 Including Cues

Set a Cue see Creating Cues

- Press the STORE key once (LED is on).
- Press the SEQUENCE key once (LED is on).
- Enter the number of the Sequence using the numeric keypad.
- Press the CUE key once (LED is on).
- Enter the number of the new Cue via numeric keypad and confirm with ENTER.

Example: A new Cue is to be included between Cue 3 and Cue 4. This new Cue will be named for example Cue no. 3.1 (numbers between 3.001 and 3.999 are possible). This way, 999 Cues can be included between two Cues.
SELECT

4.2.3 Selected Sequence (Master Sequence)
When creating sequences, Cues can directly be stored on a Selected Sequence.

- Press the SELECT key once (LED is on).
- Select the respective EXECUTOR, which shall be the Selected Sequence by pressing the respective EXECUTOR button once. The headline of the small EXECUTOR window will be green.

To create the first Cue of the Selected Sequence, see Creating Cues
- Push STORE key 1x (LED flashes).
- Push ENTER key 1x; the created cue is now stored in the Master Sequence.

If no EXECUTOR button has been selected before storing, and you confirm with ENTER, the stored Cue will always be added to the current Selected Sequence.

In the Selected Sequence, Cues can be played back directly**

- Press the GOTO key once (LED is on).
- Enter the Cue number on the numeric keypad and confirm with ENTER. The Cue will be played back with the set duration (See Settings in the DEFAULTS menu).

When played back Cues directly, you can enter a FADE or DELAY time using the TIME key.
- After having entered the Cue number, press the TIME key for the FADE time once and enter the period of time using the numeric keypad, or press the TIME key once more for the DELAY time, enter the duration using the numeric keypad and confirm with ENTER. The Cue will be played back with the entered times.

The Cue will always be played back as if the Sequence was run from the very beginning. That means, all previous steps will be accounted for with regards to the tracking of values (this depends on whether Tracking had been activated in the ASSIGN menu. siehe 5.1.4 Executor Settings)

Besides the Selected sequence, you can select multiple Executors as default sequences. These are indicated by a dark-green title window - the Selected sequence (only possible for 1 Executor) has a light-green title window.

*All default sequences can be operated at the same time if using the yellow buttons. All default sequences can also be operated by using a combination of a command (e.g. GO+, Pause, OFF) and simultaneously pressing ENTER.
- Hold the SELECT button down and click on the desired Executors (no effects or Bitmap effects); the first Executor becomes the Selected sequence (light green) and the following Executors become Default sequences (dark green). This selection is temporary and cannot be saved in the Show file.
- A further selection (hold the SELECT button and click on Exec) will delete the previous selection.

4.2.4 LOAD CUE
You can use LOAD CUE in order to directly call up a certain cue with either one or several executors.

- Press the GOTO key twice (LED is blinks)**.
- Select an executor by shortly pressing a key.

A window with a chart appears. All cues of this sequence are listed in this chart.
If you select one of these cues, it will be loaded. This cue will be displayed as next (red blinking background) in
Playing back sequences or chasers

Using the EXECUTOR button, you can playback the stored Sequences directly.

- If the green LED on the button is lit, a Cue or a Sequence of cues is stored on this button.
- If the yellow LED is lit or is flashing, this Cue, Sequence of cues or Chaser (a sequence which as been told to run automatically) is activated.

The yellow LED indicates the beat of a Chaser.

Push up the respective Master Fader for the EXECUTOR faders to see the dimmer values. Playback Cues using the Go+ button (standard setting is button below the Fader). If the green LED in the button above the Fader is on, a Cue or a Sequence is stored on this button.

- If the yellow LED is on or is flashing, this Cue, the Sequence or the stored Chaser is activated. The yellow LED indicates the beat of a Chaser.

Using the PAGE keys, you can select other pages. **5.5 PAGE Administration (PAGE)**

With the Fader to the right of the EXECUTOR buttons, you can either set fixed fade times or perform manual fade-in when playing back Cues using the EXECUTOR buttons.

- Press the key above the Fader once (red LED is on). Set the desired fade time using the Fader. When selecting the Sequence using the EXECUTOR buttons, only the fade time set here will be used (this also applies to SNAPDELAY times).
- Press the key above the Fader again (green LED is on). Select the sequence using the EXECUTOR button. Using the Fader, you can now fade in the selected sequence. Default setting for the Fader can be changed to fade just upwards or in both directions. See Settings in the DEFAULTS menu below the Executor Defaults Crossfade.

With the PREVIEW function, Cues can be displayed in the FIXTURE SHEET or CHANNEL SHEET without being output to stage. Press the PREVIEW key once and playback the desired Cue using the EXECUTOR button.

4.2.6 Saving a sequence

To protect a sequence or Cues of a sequence against unintended modifications, you can lock them; Playback is possible, the Edit mode cannot be activated, however.

- On the CommandLine, enter: `lock_seq_(number or area of the sequences)`
- `lock_seq_(number of the sequence)_cue_(number or area of the Cue)`

In the sequence pool, the locked sequences are identifiable by their yellow key symbol, in the Assign menu, all values are displayed in red. If only some part (individual Cues) of the sequence are saved, this will not be displayed in the sequence pool.

If you want to re-edit the sequence:

- On the CommandLine, enter: `unlock_seq_(number of the sequence)`
- `unlock_seq_(number of the sequence)_cue_(number or area of the Cue)`

- Insert the functions LOCK / UNLOCK as Quikeys
- Press LOCK or UNLOCK and choose the sequence in the sequence pool
4.3 Editing Sequences

During editing procedures, you can change all values of cues, add values or delete them. The X-FADE and DELAY times can be altered and the trigger of cues via GO key, X-FADER, SOUND or TIME can be defined.

Apart from what is indicated in this chapter, there are three other ways of editing:

See Overwriting, expanding, removing Cues, Update Cues or Presets and EXECUTOR window

- Press the EDIT key (LED is on). The sequence may not be saved, see 4.2.6
- Select the sequence with the respective EXECUTOR button.

Or:

- Left click with the mouse into the small window above the EXECUTOR Fader or use the touchscreen.

The EDIT menu appears on the right TFT display, showing a listing of the individual cues contained in the selected sequence.

You will find the addressed EXECUTOR fader or button in the headline, giving the number of the PAGE and the sequence name.

The second line will give you the functions of the columns.
- No.: Number of Cue
- NAME: Name of Cue
- MIB: Activate MIB (Move In Black function) individually for each cue. Activate it by selecting a cell and shortly pressing on the encoder on the right side of the display. Activation is confirmed by YES.

MIB can only be used in cells where a “*” is displayed.

- Trig: The trigger for the Cue (GO button, SOUND, TIME or FOLLOW)

If the TIMES key on the title bar of the edit window is pressed:
- Fade: FADE time
- Outfade: Duration of the fade time on Dimmer channels which are reducing in value
- Delay: CUE will be called up delayed by the time set; only possible for the „FADE“ functions
- Outdelay: OutFade will called up delayed by the time set
- Snap: Duration of the DELAY
- I.Fade: Duration of the individual FADE time (min and max)
- I.Delay: Duration of the individual DELAY time (min and max)

If the LOOPS key on the title bar of the edit key is pressed:
- LOOP: Will initiate a jump after the cue that includes the loop statement has finished
- LOOPDELAY: The length of time or the number of occurrences of a LOOP will be displayed
- LINK: The Command Line Order to be triggered will be displayed
- LI. DEL: The delay value for the execution of the Command Line Order will be displayed

If the EFFECTS key on the title bar is pressed:
- EFFECTS: Display of the effects calls

A second sheet will appear in the lower part of the display:
- No.: Number of the Effect
- NAME: Name of the Effect
- ACTION: Type of Effect call (play forwards, play backwards, pause, stop)
- INTENS: Display of the defined size of the Effect
F (Fade): If Y (YES) is displayed, the size will be faded in with the set fade time

- **SPEED**: Display of the defined speed of the Effect
  - F (Fade): If Y (YES) is displayed, the speed will be faded in with the set fade time

- **SOFT**: Display of the set softness (softer fade in) of the effect
  - F (Fade): If Y (YES) is displayed, the softness will be faded in with the set fade time

If AUTO SCROLL key is pressed, the chart will automatically move to top/bottom when handling larger sequences. The chart will show you all cues of a sequence including the various TRIGGER functions.

The EDIT CUE key will enable you to change values of individual cues (below).

Description of each encoder.

### 4.3.1 Changing values for individual cues in the sequence

- Select the Cue that you want to change (red cell) in the Name column.
- Press the Edit Cue key (LED in the EDIT key starts flashing).
- **All values of the Cue will now be played back on stage and displayed (active, red) in the Channel & Fixture sheets.**

- The cue can now be changed by either direct access or presets. See Accessing Fixtures directly (in the FIXTURE SHEET) / Accessing Dimmer Channels directly (in the CHANNEL SHEET) and Creating and calling up Presets

  - If this Cue has been changed, the LED in the Update button will be on.
  - If the Cue is not to be seen on stage, activate the Blind function by pressing the BLIND key (integrated LED is on).

- Press the Update key once. Choose OK in the window that has just opened. The changed Cue is now stored.

- Press the CLEAR key twice if necessary (Cue values will be deleted in the FIXTURE or CHANNEL window).

For modifying further Cues, select the respective Cue one by one (will be displayed on a green background).

- Repeat all steps as described with first cue.
4.3.2 Changing the TRIGGER (Call-up) of individual Cues within a Sequence
Select the respective cue within the Trig column (red cell).
Enter the following with the left Encoder or via the keyboard and confirm with ENTER.
- F: for FOLLOW mode
- G: for GO button
- S: for SOUND signal
- No.: Automatically according to set time (e.g. if the set time is 1.5, this Cue will be called up after 1.5 seconds automatically).

4.3.3 Changing the FADE or DELAY times of individual steps within the Sequence
- Select the respective cue (red cell).
- Here, the duration for this cue can be changed with the In-Fade, In Delay or Snap encoder.
- Pressing the Basics button (above the right Encoder) will switch this button to Out: Now, you can modify this time with the Encoder Out-Fade.

If no FADE or DELAY times are indicated, none are stored in this CUE.

Changing all times of one or more Cues (CUE TIME SCALING)
With this function, you can scale or compress all Fade, Delay, and Trigger times.
- select one or more Cues (red cell).
- click on the Cue's number using the right mouse button or the Encoder on the side of the monitor
- In the EDIT CUE NUMBER menu, select a percentage or absolute change
  - Scale Timing (%): All times of the marked Cue will be changed to the entered value. When entering 100%, all values remain unchanged.
  - Scale Timing (sec): The total time of the marked Cues will be changed to the entered time – all times will change proportionally. For the example on the left: For the 4 marked Cues, 6 seconds were entered; DELAY and FADE were increased to 6 seconds in total; the trigger time increases according to the proportional changes of the individual times.

- Use the Calculator to make the changes, and confirm with ENTER.
WARNING: If you compress all times to 0, you will no longer be able to enter longer times. You would then have to enter all times anew, or you could restore them, if the OOPS function was activated (not on the MICRO).

FADE times in Profiles
Besides lineary FADE times, you can also use to vary FADE procedures using a profile. You can fade dimmers and PAN/TILT movements using individual profiles. In this version, it is irrelevant whether the PATH column contains no entry or „linear“. You can choose from 43 paths, 16 of which are pre-defined, and 16 that you can assign self-created profiles to.
- Open the Cue overview
- click on the cell in the DIM PATH column (for the FADE profile of the dimmer) or MOVE PATH (for the FADE profile of the PAN/TILT movement) and press on the right Encoder.
The SELECT FADE PATH menu will open.
- select a ready-made profile
  ● Select a profile from the menu (number or profile name has a blue background), which will display the profile as a graphics and press
  ● SELECT PATH
  The selected profile will appear in the PATH column.
  For some of the pre-defined profiles, the curve position may partly lie outside of the coordinate system. A fixture can follow this negative amplitude only, if it is not already positioned at it’s ultimate ‘stop’. For self-created profiles, you cannot place the curve outside of the coordinate system.

- assigning a self-created profile to a FADE path
  ● Touch the field DIM PATH or MOVE PATH and press the right encoder
  M menu SELECT FADE PATH opens
  ● Turn the encoder and choose an empty path (User 1 - User 16)
  - NO PATH if you don’t want to assign a profile.
  - LOAD PROFILE if you want to assign a profile to a path.
  ● Click to a profile in the overview (profile gets a blue background)
  ● Press button CHOOSE PROFILE (now the profile is assigned to a path and the menu SELECT FADE/MOVE PATH opens)
    ● Press button SELECT PATH: the path with the assigned profile is assigned to the cue.
  - Press SELECT PATH and the profile is assigned to a cue in the path column.

or create or change a profile:
  ● Touch the field DIM PATH or MOVE PATH and press the right encoder
  M menu SELECT FADE PATH opens
  ● Turn the encoder and choose an empty path (User 1 - User 16)
  ● Press LOAD PROFILE to load a new profile or change an existing profile
  - Select an existing profile with SELECT PROFILE and press EDIT to change it
  - Click NEW in SELECT PROFILE, press right encoder, type in a name and confirm with OK

Change / create a profile:
  ● Touching the screen will create a reticule ADD POINT creates a new point in the center of the reticule, DELETE POINT deletes the point.
  - With the encoder POINT you can jump to the next point; the encoders In X and Out Y adjusts the reticule.
  - Move a point with a touch on the screen or with „grabbing“ with the left button of the mouse.
  When a red point is in the center of the reticule, the button TOGGLE CURVE transfer the straight line into a curve between 2 points. The point changes from red to yellow.
  - some predefined profiles are stored in the menu PREDEFINED.
  - the MIRROR - function inverts input and output
  ● With leaving the EDIT menu the profile is stored automatically
  ● DELETE PROFILE will delete a profile from the overview

You can’t delete a Fade Path and you can not create a new Fade Path. If all Fade pathes are used, you must change the profile in this path. ATTENTION: all cues, which uses this path will get the new profile too.

4.3.4 Moving Cues
  ● Press the MOVE Key once (LED is on).
  ● Press the SEQUENCE Key once (LED is on).
  ● Using the keypad, enter the number of the Sequence in which Cues are to be moved.
4.3.5 Copying Cues

- Press the CUE key once (LED is on).
- Using the keypad, enter the number of the first Cue to be moved. If only one Cue is to be moved, continue with the AT Key.
- Pressing the + Key will move the selected cue and the cue indicated by the subsequent number.
- Pressing the THRU Key on the keypad will copy the Cues from...to (including last Cue).
- When pressing the - Key, the Cue with the next number will be excluded from the move operation.
- Press the AT key once (LED is on).
- Enter the new number for the moved Cues using the keypad.
- Example: The Cues are to be inserted between Cue 10 and Cue 11. Number these Cues e.g. as 10.1 (possible Cue numbers are 10.001 - 10.999). This way, up to 999 Cues can be inserted between two existing Cues.
- Confirm with ENTER.

When moving one Cue, the COPY window will open.
- After pressing the key on the left of Statuscopy, you can choose between:
  - During the moving process, only the values and times actually stored in this Cue will be moved. Tracked information will be ignored.
  - The Cue will be moved as it would actually be realized on stage. That means, all previous steps will be taken into account and the result will be moved.
- By pressing the button on the left of Cue Only, you can choose between:
  - Normal moving (with or without Status)
  - Will copy the values of the step before into the step after, but only to a position having no value; this wouldn't be wise. The moved Cue will now be a „Cue Only“.

Pressing COPY will move the Cue, CANCEL will abort the process.

---

Copy

What Do You Want to Copy?

- Statuscopy

- Cue Only

- Copy

- Cancel
4.3.6 Deleting and renumbering Cues
Right click with the mouse on the respective Cue in the NO. column. The following window will open.
- From Cue: Display of the first selected Cue. The number can be modified by clicking on it.
- To Cue: Display of the last selected Cue. The number can be modified by clicking on it.
- New Number: Display of the first new number of the selected Cues. The number can be modified by clicking on it.
- Step Width: Display of the steps, in which the Cues’ new numbers will be placed. The number can be modified by clicking on it.

Deleting Cues
- Select the Cue to be deleted. By pressing the Delete Cue ! key, the Cue will be deleted. If you want to delete not only one but several Cues, select the respective Cues.
- By pressing the Delete Cue ! key, the Cues will be deleted.
- With CUE ONLY the cue will be deleted without changing the following cue.
- With CUE ONLY the cue will be deleted; all previous steps will be taken into account.

Deleting by mistake can be undone by OOPS!*

Renumbering Cues
Select the Cue to be renumbered. Enter the new number on the right side of “New Number“. By pressing the RENumber key, the Cue will be renumbered. If you want to renumber not only one but several Cues, select the respective Cues. Enter the new number for the first Cue on the right side of “New Number.” By pressing the RENumber key, the Cues will be renumbered.

4.3.7 Inserting LOOPS
Program flow inside a cuelist can be controlled by LOOPS.
Loops have a destination. If a Cue is executed that contains a loop, program flow will continue with the given destination instead of the next cue.
Loops can be timed. A timed loop will stay inside the loop until a given time elapses.
Otherwise loops are counting. A counting loop will stay inside the loop until the loop counter reaches zero.
Loops can be endless. An endless loop will stay forever inside the loop once it was activated.
Make a right mouse click on the respective Cue in the LOOP column. The SELECT LOOP-TARGET window will open.
Select the Cue to which the jump is to be performed. The Cue will be listed in the top line.
Select the jump function by pressing the respective Key:
- With the LOOP (TIMED) Key, a timed loop will be created.
- With the LOOP (COUNT) Key, a counting loop will be created.
- With the DELETE Key, you can delete the loop.
For the indicated loop, you can now edit the duration or the loop counter value in the LOOPDELAY column by clicking on or entering the respective value.
Example: When you enter „5“ in the TIMED cell, the loop will be executed for 5 seconds. When you enter „5“ in the COUNT cell, the loop will be repeated five times, before the Sequence will be continued normally.

4.3.8 Inserting Command Line Commands**
Within a Sequence, a Command Line Command can be triggered by a Cue. As soon as this Cue is reached, this command will be executed. By setting a time frame, the command can be played back with its own individual delay time. See Command Line
4.4. Editing Chasers

A Chaser is a sequence which runs automatically. During the editing process, you will be able to modify, add or delete all the values of the individual Cues. Speed, X-FADE and SNAP-DELAY times can also be adapted globally.

Apart from what is indicated in this chapter, there are three other ways of editing:

- See Overwriting, expanding, removing Cues and Update Cues or Presets EXECUTOR window
- EXECUTOR window
- Press the EDIT key (LED is on).
- Select a Chaser with the respective EXECUTOR key.
- Or: Left click with the mouse into the small window above the EXECUTOR Fader.

The EDIT menu appears on the right TFT display, giving a listing of the individual cues. The selected EXECUTOR fader or button is now listed in the headline, giving the page number and the name of the sequence.

In the second line, the column functions are indicated:

- **No.**: The number of the individual Cues
- **NAME**: Name of the Cue
- **MIB**: Activate MIB (Move In Black function) individually for each cue. Activate it by selecting a cell and shortly pressing on the encoder on the right side of the display. Activation is confirmed by YES.
- **MIB can only be used in cells where a ** is displayed.**
- **TRIGGER**: Has no effect on a Chaser
- If the **TIMES** key on the title bar is pressed:
  - **FADE**: Has no effect on Chaser
  - **OUTFADE**: Has no effect on Chaser
  - **SNAP**: Has no effect on Chaser
  - **IFADE**: Has no effect on Chaser

4.3.9 Automatic change of Pages

An automatic switch to another page can be assigned in the column „Link“.

- select a cue and press button LOOPS & LINK
- type in the requested page: page_x.y

4.3.10 Copying cues between sequences**

You can also copy Cues from one sequence into another. To do so, use the following syntax on the command line:

- `copy_seq_X_cue_XX_at_seq_Y_cue_YY ENTER`

If the target Cue is empty, select the status of the copy (STATUS COPY or CUE ONLY); if the Cue has a contents, choose between the OVERWRITE or MERGE option. You can cancel the copying process using CANCEL.

4.3.11 Copying individual values of a cue into another cue or sequence**

Values of individual parameters can be copied from one cue into another or into another sequence. Use the following syntax in the Command line:

- Select the fixture or the channel in the current cue, if necessary activate the parameter (double-click headline - the column has a red background). (STORE OPTION should be set with Active values)
- `STORE_seq_X_cue_Y` and confirm with MERGE or OVERWRITE

4.4. Editing Chasers

A Chaser is a sequence which runs automatically. During the editing process, you will be able to modify, add or delete all the values of the individual Cues. Speed, X-FADE and SNAP-DELAY times can also be adapted globally.
- **I DELAY**: Has no effect on Chaser
  If the **LOOPS** key on the title bar is pressed:
- **LOOP**: Will initiate a jump after the cue that includes the loop statement has finished.
- **LOOPDELAY**: The length of time or the number of occurrences of a LOOP will be displayed.
- **LINK**: The Command Line Command to be triggered will be displayed.
- **LI. DEL**: The delay value for the execution of the command will be displayed.

If the **EFFECTS** key on the title bar is pressed:
- **EFFECTS**: Display of the Effect calls.
A second sheet will appear in the lower part of the display:
- **No.**: Number of the Effect Group
- **NAME**: Name of the Effect Group
- **ACTION**: Type of Effect call
- **INTENS**: Display of the defined size of the Effect Group
  - F (Fade): If Y (YES) is displayed, the size will be faded in with the set fade time.
- **SPEED**: Display of the defined speed of the Effect Group
  - F (Fade): If Y (YES) is displayed, the speed will be faded in with the set fade time.
- **SOFT**: Display of the set softness (softer fade in) of the effects
  - F (Fade): If Y (YES) is displayed, the softness will be faded in with the set fade time.

**The chart shows all Cues in the Chaser (Sequence):**
With the help of these keys you can define the various functions for the Chaser.
- **RUN**: Chaser runs with the set speed. Fade and Delay times will be adjusted in terms of percentage.
- **SOUND**: Triggering of the steps (cues) via a sound signal. Fade and Delay times will be executed with the set time.
- **BPM**: Playback of the steps (cues) via automatic recognition of Beats Per Minute. Fade and Delay times will be adjusted in terms of percentage.
- **FORWARD**: Chaser runs forward.
- **REVERS**: Chaser runs backwards.
- **BOUNCE**: Chaser runs forward, then backwards and so on.
- **RANDOMLY**: Chaser plays back individual steps (cues) on random basis.
- **AUTO LOOP / SINGLE ON / SINGLE OFF** (Toggle by pressing the key):
  - On **AUTO LOOP**, after the last step, the Chaser will jump back to the first and continue. With **SINGLE ON**, the Chaser makes one run and stops at the last Cue. With **SINGLE OFF**, the Chaser makes one run and switches off after the last Cue.
- **SPEED INDV.**: On RUN, an individually set speed will be used.
- **SPEED 1 – 4**: On RUN, the respective SPEED-Group will be used. These set speeds can be used for all Chasers.

**Assigning Special Masters**
Using the keys, you can either divide or double the set speed.
- **HALF SPEED**: Pressing 1x, the set speed will be divided in half – this can be done up to 8 times (The modification will be displayed above the left Encoder).
- **1:1**: Resets the speed to the set value.
- **DOUBLE SPEED**: By pressing this once the set speed will be doubled – this can be done up to 8 times (Modification will be displayed above the left Encoder.
  - This key will bring you to the ASSIGN menu. See ASSIGN menu.
  - The Edit- CUE button allows you the modify values of individual Cues (LED in Edit key will flash). See Changing
values of individual Chaser steps
Above the encoders on the right screen, playback soft keys and the name of the chase are displayed. The
functions of these soft keys are:
- **EDIT**: Open edit menu for the chase
- **LEFT ARROW**: GO- (Run backwards)
- **SQUARE**: OFF (Stop)
- **DOUBLE LINE**: PAUSE (Has toggle function)
- **RIGHT ARROW**: GO (Run forward)
- **PAGE X**: Toggle between encoder functions. The important functions are on page 1.

As usual, a pushed and then turned encoder works with a different resolution, depending on the settings
in the setup menu.
An encoder click (push and release without turning) brings up a huge fader on screen.

**Encoder functions of page 1:**
- **SPEED SCALE**: Divides or multiplies the speed with a factor.
- **SPEED**: The speed of the chase. The accessible range depends on the speed scale. If the chase belongs to a speed
group, changing the chases speed will affect the speed group (also the other way around).
- **FADE**: Step by step INFADE time. Defines the smoothness of the running chase.
- **MASTER FADE**: Controls master in & outfade. It is used when starting or switching off the running chase. With
  the encoder the „Master Fade“ can be set to “DEFAULT”. In this position the predefined M-Fade from the menu
  setup/defaults/playback timing will be used.

**Encoder functions of page 2:**
- **SPEED GROUP**: Link chase to a speed group or let it have individual speed.
- **OUTFADE**: Defines step by step OUTFADE time. With the encoder the OUTFADE can be set to always equal
  INFADE.
- **SNAPDELAY**: Defines the trigger point for snapping channels in the chase.

### 4.4.1. Modifying values of separate Chaser steps
- Select the Cue to be modified in the Names column (red cell).
- Press the Edit 7 key (LED in Edit key will blink).
- **All values of the Cue will now be played back on stage and displayed (active, red) in the Channel & Fixture sheets.**
  - This cue can now be modified by either direct access or by presets. See Direct Access to Fixtures (in the FIXT-
    URE SHEET) / Direct Access to Dimmer Channels (in the CHANNEL SHEET) and Creating and calling up Presets.
  - If the Cue is not to be seen on stage, activate the Blind function by pressing the BLIND key (integrated LED is on).
  - Press the UPDATE key once. Choose OK in the window that has just opened. The changed Cue is now stored.
  - Press the CLEAR key twice (Cue values will be deleted in the FIXTURE or CHANNEL window).
  - Copying Cues
  - Moving Cues
  - Deleting and renumbering Cues
  - Inserting LOOPS
4.5 Updatings Cues

When executing sequences, Cues can be modified and stored directly.

Playback the Cue to be modified. Modify the Cue by either direct access or via presets (UPDATE key LED is on).

See Direct Access to Fixtures (in the FIXTURE SHEET) / Direct Access to Dimmer Channels and Creating and calling up Presets

- Press the Update key once. The UPDATE window will open

- By pressing this key, you can toggle between “only original contents” and “add new contents”

  - Only original contents: Upon updating the cue, only the changes on fixtures/channels which have already been used in this cue will be stored.

  - Add new contents: Upon updating the cue, all changes will be stored regardless at to whether those fixtures/channels have already been used in this cue.

- By pressing this key, you can toggle between “only last called Executor” and “all possible Executors”.

  - Only last called Executor: The “Cue Destinations” chart only shows the last played back cue.

  - All possible Executors: The “Cue Destinations” chart shows all currently playing back cues on all executors.

- “Tracking” or “Cue Only” Update. A “tracking” update may affect “cues in the future” while a “cue only” update does not affect them.

- Pressing the “Update Cue” key will update that cue being displayed with a red background. You can select another cue using the encoder.

- Pressing the “Update All Cues” key will update all cues listed in the chart.

- Pressing the Save as default button will save the (pre) sets as default settings (e.g.: Only original contents or Add new contents). The next time you open the Update menu, these settings will be available.
4.6 INFO - window
An information window can be added to every executor. Type here information for sequences, chasers or effects. Additional you can type information for every cue in a sequence, a chaser or an effect.

Create Info Window:
- with CREATE A WINDOW and INFO an empty Info Window opens
- press Select - „Select Something“ appears
- press button or little Executor window of the relevant sequence, chaser or effect.
- type Info text
- close Info Window

Create Info for cue:
- press EDIT
- choose a sequence, chaser or effect (not Bitmap Effekt)
- press Button INFO
- type Infotext

4.7 REPORT window
The REPORT function allows you to create a printed overview of sequences. An Excel file will contain all fixtures involved with their respective values sorted in & by Cues. You can also create reports for GROUP, WORLD and PRESET. In these cases, the matching fixtures and saved values will also be displayed in tables.

Open the report from the Command Line:
- enter report_seq_ (number or area of the sequence);
- enter report_seq_ (number of sequence)_(number or area of Cues);
- enter report_group_ (number or area of Groups);
- enter report_world_ (number or area of Worlds);
- enter report_preset_ (number or area of Preset);

Only „Report“ will create reports of all Cues, sequences, Groups, Worlds - CAUTION: will produce large files.
The right display will show the view form of the report. If there are more columns available than can be shown on the display, proceed by using the arrow- buttons. If there are more lines available, scroll on using the Encoder next to the display.

With each „REPORT“ command, the previously active contents of the REPORT index will be deleted to be replaced by the chosen files.
Setting up a FTP (File Transport Protocol) access:
Via this access, you can transfer data from the console to a PC. This way, you can take over the report on your PC and open it as an Excel table. The easiest way to save and print out reports is also via the PC. In order to do so, PC and console have to be connected to the same network, i.e. the first 3 number groups of the IP number have to be identical (e.g. 192.168.177.xxx), and the last number group has to be unique for each device logged on this network.

Saving and printing reports:
- Create the desired report (see above).
- Connect PC and console via FTP.
- Cut out the file xx.CSV in the REPORT folder of the console and paste it into a folder of on the PC. In the graphics on the left, the folder overview of the console having the IP 192.168.177.1.
- Start the application MICROSOFT EXCEL and open the report file.
- Printing, saving, sending the report, etc. is as usual with Excel files.
- Create the desired report (see above).
- Store the REPORT-file on a floppy with SAVE (all created reports will be stored).

Examples:
Create the report of Cue No. 2, 3, 4 and 5 of sequence 24;
- Enter the following on the CommandLine: report_sequ_24_cue_2_thru_5; confirm with ENTER
  - the report will appear on the right display; the Cue values are arranged in columns, the parameters of individual fixtures in rows.

To create the reports for sequences 1, 2, and 3,
- enter the following on the CommandLine: report_sequ_1_thru_3; confirm with ENTER
  - the report for sequence 1 will appear on the right display; the Cue values are arranged in columns, the parameters of individual fixtures in rows. With the arrow- buttons, you can switch to the next or previous report. In the report folder, you find the 3 files containing the reports.

To create the Report PRESET 1, PAN / TILT,
- enter the following on the CommandLine: report_preset_1.1; confirm with ENTER
  - the report for Preset 1, PAN/TILT will appear on the right display; the columns will display the names of the involved fixtures and the respective percentage value of PAN and TILT. Use the Encoder to scroll down, if not all rows are visible.

To create the report WORLD 3, containing the names of all fixtures in World 3,
- enter the following on the CommandLine: report_world_3; confirm with ENTER
  - the report for sequence 1 will appear on the right display; the Cue values are arranged in columns, the parameters of individual fixtures in rows. Use the Encoder to scroll down, if not all rows are visible on the display.
5 Executing Cues, Sequences and Chasers

5.1 ASSIGN menu (Assignment to EXECUTOR)

Cues, Sequences or Effect Groups can be assigned to any EXECUTOR fader or button.

One way to enter the ASSIGN menu is by a mouse click or using the touch screen on the title bar of the EXECUTOR FADER window.

Or:

Press the ASSIGN key once (LED is on).
Select a Sequence in the Sequence Pool, or an Effect Group in the Effect Pool.
Press the EXECUTOR FADER or EXECUTOR button, to which you want to assign a Sequence or Chaser.

Or:

Press the ASSIGN key once (LED is on).
Press the EXECUTOR FADER or EXECUTOR button, for which a Sequence or Chaser is to be created. The ASSIGN menu will appear in the middle TFT display.
Another way to enter the ASSIGN menu is via the EDIT menu.
The title bar will display the selected EXECUTOR FADER or BUTTON.

5.1.1 Assigning Sequences or Effect Groups

The “Function” key must be activated (dark background).

By pressing the CHASER, SEQUENCE or EFFECT key, all created Sequences will be listed in the Sheet. Select the Sequence or Effect Group to be assigned. Assigned Sequences or Effect Groups are displayed in red.
The CUES column shows the number of Cues in the individual Sequences.
By pressing the key “Edit”, you can customize the assigned Sequence or Effect Group in the EDIT menu.
See Editing Cues, Sequences or Chasers and Editing Effect Groups.

5.1.2 Changing Sequence Names

- By pushing the key “Name” the a sequence can be renamed using the keyboard.

Or:

- Push ASSIGN key 2x (LED is on).
- Push the executor button, where the name of the sequence should be changed.
- A window appears, where you can now enter the new name.
5.1.3 Changing Button and Fader Functions

- **press ASSIGN**
- **press small executor window or executor button**
- **press FUNCTION**
- **press SETTINGS**
- When touch on the FADER symbol key, a selection will appear where you can assign the respective function to the Fader by another touch.
  - **Master**: The Fader controls all programmed dimmer values of this Sequence.
  - **Swap**: With the Fader, HTP channels in the sequence can be faded in. All HTP dimmers, stored in this cue with value „0“ are set to “0” (in spite of HTP-modus and used by other sequences with values higher than „0“).

It is only possible to use the SWAP or Master fader.

- **FADE**: With the Fader, the fade-in time between cues can be set manually, when using Chasers.
- **Speed**: Chaser speed can be set with the Fader.
- **Xfade**: With the Fader, you can manually crossfade all parameters in to the next cue of the sequence.
- **XF A**: If Split Crossfade is active, you can fade out the Cue that is currently playing back when pushing the fader upwards or downwards.
- **XF B**: If Split Crossfade is active, you can use the Fader to fade in the next Cue when pushing the fader upwards or downwards.

If Split Crossfade is **not active**, you can fade out to the darkening Dimmer channels of the next Cue when pushing the fader upwards or downwards.

- **Empty**: Fader has no function.
- **Rate**: Using the Fader, you can change all fade and delay times for sequences. If the fader is at 50%, all times will be executed in the normal way. Using the RATE 1 button, you can automatically set the Fader back to the 50% position.
- **M Fade**: This fader controls master in & out fade in a range from 0 to 10 seconds. It is used when starting or switching off the running chase. With the encoder the „master fade“ can be set to “DEFAULT”. In this position the predefined M Fade from the menu setup/defaults/playback timing will be used.
- **Temp**: Use the Fader to temporarily fade in the first Cue(step), then, the previous status will be restored, similar to the „Temp“ key.

By a touch on the respective KEY symbol, a selection will appear in which any button can be allocated with different functions.

- **Go**: The cue will be played back with all programmed FADE and DELAY times.
- **Go–**: For sequences, the previous cue is played back and all changes are executed (full tracking) using all programmed FADE and DELAY times. For Chasers, the running direction will be reversed.
- **Pause**: A running cue or a Chaser will be temporarily stopped. To continue use GO+ or GO–.
- **On**: Reasserts the priority of the Executor making it the latest action thus overriding other executors which were
Micro - Assignment Menu; only one button and the fader (1-5, depends on size of executor) can assigned here.

Assignment Menu of a fader button: only the button (1-5, depends on size of executor) can assigned here.

- **Off**: Switches the Executor off so that it no longer outputting cue data to stage.
- **Rate 1**: Puts the RATE FADER to 50% position (RATE Fader).
- **Learn**: Direct entering of the Chaser speed. When pressing this button at least three times, the Chaser speed is set.
- **<<<**: Playback of the previous cue without FADE or SNAP times.
- **>>>**: Playback of the next cue without FADE or SNAP times.
- **Temp**: A Cue or chaser plays back as long as the button is pressed. Upon releasing the button, previous condition will be restored.
- **Top**: Resets the Sequence to the first cue.
- **Empty**: Button has no function.
- **Flash**: Sets the Dimmer channels in the current cue to 100% of their programmed value. Starts the sequence, if not already activated.
- **Out**: Sets the Dimmer channels in the current cue to 0% of their programmed value. Starts the sequence, if not already activated.
- **Toggle**: To switch on and off the Sequence or Chaser.
- **Fix**: Will fix sequence or chaser on this executor, even when switching PAGES here (this will be displayed by an orange background in the small EXECUTOR window).
- **Load**: Pressing the button on the right TFT display will open a chart for this sequence where you can select and directly load the next cue to be played back in the sequence (LOAD CUE). Start the cue using the GO button.
- **Select**: Makes this executor the Selected Sequence.
- **Swap**: As long as the button is pushed all other dimmer channels are faded out, except with executors, where „Swap Protected“ has been activated.
- **Kill**: Has the same function as GO, but will switch off all running Executors.

With the Size of Executor buttons 1 – 5, you can define how many faders and buttons are available for controlling your sequence on EXECUTOR FADERS, and whether one to five buttons could be used for EXECUTOR BUTTONS.

The respective titles will be displayed on the TFT display above the EXECUTOR FADERS. When the LIST function is active, the function of the EXECUTOR buttons will be displayed above these buttons (press LIST key).

**Default Button and Fader Assignment**

- Pressing the “Save as default” key will store the current settings as default settings in the Default Button/Fader menu. For each option (1-5 Faders or 1-5 Buttons, Sequences or Chasers), there is a default that can be stored.
- Pressing the “Load from default” key will load the stored default settings and use them for this Executor.
- Pressing the “Apply to all Exec” will overwrite all Fader or Button Executors. The prerequisite is, however, an identical number of Fader and Button assignments.
PLAYBACK Fader and Buttons
To expand its operational options and for a better access to Faders and Buttons. Special Shows programmed e.g. on a grandma can now be controlled from the smaller consoles having only 10 Executor Faders and 20 Executor Buttons.

For internal or external monitors – especially consoles with one or no monitor like e.g. the Replay Unit can now be used more effectively.

You can now operate Faders and Buttons using your finger (on a TouchScreen) or the Mouse. The virtual Faders and Buttons can be set and expanded like the mechanical ones in the Assign menu.

Options:

- Press the yellow Button in the upper left corner to open the Options.

To change a TYPE or PAGE, select the cell by a finger touch or using the Encoder, and press the Encoder to open the Options menu. Depending on the monitor, 2 or 6 units (each with 6 Faders or 20 Buttons) can be displayed.

**TYPE:**
- Faders 1-5: Will display the Executor Faders 1 to 5
- Faders 6-10: Will display the Executor Faders 6 to 10
- Faders 11-15: Will display the Executor Faders 11 to 15
- Faders 16-20: Will display the Executor Faders 16 to 20

On a grandMA Light and Ultra Light, switch on the WIDE EXECUTOR mode in the SETUP

- Buttons left: On a grandMA Light and Ultra Light, the Executor Buttons will be displayed
- Buttons right: identical to Buttons left, except:

On a grandMA: the left Buttons block will be displayed

**PAGE**

- Auto: Will display the Faders or Buttons of the current page, i.e. will update what is being displayed when „scrolling“ with PAGE + or Page -

**Page No.1 - 128:** The Faders or Buttons of the set page will be displayed and will not change when „scrolling“ with PAGE + or PAGE -.

The Display units can have individual settings, so that one may be fixed and another may show the Faders or Buttons of a selected page.
5.1.4 Playback Options

- The “Settings” key must be pressed (dark background).

If you press the “Auto start” key (background dark gray), the Sequence or Chaser will be automatically started when pushing the Master Fader upwards (item 6).

If the “Auto stop” key is pressed (dark gray background), the sequence or Chaser will automatically be switched off when pushing the master fader downwards to the lower stop.

If „Auto start“ is active (dark background) and „Auto Stop“ is not active, the fader gets the function „Auto On“, this means that when the fader is moved up wards from 0-position, simultaneously the function „On“ is activated and the sequence is reactivated.

If the “Auto Fix” key is pressed (dark background) and the Sequence or Chaser is started, this Executor will be locked to that position when switching the Executor pages and will only be released when it is switched off. If an Executor is stored at that position on another page, this Executor will appear and can be used again only after switching the locked Executor off.

If the “Swop Protected” key is pressed, the Dimmers of this Sequence will not be switched off, when another Sequence is called up using Swop.

If the TRACKING key is pressed (dark background), the Sequence will be executed in Tracking mode. If the key is not pressed, the Sequence will be executed in Non Tracking mode.

The TRACKING mode is normally used for theatre applications.

Values that were played back in a Cue, remain unchanged for each subsequent Cue, until they are modified or overwritten by a later Cue (LTP principle). Therefore, you do not have to program values which do not change into later cues.

Example: At the beginning of a Sequence, Dimmer channels are set to 80%. Let’s assume that the setting is to be used for several cues. As long as the channels are not modified, they will remain at 80%. When working with this Sequence, you may recognize, however, that the channel setting should only be at 70%. Now, you only have to change this channel setting once; all subsequent Cues will automatically be “modified” to 70%.

Example: Cue 10 is made up of the changes programed in cue 10 as well all the changes in cues 1 thru 9 with the later values taking precedence over the earlier values - Latest Takes Precedence (LTP).

In NON TRACKING mode values will return to their defaults unless they are specifically given a value in that cue.

Example: Cue 10 is made up of only the information in Cue 10. Modifications to earlier cues will have no effect on later cues. Essentially cues no longer have a relationship between each other. See TRACKING window.

Key A/B or Split Xfade: If the “Split Xfade” key is pressed (displayed in dark), this function is active (item 5.1.3 Changing Faders, Fader XF A and XF B).

Key Normal trigger: If the „Normal Trigger“ key is pressed, this Sequence/Chaser will be execute with the programmed triggers calls. Pressing this key, it will switch to „Trigger is GO“, where after the Sequence/Chaser can only be controlled by the GO button and will ignore Follow, Sound and trigger times.

LTP Dimmers key pressed: When playing back this sequence, dimmer channels programmed into this sequence will override all other (LTP Dimmer) instances of these channels being played back, regardless of level. They will overwrite all other dimmer channels of those Cues that were also called up in LTP mode. HTP Executors remain...
**Kill Protect:** If Kill Protect is activated (the button has a dark background), the sequence is not switched off by the Kill command of another sequence.

**Move in Black Options**

**MIB Always** key pressed: Cues in which fixture intensity changes from zero and also change other parameters, for example, a different position, color or gobo, etc., will have these values “preset” so that live changes will not be seen on stage. You can also set a FADE or DELAY time for these channels (See Settings in the Defaults Menu / Playback Timing).

**MIB Never** key pressed: Cues which have separately activated cues MIB functions are completely switched off (Edit Sequences).

**Auto PrePos** key pressed: The automatic prepositioning system will perform a move in black upon executor start. Therefore all non-dimmer channels come up with zerofadetime and delay if the corresponding fixture was dark when the executor was started. Switching off an executor with the Auto PrePos function enabled, tries not to destroy the “stage look”, only dimmer channels are fading out.

When deactivating this sequence, the channels will be altered only after the respective dimmer has been set to 0.

**LOOPS**

NORMAL: use the GO command to execute the next Cue within the LOOP

breaking GO: use the GO command to cancel the LOOP and to execute the next Cue of the sequence

**RESTART OPTIONS**

If the “Restart with first cue” key is pressed, the Sequence will restart always with the first cue.

If the “Restart with actual cue” key is pressed, the Sequence will restart exactly where it was switched off the last time.

If the “Restart with next cue” key is pressed, the Sequence will restart one cue after where it was switched off.

If the “Release from last to first cue” key is pressed, tracked values are released when the executor jumps back to the first cue.

**PRIORITY OPTIONS**

There are 3 priorities: Low (lowest), Normal (middle) and High(highest). Executors having a higher priority, cannot be overwritten by Executors of a lower priority. In general, this applies only for LTP functions.

PRIVATE EFFECTS: Effects saved in this sequence will only use channels that are not used by other sequences. So, in some cases the effect may not be executed completely as no overlaps are allowed. (upper graphics)

GLOBAL EFFECTS: Effects saved in this sequence will use all channels, even if they overlap with other sequences. (lower graphics)

For LTP Executors, you can choose Off On Overwritten additionally. When all functions of this Executor have been overwritten by other Executors, this one will switch off.

**Defaults Options**

Pressing the SAVE AS DEFAULT key will save the current settings as default settings.

Pressing the LOAD FROM DEFAULT key will load the saved default settings and use them for this Executor.
5.1.5 Assigning Group Masters

Group masters are Faders only assigned to one group previously defined. Group masters do not have an influence on the effects produced by the GrandMaster.

- select group in GROUP Pool.
- press empty EXECUTOR FADER-button
or: open ASSIGN-Menu of the related Executor
- press FUNCTION
- press GROUP MASTER
- select group

Changing Group Names

- By pushing the key “Name” the name of the group assigned to the executor can be changed by using the keyboard.

or:

- Push the ASSIGN key 2x (LED is on).
- Push the executor button, where the name of the group should be changed.
- A window appears, where you can now enter the new name.

or:

- in Group Pool. See Creating and calling up Fixtures and Dimmer GROUPS

Submaster Options:

- The “Settings” key must be pressed (dark background).

If the POSITIVE ENABLE key is pressed, this Group Master is the Master Fader for all dimmer channels of this group.

If a Group Master is set as INHIBIT Master (NEGATIVE INHIBIT key is pressed) for a group that includes Fixtures or dimmer channels from other groups, this INHIBIT Master must also be pushed up, to be able to use the overlapping channels. The INHIBIT Master has priority over other group masters and can also be used as Master Fader for all other Group Masters.

Group Overview:

- Pressing the GROUP key twice will open an overview in the right display showing all assigned Group Masters. In this overview, every Group Master is displayed with a separate small window.
- The top key contains the group name. Clicking on this key will open the Page on which it is stored. The display above the Fader shows „HERE“.
- With the FULL key, you can set the Master to 100%. With the OUT key, you can set the Master to „0“. The yellow status indicator next to the keys will give you the currently set value for the respective Fader.
- Pressing the ALL FULL key in the title bar will set all group masters to 100%.
- Pressing the CLOSE key will close this window.

Enter New Label

OK
5.1.6 Assigning Special Masters

- Press the ASSIGN key once (LED is on).
- Press an EXECUTOR FADER button, to which a Special Master is to be assigned to.
- Press FUNCTION
- If the SPECIAL MASTER key is pressed, all CHASER SPEED Masters will be displayed.
- Select which SPEED is to be assigned.

The following window will appear above the assigned Executor fader:

- The name of the Speed Group.
- The speed.

With the top button, you can enter a speed directly. By pressing the button at least twice, you can set the speed.
With the button below the fader, you can double the speed.
With the bottom button, you can halve the speed.

The speed of the Speed Group can be adjusted by using the Fader.

If SOUND : BPM is selected, you can adjust the given BPM value in the Sound menu using the fader (See Sound Signal Settings). The Sound Menu will open by touching the lower part of this window (not the headline).

or:
If SOUND : HOLD is selected, you can adjust the given HOLD value in the Sound menu using the fader (See Sound Signal Settings). The Sound Menu will open by touching the lower part of this window (not the headline).

The name of the fader function.

- GRANDMASTER: this will assign the Grandmaster function to this Fader.
- MASTER EXEC FADE: this will assign the Executor Fader function to this Fader.
- MASTER PRESET FADE: this will assign the Preset Fader function to this Fader.

Executor Fader having these 3 functions, will always run synchronized to the console faders. The BLACKOUT, SET TIME, and MANUAL FADE buttons will also affect all Faders having these functions.

5.1.7 Assigning effects

- press ASSIGN
- press on the small Executor window
- press FUNCTION
- press EFFECT
- use the Encoder to select the effect and confirm by pressing on the Encoder
5.1.8 Assigning BITMAP EFFECTS
- press ASSIGN
- press on the small Executor window
- press FUNCTION
- press BITMAP EFFECTS
- use the Encoder to select the effect and confirm by pressing on the Encoder
- if needed, set the button and fader functions

Moving, copying or deleting Executors
- Press the MOVE key once to move Executors (LED is on).
  Or:
  - Press the COPY key once to copy Executors (LED is on).
  - Press the DELETE key once to delete Executors (LED is on).
- To move or copy an Executor button or a window above the Executor, press or click on it once.
- Pressing another Executor button or window above the Executor will set the new position.
- Press an Executor button or on a window above the Executor once.

If there are programmed Macros or Timecode Shows, in which the moved or deleted Executors were to be used, these assignments may no longer work!

5.1.9 PLAYBACK Master
As the Groupmaster affects the assigned Groups, the Playback Master will have an effect on all assigned and active Playbacks. The displayed % value refers to the output Playback values.
This does not affect the AUTOSTART / AUTOSTOP functions of the Sequences.

Creating and saving a Playback Master:
- Click on an empty Executor Fader cell
- Press the Function button, and in this menu the Special Master button
- Click on a Playback Master (1-8)

Assigning a Sequence to a Playback Master:
- Open the Assign menu of the Sequence
- Press the MASTER button (default is NONE)
- Click on a Playback Master (Pb 1 - Pb 8)

Toggle: When engaged, it will switch over from Full to Out and vice versa
Full: Will switch the Master to 100%
Out: Will switch the Master to 0%
Using the Fader, you can apply a infinitely variable fading between 0 and 100%.
The Button and Fader functions cannot be modified
5.2 Small EXECUTOR Window

`grandMA`: These windows are located above every EXECUTOR FADER or, after pressing the LIST key twice, in the right TFT display for the EXECUTOR buttons.

`grandMA light, ultra-light and Micro`: After pressing the LIST FADERS key, these windows will be displayed above each of the EXECUTOR FADERS. After pressing the LIST KEYS key twice, they will be displayed on the TFT display for the EXECUTOR buttons. The name of the assigned sequence is displayed in the headline. The shown figure displays the number of the sequence.

Touching the `Sheet` (not the header) on the touch screen or using the left mouse key will open the EDIT menu. See Editing Sequences or Editing Chasers.

Touching the `title bar` on the touchscreen or using the left mouse key will open the ASSIGN menu. See ASSIGN menu.

The current section from the Cue Sheet will also be displayed:

**Sequence:**
- The Outfade time of the last Cue will be displayed by a blue bar in the upper cell.
- The Infade time of the cue will be displayed in the second cell.
- The next Cue will be displayed in the next cell below.

**Chaser:**
- The speed will be displayed in the upper cell.
- The Fade time in percentage will be displayed in the second cell and also as a green bar.
- Whilst the Chaser is not activated, you will find the type of activation in the bottom line. During execution, the number of Cues that have completed will be displayed on the left while on the right side you will see the total number of all Cues, which is also being displayed graphically by a bar.
- The individual Fader and Button functions are displayed here:
  - On the left side, the function of the fader is displayed. The yellow status indicator will give you the current fader level.
  - The function for the button above the fader is displayed at the top.
  - The function of the button below the Fader is displayed in the middle cell.
  - The function of the lower button below the Fader is displayed in the lower cell.

5.3 EXECUTOR Sheet

In the EXECUTOR sheet, you can see the sequence assigned to a FADER or BUTTON while allowing you to perform modifications to cues and cue data. See Creating a window.

Touch the left corner of the title bar you can open the EXECUTOR SHEET OPTIONS window.

In this options window, you can select which Sequence is assigned to the executor by clicking on it. With the FONT SIZE key, you can toggle the font size used in the EXECUTOR sheet between Huge, Big and Small. With the DELETE WINDOW key, you can delete the Executor sheet or close the Options window using the CLOSE key.

In the EXECUTOR sheet, you can watch the progress of the sequence; the currently playing back Cue will be displayed by a yellow background.
You can modify the MASTER fader using the left Encoder or by pressing the button above it. Using the „RATE FACTOR“ Encoder, you can temporarily adjust all FADE and DELAY times. If the Sequence is switched off, the RATE FACTOR will automatically be reset to 1.

You can set the time to be used when switching off (OFF key) using the right Encoder or by pressing the button above it. If Default is displayed, the default time will be used. See Default Menu.

Using the “Arrow right” or “Arrow left” buttons, you can call up the next or previous Cue. With the double arrow, you can call up the previous or next Cue without any FADE or Delay times. With the STOP button, you can switch off this sequence.

By pressing the Edit Window button, you open the assigned sequence in the Edit menu. See Editing Sequences.

If the LOOPS key is pressed, the programmed jumps and commands will be displayed in the Sheet. If the EFFECTS key is pressed, the calls of the Effect Groups are displayed. See Editing Sequences.

If the LINK DEFAULT key of the title bar is pressed, the selected sequence will automatically be transferred to the EXECUTOR window when changing the selected sequence. (Assigning the selected sequence. See Layout and Controls (items 9 and 10))

If you press the AUTO SCROLL key, the Sheet will be automatically moved upwards/downwards when working with larger Sequences.

Without prior changing the buttons shows: INFO, EFFECTS, LOOPS&LINKS, TIMES, ALL and AUTO SCROLL at the upper bar. All buttons, except AUTO SCROLL, can be renamed and the view can be edited.

- AUTO SCROLL: If AUTO SCROLL key is pressed, the chart will automatically move to top/bottom when handling larger sequences.

**Editing the displays:**

(AUTO SCROLL can not be edited)

- Select a sequence in the Executor-Sheet or press the small executor window above the fader.
- Click the button with the right mouse button
- or
- press EDIT and press the requested button

The menu Cuelist Display Options opens.

All attributes in the EXCLUDED column will be not shown in the Executor sheet.

- A Click on the attribute moves it to the other column (Excluded to Included and vice versa).
- With Info Dialog and Effect Dialog the cue Info and effects overview will be shown in this display.

- Click on Label for typing an individual name.
- Save as Default stores the view for all executors.
- Confirm using the X- button; options are stored
5.4 TRACKING Sheet

In the Tracking sheet, all values and times/durations of a Sequence can be displayed and modified.
Create a Tracking Sheet. See Creating windows.

- Touch the left corner of the title bar, you can open the TRACKING SHEET OPTIONS window.

Display Layer:

Choose the values, which will be displayed in the Tracking sheet. (identical with Display Layer in Fixture and Channel Sheet)

Sorting & Reading:

Choose the type of value (identical with Display Layer in Fixture and Channel Sheet)
- With the FONT SIZE key, you can switch the font size used in this window between LARGE and SMALL.
- By pressing the % key (DEC or HEX) you can switch the display of values between percent, decimal or hexadecimal values.
- The button LAYER CONTROL ON opens the control bar at the bottom of the tracking sheet. Pressing the requested button switches the display to these values.

Attribute Mask:

All attributes in the EXCLUDED column will be NOT shown in the TRACKING SHEET when the button MASK is activated.

- A Click on the attribute moves it to the other column (Excluded to Included and vice versa).

For example: Click on PAN (in EXCLUDED) moves the attribute in the INCLUDED column; the attribute will be shown in CONTENT SHEET when MASK is activated.

Select Sequence:

Select the sequence by clicking on the requested sequence name

In this window, you can watch the progress of the sequence; the currently playing back Cue will be displayed by a yellow background.

Colour codes used in the tracksheet:
- Text CYAN: New values or values that have changed in this cue.
- Text MAGENTA: Tracked values; these will not change in the next Cue and are not stored.
- Text GREEN: Downfading dimmer values.
- Text RED: "Blocked" values.
- Button TIME = FADE / DELAY times will be displayed.

If the FIX key is pressed (dark background), all selected Fixture parameters will be displayed first in the Sheet.
If the key is not pressed (indicated by a CHA), the Sheet will display all functions regardless of their...
When selecting presets, the Fixtures/Dimmers will be sorted accordingly in the Tracking Sheet.
If the MASK key is pressed, the INCLUDED/EXCLUDED functions will be activated in the OPTIONS menu.
If the SORT key is pressed (dark appearance), the Fixtures/Dimmers will be sorted by selection and parameter.
When selecting groups or presets, the Fixtures/Dimmers will be sorted accordingly in the Tracking Sheet.
If the LINK DEFAULT key of the title bar is pressed, the default sequence will automatically be transferred to the EXECUTOR window when changing the default sequence. (Assigning the Default sequence. See Layout and Controls (items 9 and 10)
If the AUTO SCROLL key is pressed, the Sheet will be automatically moved upwards/downwards when working with larger Sequences.
Using the left mouse key, you can select values or times/durations (also by using the “lasso function”). Values and times/durations can be modified using the middle mouse key. If you click and drag with the left mouse key and then click with the middle button on the selected values, a window will open where you can enter values directly.
To modify presets, must make a middle mouse click on the preset. A window will open where you can enter values or load other presets directly.
This is one of the few menus where using the mouse is the only method that makes sense.

The following window will open if you make a right mouse click on a selected value.
Use this window in the following manner:
1. Select one or more cells in the Tracking Sheet
2. Choose the DELETE, CUE ONLY, UNBLOCK or BLOCK command
3. Execute the command by choosing the source (Selection,

All Channels of Selected Cues, Complete or Selected Channels for All Cues).
- **DELETE:** Will remove all values.
- **CUE ONLY:** Will copy the values of the previous step into the following step (that step must be empty).
- **BLOCK:** With BLOCK, tracking values (magenta) can be converted into “stored values”. Theses values will be displayed in red.
- **UNBLOCK:** Converts blocked / stored values to tracking values (magenta).
- **REMOVE MODULATORS:** Deletes the modulators in the selected sequences
5.5 Page Administration

If you are in Channel Mode, the name of the currently accessible PAGE of channel faders appears on the touchscreens between the small channel windows above your faders. See CHANNEL Mode.

If you are in Executor Mode, the name of the currently accessible PAGE of executor faders appears on the touchscreens between the small executor windows above your faders.

After pressing the LIST key once, the currently accessible PAGE of EXECUTOR BUTTONS appears at the bottom of the right display including the name between the small executor windows.

Using the PAGE + & - keys you can open the access PAGES. Remember all pages output at once so changing page so no effect on playback, only on what you currently have access to.

Or:
Hold a PAGE button down, for which another is to be called up. While holding down a button, the EXECUTOR Button LEDs will indicate the current PAGE you are on (Example: If LED 28 is flashing, PAGE 8 is selected). By pressing another button you can switch to a different PAGE.

5.5.1 Channel Page

When pressing both PAGE keys of the Channel Mode simultaneously the display will show a summary of the CHANNEL PAGES.

Or:
If in Channel Mode, you can call up the summary for all Channel Pages by pressing the PAGE Keys in the display. By clicking on the respective PAGE Keys you can call up the PAGE.

5.5.2 Executor Fader Page

When pressing both PAGE keys for the Executor Faders simultaneously the display will show a summary of the Executor Fader Pages.

Or:
If in EXECUTOR FADER Mode, you can call up the summary for all EXECUTOR FADER Pages by pressing the PAGE Keys in the display. By clicking on a PAGE Key you can call up the respective PAGE.

The individual Faders are indicated by symbols in the respective PAGE Keys. The yellow bar graph will give you the currently set value for the respective Fader. If there is a green square above the Fader symbol, a Sequence, a Group or a Special Master is allocated to this Executor Fader. If this square is yellow, the Sequence or Chaser is active.

5.5.3 Executor Button Page

When pressing both PAGE keys for the Executor Buttons simultaneously the display will show a summary of the EXECUTOR BUTTON Pages.

Or:
After pressing the LIST key once, the TFT display will show a listing of the Sequences assigned to the Buttons, and in the middle a PAGE Key with the currently called-up EXECUTOR Page.

You can call up the summary for all EXECUTOR BUTTON Pages by pressing the PAGE keys in the display. By clicking on a PAGE key you can call up the respective PAGE.

The keys are indicated by symbols in the respective PAGE keys. If there is a green square, a Sequence, a Group or a Special Master is allocated to this Executor Button. If this square is yellow, the Sequence or Chaser is active.
5.5.4 Edit PAGE Name
- Press the EDIT key once.
- Select the PAGE key on the display.
- The EDIT NAME window will open. Enter a name using the keyboard and confirm with ENTER.

5.5.5 Copying, moving and deleting Pages

Copy or move a Page containing the Executor faders or buttons
- Press the COPY key once to copy Pages (LED is on).
- Or:
  - Press the MOVE key once to move Pages (LED is on).
  - Press the PAGE key once (LED is on).
  - „2“ for Executor fader or „3“ for Executor buttons (enter via numeric keypad).
  - Press the „.“-(dot) key and then enter the page number.
- Press the AT key (LED is on), enter the number of the target Page and confirm with ENTER.

Copy or move complete Pages with Executor-Faders and buttons
- Press the COPY key once to copy Pages (LED is on).
- Or:
  - Press the MOVE key once to move Pages (LED is on).
  - Press the PAGE key once (LED is on).
  - Enter the page number.
  - Press the AT key (LED is on), enter the number of the target Page and confirm with ENTER.

Delete Pages with Executor faders or buttons
- Press the DELETE key once to delete Pages (LED is on).
- Press the PAGE key once (LED is on).
- „2“ for Executor fader or „3“ for Executor buttons (enter via numeric keypad).
- Press the „.“-(dot) key and then the page number; confirm with ENTER.
- A window will open; here, confirm the deleting operation with the DELETE key.

Deleting Pages with Executor fader and buttons
- Press the DELETE key once to delete Pages (LED is on).
- Press the PAGE key once (LED is on).
- Enter the page number on the keypad and confirm with ENTER.
- A window will open; here, confirm the deleting operation with the DELETE key.

If there are programmed Macros or Timecode Shows, in which the moved or deleted Pages were to be used, these assignments may no longer work!
5.6 OFF menu (RUNNING PROGRAMS)

Pressing the OFF key twice will open the RUNNING PROGRAMS window. All active chasers, sequences, effect groups, timecode shows and Macros are displayed here.

- **CHASES ALL OFF**: Switches off all (!) active CHASERS.
- **SEQUENCES ALL OFF**: Switches off all (!) active SEQUENCES.
- **EFFECTS ALL OFF**: Switches off all (!) active EFFECTS.
- **TIMECODE ALL OFF**: Switches off all (!) active TIMECODE SHOWS.
- **MACROS ALL OFF**: Switches off all (!) active MACROS.

Pressing the DETAILS key will open the View ALL RUNNING EFFECTS menu. See View ALL RUNNING EFFECTS menu

- **CURRENT PAGE OFF**: Switches off all (!) Executors of the current Page
- **ALL FADERS OFF**: Switches off all (!) active EXECUTOR Faders.
- **ALL BUTTONS OFF**: Switches off all (!) active EXECUTOR buttons.
- **EVERYTHING OFF**: Switches off all (!) EXECUTORS.
- **CLOSE**: Will close this window.

You can also switch off Executors or Pages directly.

**e.g.**:
- [OFF key] [EXECUTOR button] [3] [TIME key] [2] [Enter]
- [OFF key] [PAGE key] [3] [TIME key] [2] [Enter]

Fixtures or Groups can be released (knocked out) from direct access.

**e.g.**:
- [OFF key] [FIXTURE key] [3] [Enter]
- [OFF key] [GROUP key] [3] [Enter]

For quick switch off:

- Keep OFF button pressed, then press
  
  - **GO+** switches off everything (compare with EVERYTHING OFF)
  - **EXECUTOR** all executors are switched off
  - **EFFECT** all running effects are switched off
  - **MACRO** all running macros are switched off
These sheet is a special version of the Tracking Sheet. Not only the values for the running cue can be displayed, but also the values for the next or the previous.

The colors of the values are the same as in the Tracking Sheet (see COLOR CODE in the appendix of this manual).

The COM PRESSED CONTENT menu offers the same contents, but is structured more compactly (up to 19 columns) and gives the practiced user a more extensive overview.

Open the sheet:
- Click a blank screen
- Select CONTENT or COM PRESSED CONTENT in the overview

Sequence selection:
- Link Last Go
  This displays the sequence that was last started (with GO or ON). The sequence name is shown in the top bar of the CONTENT Sheet.
- Link Selected
  Always select Selected Sequence here (the small executor window has a light green background).
- Not Linked
  Here you have to select a sequence in the CONTENT SHEET OPTIONS menu. The sequence name is shown in the top bar of the CONTENT Sheet.

AUTO SCROLL: when the button is active (has dark background), automatically the actual cue is displayed (NEXT and LAST CUE not activated) or the next cue is displayed (NEXT CUE is activated) or the previous cue will be shown (LAST CUE is activated). The actual (running) cue number and the shown cue number is displayed in the title bar. E.g. act:2cue, showing 3cue. Cue 2 is running and cue 3 is displayed in the Content Sheet; therefore NEXT CUE is activated.

- Next Cue (only in mode AUTO SCROLL)
  If the button is activated (dark background), the next cue is displayed. This means that if cue 2 of the sequence is active, cue 3 is displayed and the cue number appears in the headline. If the last cue is already shown, the display jumps to the first cue again.
- Last Cue (only in mode AUTO SCROLL)
  If the button is activated (dark background), the previous cue is displayed. This means that if cue 2 of the sequence is active, cue 1 is displayed and the cue number appears in the headline. If the first cue is already shown, the display jumps to the last cue again.
MAN SCROLL: Is activated when the background is dark. The buttons NEXT and LAST CUE disappear. Select the required sequence with the encoder.
- Click on the title bar (gets a light grey background when activated)
- Select the cue with the encoder. The title bar shows: MANUAL showing „x Cue“

For scrolling within the sheet (if not all rows and columns are visible) click on the sheet (the title bar has now dark background again). Turn the pressed encoder for horizontal movement and turn the encoder for vertical movement. The colored frame shows the actual position.

SHOW / SKIP TRACKING
- SHOW TRACKING; shows tracked values
- SKIP TRACKING; doesn’t show tracked values

Mask (only in COMPACT CONTENT)
When MASK is activated (button has dark blue background), all attributes in the Excluded column (in Options Attribute Mask) will disappear from the display.

CONTENT SHEET OPTIONS (Configuring the layout in the display)
The Content Sheet can personalized and stored in Users profile.
- Press EDIT and the yellow bar in the Content - Window.
or
- Press the yellow dot in the CONTENT SHEET (on the left side of the title bar)

The OPTION - Menu opens:
- Display Layer (identical with OPTIONS in Fixture/Fader/Channel Sheet)
- Sorting & Readout (identical with OPTIONS in Fixture/Fader/Channel Sheet)
- Setting (identical with OPTIONS in Fixture/Fader/Channel Sheet)
- Attribute Mask (only in COMPACT CONTENT SHEET)
All attributes in the EXCLUDED column will be not shown in the CONTENT SHEET when the button MASK is activated.
- A Click on the attribute moves it to the other column (Excluded to Included and vice versa).
For example: Click on PAN (in EXCLUDED) moves the attribute in the INCLUDED column; the attribute will be shown in CONTENT SHEET when MASK is activated.

- Attribute Sort (only in COMPACT CONTENT SHEET)
Sort the vertical order of the attributes.
- Select the attribute (has dark blue background) and move with UP or DOWN.

- Select Sequence
A view with all stored sequences is shown.
- Select the required sequence by turning the encoder and press the encoder to open the sequence.
or
- Select the required sequence by touching the sequence on the display
In the CONTENT SHEET now the required sequence appears.
6 Effects

6.1 Effect Pool

In the Effect Pool, you can create up to 900 different Effect groups. In the individual Effects groups, different Effects and functions can be combined and matched to each other. For PAN/TILT values, self-created two-dimensional forms can be played back and adjusted. See Creating and storing virtual forms.

The individual Effect Groups can be subdivided into four different types:
- Effect Group with assigned Fixtures or Dimmers (key of the Effect Group is displayed in pink) - a specific effect
- Effect Group without assigned Fixtures or Dimmers (key of the Effect Group is displayed in red) - a generic effect
- Temporary Effect Group (keys displayed in blue in the ALL RUNNING EFFECTS menu). If this Effect Group is not stored after having been created, it will automatically be deleted after it is switched off.
- Sequence Effect Group (Effect Group key displayed in orange). A specific copy of a generic effect that has been created automatically because a generic effect has been used when creating a cue.

6.1.1 Creating an Effect Group

Create an EFFECT window.

1. Select the Fixtures or Dimmers, for which an effect is to be used (selected Fixtures/Dimmers are indicated by yellow characters).
2. Choose an empty Effect Group. New keys and Encoder names are displayed above the encoders. Pressing the EDIT key for this Effect Group will open the EDIT EFFECT menu in the right TFT display.
3. Pressing the ADD LINE key once will open the SELECT PARAMETER window. Now, select a function (e.g. PAN). After selecting a function, the SELECT TABLE window will open, where you can select an Effect for the chosen function.
   - PWM: Pulse width modulation
   - RANDOM: Random fade-ins of individual channels of the selected function
   - CHASE: sequential flash to 100% function
   - SIN: Sinus function
   - COS: Co-sinus function
   - LIN+: Saw tooth ascending
   - LIN-: Saw tooth descending
   - TRIANGLE: Triangle function
   - PHASE1/PHASE2/PHASE3: Normally used to create rainbow color effects on fixtures with color mixing. Each of the phases is exactly out of phase with the other. This allows for an even and offset application across 3 parameters.
4. By pressing the USER DEFINED key (turns dark gray), user-created two-dimensional forms can be selected for the PAN/TILT function. If a form is to be created or modified, press the NEW or EDIT key to open the EDIT FORMS menu. See Creating and storing virtual forms.
In order to assign further Effects to the selected Fixtures/Dimmers in this group, press the Add Line key again. A new line will be displayed and the Select Parameter window will open. Choose a function now and assign an Effect. Up to 16 individual Effects can be combined within a Group. Press Edit key (LED on) and a key in the Effect Pool. The EDIT EFFECT menu will appear in the right TFT display.

### 6.2 Editing Effect Groups

When choosing an Effect Group from the Effect Pool, respective keys will be displayed above the Encoders. Pressing the EDIT key for this Effect Group will open the EDIT EFFECT menu.

Or:

Push Edit key (LED on) and a key in the Effect Pool. The EDIT EFFECT menu will appear in the right TFT display.

### 6.2.1 Editing Effects

In the title bar, the Effect Group to be modified will be displayed with its number and name. In the second line, the column functions are listed:

- **Sel (Selection):** Displays the numbers of Fixtures or Dimmers assigned to this Effect. If the Fixtures’ or Dimmers’ assignments are to be modified for an Effect, it has to be selected, this will be indicated by a red background. Select those Fixtures and/or Dimmers (displayed in yellow) that are to be assigned to this Effect. Now, press the TAKE SELECTION key once. The new number of Fixtures and Dimmers will now be inserted and adopted. If a generic Effect Group is to be created (that’s one without any selection which can then be used with any selection), do **not** select any Fixtures or Dimmers, but press the TAKE SELECTION key once. The cell will now display a "Zero". The key of this Effect Group will be indicated in red in the Effect Pool.

- **Filter:** Here, a filter can be set that limits the execution of the Effect either to the odd-numbered or to the even-numbered Fixtures. To assign a filter, select the cell. Press the Encoder right of the display once. The SELECT FILTER window will open, where you can select a filter for this Effect.

- **Param (Parameter):** Display of the assigned parameter for which the Effect has an influence over. To change which parameter, select the cell and press the Encoder to the right of the display once. The SELECT ATTRIBUTE window will open, where you can select a different parameter for this Effect.

- **Table:** Here, the assigned Effect is indicated with its name. To re-assign an Effect, select the cell. Press the Encoder right of the display once. The SELECT TABLE window will open, where you can select a different Effect for this function. The left part of the window displays the selected Effect. If the Effect Group has been started, the Fixtures and Dimmers will be displayed on the Form mimic at the bottom left of the display.

- **PWM:** Pulse width modulation. The pulse width can be defined as follows: Press the EFFECT SETUP key once...
(key has a dark background), press the PULSE WIDTH key once (key has a green background). Now, the pulse width can be modified using the Encoder below. The pulse width can be set to between 0 and 100%. Pressing the Encoder once shortly will automatically set the width to 25, 50, or 75%. You can also use the ALIGN function to set this value. See ALIGN function.

The values set for the respective Effects will be displayed in the WIDTH column. **Press and hold** the Encoder and turn to the right so that the focus (blue cell frame with red background) will be moved to the right. When moving the focus beyond the right border, further columns will be displayed (WIDTH, BASE).

- **RANDOM**: Random fade-ins of individual channels of the selected function. The number of channels to be faded in can be set.
- **SIN**: Sinus function
- **COS**: Co-sinus function
- **LIN+**: Saw tooth ascending
- **LIN–**: Saw tooth descending
- **TRIANGLE**: Triangle function
- **PHASE1/PHASE2/PHASE3**: Normally used to create rainbow color effects on fixtures with color mixing. Each of the phases is exactly out of phase with the other. This allows for an even and offset application across 3 parameters.

By pressing the USER DEFINED key (turns dark gray), user-created two-dimensional forms can be selected for the PAN/TILT parameters. If a form is to be created or modified, press the NEW or EDIT key to open the EDIT FORMS menu. See Creating and storing virtual forms.

Pressing the SELECT key will adopt the function; the window will close discarding any modifications when pressing CANCEL.

- **Dir (direction)**: In this column, an arrow indicates in which direction the Effect will be executed. To reverse the direction, select the cell and press the Encoder to the right of the display once.
- **Size**: In this column, each Effect is displayed with a separate value. The set value increases or decreases the size of the selected parameter. The maximum limit for size modifications that can be set is from -200 to +200%. Before modifying the value of a size, select the Effect first. Press the SIZE key once (green background). Now, you can set a different size using the Encoder below. Clicking the Encoder once will automatically set the size to 100. Clicking the Encoder a second time will increase the value to 200 and at the third time will reset it “0”. You can also use the ALIGN function to set this value. See ALIGN function.

- **Modulator**: In this column, you can assign an individual Modulator to each individual Size effect. Using a Modulator, the effect size can automatically be altered. Think of it as and effect on the application of an effect to a parameter.

To assign a Modulator for this effect, select this cell and press the Encoder on the right side of the Display. The SELECT MODULATOR window will open, where you can now go to NEW MODULTOR by turning the Encoder and clicking it to select this option. A new modulator will now be generated in the lower part of the sheet.

- **Modulator**: In this column, the different modulators can be discerned by their numbers.
- **Table**: The assigned effect for the modulator will be displayed by its name.
- **From**: The starting point for the automatic modification in terms of percentage.
- **To**: The end point for the automatic modification in terms of percentage.
- **Phase**: Here, an angle for moving individual modulators can be set.
- **Rate**: Display of the set ratio between the speed for this individual Modulator as to that of the whole Effect Group.
- **Base**: You can also set an average value for each Effect using the BASE VALUE option. The set value will overwrite all previously modified values of this function and by this, will control all Fixtures/Dimmers evenly. The value can be set to between 0 and 100%.

Before modifying the BASE VALUE, select the Effect first. Press the BASE VALUE key once (green background). Now, you can set an average value using the Encoder below. Clicking the Encoder once will automatically set the value to 50% (default value). Pressing the Encoder a second time, the value will be deleted and set to NONE (no BASE VALUE). If no BASE VALUE is set, the Cue that is playing back or a direct access value will take effect. You can also use the ALIGN function to set this value. See ALIGN function.

- **Offset**: By modifying the Offset, the starting points for the selected Fixtures and Dimmers will change. Default setting is between 0° and 360°, i.e. the first Fixture/Dimmer starts with an offset of 0°, the last with a maximum offset of 360°; all Fixtures/Dimmers in between will be distributed evenly. The maximum limit for Offset modifications that can be set is from -360° to +360°.

Before modifying the value of a size, select the Effect first. Press the OFFSET key once (green background). Now, you can set a different Offset using the Encoder below. Clicking the Encoder once will automatically set the value to 0. You can also use the ALIGN function to set this value. See ALIGN function.

- **Rate**: Display of the set ratio between the speed for this individual Effect as to that of the whole Effect Group. Possible settings range between 1:16 and 4:1. At a ratio of 1:16, the rate set for the Effect Group will be divided by 16. If the setting is 4:1, the rate will be multiplied by four.

Before modifying the ratio's value, select the Effect first. Press the RATE FACTOR key once (green background). Now, you can set a different ratio using the Encoder below. Clicking the Encoder once will automatically set the value to 1:1.

- **Grp (Group)**: Display of the set number, by which the assigned Fixtures or Dimmers will be divided. In the subdivided groups, the Effect will then fully be executed. Before modifying the subdivision value, select the Effect first. Press the GROUPS key once (green background). Now, the subdivision of the Effect can be set using the Encoder below. Clicking the Encoder once will automatically delete the set value.

- **Wing**: The set number will indicate, how often the assigned Fixtures or Dimmers and the Effect will be mirrored. Possible settings range between –8 and +8.

Example: With a setting of 2, the assigned Fixtures/Dimmers will be divided in the middle. The set effect will now be executed in the first half forwards up to the middle, and in the second half, the Effect will be executed in reverse from the middle onto the last Fixture/Dimmer.

With a setting of -2, the assigned Fixtures/Dimmers will be divided in the middle. The set effect will now be executed in the first half forwards up to the middle, and in the second half, the Effect will be executed in reverse and phase-shifted by 180° from the middle onto the last Fixture/Dimmer.

Before modifying the wing value, select the Effect first. Press the WINGS key once (green background). Now, the number of Effect wings can be set using the Encoder below. Clicking the Encoder once will delete the set value.
- **AS (Adaptive Speed):** If this function is activated, the speed will automatically be adjusted when the number of Fixtures or Dimmers changes. That means, the individual Effects of this Effect Group do not run at different speeds when working with different numbers of Fixtures or Dimmers, but always at the same step speed.

To activate the function, select the cell. Press the Encoder right of the display once.

**Or:**
Activate by making a short right mouse click into the cell below AS. This will be indicated by a YES in this cell.

- **Part (Partly):** the sequence of an Effect can be subdivided 16 times, and an Effect can then be assigned to the first individual subdivision. This column displays what the subdivision ratio this part of the Effect Group belongs to.

Example: With a setting of 1:5, the individual Effect would always be executed in the first fifth of a Effect Group sequence. Before modifying the subdivision value, select the Effect first. Press the PART key once (green background). Now, you can set the subdivision of the Effect Group for the individual Effect by pressing and holding the Encoder below. You cannot designate a section in which a particular Effect is to be executed, it will always be executed as the first subdivision.

Pressing the Encoder once shortly will set the value to ALWAYS and the Effect will be executed during the whole period.

### 6.2.2 Deleting individual Effects
- Select the Effect to be deleted.
- Press the DELETE LINE key.

### 6.3 Executing an Effect Group
If an Effect has started, this will be indicated for the appropriate Scanner and Dimmer channels by a violet bar in the Fixture, Channel or Fader Sheets. If you want to visualize the changes made to the values, the appropriate Sheet has be set to "Output" (Options). See Options of Fixture, Channel and Fader Sheets.

- Select the Effect Group from the Effect Pool. The Effect Group will be started automatically.

**Or:**
- The names and playback keys for the Effect Groups will be displayed in the right TFT display above the Encoders. The name of the currently selected Effect Group will appear above the left Encoder.
  - Pressing the right arrow will start the complete Effect. The selected Fixtures or Dimmers will now form the Effect.
  - Pressing the PAUSE key will stop or restart the complete Effect, respectively.
  - You can switch off the Effect using the STOP key.
  - By pressing the left arrow, the Effect will run backwards.

With the left INTENSITY Encoder, you can globally adjust the size of the whole Effect Group.

Pressing the Encoder while turning it will increase or decrease the Encoder's resolution, depending on the setup.

When pressing an Encoder or the key above, this will bring up a Fader above the Encoder in the display. Now, you can also use it to modify the value.

Use the SPEED encoder to set the speed for the whole Effect Group.

If you use the Encoder to increase the SOFTNESS value, the Effect will be faded in and out more softly. SOFTNESS
can be used for PWM-, RANDOM- and CHASE Effects.
Using the right FADE TIME Encoder, you can now globally set a fade in and fade out time for this Effect Group. When switching the Effect Group on or off, this Fade Time will be faded in or out with the set duration.
Pressing the EDIT key will call up the Edit menu for this effect. See Editing Effects
Pressing the LIST key will open the VIEW ALL RUNNING EFFECTS window, where you have an overview on all currently active Effect Groups. See View ALL RUNNING EFFECTS menu

6.4 Customizing an Effect Group
The global settings like e.g. Bounce, BPM, Intensity, Speed etc., are automatically stored in the Effect Group. You can customize the individual sequences of the Effect Groups by using the respective keys.

- **Speed Scale**: The current ratio of the SPEED setting will be displayed on the key. Pressing this key will open the SPEED SCALE menu. Pressing a key will re-adjust the Speed setting. With MUL BY 2 or MUL BY 4, the SPEED setting will be multiplied by 2 or 4, with DIV BY 2, 4 or 8, the SPEED setting will be divided by 2, 4 or 8. Pressing the 1:1 key will recall the default setting again.
- **Speed Group**: The key will display the currently assigned SPEED group. Pressing this key will open the SPEED GROUP menu. By pressing a key, you can designate a SPEED Group. Using the Fader of the assigned SPEED Group, you can now adjust the speed for this Effect Group. See Assigning Special Masters if INDIVIDUAL is selected (default setting), you can adjust the speed only by using the SPEED encoder.
- **Bounce**: If this key is pressed (dark background), the whole Effect Group will first run forwards and then backwards, etc.
- **BPM**: If this key is pressed (dark background), the speed of the whole Effect Group will be controlled by the automatic measure recognition. See Setting Sound signals
- **Start Speed**: Pressing this key once will store the currently set speed. The key will display the stored speed. From now on, this Effect Group will be started with this speed, even if the speed was changed during the execution. To delete the stored speed, use the Encoder to set the SPEED to STOP and press the START SPEED key once. Now, no speed is stored and the key will display NONE.
- **Off On Overwritten**: This Effect Group will be switched off, when the OFF ON OVERWRITTEN key is pressed (dark background) and another Effect Group is started, in which the same Fixtures/Dimmers are to be used (default setting).
  If this function is disabled, the Effect Group will not be switched off. It is still active, but does affect any Fixture/Dimmer. The key of this Effect Group in the Effect Pool will display a white/red flashing "2". The number indicates, at what position this Group will be in relation to the other overwritten Effect Groups. If the other Effect Group that had overwritten this Group is switched off, this Effect Group will again affect the Fixtures/Dimmers. This function is active by default when creating a new Effect Group.
- **Sync Start**: If this key is pressed (dark background), and another Effect Group had already been started, this Group will automatically be started at the same speed and position.
- **One Shot**: If this key is pressed (dark background), the Effect Group will only be executed for one complete run and will be deactivated.
6.5 Effect groups in Cues

During normal SAVE processes, you can also save Effect Groups in Cues. In the Cues, the settings for Call (GO, GO-, Pause and OFF), Intensity, SPEED, SOFTNESS and IN/OUT FADE TIME are saved. In the Cues, no further settings from the Effect Group will be saved (function as with presets).

Or:

It is also possible to create Cues, to which an own Effect Group can be assigned. If temporary Effect Groups are used when creating the Cues, a copy of the Cue will also be saved, i.e. it will not be depending on the original Effect Group anymore.

- Start an Effect Group in the Effect Pool by selecting it.
- Press the STORE button once.
- Press the EXECUTOR button to which the call is to be saved. The Effect Group call will be saved in the Cue with all settings mentioned above. If this Cue is called up, the Effect Group will be started.

When calling up Effect Groups, its size, speed and softness can be faded in or out. If in the Effect Group a FADE TIME is set, the intensity and speed or softness of the Effect Group will automatically be faded in or out when this Group is started.

In the Executor Sheet or in Edit Sequence, press the EFFECT button (will be displayed dark grey). The window will be divided into two halves. The upper part will display the Cue, the lower part the calls of the individual Effect Groups for the selected Cue, including the respective parameters.

Select a Cue in which calls or parameters of Effect Groups are to be modified (selected Cue will be displayed with a blue frame and a magenta background).

The lower chart displays all calls of Effect Groups from this Cue.

Select an individual call to be modified (will be displayed with a blue frame). In the right display, the setting will be adopted and displayed above the Encoders and can be customized at will. If intensity, speed or softness are to be faded in or out with the set Fade Time when the Effect Group is called up, make one right mouse click into the cells behind the value in column F (Fade). The column will show a Y for YES. Press UPDATE to confirm the modifications and save them in the Cue.

You can modify the cells Name, Intens, Speed, F, Soft and Fade directly by a right mouse click.
6.6 View ALL RUNNING EFFECTS menu

In this menu, all currently playing back Effect Groups will be displayed.

- Press the EFFECT key twice. (On older consoles, this key is not labeled and is positioned between the VIEW and GOTO keys. An appropriate label can be ordered from MA or from your local dealer)
- Or:
  - When choosing an Effect Group from the Effect Pool the respective key will be displayed above the Encoders.
  - Press the LIST key on the touch screen.
  - By pressing the ALL OFF key, you can switch off all Effect Groups simultaneously.
  - You can leave the menu with the CLOSE key.
  - In the left part of the menu, all manually called-up Effect Groups will be displayed. Pressing the OFF key on the right side of MANUAL, all these Effect Groups will be switched off.
  - The middle part of the menu shows all Effect Groups that are playing back via EXECUTOR faders. Pressing the OFF key right of the EXECUTOR will switch off these Effect Groups. See Assigning Effect Groups to EXECUTOR faders.
  - The left part of the menu shows all Effect Groups that are playing back via Cues. Pressing the OFF key on the right side of CUELIST, all these Effect Groups will be switched off.
  - The lower part of the menu shows all Effect Group calls performed since the last Cue was stored, including their respective playback parameters. When storing the next Cue, all calls in this Sheet will also be stored. It is also possible to modify individual calls. To do so, select the respective call (will be displayed with a blue frame). The setting will be adopted, displayed above the Encoders and can be adjusted with them. You can delete a complete call by making a right mouse click into the NAME column. If you only want to delete a single parameter, make a right mouse click on the parameter.

6.7 Creating and Storing Virtual Forms (EDIT FORMS)

6.7.1 Creating Virtual Forms

From this menu, you can create two-dimensional forms for use with PAN/TILT parameters. When creating Forms, the movements can directly be output to the Fixtures. The created Forms will automatically be stored in the Form Pool.

Calling up this menu: Creating an Effect Group, item 3
Editing Effects, item Table

- Press the PREDEFINES key once. A window will open, where several prepared Forms will be displayed. Select one of these Forms; this Form will now be displayed on the black window.
### 6.7.2 Modifying Forms

The EDIT FORM S window will open by pressing the EDIT key. Make a left click with the mouse on at least three positions of the marked form. With each click on the form, a new red dot will be displayed on that position. In order to delete one of the dots, middle click with the mouse on this dot.

To reshape the form, click and drag with the mouse on one of the red dots. If you click the right mouse key during the reshaping (while holding the left mouse key), you can define the reshaping each time.

- **By pressing the key, you can program in which way the lines shall be drawn when reshaping the form:**
  - ANGLE: straight line
  - ARC: outer arc
  - ARROW: inner arc

**By reshaping the form, the lines will be expanded and, respectively, the extended positions of the form will be reported to the Fixture faster.**

- If the extended lines and, consequently, the longer ways for the Fixture are to be transmitted with the same speed, you have to press the EQUALIZE DOTS key once.
- The form can be modified in its horizontal or vertical size using the Hori: and Vert: sliders. By pressing the dark-grey key below the modified sliders shortly, both values can be set simultaneously. By pressing the “< >” key, both sliders can be coupled, so that the size can be modified simultaneously.
- Using the ROTATION slider, the form can be turned from 0° to 360°.
- By pressing the MIRROR key, the form can be mirrored.
- You can leave the EDIT menu with the CLOSE key.

Syntax to enter a formula manually:

> The standard display of mathematical formulas will be executed. The following is allowed:

- **Mathematical Basic Operators:** +, –, *, /
- **Numerical constants:** integers, floatingpoint numbers or exponential figures
  - Example for valid numerical constants: 2.71818
  - 1.2e-2
  - 0.4
- **Other constants:** pi corresponds to the circle figure π
- **Variables:** x
- **Mathematical functions:**
  - sin(x) or sinus(x)
  - cos(x) or cosinus(x)
  - abs(x) corresponds to the absolute amount
  - sqrt(x) corresponds to the square root
  - pow(x; y) corresponds to the y Power of x
  - (arguments errors with x = 0 und y <= 0 or with x < 0 and y are no integers)

**Examples:**

- sin(3 * x)
- sqrt(abs(x)) * sin(x)
- sin(x) * cos(3 * x) / pi/2
- (cos(x) * abs(x) + 1) / pow(x;2)
- (cos(0.5 * x) * abs(x) + 0.5) / 2
6.8. Modulators

INDEX

While the modulators that are used for the effects will only influence the whole effect, it is now possible for each feature to use a modulator for effects, and for the speed, size and shifting of effects within the modulators of the Fixture and Channel Sheets. The modulators run within the Programmer, i.e. they are not permanent. You can only save changes as Cues; effects transferred with the TOP button to the modulators will remain unchanged. For each attribute of a fixture, four modulator settings are available, each of them being individual.

Assigning modulators to a fixture:

- select fixtures (here the fixtures 3-5 from the Channel Sheet)
- open FIXTURE or CHANNEL SHEET
- in OPTIONS, press the LAYER CONTROL button; it has a violet background and shows, which values are displayed in the Sheet (in the SPEED graphics of the Channel Sheet, and in PHASE in the FIXTURE Sheet); the violet or white triangle shows, which value is being entered into the active Sheet using the Encoder (in the SPEED graphics in the Fixture Sheet).
- select the FEATURE to be executed by the modulator. (here: Dimmer in the Fixture Sheet)
- In the Select menu, select for which features the modulator values are supposed to be valid. In order to do so, press on the right arrow and select using the Encoder, confirm by pressing on the Encoder, or select the menu by pressing on the text button.
  - SINGLE only the attribute selected from the Fixture or Channel Sheet will be changed
  - SINGLE for ACTIVE only the attributes selected from the Fixture or Channel Sheet and now being active will be changed
  - FEATURE only the feature selected from the Fixture or Channel Sheet will be changed
  - FEATURE for ACTIVE only the features selected from the Fixture or Channel Sheet and now being active will be changed
  - ALL all attributes of the selected fixture will be changed
  - ALL for ACTIVE all attributes selected from the Fixture or Channel Sheet and now being active will be changed
  - DEFINED only the defined attributes will be changed In order to do so, press on the left arrow and select the desired attributes from the menu (attributes with a green background have been selected); this setting remains valid for the period that the show remains loaded.
  - DEFINED for ACTIVE only the defined and active attributes will be changed
- select a modulator; in order to do so, press on the right arrow and select it using the Encoder, confirm by pressing on the Encoder, or select the menu by pressing on the text button.
- select MODULATOR PROPERTIES using the left Encoder below the Screen, chose an effect or a setting and confirm by pressing on he Encoder on the side of the Screen.
**NONE** no effect selected

**PWM** Impulse Width Modulation

**RANDOM** Random fade-ins of individual channels of the selected function

**TABLE** here, specific effects have a special background (identical to TABLE in EDIT EFFECT)

**FORM** here, forms that were previously defined and are in the FORM pool memory have a special background

- **MODULATOR SIZE:** here, you can enter the size of the effect (in the graphics, 100% are entered)

- open the *Calculator* using the Encoder below the Screen, enter the value und confirm with **ENTER**

- **MODULATOR SPEED:** here, you can enter the effect speed in **Beats Per Minute**

- open the *Calculator* using the Encoder below the Screen, enter the value und confirm with **ENTER**

- **MODULATOR PHASE:** here, you can enter the angle for shifting the modulator

- open the *Calculator* using the Encoder below the Screen, enter the value und confirm with **ENTER**

All entries are executed immediately and can be controlled from the STAGE view or, even better, from the 3D VISUALIZER.

- delete the settings by pressing 3x **CLEAR**; all effects will be deleted from the Programmer immediately.

or

**Save setting as Cue:**

- press **STORE**
- press on an empty cell in the small Executor window or an empty Executor button

The effect will be saved as a Cue; in the Sheets, the white text on a violet background will change to yellow on a dark background. If PROGRAMMER ONLY had been activated, all features will disappear from the Sheet. This Cue can now be executed or edited like a normal sequence.

**Applying EFFECTS to the Modulators:**

By transferring effects to modulators, you are enabled to execute changes very rapidly. As the effect will be permanent, you can delete a temporary change after its execution or save it as a Cue.

- start the Effect button in the Effect pool
- press **TOP**
- press the Effect button of the currently running effect in the Effect pool

The effect stops (disappears from the ALL RUNNING PROGRAMS menu) and its settings can now be seen in the modulators. All fixtures involved are marked by a red bar; all settings taken from the effect, have a dark violet background in the modulators (all changed modulators have a violet background).
7 BITMAP Effects

Besides the effects mentioned in chapter 6, you can use the Bitmap Effects function to run graphics in a fixture matrix. You can either create Bitmap graphics on a PC and then import them, or directly create them in the DRAW mode. With CREATE TEXT, you can also create texts as Bitmap graphics. The „setting“ for the effects is a fixture matrix to be created in SETUP. In the Editor, you can assign effects (e.g. rotation, zoom, etc.) and a layout to the fixture layout. Bitmap effects can be assigned to Executors and be controlled very easily, just like normal effects.

TAKE CARE THAT THE FIXTURE TYPE USED HAS THE FUNCTIONS TO BE USED IN THE EFFECT.

7.1 Creating a Layout for a BITMAP Effect

Arranging the matrix: Open STAGE window, activate SETUP (button on right top) and open the WIZZARD.

ARRANGE IN MATRIX:
- Select those fixtures to be embedded into the matrix (the number should be the sum from horizontal and vertical lines as otherwise no complete square will result)
- Enter the number of horizontal ROWS and vertical COLUMNS;
- Enter the horizontal and vertical distances of the fixtures; the resulting total value may, however, may not exceed the stage size.
- Confirm using the OK button.

Create a layout:
Here, you can create layouts that can later be assigned to a Bitmap effect.

- open the LAYOUT VIEW menu using CREATE A WINDOW.
- press CHOOSE LAYOUT and use the Encoder to select + confirm a free layout number in the overview.
- open the OPTIONS (press the yellow button in the upper left corner).
- press SETUP to open the MANIPULATE / SETUP LAYOUT menu.
- click on the LABEL line and enter a name for the layout; confirm with ENTER.
- select the fixtures to be used in the layout (on the STAGE, FIXTURE or CHANNEL Sheet).
- enter the values for ROWS and COLUMNS (number of rows and columns making the grid); pressing on the digit cell will open the Calculator; after entering the values, confirm with ENTER. The menu will now show the selected grid where you can place your fixtures.
- Transferring fixtures into the layout.
- **MOUSE FRAME**: if the button is activated (text turns green), you can draw a blue frame on the grid. This frame forms the target for the commands CLEAN, REMOVE, and FILL. If the button is not active (text is grey), you can fill the grid using the FILL command, or you can deliberately position individual fixtures on a free cell.

- **TAKE SELECTION**: the selected fixtures will be transferred into the layout and you can position them using the WIZARD command.

- **ADD SELECTION**: when there are already fixtures positioned in the layout, the selected fixtures will be added.

- **CLEAN FRAME**: fixtures within the blue frame (drawn with the active MOUSE FRAME) will be taken out of the layout and „bunkered“ as red squares adjacent to the grid.

- **REMOVE FRAME**: fixtures within the blue frame (drawn with the active MOUSE FRAME) will be deleted from the layout, but can reintegrated again into the layout using the ADD SELECTION command.

Positioning fixtures within the layout:
The order in which fixtures are arranged, will influence how the effect will appear later.
The default setting is Left-Right, Top-Bottom, and Wrap Off – with this setting, the stage output will correspond to what is displayed in the Preview window. Changes applied to this setting will not appear in the Preview window of the Bitmap Editor, so that it is advisable to check them in the STAG view.

- **LEFT - RIGHT / RIGHT - LEFT**: places the ID number starting point to the left / right margin

- **BOTTOM - TOP / TOP - BOTTOM**: places the ID number starting point to the bottom / top margin

- **Horizontal first**: arranges the fixtures horizontally in an ascending order of their ID numbers;

- **Vertical first**: arranges the fixtures vertically in an ascending order of their ID numbers;

If a Bitmap effect runs on the same fixture matrix, but with differently filled layout, this will produce mirrored representations. (see example on the left)

Using the default setting will take the stage output as displayed in the Preview window; if LEFT and RIGHT are exchanged, the stage output will be displayed mirrored. You can save both layouts under different names and allocate them to the effect.

- **FILL**: all fixtures taken over into the layout will be placed in it using the selected settings (as far as there is enough space available – fixtures in excess will be „spared“ in a red square adjacent to the grid.

  or

- **position each fixture individually**: in order to do so, click (mouse or finger) on the red square and draw it on a free cell in the grid.

  - Press „X“ to leave the SETUP menu.

  - Leave the LAYOUT VIEW menu using OPTIONS and DELETE WINDOW.

Use DRAW to switch over to the drawing mode.
In this menu, you can create a graphics in a selected layout by hand or mouse, or you can modify already created graphics. Besides changing the layout, you can also change all values of the fixtures involved. Save the drawn graphics as a bitmap or save the individual layout steps as a Cue. You can delete all changes by pressing CLEAR 3 times.
● open LAYOUT VIEW
● pick a layout with CHOOSE LAYOUT
● pressing DRAW will bring you into the drawing mode
● choose DRAW MODE.
- FREE; allows you freehand drawings using the mouse or your finger
- BLOCK; forms a rectangular frame
- COLOR; opens the color menu for fixtures with color changers Choose a color and insert the new color by pressing on the Color button in the Select menu. When using ACT ON CMY, this color will be assigned to the selected cells.

● choose ACT ON
- GREY; a dimmer value will be assigned to the selected cells
- COLOR; a color value will be assigned to the selected cells
The selected cells receive a yellow frame and will disappear, the next time you touch the screen. Only if the selected cells have an assigned dimmer value, these cells will be kept (grey scale according to dimmer value) and you can select the next cells. Each selected cell will immediately lose its dimmer value - this way, you can delete individual cells from the graphics. And this is also, how to create a graphics with different dimmer values.
- COPY:
- SELECTION; only the selected cells (yellow frame) will be copied
- TOTAL; all active cells will be copied
- MOVE; using the arrow keys, you can move the graphics in the desired direction
- MIRROR; using the arrow keys, you can mirror the graphics

● saving or deleting settings
- using SAVE, you can save the graphics as sequence to a free Encoder or
- using BITMAP WIZARD, to switch to the WIZARD menu
- using SAVE BITMAP, you can save the created bitmap
- or the other way round: load a bitmap graphics in the Wizard, return to the Draw mode, and go on processing the graphics there or delete all selections and setting pressing CLEAR 3 times.
● Press „X“ to leave the SETUP menu.
● leave the LAYOUT VIEW menu using OPTIONS and DELETE WINDOW.
7.2 Creating / Changing Bitmap effects

- open the Bitmap Wizard to load, create or adapt a bitmap.
- Creating a graphics
  - CREATE TEXT; to create and save a text bitmap.
    - press CREATE TEXT, enter text and text size, and name the file.
    - with TAKE, transfer it to the Wizard, with TAKE SAVE save it and simultaneously transfer it, or just save it with SAVE.
  - SAVE BITMAP; to save a bitmap on the console’s hard disk.
  - LOAD BITMAP; to load a bitmap from the console’s hard disk.
  - DELETE BITMAP; to delete a bitmap.
  - IMPORT BITMAP; to import a bitmap from floppy disk.

- press „X“ to return to the EDIT menu
- choose a background color
- TILES (tiling function) sets the graphics as multiple tiles one after the other.
- using BACKGROUND, choose the background color. Choose color and brightness in the Select menu and press the button for the desired color.
- COLOR CORRECTION / GREY SCALE CORRECTION
  - set the offset values using + or - or the Calculator (pressing on the black number cell).
  - select a scaling
    - SCALE 1:1; will transfer the bitmap 1:1 into the selected layout
    - SCALE TO FIT WIDTH; will scale the bitmap to the optimum width for the selected layout
    - SCALE TO FIT HEIGHT; will scale the bitmap to the optimum height for the selected layout
    - SCALE TO BEST FIT; will scale the bitmap to the optimum appearance for the selected layout
  - using the Encoders below the screen to set the bitmap starting position; after switching the page, you can also turn the bitmap around and change its rotation point.

The cross-wires and the projection frame are very useful when setting up the bitmap effect.
- OFFSET: here, you can change the bitmap-to-matrix position - the projection frame will be offset along the x or y axis
- ROTATION OFFSET: here, set the pivot point for a rotation - the cross-wires will be offset along the x or y axis
- ROTATION: here, enter the bitmap position
- WIDTH: here, enter the bitmap width
- HEIGHT: here, enter the bitmap height
- press „X“ to return to the EDIT menu
- enter the values for the individual functions (e.g. horizontal shift or rotation).

**Enter preset values:** (if TOGGLE is active = is green, you can combine multiple settings)
- **ROTATE RIGHT** will insert „0° - 360°“ into the Rotation column
- **ROTATE LEFT** will insert „360°“ into the Rotation column
- **SCROLL LEFT** will insert „-5.0 – 5.0“ into the OFFSET X column
- **SCROLL RIGHT** will insert „5.0 – -5.0“ into the OFFSET X column
- **ZOOM IN** will insert the „100% - 50%“ into the SCALE X and SCALE Y columns
- **ZOOM OUT** will insert the „100% - 200%“ into the SCALE X and SCALE Y columns

**Enter individual values:**
- click on the cell in the respective column and open it by pressing on the Encoder; enter values and confirm with ENTER

- **TABLE**: here, you can select the effect
- **FROM TO**: here, you can enter the starting and end points
- **PHASE**: here, you can enter the angle to shift the effect
- **RATE** stands for the ratio d

- set ACT ON; depending on the setting and type of BITMAP, the buttons below are active (bright – values can be entered) or inactive (dark – no modifications possible). The values allocated to the bitmap are marked by a violet bar over the respective column in the Fixture or Channel Sheet.

- **GREY**: dimmer values are assigned to the graphics element
- **TRIGGER**: presets are assigned to the graphics element
  - Preset 1 - the preset is assigned to the graphics background
  - Preset 2 - the preset is assigned to the graphics
  - Background - the preset is assigned to the matrix outside the graphics
- **COLOR**: color values are assigned to the graphics element

- define the order using the 4 Encoders
- **MASTER** here, you can set the dimmer value
- **SPEED** here, you can set the effect speed. (however, the graphic’s movements also depend on the settings FROM
  - TO, SPEED SCALE, and RATE)
- **FADE** here, you can
- **MASTER FADE** here, you can set the time to fade out and fade in the effect after start and stop

- enter a name for the BITMAP EFFECT in the **LABEL** line and confirm with ENTER.
7.3 Starting the Effect

- open the **BITMAP EFFECTS WINDOW**
- press the button in the **BITMAP EFFECTS** pool

Or, if the effect had been placed on a fader or a button:
- start the effect using the fader or button

As is the case with the effects, you can modify the speed while the effect is running

**WARNING!** If you open the BITMAP WIZARD in the EDIT menu, the effect will stay active!
8 Remote Control

8.1 Timecode

All sequences, chases and cues on the grandMA can be synchronized by using Linear Timecode (LTC) or MIDI Timecode (MTC). Timecode synchronization can be used to trigger one or more controllers to synchronize with an audio or video recording. SMPTE 24-, 25- and 30 Drop and Non-Drop Frames are encoded time information, e.g. recorded on a separate track of a multitrack tape (frequency range of 1–2 kHz). Normally, this Timecode is already added when compiling the music, e.g. for presentations, but it can also be recorded afterwards in a regular recording studio. If the music is recorded in stereo, a third track is needed for the Timecode.

All sequences programmed into the grandMA can be synchronized by Timecode. During the playback of the tape, the Timecode information is transmitted to the connected controllers. Each controller has an internal memory that triggers the activation of a specific program at a given point of time. On the grandMA, the EXTERNAL LTC Timecode can be connected via a jack socket and the MTC via Midi IN on the rear of the unit.

8.1.1 Introduction to the Timecode System

Here the major advantages of the new Timecode System:

- Timecode shows are organised in a pool. The basic handling of timecode shows like edit, copy, delete, etc. is totally compliant with the rest of the console’s syntax.
- Timecode shows are completely embedded into the command line. So you can now start timecode show number 5 from a macro.
- GOTO commands are supported and are used as the default when recording normal GOs. This means that the timecode show is referencing absolute cue numbers.
- Cue names and numbers are displayed in the timecode show.
- All kinds of executor fader movements are recordable. So you can now record the change of a chaser speed or a manual crossfade.
- Automatic fader data reduction, reducing the amount of recorded fader movements dramatically and allowing easier manual editing afterwards.
- Free choice of editing in graphic or text mode. Text mode supports filtering so that you can watch only the executors that you want to.
- Blind programming.
- No restrictions to the number of timecode shows running at one time; memory permitting of course.
- No restrictions for “no mouse please, users”. The timecode show can be fully edited with the encoders and/or the touchscreens.
- Timecode shows can be “write-protected”. So if you only want to watch your show running, you will not accidentally change something.
- Copy / Paste functions between different timecode shows is now possible. Timecode shows can be merged together.
- Autostart feature for timecode shows, e.g. the show will automatically load and run upon detection of the correct SMPTE signal.
- Repeat function with definable number of repeats for timecode shows with internal synchronisation.
8.1.2 Creating a Timecode Show

Graphically with the touch screens or mouse:
- Open a timecode pool window.
- Touch one of the timecode show keys, you will get the timecode control bar for this show in the display on the right.
- Enter the name for the timecode show using the PC keyboard.
- Press the EDIT field in the timecode control bar, and the timecode editor will appear.

Using the command line:
- EDIT TIMECODE X ENTER . Brings up the timecode editor and the timecode control bar for timecode show X. There is no hardware key for TIM ECODE on the grandMA, but you can enter this in the command line or into a macro by using the text keyboard.

Combining the two methods:
- EDIT and then touch a key in the timecode pool.
If the timecode show that you have selected was empty, there will be only the empty editor in front of you and you can now start recording or manual editing.

8.1.3 Playing back a Timecode Show

Graphically with the touch screens or mouse:
- Brings up a timecode control bar for the desired timecode show when touching a key in the timecode pool.
- Use the cells with the cd player-like symbols to control the show playback.

Using the command line:

Combining the two methods:
- COM M AND TIMECODE X ENTER. COM M AND is one of the executor commands that you will find above the page keys. You can use GO+, PAUSE, <<<, >>>, ON and OFF.

Description of playback commands:

<table>
<thead>
<tr>
<th>Status</th>
<th>Command Line</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOP</td>
<td>OFF</td>
<td>Show is stopped, no output is generated.</td>
</tr>
<tr>
<td>PAUSE</td>
<td>PAUSE</td>
<td>Show is stopped, output is generated for current time.</td>
</tr>
<tr>
<td>PLAY</td>
<td>GO+</td>
<td>Show is running.</td>
</tr>
<tr>
<td>RECORD</td>
<td>STORE</td>
<td>Show is recording.</td>
</tr>
<tr>
<td>JUMP BACK</td>
<td>&lt;&lt;&lt;</td>
<td>Show jumps to the next breakpoint before current time.</td>
</tr>
<tr>
<td>JUMP FORWARD</td>
<td>&gt;&gt;&gt;</td>
<td>Show jumps to the next breakpoint after the current time.</td>
</tr>
</tbody>
</table>

If a show is generating output, the corresponding key in the timecode pool will show the current time. In case of recording, this key is also blinking red with the note “REC”.

AUTOSELECT
ON: (light background) the selected track is green highlighted and is permanent shown
OFF: (dark background) the actual track of the running show is green highlighted

External / Internal Sync

PLAY and RECORD on the sync setting in the options menu for their behaviour.

If sync is set to internal, time runs continuously, based on the internal time base.
If sync is set to “SM PTE”, the current time of the timecode show depends on the SM PTE input signal. If MIDI is set, MTC (Midi Timecode) will be used.

In the headline of the timecode pool you will find a SM PTE input indicator. Regardless of the shows using SM PTE, it will always display the current SM PTE input signal together with the SM PTE frame format.
If a show is using SM PTE (external synchronisation), the local time within the show can differ from the external SM PTE
time. By using the timecode offset in the options menu, you can set up a time offset, which is subtracted from the external SMPTE time. Shows which are using internal sync can have a user definable repeat. These settings are also found in the options menu.

**Pre Roll & After Roll, Dropout Elimination**

Due to the fact that SMPTE is an analogue signal, fluctuations can occur. Very often there are temporary errors in the recorded SMPTE signal which are called dropouts. As such misleading small errors should of course not affect the board, it filters out these errors automatically.

Therefore the desk is filtering out these errors.

This filter is controlled by two values: **PRE ROLL** and **AFTER ROLL**.

**PRE ROLL** defines the time that a signal must be error free before it is accepted by the console.

A small pre roll means that your console reacts faster to incoming SMPTE signals.

**AFTER ROLL** defines the time that a signal must be continuously in error or missing before it is assumed to be off. During the after roll time, the console continues the show, using its internal time base.

A small after roll means that your console stops faster after the SMPTE signal has stopped, but that it is also reacting faster to errors in the SMPTE signal.

The settings for pre roll and after roll can be found in the **context menu of the timecode pool**. This can be accessed by right clicking on the headline of the Timecode pool.

The names for pre roll and after roll have a historical significance. At the beginning of the timecode era, the huge tapes in the machines which contained timecode and audio signals where really visibly rolling.

**NOTE:** Set After Roll to minimum 0.37 seconds. Shorter time can cause failure of the time code show.

**Manually Changing the Current Time**

If the show is playing back or recording with external sync, it is not possible to change the time manually.

There are many different ways to change the current time of your show when using the internal time base:

**Graphically with the mouse:**
- left mouse click somewhere into the timeline

**With the encoder:**
- Turn the time encoder (leftmost) to change the current time. Each click on the encoder means one frame.
- If you press and turn this encoder simultaneously, each click means one second.
- If you press the encoder without turning, you can enter an absolute time.

**With the “jump to breakpoint” commands:**
- You will find them as the outer playback symbols in the timecode control bar and as command line functions << and >>.
- Time will jump to the next available breakpoint in the given direction.

**With the event encoder (second) in the bar:**
- Whenever you select a new event, time will jump to the exact time of that event.
8.1.4 Recording a Timecode Show

Recording is enabled only if the timecode show is not write-protected (options menu). Recording will always be „live on stage“ and can be done in three ways:

a) Fully automatic recording with external synchronisation. The current time is given by the SMPTE signal and every executor command or fader movement will be added to the timecode show until you stop or pause the show. Your actions and pre-recorded items already in the show will be live on stage. You can repeat the recording process step by step to add more and more details to your show.

b) Fully automatic recording with internal synchronisation. Basically the same as with external sync, time is running continuously, but you where to start and where to stop.

c) Semi-automatic manual recording. In this mode time is not running, although your show is in recording mode. Between each executor command that you want to be recorded, you can set the recording time manually with an encoder or by direct absolute input (simply press the first encoder). This is probably the best way of editing for the experienced user, who already has a time table in front of him. Even fader commands can be recorded this way.

Starting to record:
- Automatic recording is started by pressing the record symbol in the timecode control bar (the red symbol).
- The depending on the sync-setting (in the options menu) you will record with internal or external synchronisation. Automatic Recording can also be started from the command line in a similar way to recording a macro: STORE TIMECODE X ENTER or STORE and press a key in the timecode pool.
- Manual recording is started by pressing the MANUAL RECORD key in the timecode editor.

Stop recording:
- Recording is stopped when you PAUSE or STOP the timecode show.
- Automatic recording with internal sync will also be interrupted if you enter a new time.
- Recording is NOT stopped when you close the timecode editor. So be aware of what is being recorded, otherwise you will discover a huge timecode show at some later point.

After recording, particularly if you have recorded fader movements, it is a good idea to use the DO FADER DATA REDUCTION (in the options menu). This keeps your show slim and easier to edit. The fader data reduction process guarantees, that the compressed signal will not differ more than 1 frame in time and 1% in value from the original. Usually recorded fader events will be reduced to 20% or less of the original amount.

The length of the show

During recording, the length of the show is automatically extended if needed. This also happens if you manually add events after the current length (see manual editing).

The length of a show becomes very important if you plan to use internal sync and repeat. In combination with the “when reaching the end” setting (to be found in options menu), it is worth taking into consideration how long your show should be.

The length of the timecode show can be changed in the options menu.

8.1.5 Manual Editing of a Timecode Show

Editing is only enabled, if the timecode show is NOT write-protected (options menu).

Track Management

A timecode show consists of TRACKS:

A TRACK has a specific function. At the moment, only EXECUTOR TRACKS are implemented, but in the future, it is conceivable to have tracks implemented for submasters, global speeds etc., too. This way, one track would
always relate to one specific executor. It is not possible to have two tracks for the same executor. A TRACK consists of SUBTRACKS:
A SUBTRACK has a specific function that relates to its "parent track". For example, a subtrack for an executor track could have the crossfade function. One subtrack always relates to one specific function. It is not possible to have two subtracks for the same function.
Every executor track has at least one subtrack for executor commands. Subtracks for fader movements are added if needed.
A SUBTRACK contains EVENTS:
An EVENT contains specific TIME and DATA information. The DATA is interpreted according to the function of the assigned subtrack.

Adding Tracks
When recording TRACKS are automatically added, but of course you can also add tracks manually:
- Press the TRACK FUNCTIONS key or make a right click with the mouse in the track display of the timecode show editor (on the left side, below the sort key).
- Select ADD NEW TRACK.
- Choose an executor from the list, or simply press a physical executor button. You can even enter EXEC 17 ENTER in the command line. An executor track for this executor will be added to your timecode show if it did not exist already.

Changing the Executor
Changing the executor of an already existing track is very similar to adding a new track:
- Choose the track that you want to change (with the track encoder or by touching it)
- Press the TRACK FUNCTIONS key.
- Select CHANGE EXECUTOR from the list. The rest is similar to adding a new track.

Adding Subtracks
When recording SUBTRACKS are added automatically. Of course you can also add subtracks manually. Subtracks can only be added to already existing tracks:
- Choose a track (with the track encoder in the bar or by touching it).
- Press the TRACK FUNCTIONS key or right click with the mouse on the TRACK.
- Select ADD NEW SUBTRACK.
- Choose the type of the new subtrack from the list.

Deleting Tracks or Subtracks
- Choose a track (with the track encoder in the bar or by touching it).
- Press the TRACK FUNCTIONS key or right click with the mouse the TRACK.
- Select DELETE TRACK.
- If the track contains events, you will be asked for a confirmation, otherwise the track will be deleted immediately.
- If you delete the first subtrack (like executor command track), the whole track with all its subtracks will be deleted.

Expanding / Collapsing Tracks
Tracks can be EXPANDED or COLLAPSED. An expanded track will show all of its subtracks, while a collapsed track will hide all its subtracks except for the first one. For an executor track, the first subtrack is always the executor command subtrack.
This functionality only affects the display. "Hidden" subtracks are always played back.
An expanded track is marked with a “+” in front of it, a collapsed track indicated by a “−”. Click on this mark to change the expand/collapse status of the track. The TRACK FUNCTIONS menu contains functions to expand/collapse all tracks simultaneously.

**Selecting Tracks**
Tracks can be SELECTED individually. A selected track is displayed in a darker colour. Only selected tracks are shown in TEXT display mode. For some functions it is important whether a track is selected or not. For normal operations however, in graphic display mode, you do not have to worry about this.

Click on the track name cell (you may have to do this twice, because the first click is chooses the current track) or press the track encoder within the bar to change the selection status of a track. The TRACK FUNCTIONS menu contains functions to select/deselect all tracks simultaneously. These functions are also available as direct “R” (Reset all tracks to unselected) and “S” (Set all tracks to selected) keys.

At the moment, selecting tracks does not affect the playback functionality, it is only a display and edit function. For future versions, however, we plan to have that as a special playback mode, to enable playback output for selected tracks.

**Sorting Tracks**
Perhaps you have a large number of tracks in your show, but currently you are only interested in some of them. Select these tracks and press the SORT key. The selected tracks will be sorted and displayed at the very top of the track display.

If you have selected all (or no) tracks and press SORT, they are sorted into their natural order, e.g. the order in which they appear on the console.

The sorting of tracks is part of the show and is stored with the show. It is only a display function and not affect playback functionality.

**Adding Events**

**Graphically with the mouse:**
- Choose the ADD mouse tool. The cursor will show an arrow with a large “+”.
- Click anywhere in a track. At the position you clicked with the mouse a new event will appear.
- To edit this new event right click on it.

**With encoders and keys:**
- Set the current time with the time encoder (first one) to where you want to add the event.
- Use the track encoder (second one) to select the track on which you want to add the event.
- Press the ADD HERE! key.
- At the given position, a new event will appear and now you are ready to edit the event.

When you are adding events on an executor command track, the timecode editor will try and predict the most likely command at that particular point in the track. For example if you have an executor with a sequence, containing 3 steps, and you simply add one event after the other, it is assuming:

GOTO STEP1, GOTO STEP2, GOTO STEP3, OFF

Or if you are adding a new event after a FLASH UP ON command, it will predict the new event as FLASH UP OFF.

For chaser, the editor never predicts GOTOs, instead it uses conventional Gos. The editor is also assumes, that you only want to switch the chase on, and then off again, regardless of how many steps the chase has.
Attention, mouse users:
Please be aware that if you have chosen the ADD mouse tool, this tool stays active. So wherever you click with the mouse – something will be added. If you switch on “always reset mouse tool” in the options menu, the risk of accidentally adding something is reduced.

Selecting Events
Events can be SELECTED individually. A selected event is displayed in red. All selected events together are called the selection. You can MOVE, DELETE or COPY this selection.

Selecting with the mouse in graphic mode:
- Choose the SELECT mouse tool. The cursor will show a selection frame.
- Left mouse click somewhere in a track, keep mouse key pressed, and drag a frame.
- Upon release of the mouse key, all events inside the frame are selected.

Selecting with the mouse in text mode:
- Left mouse click somewhere in the list, keep mouse key pressed, and drag vertically a frame.
- Upon release of the mouse key, all text lines (events) inside the frame are selected.

With the CREATE SELECTION function:
- Press the CREATE SELECTION key, the CREATE SELECTION menu appears.
- Choose to either make a selection on the current (green) track only, or on all selected tracks.
- Choose one of the three commands:
  - A) BEFORE TIME Events that are before the current time will be selected.
  - B) ALL All events on given tracks will be selected
  - C) AFTER TIME Events that are after the current time will be selected.

Selecting the Current Event
Only one event can be defined as the current event. In the graphic mode, this event will blink. In text mode, this text line (event) will be yellow. Its position is shown in the timecode control bar.

You can select the current event one way or the other:
Graphically with the mouse:
- Choose the SELECT mouse tool.
- Make a selection that contains only one event, or click only on one event.

With the encoders in the bar:
- Select the track with the track encoder (second one).
- Select the event with the event encoder (third one)

With the XY-encoder in text mode:
- Simply scroll through the list.

Deleting Events
Graphically with the mouse:
- Select the DELETE mouse tool. The cursor will show an arrow with a large “-“.
- Drag a frame or click on an event. Events that you click on or that are inside the frame will be deleted.

With the DELETE SELECTION key:
- Make a selection or select the current event.
- Then press DELETE SELECTION. If more than one event is going to be deleted, you will be asked to confirm that.

Attention, mouse users:
Please be aware that if you have chosen the DELETE mouse tool, this tool stays active. So wherever you click with the mouse – it will be deleted. If you switch on “always reset mouse tool” in the options menu, the risk of
accidentally deleting something is reduced.

**Moving Events**

**Graphically with the mouse:**
- Choose the MOVE mouse tool. The cursor will show a hand with a little arrow. The corner of the arrow is the “hot spot” of the cursor.
- Left click INSIDE the selection or on an event and keep mouse key pressed.
- Drag the mouse horizontally. The selection/current event will follow.

**With encoder within the bar:**
- Make a selection or select the current event.
- Turn the MOVE encoder (furthest to the right). For every click of the encoder, you will move the selection/current event by one frame.
- If you press and turn the encoder for every click you will move one second.
- If you press it without turning, you can enter a new start time for your selection/current event. This input can be a relative movement if you use signs (“-1.5” will move your selection 1.5 seconds backwards in time).

**In text mode:**
- Edit the Time column (by right clicking with the mouse or press the XY-encoder).
- The movement will be relative if you use the signs, otherwise it will be absolute.

**Editing an Event**

You can only edit an already existing event (see Adding Events). Editing an event means to change its data. If you want to change its time, look for MOVING EVENTS.

**Graphically with the mouse:**
- Right click on an event and the Edit menu appears according to the type of the event.

**With the event encoder in the bar:**
- Select current event with the track and event encoder.
- Then press the event encoder. Edit menus will appear.

**In text mode:**
- Scroll to the event that you are looking for.
- Edit the appropriate column by right clicking or pressing on the XY encoder. The parameter column is only editable for GOTO commands and for fader events.

**Special fast edit for fader-events in graphic mode:**
- This method is not exact enough for speeds, but for master fader events it is recommended.
- Click with the middle mouse key on an event and keep the mouse key pressed.
- Drag the mouse vertically with middle mouse key pressed. The value of the fader event will now follow.
8.1.6 Special Procedures
Recording Crossfades
Crossfades for executors are recorded as a combination of commands and fader movements.
These commands are:

- **XGoUp**: Crossfade will start upwards
- **XGoDn**: Crossfade will start downwards
- **Xend**: Crossfade has ended

XGoUp and XGoDn have a cue number as parameter, just like a GOTO command, therefore a crossfade may start on any cue, not only on the next one.

Try to record a crossfade and have a look at the outcome. You will see, that the global crossfade setting CROSSFADE PERMANENT / RELOAD affects the recording.
In the first case, a pattern of XGoUp, XgoDn, XGoUp... Xend is recorded, while in the second case only XGoUps are recorded.

Nevertheless you can change the global crossfade mode afterwards without affecting the playback of your recorded timecode show.

If you edit a crossfade manually, be aware that the crossfade fader movement alone does not do anything. Although faders are moving, no crossfade is started. You have to place the crossfade commands on the command track to make the crossfade work.

Accordingly, if you want to move a crossfade in time, you have to move both, the fader events on the fader track and the crossfade commands on the command track.
At first glance, this procedure of recording a crossfade may seem to be complicated, but it has a lot of advantages:
- The crossfade commands are displayed in text mode, making crossfades more readable
- Crossfades relate to absolute cue numbers, like gotos.
- Crossfades are not destroyed by running fader data reduction
- You can jump into the middle of a crossfade, or run backwards into a crossfade, and it will be correctly initialised. (This will happen quite often when using external time code!)

8.1.7 Time Code im onPC
CD-Player im onPC
In the onPC you find a CD Player in the OPTIONS menu (click with the right mouse button on the yellow dot).
Then click „CD-Player visible“ and switch on the encoder bar.
8.2 Remote Control via Touchboard

On the rear of the grandMA, there is a 25-pin SUB-D socket (DC REMOTE CONTROL) to connect a standard Touchboard with up to 16 channels.

- PIN 1 ... 16: Input Channels 1 to 16
- PIN 21+22: +5 Volt (max. 100 mA Output)
- PIN 17+18 und 24+25: Earthing

The Touchboard input sockets only function as switches:
- 0 bis +2 Volt: Off
- +5 to +15 Volt: On

8.2.1 Assigning Playback keys

- press TOOLS
- press TOUCHBOARD REMOTE

The menu REMOTE TOUCHBOARD CONFIGURATION displays the commands; „Empty“ means, that there is no command assigned to this button.

- Press the STORE key once (LED is on).
- Press a key on the Touchboard, where a Playback key is to be assigned to, once.
- Select a key in the REMOTE CONFIGURATION menu. Press the Playback button that you want to assign. The selected button will now be assigned.

- In the TOOLS menu, you can switch the Touchboard function on or off using the ON / OFF key.

Deleting assignment:

- Press DELETE
- Press the Touchboard key or the appropriate key once.

The assigned playback keys will always be executed directly. The assigned playback keys will be executed in combination with the previously selected commands. Example: If an OFF key is programmed on a TOUCHBOARD key, but PAUSE is activated (See Layout and Controls, item 11), not the OFF command, but the PAUSE command will be executed when pressing this key.
8.3 Remote Control by DMX IN

DMX IN can be used to MERGE the signals of a second control board with those of the grandMA and transmit them to the stage via the same data line. If, during this process, channels from the grandMA and from the second control board are mixed up, only the higher value will be transmitted. DMX IN will only be linked to DMX OUT A and will not be output via Ethernet.

Via the DMX IN socket, assigned commands can be called up from an external DMX console. The DMX input has only the function of a switch that will release at approx. 50%.

8.3.1 Assigning Playback Keys

1. Press the TOOLS key once.
2. Call up the DMX-IN REMOTE CONFIGURATION menu using the REMOTE key.
3. Press the STORE key once (LED is on).
4. Select a key in the DMX-IN REMOTE CONFIGURATION menu.
5. Press the Playback button that you want to assign. The selected button will now be assigned.

or:

1. Enter the Executor Fader to be assigned using the Command Line (e.g.: „Executor Executor 1.5“ means Exe-Fader 5 on Page 1) and confirm with Enter.

The assigned Playback buttons/fader will be displayed on the individual keys. Only EXECUTOR buttons and faders can be assigned to the respective DMX channel.

8.3.2 Assigning DMX Channels

Make a right mouse click on the key. A menu will open in which you can assign one of the 512 DMX channels to this key. Identical DMX channels can be assigned to more than one key.

By pressing the PAGE 1 key, you can open another page (PAGE 2) with keys.

8.3.3 Deleting Assignments

1. To delete an assigned Playback key, press the DELETE key once (LED is on). Press the respective DMX IN key once.

8.3.4 Using the DMX Input

In the TOOLS menu, you can switch the DMX input function on or off using the ON / OFF key.

If the DMX input is activated, you can use the assigned keys by switching on the respective DMX input. For clarity when looking at this window, the keys in the DMX-IN REMOTE CONFIGURATION menu will have a red background when switching on the respective DMX channel.

The assigned playback keys will always be executed directly.

The assigned playback keys will be executed in combination with the previously selected commands.

Example: If an OFF key is programmed on a DMX-IN channel, but PAUSE is activated (See Layout and Controls, item 11), not the OFF command, but the PAUSE command will be executed when calling up this DMX-IN channel.
8.4 Remote Control by MIDI

On the rear of the grandMA, you will find the MIDI IN, MIDI THRU and MIDI OUT sockets. Assigned commands can be called up using e.g. an external MIDI keyboard or sequencer. Devices like these can be plugged into the MIDI IN socket. Only note commands are currently supported. The incoming signals will be automatically transferred to MIDI THRU. Also MIDI Show Control (MSC) can be processed or sent.

8.4.1 Midi Show Control

The console can receive MSC commands which will be used to trigger the Master sequence only. Push the key “MIDI Show Control” within the Tools menu; the menu Configuration MIDI Show Control will be opened.

To receive MSC, set the device or the groups into the window „MIDI IN“. You can switch between Midi Enabled and Midi via Ethernet via the key below the window „MIDI IN“. After pushing the key „Store“ all settings will be stored and the function will be started.

To send MSC, set the device or the group into the window „MIDI OUT“. By the key „Send“ you can change between sending Device, Group or ALL. You can switch between Midi Enabled and Midi via Ethernet via the key below the window „MIDI OUT“. After pushing the key „Store“ all settings will be stored and the function will be started.

8.4.2 Assigning Playback Buttons

- Press the TOOLS key once.
- Call up the MIDI REMOTE CONFIGURATION menu using the REMOTE key.
- Press the STORE key once (LED is on).
- Select a key in the MIDI REMOTE CONFIGURATION menu.
- Press the Playback button that you want to assign. The selected button will now be assigned.

The assigned Playback buttons will be displayed on the individual keys of the MIDI REMOTE CONFIGURATION menu. EXECUTOR buttons and faders can be assigned to the respective MIDI note.

8.4.3 Selecting the MIDI Channel

Pressing the Channel key will open a menu in which you can select one of the 16 Midi channels by a mouse click.

8.4.4 Assigning the Pitch

By pressing the KEY OFFSET key, you can transpose the incoming notes by one octave downwards. This can be set for up to three octaves.

8.4.5 Deleting Assignments

- To delete an assigned Playback button, press the DELETE key once (LED is on). Press the Key once.

8.4.6 Using the MIDI Input

In the TOOLS menu, you can switch the MIDI input function on or off using the ON / OFF Key. If the MIDI input is active, you can call up the assigned keys by pressing the respective note keys on the MIDI keyboard. For optical convenience, the key in the MIDI REMOTE CONFIGURATION menu will have a red
background when pressing a note key.

8.4.7 MIDIOUT

Use the following syntax for MIDI_OUT commands in the CommandLine:

MIDI Note: MiNote 0-127, 0-127 Separate numbers with comma e.g. MiNote_13,122
MIDI Control: MiCtr 0-127, 0-127 Separate numbers with comma e.g. MiCtr_11,123
MIDI Programm: Miprog 0-127
OPTION: type in the MIDI channel separated by a comma (1-16). If no channel is selected, the default channel is used.

Separate multiple commands with semi-colon „;“ (see lower line on picture left)

9 Macros und QUIKEYS

9.1 Creating Macros

With macros, you can combine sets of command line entries and key strokes for recalling in batches. These can also be:
- Playback buttons (e.g. GO, Fader, Pause, etc., incl. number of the Executor)
- Call-ups of Views
- Call-ups of Delete operations
- Other Macro calls
- Call-ups of Clear operations

- Press the STORE key once (LED is on).
- Press the MACRO key once (LED is on). The SELECT MACRO window will open.
- Enter a name for the Macro using the keyboard.
- Press the TIMED key (will turn dark-gray) if the Macro is to be executed over the same amount of time as it takes to record it. The alternative is that the Macro will be played back as fast as possible.
- Confirm with ENTER.

LED in the MACRO key flashes.

Now, enter all operational steps to be executed by this Macro.

- To stop recording the macro press STORE, MACRO and then ENTER (LED in the MACRO key is now off).

This completes the MACRO Programming procedure.

9.1.1 Calling up macro

- Call up the macro window with CREATE A WINDOW
- Press the desired macro button.

or:
- Enter in the COMMAND LINE: Macro_XX + ENTER

or:
- Press ASSIGN (LED lights up) and click a VIEW button. The OPTIONS window appears
- Select MACRO. The SELECT MACRO window appears
- Select macro. Now the macro is assigned to the VIEW button and can be requested at any time.
9.1.2 Assign a macro to a executor

Macros may be stored to executor fader or executor button and may be started with this button. 3 buttons of the executor fader (Micro and Pico only 1 button) as well as the executor buttons can be assigned with the commands ON, GO or OFF. With this function the fader is not active.

Note: If a macro is started from an executor button, it is only effective local (with the same user profile). All macros started with in a cue (linked in a cue) are effective global (as hitherto)

**Store a macro to a executor button:**
- press ASSIGN and press a empty executor button - the executor menue for this button opens.
- choose FUNCTION / MACRO and select the required macro (see picture left)
- close the menue with X, the selected macro is stored on this button

**Store a macro to a executor fader button (with this function the fader is not active)**
- press ASSIGN and press a empty executor fader - the executor menue for this executor opens.
- choose FUNCTION / MACRO and select the required macro (see picture left)
- close the menue with X, the selected macro is stored on this executor

**Store GO, ON or OFF to a Executor button**
- press ASSIGN
- press (hard) button GO, ON or OFF
- press the executor button or one of the three executor fader button - the required command is stored to this button

Go and ON starts different actions, depends on the mode of the macro (timed or not timed)

- **GO macro not timed** - starts the macro (identical with ON)
- **GO macro timed** - starts the macro. If a cue has a GO in the DELAY column, the macro will have a break there; continue with a GO command.

- **ON macro not timed** - starts the macro (identical with GO)
- **ON macro timed** - starts the macro; with every ON command (during the macro is running) the macro is restarted with the first cue. If one cue has a GO in the DELAY column, the macro will have a break there and can only be continued with a GO command.

**NOTE:** If two or more commands should be executed with the same channel, give time to the console to execute all commands. In the macro (shown left) a channel is set to 100% with the first command. The second command is to park this channel with the 100% output. With the setting NOT TIMED both commands would be executed simultaneously and the channel would be parked without an output (no time to set the output). WORKAROUND: set a short delay (for example 0.2 seconds), then both commands can be executed completely.
9.1.3 Editing Macros

- Press the EDIT key once. Select a Macro from the MACRO Pool.
- Or:
  - Press the EDIT key once. Press the MACRO key once, enter the Macro number and confirm with ENTER. The EDIT MACRO window will open.
  - In the LINE column, the individual commands are numbered.
  - In the COMMAND column, all stored commands are displayed one by one.
  - For each command the time between steps where the macro was recorded is displayed in the DELAY column. This times can be edited or ignored for playback purposes.

Note: if a GO command is assigned to line in the DELAY column (see example left), the macro (in „Timed Macro“-mode) will have a break and can only continued with a GO-command - see previous page.

- Pressing the ADD LINE key will insert a step in front of the chosen position. Now you can enter one or two commands (separated by a semi-colon).
- Now, you can enter a command using the text keyboard. If you want to use a Delay time when performing a command, click in the cell, enter a time using the keyboard, and confirm with ENTER.

- To delete a command, select one of the lines and press the DELETE LINE(S) key.
- To modify a command, select one and press the EDIT LINE key. Now, you can enter a new command.
- If you want to modify the Delay time, click into the cell, enter a different time using the keyboard, and confirm with ENTER.
- Pressing the EDIT MACRO NAME will open the EDIT NAME window. Now, you can enter a new name using the keyboard and confirm this with ENTER.

If the TIM ED (MACRO) key is switched on, the calls of this Macro will be executed with the set DELAY times. Pressing this key once will switch the display to MACRO NOT TIM ED. In the Sheet, the DELAY times will be displayed on a dark background, and the Macro will be executed without delay times.

- You can leave the menu with the CLOSE key.
### 9.2 Assigning and Activating QUIKEYS

You can display and call up various keys, commands and functions using the QUIKEY pool (Display Softkeys).

- Create a QUIKEY window. See Creating a Window
- Press the EDIT key and click or touch on a key in the QUIKEY pool. or:
- Make a right click with the mouse on a key. The QUIKEY OPTIONS pool will open.
- Clicking on one of the functions will assign it to the key. Using this method it is possible to customise the console allowing quick and easy access to commonly used functions.

#### List of functions:

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALIGN OFF:</td>
<td>Switches off the ALIGN function.</td>
</tr>
<tr>
<td>ALIGN LEFT:</td>
<td>ALIGN key pressed once</td>
</tr>
<tr>
<td>ALIGN RIGHT:</td>
<td>ALIGN key pressed twice</td>
</tr>
<tr>
<td>ALIGN BOTH:</td>
<td>ALIGN key pressed three times</td>
</tr>
<tr>
<td>ALIGN SYM:</td>
<td>ALIGN key pressed four times</td>
</tr>
<tr>
<td>CLEAR SELECTION:</td>
<td>CLEAR key pressed once</td>
</tr>
<tr>
<td>CLEAR ACTIVE:</td>
<td>CLEAR key pressed twice</td>
</tr>
<tr>
<td>CLEAR RELEASE:</td>
<td>CLEAR key pressed three times</td>
</tr>
<tr>
<td>VALUES MODE:</td>
<td>Switches the FIXTURE and CHANNEL SHEET to the VALUES mode</td>
</tr>
<tr>
<td>FADE MODE:</td>
<td>Switches the FIXTURE and CHANNEL SHEET to the FADE time mode</td>
</tr>
<tr>
<td>DELAY MODE:</td>
<td>Switches the FIXTURE and CHANNEL SHEET to the DELAY time mode</td>
</tr>
<tr>
<td>ASSIGN:</td>
<td>ASSIGN key</td>
</tr>
<tr>
<td>EMPTY:</td>
<td>Creates an empty key</td>
</tr>
</tbody>
</table>
| FLIP:                | M Moving Head Fixtures (this function is used to control the manner in which a Moving head fixture moves between two positions):
                        - Pressing 1x: The head will be turned so that it is pointing to the same position but with different values for Pan & Tilt. All lights that have 360 degrees or more of Pan and 270 degrees of tilt can point at the same position using two (or more) sets of Pan & Tilt values.
                        - Pressing 2x: For fixtures with more than 360 degrees of Pan, a third set of Pan and Tilt values is possible while still pointing to the same position on stage. If the fixture only has 360 degrees of movement it will return to its original position.
                        - Pressing 3x: The head will be returned to the original position. When using head Fixtures, the FIXTURE SHEET will show a yellow square left of the PAN value, symbolizing the current head position.
                        - Mirror Fixtures: The PAN/TILT value will be inverted, the mirror will be positioned so to easily allow the creation of symetrical looks.
                        - Flip reacts as well to the Preset Master Fader (see chap. 3.7.3). Flip can be faded either with a set time (Set Time setting) or cross-faded with the fader (Manual Fade setting).

- (minus): M minus key
- STORE: STORE key
- EDIT: EDIT key
- UPDATE: UPDATE key
- ESCAPE: ESCAPE key
- ENTER: ENTER key
- ALL SELECTION: Reselects all FIXTURES and CHANNELS (this is normally used after working with the NEXT/PREV).
- ODD SELECTION: Selects all odd FIXTURES and CHANNELS
- EVEN SELECTION: Selects all even FIXTURES and CHANNELS
- INVERT SELECTION: Allows to invert the selection.

- If several fixtures are activated (values in red), but only some of those fixtures are currently selected (fixture name in yellow), you can deselect those fixtures and reselect all other fixtures will active values by pushing the INVERT SELECTION key and ENTER.

- DELETE: Delete key
- MOVE: MOVE key
- COPY: COPY key
- BACKUP: BACKUP key
- SETUP: SETUP key
- TOOLS: TOOLS key
- PREVIOUS: PREV. key
- NEXT: NEXT key
- TRACKBALL SPEED: Toggles the TRACKBALL between coarse and fine.
- ENCODER SPEED: Toggles the ENCODER between coarse and fine; further toggling is achieved by pressing on the ENCODER.

- REPORT: Creates a report
- INFO: Opens the INFO-window of the required sequence
- LOCK: Locks sequences (or a single cue in a sequence), executors, effects, forms, groups, presets, worlds and macros; editing is not possible
- UNLOCK: Unlocks the above items - editing is possible
- HIGHLIGHT: HIGHLIGHT- button has Highlight - function
- SOLO: SOLO- button has SOLO-fun function
- TRACKBALL TILT ONLY: Trackball will only change the Tilt value, as long as the Qukey is active (pressed down).
- TRACKBALL PAN ONLY: Trackball will only change the Pan value, as long as the Qukey is active (pressed down).

- SHUFFLE VALUE: Will exchange the values at random between the selected fixtures
- SHUFFLE SELECT ORDER: Will mix up the selection order at random
- BLOCK / UNBLOCK: Qukeys have the same function as Buttons in the Tracking sheet. Qukeys, however, offer far more options. With Qukeys, you can block individual Fixtures or Dimmers, not only Sequencies and Cues. When using the AT filter, you can block individual parameters, too.
In this window you can set the time of day and date for the automatic execution of Macros. It is also possible to set relative trigger points using sunrise, sunset, dawn and dusk as a reference.
- If DAY is chosen, the ADD, DEL and EDIT keys will be displayed.
- Pressing the ADD key will include a new column in the sheet, where you can set the programming for automatic control.
- Pressing the DEL key will delete it by pressing the DEL key.
- If a cell is selected, you can delete the function / time by pressing the EDIT key.

All created events will be displayed in this sheet.
Selecting a cell within a column and pressing the encoder will open a window where you can enter the following:
- Start: Absolute: The Macro will be started at the set time.
- Dawn: The Macro will be triggered at the calculated time for dawn.
- Sunrise: The Macro will be triggered at the calculated time for sunrise.
- Sunset: The Macro will be triggered at the calculated time for sunset.
- Dusk: The Macro will be triggered at the calculated time for dusk.

See Menu TIME & DATE

Time: If ABSOLUTE is selected in this line under „Start“, a time can be set for the Macro to start.
If DAWN, SUNRISE, SUNSET or DUSK is selected in the start column, you can enter between -1 to +1 hour.
Consequently, the Macro will be started either 1 hour earlier or later than the calculated time.

Duration: If the unit is powered up later than the trigger time a setting in this column specifies the amount of time (up to 8 hours), after the original trigger time, that the macro should still be triggered.

Repeat: NONE will execute the event only once.
Daily, weekly, monthly, yearly, daily each month, weekly each month, daily each year, weekly each year, monthly each year will execute the event repeatedly according to the set frequency.

Link: Here you can specify which Macro is to be triggered by the event.

You can enter a comment, using the keyboard.

Agenda Options

Touch the touch screen on the left corner of the title bar.
Or:
With a right click using the mouse on the title bar, you can open the Agenda Options window.
The table will show all created events. By clicking with the mouse or the encoder you can select and edit specific events.
10 Command line

10.1 Introduction

The following chapter describes the functionality of the grandMA family of consoles that can be achieved using the command line.

“Command line operation” means using physical keys or the keyboard as opposed to using the mouse or touchscreen(s).

10.1.2 Quikeys

On some grandMA consoles, particularly the grandMA replay unit, you may not find all of the described hard keys. In spite of this small disadvantage, you can create a QUIKEY pool window on the screen and arrange the missing functions there. Then simply use these “soft keys” instead of the hard keys.

10.1.3 Double functions of hard keys

Some keys have more than one function due to space considerations. Some hard keys have an alternative function at the second or even the third push. These keys are:

<table>
<thead>
<tr>
<th>Hard key</th>
<th>First press</th>
<th>Second press</th>
<th>Third press</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSIGN</td>
<td>ASSIGN</td>
<td>LABEL</td>
<td></td>
</tr>
<tr>
<td>CHANNEL</td>
<td>CHANNEL</td>
<td>DMX</td>
<td></td>
</tr>
<tr>
<td>EXEC</td>
<td>EXEC</td>
<td>FADER</td>
<td></td>
</tr>
<tr>
<td>GOTO</td>
<td>GOTO</td>
<td>LOAD</td>
<td></td>
</tr>
<tr>
<td>IF</td>
<td>IFOUTPUT</td>
<td>IF</td>
<td></td>
</tr>
<tr>
<td>MOVE</td>
<td>MOVE</td>
<td>INSERT</td>
<td></td>
</tr>
<tr>
<td>PRESET</td>
<td>PRESET</td>
<td>FEATURE</td>
<td></td>
</tr>
<tr>
<td>TIME</td>
<td>FADE</td>
<td>DELAY VALUE</td>
<td></td>
</tr>
<tr>
<td>VIEW</td>
<td>VIEW</td>
<td>VIEWKEY</td>
<td></td>
</tr>
<tr>
<td>EFFECT</td>
<td>EFFECT</td>
<td>Call up an effect view</td>
<td></td>
</tr>
<tr>
<td>GROUP</td>
<td>GROUP</td>
<td>Call up a submaster view</td>
<td></td>
</tr>
<tr>
<td>PAGE</td>
<td>PAGE</td>
<td>Call up a total page view</td>
<td></td>
</tr>
</tbody>
</table>

10.1.4 Messages

Sometimes the command line asks you a question upon the execution of a command. It can also inform you about something that went wrong with your command.

If such a message or a question window appears on the display, use the NEXT and PREVIOUS hard keys to select the appropriate answer (the key with the thick blue border) and then hit ENTER. Also ESC can be used for simple messages or warnings. If there is a more complex question and you hit ESC, the action is considered to be CANCELED.

Every command line action that succeeds will appear in the history of all command line windows.

10.1.5 Command line window

Of course you want to be able to see the commands that you give to your console. Open a command line window on the screen. There you can see what you enter and what you have entered previously.

10.1.6 Using the PC keyboard

Some users may find it convenient to use the PC keyboard for command line input. Open a command line window on the screen. Whenever this window has the input focus (title is shown in deep blue), all keystrokes of the PC keyboard go into the command line. If the input focus goes somewhere else, the PC keyboard will no longer work with the command line. Touching the title or the bottom line of the command line window will give the input focus back to it.

To permanently lock the the PC keyboard to command line input, press the SCROLL LOCK key. You will hear a beep and the SCROLL LOCK lamp will be on, indicating that the PC keyboard is now locked to command line operation.

If the PC keyboard is locked, you can not use it for other operations like naming presets etc. But another push of the SCROLL LOCK key will unlock it.

If you are using the PC keyboard as command line input, you can only enter valid commands and values. If you try to enter FIQQQ the command line will audiably warn you upon the entry of the First Q. This is because the only two commands that the command line recognises that start FI are FIXTURE or FIX.

In most cases it is not necessary to enter the full name of a keyword, the letter F is totally sufficient for FIXTURE. You can find all keywords and their shortest form in section 9.2 command overview.

10.1.7 Using the command line history

It is possible to recall previous commands from the history into the current command line.

There they can be re-executed or edited and executed.

- Left click with the mouse in the history of a command line window
- Or scroll with the XY encoder if the command line window has the focus
- Or use the UP and DOWN cursor keys on the PC keyboard if the command line window has the focus (or the PC keyboard is locked to the command line).

b) Edit the command line if you want
c) Press ENTER. The command line will be executed.
## 10.2 Command Overview

Here comes the complete list of all possible keywords in the command line.

<table>
<thead>
<tr>
<th>Keyword:</th>
<th>Shortcut:</th>
<th>Hard key:</th>
<th>Operation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>As it appears in the command line.</td>
<td>Shortest possible form How to enter the keyword into the command line.</td>
<td>Hard key: Operation: Short description of the meaning.</td>
<td>For a more detailed explanation see chapter 3.</td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>Plus</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Minus</td>
</tr>
<tr>
<td>&lt;&lt;&lt;</td>
<td>&lt;</td>
<td>&lt;&lt;&lt;</td>
<td>Go Back with no time</td>
</tr>
<tr>
<td>&gt;&gt;&gt;</td>
<td>&gt;</td>
<td>&gt;&gt;&gt;</td>
<td>Go Forward with no time</td>
</tr>
<tr>
<td>ALL</td>
<td>ALL QUIKEY</td>
<td>ALL</td>
<td>All selection (with ODD/EVEN)</td>
</tr>
<tr>
<td>ALL CHASES</td>
<td>ALL C CONSOLE</td>
<td>ALL C</td>
<td>Accessing all executors with chases</td>
</tr>
<tr>
<td>ALL SEQUENCES</td>
<td>ALL S CONSOLE</td>
<td>ALL S</td>
<td>Accessing all executors with sequences</td>
</tr>
<tr>
<td>ASSIGN</td>
<td>AS ASSIGN</td>
<td>AS</td>
<td>Assign &lt;source&gt; &lt;destination&gt;</td>
</tr>
<tr>
<td>AT</td>
<td>A AT</td>
<td>AT</td>
<td>At, give value</td>
</tr>
<tr>
<td>CHANNEL</td>
<td>C CHANNEL</td>
<td>CHANNEL</td>
<td>Channel</td>
</tr>
<tr>
<td>CLEAR</td>
<td>CL CLEAR</td>
<td>CLEAR</td>
<td>Progressively clear programmer</td>
</tr>
<tr>
<td>CLEAR ACTIVE</td>
<td>CLEAR A QUIKEY</td>
<td>CLEAR A</td>
<td>Deactivate programmer</td>
</tr>
<tr>
<td>CLEAR ALL</td>
<td>CLEAR ALL QUIKEY</td>
<td>CLEAR ALL</td>
<td>Total clear of programmer</td>
</tr>
<tr>
<td>CLEAR SELECTION</td>
<td>CLEAR S QUIKEY</td>
<td>CLEAR S</td>
<td>Clear selection</td>
</tr>
<tr>
<td>COPY</td>
<td>CO COPY</td>
<td>COPY</td>
<td>Copy &lt;source&gt; at &lt;destination&gt;</td>
</tr>
<tr>
<td>CUE</td>
<td>CU CUE</td>
<td>CUE</td>
<td>Cue</td>
</tr>
<tr>
<td>DEF GO</td>
<td>DEF Yellow GO</td>
<td>DEF</td>
<td>Go forward for default executor</td>
</tr>
<tr>
<td>DEF GO-</td>
<td>DEF GO- Yellow GO-</td>
<td>DEF GO-</td>
<td>Go back for default executor</td>
</tr>
<tr>
<td>DEF PAUSE</td>
<td>DEF P Yellow Pause</td>
<td>DEF P</td>
<td>Pause for default executor</td>
</tr>
<tr>
<td>DELAY</td>
<td>DELA 2 x TIME</td>
<td>DELA</td>
<td>Enter delay mode or give delay time</td>
</tr>
<tr>
<td>DELETE</td>
<td>D DELETE</td>
<td>D</td>
<td>Delete &lt;destination&gt;</td>
</tr>
<tr>
<td>DMX</td>
<td>DMX DMX</td>
<td>DMX</td>
<td>DM X address</td>
</tr>
<tr>
<td>DMX BTN</td>
<td>DM CONSOLE</td>
<td>DM</td>
<td>Remote DM X button</td>
</tr>
<tr>
<td>EDIT</td>
<td>ED EDIT</td>
<td>ED</td>
<td>Edit &lt;destination&gt;</td>
</tr>
<tr>
<td>EFFECT</td>
<td>EF EFFECT</td>
<td>EF</td>
<td>Effect</td>
</tr>
<tr>
<td>ESC</td>
<td>ES ESCAPE</td>
<td>ESCAPE</td>
<td>Escape, close dialogs</td>
</tr>
<tr>
<td>EVEN</td>
<td>EV QUIKEY</td>
<td>QUIKEY</td>
<td>Even selection (with ALL/ODD)</td>
</tr>
<tr>
<td>EXEC</td>
<td>E EXECUTOR</td>
<td>EXECUTOR</td>
<td>Executor</td>
</tr>
<tr>
<td>FADE</td>
<td>FADE 1 x TIME</td>
<td>FADE</td>
<td>Enter fade mode or give fade time</td>
</tr>
<tr>
<td>FADER</td>
<td>FADER 2 x EXEC</td>
<td>FADER</td>
<td>Fader, access executor faders</td>
</tr>
<tr>
<td>FADERBUTTON1</td>
<td>FADERBUTTON1 Hit Executor</td>
<td>FADERBUTTON1</td>
<td>Middlet button of executor section</td>
</tr>
<tr>
<td>FADERBUTTON2</td>
<td>FADERBUTTON2 Hit Executor</td>
<td>FADERBUTTON2</td>
<td>Lower button of executor section</td>
</tr>
<tr>
<td>FADERBUTTON3</td>
<td>FADERBUTTON3 Hit Executor</td>
<td>FADERBUTTON3</td>
<td>Upper button of executor section</td>
</tr>
<tr>
<td>FEATURE</td>
<td>FE 2 x PRESET</td>
<td>FE</td>
<td>Single feature like PAN</td>
</tr>
<tr>
<td>FIX</td>
<td>FIX FIX</td>
<td>FIX</td>
<td>Fixing executors</td>
</tr>
<tr>
<td>FIXTURE</td>
<td>F FIXTURE</td>
<td>FIXTURE</td>
<td>FIXTURE</td>
</tr>
<tr>
<td>FLASH DOWN</td>
<td>FLASH_D CONSOLE</td>
<td>FLASH_D</td>
<td>Downflash executor</td>
</tr>
<tr>
<td>FLASH DOWN OFF</td>
<td>FLASH_DOWN_OFF CONSOLE</td>
<td>FLASH_DOWN_OFF</td>
<td>End of Downflash</td>
</tr>
<tr>
<td>FLASH UP</td>
<td>FLASH_U CONSOLE</td>
<td>FLASH_U</td>
<td>Upflash executor</td>
</tr>
<tr>
<td>FLASH UP OFF</td>
<td>FLASH_UP_OFF CONSOLE</td>
<td>FLASH_UP_OFF</td>
<td>End of Upflash</td>
</tr>
</tbody>
</table>

### Special Shortcuts

- **2 x OFF**: Displays an overview of all running playbacks (Sequences, Effects, Chasers, Macros and Timecodes)
- **OFF + GO+**: Shut off all running playbacks
- **GO+ + CHANNEL** **Activated the selected „parked“ Channel / Fixture**
- **CHANNEL** **“Parking” the selected Channel / Fixture**
- **HIGHLIGHT** **(long)** The dimmer channel pulses; for better dentification
- **2 x BACKUP** Stores the current show
- **NEXT** **/ PREV** **(without prior selection of Fixtures or Dimmers) selects the first (NEXT) or last (PREV) Dimmer or Fixture (depends on default- command; see10.3.1)**
- **CLEAR** **(long)** Clears the programmer totally (all selections, activations, values ......); identical with 3x CLEAR
- **GOTO + ENTER** The Overview of the selected cue opens and a cue can be started with the GOTO button
- **2 x GOTO + ENTER** The Overview of the selected cue opens and a cue can be loaded with the LOAD button
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORM FO</td>
<td>CONSOLE Form, used by effects</td>
</tr>
<tr>
<td>FULL FU</td>
<td>FULL Full, equals 100%</td>
</tr>
<tr>
<td>GO GO</td>
<td>GO Go forward</td>
</tr>
<tr>
<td>GO- GO-</td>
<td>GO- Go backwards</td>
</tr>
<tr>
<td>GOTO GOT</td>
<td>GOTO Goto &lt;cue&gt;</td>
</tr>
<tr>
<td>GROUP G</td>
<td>GROUP Group</td>
</tr>
<tr>
<td>IF IF</td>
<td>2x IF If (logical AND for selections)</td>
</tr>
<tr>
<td>IF OUTPUT</td>
<td>IF Output, create selection from output</td>
</tr>
<tr>
<td>INFO INF</td>
<td>Info · Window</td>
</tr>
<tr>
<td>INSERT I</td>
<td>Exe-key Insert &lt;source&gt; at &lt;destination&gt;</td>
</tr>
<tr>
<td>INVERT INV</td>
<td>Invert &lt;destination&gt;, inverting selection</td>
</tr>
<tr>
<td>LABEL LA</td>
<td>Label &lt;destination&gt; <em>Name</em> give a name</td>
</tr>
<tr>
<td>LEARN L</td>
<td>Learn, change speed of running programs</td>
</tr>
<tr>
<td>LOAD LO</td>
<td>Load &lt;Cue&gt;</td>
</tr>
<tr>
<td>MACRO M</td>
<td>Macro</td>
</tr>
<tr>
<td>MIDI_BTN MI</td>
<td>Remote Midi Button</td>
</tr>
<tr>
<td>MOVE MO</td>
<td>Move &lt;source&gt; at &lt;destination&gt;</td>
</tr>
<tr>
<td>NEXT N</td>
<td>Next device of current selection</td>
</tr>
<tr>
<td>ODD OD</td>
<td>ODD selection (with ALL/EVEN)</td>
</tr>
<tr>
<td>OFF OF</td>
<td>Off, switch something off</td>
</tr>
<tr>
<td>ON ON</td>
<td>On, switch something on</td>
</tr>
<tr>
<td>OOPS O</td>
<td>Oops, I made a mistake - &gt; Undo</td>
</tr>
<tr>
<td>PAGE PA</td>
<td>Page</td>
</tr>
<tr>
<td>PAUSE PAU</td>
<td>Pause something</td>
</tr>
<tr>
<td>PRESET PR</td>
<td>Preset type or Preset</td>
</tr>
<tr>
<td>PREVIEW PREV</td>
<td>Preview something</td>
</tr>
<tr>
<td>PREVIOUS P</td>
<td>Previous device of current selection</td>
</tr>
<tr>
<td>SELECT SE</td>
<td>Select &lt;executor&gt;, select default executor</td>
</tr>
<tr>
<td>SEQU S</td>
<td>Sequence (Cuelist)</td>
</tr>
<tr>
<td>STORE ST</td>
<td>Store</td>
</tr>
<tr>
<td>SWOP SW</td>
<td>Swop executor</td>
</tr>
<tr>
<td>SWOP_OFF SWOP_O</td>
<td>End of swap</td>
</tr>
<tr>
<td>TEMP TE</td>
<td>Temporary run executor</td>
</tr>
<tr>
<td>THRU T</td>
<td>Through, to enter ranges</td>
</tr>
<tr>
<td>TIMECODE TI</td>
<td>Timecode show</td>
</tr>
<tr>
<td>TOGGLE TOG</td>
<td>Toggle running status of executor</td>
</tr>
<tr>
<td>TOP TOP</td>
<td>Call first cue of executor</td>
</tr>
<tr>
<td>TOUCH_BTN TO</td>
<td>Remote Analog input button</td>
</tr>
<tr>
<td>UNPRESS UN</td>
<td>Release of command</td>
</tr>
<tr>
<td>UPDATE U</td>
<td>Update</td>
</tr>
<tr>
<td>VALUE VA</td>
<td>return to value mode</td>
</tr>
<tr>
<td>VIEW V</td>
<td>View, contents of one or multiple screens</td>
</tr>
<tr>
<td>VIEWBTN VIEWB</td>
<td>Viewbutton, hardkey beside screens</td>
</tr>
</tbody>
</table>
10.3 Command Reference

In this chapter, all commands are explained along with their syntax, demonstrating all possibilities of using command line entry.

10.3.1 Key word classifications

In the following descriptions, the term **starting keyword** will appear often. This “starting keyword” is a keyword that you start a new command line operation with.

**Basic operational keywords**

A basic operational keyword in the command line determines a basic operation. These keywords can only appear as starting keyword in the command line.

The only exception from this rule is the AT command. AT can follow a list of object keywords and will still be interpreted as operational keyword.

Operational keywords expect object keywords as targets for their operation. Sometimes they also use helping keywords.

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSIGN</td>
<td>Assign one object to another, like assigning a sequence to an executor.</td>
</tr>
<tr>
<td>AT (operational form)</td>
<td>Set a value to something.</td>
</tr>
<tr>
<td>COPY</td>
<td>Make a copy of an object.</td>
</tr>
<tr>
<td>DELETE</td>
<td>Delete an object.</td>
</tr>
<tr>
<td>EDIT</td>
<td>Edit an object.</td>
</tr>
<tr>
<td>IFOUTPUT</td>
<td>Create a selection depending on an objects stage output.</td>
</tr>
<tr>
<td>INSERT</td>
<td>Insert an object at another location.</td>
</tr>
<tr>
<td>INVERT</td>
<td>Invert the selection.</td>
</tr>
<tr>
<td>LABEL</td>
<td>Change name of an object</td>
</tr>
<tr>
<td>MOVE</td>
<td>Move an object to another location.</td>
</tr>
<tr>
<td>PREVIEW</td>
<td>Have a look at an object without stage output.</td>
</tr>
<tr>
<td>STORE</td>
<td>Store data into an object.</td>
</tr>
<tr>
<td>UPDATE</td>
<td>Update data of active object. Active objects create stage output.</td>
</tr>
</tbody>
</table>

**Executing Keywords**

Executing keywords may be used as starting keywords, or as source in an assign operation. As starting keywords they expect object keywords as targets for their operations.

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;&lt;&lt;</td>
<td>Go back with no time</td>
</tr>
<tr>
<td>&gt;&gt;&gt;</td>
<td>Go forward with no time</td>
</tr>
<tr>
<td>FIX</td>
<td>Fix an executor. This executor will ignore page changes.</td>
</tr>
<tr>
<td>FLASH_DOWN</td>
<td>Temporary down flash of executor</td>
</tr>
<tr>
<td>FLASH_UP</td>
<td>Temporary up flash of executor</td>
</tr>
<tr>
<td>Keyword</td>
<td>Meaning</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>GO</td>
<td>Go forward.</td>
</tr>
<tr>
<td>GO-</td>
<td>Go backwards.</td>
</tr>
<tr>
<td>GOTO</td>
<td>Goto cue</td>
</tr>
<tr>
<td>LEARN</td>
<td>Learn speed</td>
</tr>
<tr>
<td>LOAD</td>
<td>Prepare next step of executor, wait for GO.</td>
</tr>
<tr>
<td>OFF</td>
<td>Switch off something.</td>
</tr>
<tr>
<td>ON</td>
<td>Switch on something.</td>
</tr>
<tr>
<td>PAUSE</td>
<td>Pause</td>
</tr>
<tr>
<td>SELECT</td>
<td>Select default executor.</td>
</tr>
<tr>
<td>SWOP ~_OFF</td>
<td>Temporary up flash for executor and downflash for all others.</td>
</tr>
<tr>
<td>TEMP ~</td>
<td>Temporarily run an executor.</td>
</tr>
<tr>
<td>TOGGLE</td>
<td>Toggle executor on and off.</td>
</tr>
<tr>
<td>TOP</td>
<td>Goto first cue.</td>
</tr>
</tbody>
</table>

**Object Keywords**

Object keywords are used as targets by basic operational keywords and by executing keywords. They represent data, that can be manipulated.

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL_CHASES</td>
<td>All executors assigned as chasers.</td>
</tr>
<tr>
<td>ALL_SEQUENCES</td>
<td>All executors assigned as sequence.</td>
</tr>
<tr>
<td>CHANNEL</td>
<td>A conventional light.</td>
</tr>
<tr>
<td>CUE</td>
<td>One step or memory of a cuelist.</td>
</tr>
<tr>
<td>DMX</td>
<td>A DMX channel.</td>
</tr>
<tr>
<td>DMX_BTN</td>
<td>A Remote triggered by incoming DMX signals.</td>
</tr>
<tr>
<td>EFFECT</td>
<td>An freely editable effect generator.</td>
</tr>
<tr>
<td>EXEC</td>
<td>An executor is the physical front end for executing sequences etc.</td>
</tr>
<tr>
<td>FADER</td>
<td>A executor fader.</td>
</tr>
<tr>
<td>FADE RBUTTON1</td>
<td>The middle button of an executor column.</td>
</tr>
<tr>
<td>FADE RBUTTON2</td>
<td>The lower button of an executor column.</td>
</tr>
<tr>
<td>FADE RBUTTON3</td>
<td>The upper button of an executor column.</td>
</tr>
<tr>
<td>FIXTURE</td>
<td>A complex light that has more than just a dimmer channel.</td>
</tr>
<tr>
<td>FEATURE</td>
<td>A feature inside a fixture, like PAN or IRIS.</td>
</tr>
<tr>
<td>FORM</td>
<td>A 1 or 2 dimensional path, used by effects.</td>
</tr>
<tr>
<td>GROUP</td>
<td>A collection of fixtures and channels.</td>
</tr>
<tr>
<td>MACRO</td>
<td>Can do complex command line operations.</td>
</tr>
<tr>
<td>MIDI BTN</td>
<td>A Remote triggered by incoming MIDI signals.</td>
</tr>
<tr>
<td>PAGE</td>
<td>A page is one set of visible executors.</td>
</tr>
<tr>
<td>PRESET</td>
<td>A memory that can be used indirectly as a placeholder.</td>
</tr>
<tr>
<td>SEQU</td>
<td>A sequence consists of one or more cues.</td>
</tr>
<tr>
<td>TIMECODE</td>
<td>A timecode show consists of many timed playback instructions for executors. Can be synchronised with incoming SMPTE or MIDI signals.</td>
</tr>
<tr>
<td>TOUCH BTN</td>
<td>A Remote triggered by hardwired analogue 0/10 V inputs.</td>
</tr>
<tr>
<td>VIEW</td>
<td>Stores a display arrangement.</td>
</tr>
<tr>
<td>VIEW BTN</td>
<td>A physical button that can call views and macros.</td>
</tr>
</tbody>
</table>
Helping keywords

Helping keywords are context sensitive and thus have different functions depending on where they are used and what they are used with.

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Used ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Everywhere ...</td>
</tr>
<tr>
<td>- -</td>
<td>Everywhere ...</td>
</tr>
<tr>
<td>AT (helping form)</td>
<td>by COPY/MOVE etc.</td>
</tr>
<tr>
<td>DELAY</td>
<td>In executing commands, AT, STORE etc</td>
</tr>
<tr>
<td>FADE</td>
<td>In executing commands, AT, STORE etc</td>
</tr>
<tr>
<td>FULL</td>
<td>As value 100 %</td>
</tr>
<tr>
<td>IF</td>
<td>In selections</td>
</tr>
<tr>
<td>THRU</td>
<td>In ranges</td>
</tr>
<tr>
<td>UNPRESS</td>
<td>After executing keywords</td>
</tr>
</tbody>
</table>

Immediate Keywords

These keywords expect no additional parameters.

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>Restores selection after ODD/EVEN NEXT/PREVIOUS.</td>
</tr>
<tr>
<td>CLEAR</td>
<td>Progressively clear the programmer.</td>
</tr>
<tr>
<td>CLEAR_ACTIVE</td>
<td>Clear the values in the programmer.</td>
</tr>
<tr>
<td>CLEAR_ALL</td>
<td>Totally clear programmer at once.</td>
</tr>
<tr>
<td>CLEAR_SELECTION</td>
<td>Clear the current selection.</td>
</tr>
<tr>
<td>DEF_GO</td>
<td>Go forward for default executor</td>
</tr>
<tr>
<td>DEF_GO-</td>
<td>Go back for default executor</td>
</tr>
<tr>
<td>DEF_PAUSE</td>
<td>Pause the default executor.</td>
</tr>
<tr>
<td>ESC</td>
<td>Escape from input or menu.</td>
</tr>
<tr>
<td>EVEN</td>
<td>Select even devices inside current selection.</td>
</tr>
<tr>
<td>NEXT</td>
<td>Select next device inside current selection.</td>
</tr>
<tr>
<td>ODD</td>
<td>Select odd devices inside current selection.</td>
</tr>
<tr>
<td>OOPS</td>
<td>Oops, I mad a mistake -&gt; Undo</td>
</tr>
<tr>
<td>PREVIOUS</td>
<td>Select previous device inside current selection</td>
</tr>
<tr>
<td>VALUE</td>
<td>Switch back from fade or delay to value mode.</td>
</tr>
<tr>
<td>UPDATE</td>
<td>Update data of active object. Active objects create stage output.</td>
</tr>
</tbody>
</table>

The DEFAULT keyword

The command line has a DEFAULT keyword.
Whenever you **start a new command line with numeric values**, this default keyword will be used.

Assume that the default keyword is CHANNEL. When you type in:
1 ENTER. In the command line will appear CHANNEL 1 ENTER.

If the command line is empty, the current default keyword is shown by:

a) LED in the physical key
b) the command line window

The following keywords can be the default keyword:

- CHANNEL *
- FIXTURE *
- GROUP
- SEQU
- CUE
- EXEC
- PAGE
- MACRO
- PRESET
- VIEW
- EFFECT

The default keyword is also used by operational keywords.

Assuming that the default keyword is GROUP. Then you are typing in:

DELETE 1 ENTER. As a result, GROUP 1 will be deleted!

An exception to this are the keywords CHANNEL and FIXTURE. If they are the default keywords, operational keywords will use CUE as the default keyword!

If CHANNEL is the default keyword. STORE 5 ENTER will do STORE CUE 5!
### 10.3.2 Ranges and Range Lists

Many commands are able to operate on a list of objects. Instead of typing

DELETE SEQU 1 ENTER
DELETE SEQU 2 ENTER
DELETE SEQU 10 ENTER

you can write

DELETE SEQU 1 THRU 2 +10 ENTER.

A range can have the following formats:

- X
- X THRU Y
- THRU

Please note that ranges have a direction. This is particularly important when creating selection. FIXTURE 1 THRU 10 is very different than FIXTURE 10 THRU 1.

Ranges can be combined to Range Lists:

OBJECT_KEYWORD Range1 +/- [OBJECT_KEYWORD] Range2 ...

It is not necessary to repeat the OBJECT_KEYWORD in the range list.

### 10.3.3 Detailed keyword list

**+ (Plus)**

As starting keyword, + enlarges the current selection. Everything that follows after the plus will be interpreted as a selection:

+ CHANNEL/FIXTURE/GROUP/SEQU/CUE/EXEC/PRESET/EFFECT

In object lists it is including objects:

... OBJECT 1 + OBJECT 2 ...

In front of values it is changing the value to a positive relative value:

CHANNEL 1 AT +10 ENTER will increase the dimmer value by 10%.

As a starting keyword, and repeated, + is increasing the dimmer values of the current selection by 10% every time you press +.

**- (Minus)**

As starting keyword, - reduces the current selection. Everything that follows after the minus will be interpreted as a selection:

- CHANNEL/FIXTURE/GROUP/SEQU/CUE/EXEC/PRESET/EFFECT

In object lists it is excluding objects:

... OBJECT 1 THRU 10 - OBJECT 2 ...

In front of values it is changing the value to a negative relative value:

CHANNEL 1 AT - 10 ENTER will decrease the dimmer value by 10%.

As a starting keyword, and repeated, - is decreasing the dimmer values of the current selection by 10% every time you press -.
### ASSIGN TIME

**ASSIGN** (Time)[(value)][(target)] [ ENTER ] to set times in Cues

- **FADE** (press TIME button once)
- **OUTFADE** (press TIME button 2x)
- **DELAY** (press TIME button 3x)
- **OUTDELAY** (press TIME button 4x)
- **SNAPDELAY** (press TIME button 5x)

*Cue (N)* for the Default Executor

*Cue (N)* Executor *(N)* for the respective Executor

---

**Example:**

```
ASSIGN FADE 3 DELAY 8 OUTDELAY 4 CUE 1 THRU 4 EXEC 2.4
```

---

### AT

As operational keyword:

#### AT TYPE 1: Inputting dimmer values directly

```
[ (destination objects) ] AT [set AT filtering] (source objects) ENTER
```

**Destination objects:** A list of objects that can create selections. Usable keywords are: CHANNEL, FIXTURE, GROUP, SEQ, CUE, PRESET, EFFECT.

**Source objects:** A list of objects that can supply values. Usable keywords are: CHANNEL, FIXTURE, GROUP, SEQ, CUE, PRESET.

**Set AT filtering:** Keep AT pressed. After half a second the AT filter menu will appear. Change the filtering while you keep AT pressed.

---

**Examples:**

```
CHANNEL 1 THRU 10 AT 20 FADE 2.5 DELAY 0 THRU 5 ENTER
```

---

### AT TYPE 2: Copying values with filtering:

```
[ (destination objects) ] AT (set AT filtering) (source objects) ENTER
```

**Destination objects:** Same as above.

**Set AT filtering:** Keep AT pressed. After half a second the AT filter menu will appear. Change the filtering while you keep AT pressed.

**Examples:**

```
FIXTURE 2 THRU 10 AT (select CMY colour mixing) FIXTURE 1 ENTER
```

---

**Example:**

```
FIXTURE THRU AT (select PAN/TILT) CUE 1 ENTER.
```

---

### Filtered copy inside the programmer

**All values except default values will be copied if they pass the filter!**

**Examples:**

```
CUE 5 AT (select GOBO) CUE 4 ENTER.
```

---

**As helping key word:** See COPY, MOVE and INSERT.

---

### 2x AT

```
Will set the default value for selected fixtures (set in SETUP / DEFAULTS / DEFAULT AT)
```

---

### CHANNEL

As starting keyword:
CHANNEL ENTER CHANNEL becomes the DEFAULT KEYWORD.
CHANNEL (range list) ENTER Select channels in range list.
CHANNEL (range list) AT ... (see AT) Apply values to channels in range list.
Channel numbers in the range list must be in the interval [1 ... 9999].

as target for the following executing commands:
ON activate dimmer value in programmer.
OFF deactivate dimmer value in programmer and deselect channel.
PAUSE PARK dimmer value of channel.
GO UNPARK dimmer value of channel.

CLEAR
Progressively performs:
1) If there is a selection -> CLEAR_SELECTION
2) If there is an activation -> CLEAR_ACTIVE
3) If there is stage output from programmer -> CLEAR_ALL

CLEAR_ACTIVE
Clears the activation in the programmer without destroying stage output.

CLEAR_ALL
Clears the selection.
Clears the activation.
Clears the programmer totally, all values returned to default or to playback control.
ODD/EVEN/Sub-selection is reset to ALL.

CLEAR_SELECTION
Clears the selection. No device is selected.
ODD/EVEN/Sub-selection is reset to ALL.

COPY
COPY (source objects) AT (destination objects) [ ENTER ]
Source objects: a range list of objects which are all of type X.
Destination objects: a range list of objects which are all of type Y
Object types X and Y must be equal or compatible.

Source object types Compatible destination object types
EXEC EXEC
FADERBUTTON/123 FADERBUTTON/1/2/3
DM X, BUTTON DM X, BUTTON
MIDI BUTTON MIDI BUTTON
TOUCH BTN TOUCH BTN

Currently there are some limitations for copying CUES:
1) A range list of cues can be
   a. A single cue e.g. CUE 1
   b. A range of cues. e.g. CUE 1 THRU 10
2) Also the destination object must be a CUE.
   Therefore the syntax COPY CUE 1 SEQU 1 AT SEQU 2 ENTER is not allowed.
   Instead you must write COPY CUE 1 SEQU 1 AT CUE 2 SEQU 2 ENTER.
   Please note, that CUE 1 SEQU 1 equals the term SEQU 1 CUE 1. Whenever the term contains CUE, you are copying CUES!

CUE

General Format:
Expression Normal meaning
CUE Current active cue of running default executor
In case of STORE New cue at the end in default executor
CUE X Cue X of default executor
CUE X SEQU Y Cue X of sequence Y
SEQU Y CUE X Same as above!
CUE EXEC Z Current active cue of running executor Z
In case of STORE New cue at the end in executor Z
CUE X EXEC Z Cue X of executor Z
X Cue number in format A.B with intervals [0...3999],[0...999], B is optional.
   “CUE 0” is invalid, but “CUE 0.5” is valid.
Y Sequence number in interval [1 ... 999]
Z Executor number in format PAGE.INDEX with intervals [1 ... 64],[1...60],
   or in format INDEX with interval [1...60] using current page.

Either X or Y,Z can be range lists. Range lists with X and Y,Z are not allowed.
Therefore:
   CUE 1 THRU 10 SEQU 1 is valid
   CUE 1 TRUE 10 SEQU 1 THRU 5 is invalid

As starting keyword:
CUE ENTER CUE becomes the DEFAULT KEYWORD.
CUE (range list) ENTER Select devices included in cue(s).
CUE (range list) AT... (see AT) Apply values to devices included in cue(s).

As target for the following operational commands:
AT Extract data from cue
COPY Copy one cue to another
DELETE Delete a cue
EDIT Edit a cue
IF Select devices which are Part of the cue.
IFOUTPUT Search for stage output of cue
INVERT Invert selection of cue
LABEL Change name of cue
MOVE Move cue to another position
as target for the following executing commands:
- **ON** activates content of cue in programmer.
- **OFF** deactivates content of cue in programmer.
- **PAUSE** PARK all features included in cue.
- **GO** UNPARK all features included in cue.
- **LOAD** Prepare cue X as next cue for executor Z.
- **GOTO** Executor Z is calling cue X.

### DEF_GO
- Is performing a GO on the default executor.

### DEF_GO-
- Is performing a GO- on the default executor.

### DEF_PAUSE
- Is performing a PAUSE on the default executor.

### DELAY
With executing keywords and executors
(Executing keyword) (Executor List) DELAY X.X ENTER
The execution command is performed on all listed executors with a snap delay overwrite of X.X seconds. Does not work with PAUSE or flashing commands.

### Giving individual delay times to fixtures or channels:
[Selection] AT DELAY X.X (TRHU Y.Y) ENTER
Individual delays for the feature shown in the preset bar will be set to X.X seconds. If no selection is given, the current selection is used. Please note that the given delay may be a range. In this case, delays will be aligned over the given selection. The given delays can be signed, which will result in relative changes of individual delays.

#### Clearing individual delays:
[SELECTION] AT DELAY ENTER
Works very much like b), but no value for the delay is given.

#### Setting default snap delay:
(No selection present) DELAY X.X ENTER
The next cue will be stored with X.X seconds snap delay default for all snap channels.

### As snap delay when storing a cue:
STORE (List of Cues) DELAY X.Y ENTER
The given cues will be stored with a snap delay default of X.Y seconds for all snap channels.

### Switching to delay display mode:
DELAY ENTER
All sheets which are set to AUTO display mode, will display delays instead of values. This effect is only temporary. All sheets will switch back to value mode upon ending of the next command line operation.

### DELETE
DELETE (object list) ENTER
Some forms of delete will need no ENTER in the end:
- DELETE (hit key in a pool)
- DELETE [CUE] X (hit executor button)
- DELETE (hit viewkey)
All objects in the list must be of the same type. You can not delete a preset and a cue at the same time. Deleting an object that is assigned to an executor will also delete the executor. Deleting an object that is assigned to a view key will also delete the view key.

#### Object Comment
- **CUE**
  - If no sequence or executor is specified, the sequence of the default executor is used. If the last cue of a sequence is deleted, the whole sequence is deleted.
- **DMX_BTN**
- **EFFECT**
  - Do not delete effects which are used by sequences.
- **EXEC**
  - Deleting an executor does not delete the sequence, group etc. assigned to it.
- **FORM**
  - Do not delete forms which are still in use by effects.
- **GROUP**
  - Deleting a group will also delete its submaster functionality.
- **MACRO**
  - You can not delete a macro that is currently recording.
- **MIDI_BTN**
- **PAGE**
  - Deleting a page will delete all executors on that page.
- **PRESET**
  - Deleting single presets is done with the syntax PRESET X.Y with X=preset type and Y=preset number. DELETE PRESET X will ask for confirmation and delete all presets of the given type.

#### SEQU
- **TIMECODE**
- **TOUCH_BTN**
- **VIEW**
- **VIEWBTN**

### EDIT
Simulating a right click of the mouse for editing an input field or a cell in...
a grid:
EDIT (use touchscreen to click somewhere) or
EDIT (left-mouse-click somewhere)

Starting EDIT / UPDATE procedure:
The whole procedure works as follows:
- EDIT object ENTER
- Only one object can be edited at once. If the edit / update procedure is still
  running for another object, you will be asked to update the old one first.
- Programmer is cleared, and the values and selection of the object is loaded
  into the programmer.
- All titles of fixture and channel sheet will show the name of the “edit object”.
- Change values and selection in the programmer as required.
- UPDATE starts flashing as soon as values are changed.
- Hit UPDATE. You will be asked for a confirmation and then changed values
  and selection is stored back into the object.
- ESC will quit the EDIT / UPDATE procedure without updating the object at any
time.

Objects that can be edited in this way are:

Syntax, start with EDIT ...

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUE ENTER</td>
<td>Edit active cue of default executor</td>
</tr>
<tr>
<td>[CUE] X ENTER</td>
<td>Edit cue X of default executor</td>
</tr>
<tr>
<td>CUE X SEQUENCE Y ENTER</td>
<td>Will edit first cue of sequence X</td>
</tr>
<tr>
<td></td>
<td>sequence pool window</td>
</tr>
<tr>
<td>CUE X EXEC Y.Z ENTER</td>
<td>Although a group has no values, group</td>
</tr>
<tr>
<td></td>
<td>pool window the selection can be edited.</td>
</tr>
<tr>
<td>CUE X (hit executor)</td>
<td>Will edit first non-empty preset</td>
</tr>
<tr>
<td>SEQUENCE X ENTER</td>
<td>of type X</td>
</tr>
<tr>
<td></td>
<td>Group X ENTER or hit key in the</td>
</tr>
<tr>
<td>GROUP X ENTER</td>
<td>Will edit first cue of type X</td>
</tr>
<tr>
<td></td>
<td>PRESET X ENTER or hit preset type on the</td>
</tr>
<tr>
<td>PRESET X ENTER</td>
<td>the preset control bar of fixture sheet.</td>
</tr>
<tr>
<td>PRESET X.Y ENTER</td>
<td>Will edit first non-empty preset</td>
</tr>
<tr>
<td></td>
<td>of type X</td>
</tr>
<tr>
<td></td>
<td>PRESET X ENTER or hit key in the preset</td>
</tr>
<tr>
<td></td>
<td>pool window</td>
</tr>
</tbody>
</table>

Continue EDIT / UPDATE procedure with NEXT / PREVIOUS object:
EDIT NEXT [ENTER]
EDIT PREVIOUS [ENTER]
If you use the NEXT and PREVIOUS hard-keys, ENTER is not necessary.
Next and previous will continue edit/update with the next/previous non-empty
object in the context of the current “edit object”.

Examples:
- EDIT PRESET 1 ENTER. Starts edit/update for first non-empty PAN/TILT preset.
- EDIT NEXT goes on to the next non-empty PAN/TILT preset.
- EDIT SEQUENCE 1 ENTER. Starts edit/update for first cue.
- EDIT NEXT goes on to second cue.
Together with the HIGHLIGHT function, EDIT NEXT is a very powerful tool for
to check your stage presets.

Opening an edit screen:
Some objects can not be edited in the programmer. They have edit screens to
manipulate them. Only one edit menu for only one object can be open at one time.
If you open an edit menu for an object, all other edit menus will close. Edit
menus can be closed with the ESC key.
EDIT EFFECT X ENTER or EDIT (hit key in effect pool)
EDIT EXEC X.Y ENTER or EDIT (hit executor)
EDIT FORM X ENTER or EDIT (hit key in form pool)
EDIT MACRO X ENTER or EDIT (hit key in macro pool)
EDIT TIMECODE X ENTER or EDIT (hit key in timecode pool)

EFFECT
As starting keyword:
EFFECT ENTER
EFFECT becomes the DEFAULT KEYWORD.
EFFECT (range list) ENTER
Start effects in range list.
Effect numbers in the range list must be in the interval [ 1 ... 999].

Effects are numbered in a certain way:

<table>
<thead>
<tr>
<th>Range</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ... upwards</td>
<td>User created effects</td>
</tr>
<tr>
<td>899 ... downwards</td>
<td>Automatic created effects used by cuelists</td>
</tr>
<tr>
<td>900 ... upwards</td>
<td>Temporary effects, created from preset effects. These effects are not visible in pools.</td>
</tr>
</tbody>
</table>

As target for the following operational keywords:
ASSIGN Assign an effect to an executor
COPY Copy one effect to another
DELETE Delete an effect
EDIT Open edit menu for effect
IF Deselect devices that are not included in effect
IF OUTPUT Select devices that have stage output from the effect
INSERT/MOVE Change visible number of effect
LABEL Change name of effect

As target for the following executing commands:
GO Run forward, start with fade in
GO- Run backwards, start with fade in
>>> Run forward, no fade in
<<< Run backwards, no fade in
PAUSE Pause, stand still
OFF Switch off, fading out

ESC
ESC (Escape) will progressively perform the following actions:
  a) Is there something in the command line? Yes - > clear commandline!
  b) Is edit/update procedure running? Yes - > cancel edit update
  c) Is there an open window or a message box? Yes - > close it!
  d) Is there an edit menu open? Yes - > close it!

EVEN
EVEN creates a sub-selection from the current selection.
If you have selected 10 fixtures and then select EVEN, only the 2nd, 4th, 6th, 8th
and 10th fixture in this selection stays selected. The others have become
"temporarily deselected", waiting to be fully selected again by the ALL
command.

EXEC

<table>
<thead>
<tr>
<th>Format</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXEC X [THRU Y]</td>
<td>Executors X to Y of current page</td>
</tr>
<tr>
<td>EXEC P.X [THRU Q.Y]</td>
<td>Executors X of page P to exec Y of page Q</td>
</tr>
<tr>
<td>EXEC X [THRU Y] PAGE P [THRU Q]</td>
<td>Executor X to Y of page P to Q</td>
</tr>
<tr>
<td>- Executor number X/Y must be in the range of [1 .. 60] where [1..20] is addressing the motorized fader executors and [21 .. 60] is addressing the button executors.</td>
<td></td>
</tr>
<tr>
<td>- Page numbers P/Q must be in the range of [1 .. 64].</td>
<td></td>
</tr>
</tbody>
</table>

as starting keyword:
EXEC ENTER
EXEC becomes the DEFAULT KEYWORD.
EXEC (range list) ENTER
Select devices included in objects to given executors.
EXEC (range list) AT ... (see AT)
Apply values to devices included in objects assigned to given executors.
  the command line to an executor.
EXECUTING COMMANDS can be assigned with the command line to an
executor's button. For fader executors, the keyword EXEC specifies the middle
key.
COPY Copy one executor to another
DELETE Delete an executor. This does not destroy the object that
  is assigned to the executor.
EDIT Edit the object that is assigned to the executor.

IF Deselect devices which are not part of executor's
object's selection.
IFOUTPUT Select devices which have stage output from this
executor
INVERT Invert current selection by the selection of executor's
object.
LABEL Change name of executor's object.
MOVE Move executor to another position.
PREVIEW Preview executors object. If the object is a sequence,
  and the executor is running, the next cue will be
  previewed.

as target for ALL executing commands.
Please look at 9.3.1 Executing Keywords for a summary or look at those
keywords for details.

FADE

With executing keywords and executors
(Executing keyword) (Executor List) FADE X.X ENTER
The execution command is performed on all listed executors with a fade
overwrite of X.X seconds. Does not work with PAUSE or flashing commands.

Giving individual fade times to fixtures or channels:
[Selection] AT FADE X.X [TRHU Y.Y] ENTER
Individual fades for the feature shown in the presetbar will be set to X.X seconds.
If no selection is given, the current selection is used.
Please note that the given fade may be a range. In this case, fades will be
aligned over the given selection.
The given fades can be signed, which will result in relative changes of in
dividual fades.
Giving individual fades can be combined with giving individual delays and
values into one AT command.

Clearing individual fades:
[SELECTION] AT FADE ENTER
Works very much like b), but no value for the fade is given.

Setting default in & out fade:
(No selection present) FADE X.X ENTER
The next cue will be stored with X.X seconds basic fade and outfade for all
non-snap channels.

as target for the following operational commands:
ASSIGN SEQUENCE,GROUP and EFFECT objects can be assigned with
As in & out fade when storing a cue:
STORE (List of Cues) FADE X.Y ENTER
The given cues will be stored with a basic fade and outfade of X.Y seconds
for all non-snap channels.

Switching to fade display mode:
FADE ENTER
All sheets which are set to AUTO display mode, will display fades instead of values. This effect is only temporary. All sheets will switch back to value mode upon ending of the next command line operation.

FADER

<table>
<thead>
<tr>
<th>Format</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>FADER X [THRU Y]</td>
<td>Fader X to Y of current page</td>
</tr>
<tr>
<td>FADER P.X [THRU Q.Y]</td>
<td>Fader X of page P to fader Y of page Q</td>
</tr>
<tr>
<td>FADER X [THRU Y] PAGE P [THRU Q]</td>
<td>Fader X to Y of page P to Q</td>
</tr>
<tr>
<td></td>
<td>- Fader number X/Y must be in the range of [ 1 .. 20 ]</td>
</tr>
<tr>
<td></td>
<td>- Page numbers P/Q must be in the range of [1 .. 64 ]</td>
</tr>
<tr>
<td>Only one command is implemented for the fader keyword:</td>
<td></td>
</tr>
<tr>
<td>FADER (list of faders) AT (value list) [ENTER]</td>
<td>This command will set the motorized faders to the given values.</td>
</tr>
</tbody>
</table>

FADERBUTTON1
The same as EXEC, but in case of ASSIGNMENTS it is explicitly pointing to the MIDDLE button.

FADERBUTTON2 (not Micro)
The same as EXEC, but in case of ASSIGNMENTS it is explicitly pointing to the LOWER button.

FADERBUTTON3 (not Micro)
The same as EXEC, but in case of ASSIGNMENTS it is explicitly pointing to the UPPER button.

FIX
As starting keyword, it is used to fix / unfix EXECUTORS. A fixed executor is physically present on all pages.
FIX (executor list) [ENTER]  

FIXTURE
As starting keyword:
FIXTURE ENTER
FIXTURE becomes the DEFAULT KEYWORD.
FIXTURE (range list) ENTER
Select fixtures in range list.
FIXTURE (range list) AT ... (see AT)
Apply values to fixtures in range list.
Fixture numbers in the range list must be in the interval [1 ... 9999], as target for the following executing commands:

FLASH_DOWN
As starting keyword, every executor that follows after FLASH_DOWN reduces its intensity channels to zero with no time.
FLASH_DOWN (executor list) [ENTER]
As starting keyword combined with UNPRESS, every executor that follows returns its intensity channels to their previous levels.
FLASH_DOWN (executor list) UNPRESS [ENTER]
In an assign command, this function can NOT be used. You have to use the Assign menu for putting it on an executor button. It is simply called FLASH there.
Note: It is almost impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button or as part of a macro!

FLASH_DOWN_OFF
Same as FLASH_DOWN ... UNPRESS.
Please look at the FLASH_DOWN command description.

FLASH_UP
As starting keyword, every executor that follows after FLASH_UP outputs all intensity channels of the current cue to 100% of their programmed value.
FLASH_UP (executor list) [ENTER]
As starting keyword combined with UNPRESS, every executor that follows after FLASH_UP returns all intensity channels of the current cue back to their previous state.
FLASH_UP (executor list) UNPRESS [ENTER]
In an assign command, this function can NOT be used. You have to use the Assign menu for putting it on an executor button. It is simply called OUT there.
Note: It is almost impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button or in a macro!

FLASH_UP_OFF
Same as FLASH_UP ... UNPRESS.
Please look at the FLASH_UP command description.

FORM
As starting keyword it has no function.
FORM (range list) ENTER
Form numbers in the range list must be in the interval [1 ... 999].
As target for the following commands:
COPY       Copy one form to another
DELETE     Delete a form
EDIT       Open edit menu for form
INSERT/MOVE Change visible number of form

FULL
Full is an alias for 100% dimmer value (open).
As starting keyword, it is immediate, opening all dimmers of the current selection:
FULL
After the AT command in value ranges like:
... AT FULL ENTER
... AT 0 THRU FULL ENTER

FULL
2x FULL will transfer the Highlight value into the Programmer

GO
As starting keyword, every object that follows after the GO will try to go forward one step.
GO (target object list) [FADE X] [DELAY Y] [ENTER]
If fade or delay are given, they overwrite the pre-programmed times.

Target type    Operation
EXEC            Go forward one step
EFFECT          Start running forward
TIMECODE        Start playing forward
PAGE            Go on all its executors.
SPEEDMASTER     Go on all chasers using this speed master
(executor assigned to a speed master)
SUBMASTER       Unpark all channels in this group.
CHANNEL, FIXTURE, GROUP
PRESET X (Preset Type)

GO-
As starting keyword, every object that follows after the GO will try to go backwards one step.
GO- (target object list) [FADE X] [DELAY Y] [ENTER]
If fade or delay are given, they overwrite the default GO- times.
The default GO- times can be changed in the SETUP / DEFAULTS menu.

Target type    Operation
EXEC            Go backwards one step
EFFECT          Start running backwards
PAGE            GO- on all its executors.
SPEEDMASTER     GO- on all programs using this speed master(executor assigned to a speed master)

GOTO
As starting keyword, every executor that follows after the GOTO will try to go directly to a given step.
GOTO [CUE] [W] [EXEC X] [FADE Y] [DELAY Z] [ENTER]
Using the keyword CUE is optional.
If W (cue number) is not given, you will be prompted for it.
If executor is not given, default executor will be used.
If fade or delay are given, they overwrite the default GOTO times.
The default GOTO times can be changed in the SETUP / DEFAULTS menu.
In an assign command, this function can be put directly on to an executor button (see ASSIGN).
In actual fact you will end up with an LOAD assigned to the executor button as it has to ask for the cue number.

GROUP
As starting keyword:
GROUP ENTER     GROUP becomes the DEFAULT KEYWORD.
GROUP (range list) ENTER    Select groups in range list.
GROUP (range list) AT ... (see AT) Apply values to groups in range list.
Group numbers in the range list must be in the interval [ 1 ... 999].
As target for the following executing commands:
ON     activate devices contained in group.
OFF    deactivate and deselect devices contained in group.
PAUSE  PARK all devices of group.
GO     UNPARK all devices of group.

HIGHLIGHT
Pressing HIGHLIGHT once will change the selected fixtures to the value set in SETUP.
When holding the HIGHLIGHT button down, the selected fixtures will pulse – for a better identification.

IF
IF is performing a logical command within selections. It never enlarges the current selection. It leaves only those devices selected which are included in both selections:
Assuming that we have two groups (we will use real names to make it clearer):
PAR64 includes ALL PAR64 lamps
FRONT_TRUSS includes ALL lamps on the front truss.
PAR64 IF FRONT_TRUSS ENTER will therefore select all PAR64 which are on the front truss!

General Syntax:

IF [ (selection1) ] IF (selection2) ENTER
If selection1 is not given, the current selection will be used. IFOUT

IFOUTPUT is selecting devices depending on the current stage output.
General syntax:

IFOUTPUT (object list) [ENTER] If the object list is a hit on an executor’s button, or a click into an object pool window, ENTER is not needed.
Examples:

IFOUTPUT EXEC 1 ENTER All devices which have stage output from executor 1 will be selected.
IFOUTPUT PRESET 1.1 ENTER All devices which have the preset 1.1 active on stage will become selected.
Very nice for selecting all fixtures that have a “blue star” currently on stage.
IFOUTPUT (selection) ENTER All devices of the given selection that have a stage output at the moment become selected.
IFOUTPUT CUE/SEQUENCE/EFFECT works accordingly.
IFOUTPUT ENTER All devices having a dimmer value of more than 0 will be selected.
IFOUTPUT (X) THRU (Y) ENTER All devices having an output between the entered values will be selected. If no value had been entered for X, the value 0 will be taken.
If no value had been entered for X, the value FULL will be taken.
If only one value had been entered, this value will be selected.
Basically, only % values will be looked for – entries above 100 will yield no result.

INVERT

INVERT (selection) [ENTER] INVERT is inverting the selected status of devices.
Example1:
Fixtures 1 through 5 are already selected.
INVERT FIXTURE 1 THRU 10 ENTER
Fixtures 6 through 10 are selected.
Example2:
All even fixtures of GROUP X are already selected.
INVERT GROUP X ENTER
All odd fixtures of GROUP X are selected.
Special case:
INVERT ENTER
The selected status of all devices that have ACTIVE channels in the programmer is inverted.

LABEL

LABEL (object list) ["NEW NAME"] ENTER All objects in the object list will be renamed to “NEW NAME”.
Directly entering the new name is only possible with the PC keyboard.
If the name is not given directly within the command, you will be prompted for it.
If more than one object is to be labeled, the given name will be enumerated for every object:
LABEL PRESET 4.1 THRU "COLOUR1" ENTER
Preset 4.1 is named “COLOUR1”
Preset 4.2 is named “COLOUR2” and so on.
Please note that executors do not have a name of their own. Instead they show the name of the object assigned to it. In this way, labeling of an executor does not change the name of the executor, but of its object. Relabeling of executors can be very quickly done:
LABEL hit executor, enter new name.
Of course you can not change the name of an empty executor.

LEARN

As starting keyword, every executor that follows after LEARN will use repeated learn commands to define a new speed.
LEARN (executor list) ENTER
In an assign command, this function can be put on an executor button (see ASSIGN).
The LEARN function works with CHASERS (a sequence assigned to an executor in chaser mode) and with EFFECTS (regardless if they are assigned to an executor or not).
Note: It makes no sense to use this function by typing it into the command line. The LEARN function will calculate and average the timing between 2 to 4 LEARN commands and adapt its speed to that.

LOAD
As starting keyword, every executor that follows after the LOAD will go to a given cue upon the next MANUAL GO command.
LOAD [CUE] [W] [EXEC X] [ENTER]
Giving the keyword CUE is optional.
If W (cue number) is not given, you will be prompted for it.
If executor is not given, default executor will be used.

MACRO
As starting keyword, given macros will be executed.
MACRO (range list) ENTER
Macro numbers in the range list must be in the interval [1 ... 999].
as target for the following commands:
ASSIGN A macro can be assigned to a VIEWBTN
COPY Copy one macro to another
DELETE Delete a macro
EDIT Open edit menu for macro
INSERT/MOVE Change visible number of macro
STORE Start to record a macro from live actions. Macro recording is indicated by a flashing macro key. Macro recording is stopped with the command STORE MACRO ENTER.
Macros can be timed.
A timed macro plays back with the same timing as it was recorded.
Non-timed macros execute completely at once.

MIDI_BTN
As starting keyword, every object that follows after the OFF will be switched on/off.
OFF
MIDI_BTN (midi button) is a remote function triggered by incoming midi note on/note off signals.
The MIDI_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. MIDI_BTNs can be seen under TOOLS / REMOTE MIDI menu.
Calling a MIDI_BTN manually:
MIDI_BTN X ENTER
Linking a MIDI_BTN to an executor:
STORE MIDI_BTN X EXEC/FADEREBUTTON1/2/3 Y.Z ENTER
Using EXEC in this command will always link the remote to the middle executor button.
X must be in the range from 1 to 72.
OFF.
OFF (target object list) [FADE X] [DELAY Y] [ENTER]
If fade or delay are given, they overwrite the default OFF time.
The default OFF times can be changed in the SETUP / DEFAULTS menu.

<table>
<thead>
<tr>
<th>Target type</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXEC</td>
<td>Switch off executor</td>
</tr>
<tr>
<td>EFFECT</td>
<td>Switch off effect (fading out)</td>
</tr>
<tr>
<td>TIMECODE</td>
<td>Stop timecode show</td>
</tr>
<tr>
<td>PAGE</td>
<td>Does OFF on all its executors.</td>
</tr>
<tr>
<td>SPEEDMASTERS</td>
<td>Does OFF on all programs using this speed master (executor assigned to a speedmaster)</td>
</tr>
<tr>
<td>SUBMASTERS</td>
<td>“Knock out” all channels involved in this group.</td>
</tr>
<tr>
<td>CHANNEL, FIXTURE and GROUP</td>
<td>“Knock out” all given devices.</td>
</tr>
<tr>
<td>PRESET X (Preset Type)</td>
<td>“Knock out” all channels of current selection of that preset type.</td>
</tr>
</tbody>
</table>

“Knock out” means to clear the programmer completely for a channel.

ON
As starting keyword, every object that follows after the ON will be switched ON without changing the current step.
ON (target object list) [FADE X] [DELAY Y] [ENTER]
If fade or delay are given, they overwrite the pre-programmed times.

<table>
<thead>
<tr>
<th>Target type</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXEC</td>
<td>Switch on executor</td>
</tr>
<tr>
<td>EFFECT</td>
<td>Switch on effect (fading in in last direction)</td>
</tr>
<tr>
<td>PAGE</td>
<td>Does On on all its executors.</td>
</tr>
<tr>
<td>SPEEDMASTERS</td>
<td>Does On on all chasers using this speed master (executor assigned to a speed master)</td>
</tr>
<tr>
<td>SUBMASTERS</td>
<td>“Knock in” all channels involved in this group.</td>
</tr>
<tr>
<td>CHANNEL, FIXTURE and GROUP</td>
<td>“Knock in” all given devices.</td>
</tr>
<tr>
<td>PRESET X (Preset Type)</td>
<td>“Knock in” all channels of current selection of that preset type.</td>
</tr>
</tbody>
</table>

“Knock in” means to activate the programmer for a channel with its current value. This function can also be used to make “snapshots” of running programs.

OOPS (not Micro)
OOPS, I made a mistake! Undo!
OOPS progressively performs:
- If the command line is not empty, a backspace in the command line.
- If the undo stack is not empty, an undo operation.
Undos are created for programming actions such as storing a cue.
You can not do an undo for playback actions such as starting an executor.
The undo stack contains the last 10 programming operations, therefore you can go back 10 undos. Nevertheless a command like DELETE SEQU 1 THRU 10 (deletes 10 sequences) will create only one undo on the stack.
Working with undos can give you security during your programming, but for performance reasons on very large shows it can be switched off (see SETUP / UNDO menu).

PAGE
As starting keyword, the given page will become the current page.

| As target for the following operational commands: |
| COPY | Copy one page to another |
| DELETE | Delete a page |
| MOVE | Move a page to a different location |

As target for all execution commands.
The page will redirect the given commands to all its executors.

PAUSE
As starting keyword, every object that follows after the PAUSE will be paused.

<table>
<thead>
<tr>
<th>Target type</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXEC</td>
<td>Pause an executor</td>
</tr>
<tr>
<td>EFFECT</td>
<td>Pause an effect</td>
</tr>
<tr>
<td>PAGE</td>
<td>Pauses all executors on the page.</td>
</tr>
<tr>
<td>SPEEDMASTERS</td>
<td>Pauses all chasers using this speed master (executor assigned to a speed master)</td>
</tr>
<tr>
<td>SUBMASTERS</td>
<td>“Park” all channels involved in this group.</td>
</tr>
<tr>
<td>CHANNEL, FIXTURE and GROUP</td>
<td>“Park” all given devices.</td>
</tr>
<tr>
<td>PRESET X (Preset Type)</td>
<td>“Park” all channels of current selection of that preset type.</td>
</tr>
</tbody>
</table>

“Park” means to freeze the output for a channel with its current value. Parked channels are shown with a bright blue background in the sheets. Although a channel is parked, it can still be used normally for programming purposes.

PRESET
As starting keyword:
PRESET ENTER

Technischer Service: tech.support@malighting.com; +49.5251.688865-30  Emergency Line: +49.5251.688865-99  Version 6.2
PRESET becomes the DEFAULT KEYWORD.

**PRESET** T.X ENTER
Call Preset X of type T.
X Preset number in range [1...999] T Preset type in range [1...9]

As target for the following operational commands:
- COPY: Copy one preset to another
- DELETE: Delete a preset
- EDIT: Start edit / update procedure for preset
- IF: Deselect devices which are not part of the preset.
- IFOUTPUT: Search for stage output of preset
- LABEL: Change name of preset
- MOVE/INSERT: Move preset to another position

**PREVIEW**
PREVIEW (object) [ENTER]
Only one object can be previewed at one time.
Preview will show the content of the object in the fixture / channel sheets without outputing to stage (blind). Programmer contents is not destroyed but using Preview.
Preview will be indicated by all sheets, showing PREVIEW in their titles.
Preview is cancelled by the next command line operation.

**PREVIOUS**
Create a subselection from the current selection:
If you have selected more than one fixture and then say PREVIOUS, only the last fixture of the selection actually stays selected. The others become "temporarily deselected". The next time you say PREVIOUS, only the 2nd last fixture within the current selection is actually selected and so on. The ALL command will clear this subselection.

Continue EDIT / UPDATE procedure with PREVIOUS object:
See EDIT.
Cursor Left in open dialog windows.
In all temporary dialog windows and message boxes, you can use the PREVIOUS key to move the input focus in that window to the left. Together with NEXT and ENTER you can, for example, choose the appropriate answer in a message box.
If no device is selected, PREVIOUS will bring the fixture having the lowest ID into the selection; on the next PREVIOUS, the fixture with the next lower ID will be selected. With NEXT, the selecting direction will be reversed. Proceeding from the fixture with the lowest ID, on the next PREVIOUS, the selection will jump to the dimmer with the highest ID.

**SELECT**
As starting keyword, it is used to select the DEFAULT EXECUTOR.

SELECT hit executor
SELECT EXEC X ENTER
The default executor can be identified by its green title in the executor mini displays.
The default executor is reacting to the DEF.GO,DEF.GO- and DEF_PAUSE commands and to their physical counterpart, the three big yellow buttons.
During programming it can be very convenient to make the executor you are working on the default one. Many commands assume to work with the default executor if no other executor is given.
In an assign command, this function can be put on an executor button (see ASSIGN).
Pushing this button will select the executor of the button as default executor.

**THRU** can only be used within other commands to create ranges.
- X THRU Y: Range from X to Y
- X THRU: Range from X to the end
- THRU Y: Range from the beginning to Y
- THRU: Range from the beginning up to the end.
The meaning of “beginning” and “end” depend on the context.
**FIXTURE 10 THRU ENTER** will select all fixtures from 10 upwards.
Thru can of course also be used to create ranges of values like
**CHANNEL 1 THRU 10 AT 0 THRU FULL ENTER**
or
**CHANNEL 1 THRU 10 AT FULL FADE 1 DELAY 0 THRU 5 ENTER**

**SEQU**
As starting keyword:
SEQU ENTER
SEQU becomes the DEFAULT KEYWORD.
SEQU (range list) ENTER
Select devices included in sequences.
Sequence numbers must be in the range of [1...999]
SEQU (range list) AT ... (see AT)
Apply values to devices included in sequences.

As target for the following operational commands:
- EDIT: Opens edit menu for sequence
- IF: Deselect devices which are not part of the sequence.
- IFOUTPUT: Search for stage output of sequence
- INVERT: Invert selection of sequence
- LABEL: Change name of sequence
- MOVE: Move sequence to another position

as target for the following executing commands:
- ON: “Knock in” all devices contained in sequence.
- OFF: “Knock out” all devices contained in sequence.
PAUSE PARK all devices contained in sequence.
GO UNPARK all devices contained in sequence.

STORE
STORE (object list) [ENTER]
All objects in the object list must be of the same type.
If no object is given, a new cue is stored into the default executor.
If the destination of the store command is not empty, you will be asked for confirmation.
In case of storing over existing cues, you will furthermore be asked about the desired store mode, e.g. merge, overwrite or remove.
If you start storing by pressing the STORE hard key, a temporary window will appear.
The settings in this window affect the way, the store command is handled.
Defaults for these store options can be found in SETUP / DEFAULTS menu.

SWOP
As starting keyword, every executor that follows after SWOP increases the intensity of all programmed dimmer channels to 100% while reducing all other executors to 0% (as long they are not protected against swop).
SWOP (executor list) [ENTER]
As starting keyword combined with UNPRESS, every executor that follows after SWOP reduces the intensity of all programmed dimmer channels to 0% while restoring the intensity of all other executors to 100%
SWOP (executor list) UNPRESS [ENTER]
In an assign command, this function can NOT be used. You have to use the Assign menu to define it on an executor’s button.
Note: It is nearly impossible to use this command by typing it into the command line.
When it is assigned to a button or as part of a macro!

SWOP OFF
Same as SWOP ... UNPRESS.
Please look at the SWOP command description.

TEMP
As starting keyword, every executor that follows after TEMP performs a GO if it wasn’t already running.
TEMP (executor list) [ENTER]
As starting keyword combined with UNPRESS, every executor that follows after TEMP is switched OFF.
TEMP (executor list) UNPRESS [ENTER]
In an assign command, this function can be assigned to an executor’s button.
ASSIGN TEMP (executor list) ENTER
Note: It is nearly impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button or in a Macro! TEMP does not really exist as a function. It is always translated into a pair of GO/OFF commands. You will see that if you record TEMP in a timecode show.

THRU-
Views that contain multiple screens will be called back on the original screens.
- Views that contain single screens from external monitors can not be called back on the build in system screens (because of higher resolution).
- Views which are called by the command line (and not by the push of a VIEWBTN) are called back on the original screens.

T IM ECODE
As starting keyword:
TIM ECODE ENTER
TIM ECODE becomes the DEFAULT KEYWORD.
TIM ECODE (range list) ENTER
Does nothing.
Timecode numbers in the range list must be in the interval [1 ... 200].
As target for the following operational keywords:
COPY Copy one timecode show to another
DELETE Delete a timecode show
EDIT Open edit menu for timecode show
INSERT/MOVE Change visible number of timecode show
LABEL Change name of timecode show
As target for the following executing commands:
GO Start playback
PAUSE Pause playback, keep output
OFF Switch off, release output
>> Jump forward to next breakpoint in show
<< Jump backwards to last breakpoint in show

TOGGLE
As starting keyword, every executor that follows after TOGGLE performs a GO if it wasn’t running or an OFF if it was running.
TOGGLE (executor list) [ENTER]

TOP
As starting keyword, every executor that follows after TOP is performing a GOTO FIRST STEP.
TOP (executor list) [ENTER]
TOUCH_BTN

A TOUCH_BTN (touch button) is a remote function triggered by incoming 0-10V signals.
The TOUCH_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. TOUCH_BTNs can be seen under TOOLS / REMOTE TOUCH menu.
Calling a TOUCH_BTN manually:
TOUCH_BTN X ENTER

Linking a TOUCH_BTN to an executor:
STORE TOUCH_BTN X EXEC/FADE/REBUTTON1/2/3 Y.Z ENTER

Using EXEC in this command will always link the remote to the middle executor button.
X must be in the range from 1 to 16.

UNPRESS

UNPRESS is used only in combination with functions of executor’s buttons that cause an action upon unpress. These functions are FLASH_UP, FLASH_DOWN, SWOP, and TEMP.
Please look at these commands for details about UNPRESS.

UPDATE

UPDATE does the following things, sorted by priority:
If the UPDATE dialog is open, it closes the UPDATE dialog.
If the EDIT / UPDATE procedure is active, the edited object is updated, and EDIT / UPDATE procedure is finished.
It loads the UPDATE dialog, where you can update changed PRESETS and CUES.

VALUE

VALUE has no other meaning than switching back to value mode if desk is in a time mode such as FADE or DELAY.

VIEW

As starting keyword, given views will be called.
VIEW (range list) ENTER

View numbers in the range list must be in the interval [ 1 ... 999 ].

As target for the following commands:
ASSIGN A view can be assigned to a VIEWBTN
COPY Copy one view to another
DELETE Delete a view
INSERT/MOVE Change visible number of view
STORE Store a view. You will be asked for the screens that should be contained in the view.

Views can store and restore the window arrangement on the screens of your desk.
- A View can contain one screen or multiple screens.
- Views that contain single screens can be called back also on other screens.

VIEWBTN

As starting keyword, given view buttons will be called.
VIEWBTN (range list) ENTER

Viewbutton numbers in the range list must be in the interval [ 1..30 ]
Each screen has 6 view buttons. 3 build in and 2 external monitors make a total of 30 view buttons.

As target for the following commands:
ASSIGN Assign a view or a macro to a view button. Syntax is:
ASSIGN VIEW X VIEWBTN Y ENTER
ASSIGN MACRO X VIEWBTN Y ENTER

COPY Copy one view button to another
DELETE Delete (Empty) a view button.
MOVE Move one view button to another
STORE STORE a view and assign it to the view button.
### 11 Saving and loading a SHOW

A unnamed show will always saves as NEW SHOW; rename it immediately, for the next show will saved with this name and will overwrite the previous show. **Write protection is not possible.**

Please make sure to frequently save the current show on harddisk during the programming procedure. A good idea is to change the name of your show on a regular basis so that you can go back to previous days programming. A back-up on floppy disk is always a good idea.

**Automatic save:**
With the AUTOSAVE key, you can set an automatic save according to the time displayed on the key. Avoid using this during a live show or in very loud environments. When using the AUTOSAVE function a BACKUP of the Show will be made with each saving operation (max. 10). These backups can be used to restore previously saved Shows. You can display these backups using the SHOW BACKUP key.

- press BACKUP
- press AUTOSAVE, until the desired time is set. With OFF, you switch off Autosave.
- select your Archive Medium: hard disk (on the console), file server (external memory) to be set using FileServer in Archive Media.

When Autosave is active, the time to the next saving point will be indicated on the bottom margin.

**Quick save:**
- press twice BACKUP - the fastest way to save the show
- select Enumerate
  - set Enumerate to OFF; you can save the Show immediately.
  - set Enumerate to ON; you can save the Show immediately, plus a consecutive number will be added to the current name.

If the ENUMERATE button is on ON in the BACKUP menu under QUICK SAVE, every saving procedure saves a new copy of the show - with AUTO SAVE, this happens automatically. In this way several 100 versions of the show can quickly burden the hard disk.

- select your Archive Medium: hard disk (on the console), file server (external memory) to be set using FileServer in Archive Media.

### 11.1 Saving the Current Show on the internal harddisk

- press BACKUP
- press INTERNAL ONLY
- save Show
  - SAVE Show As: Enter a name for the show and confirm with ENTER. The show will be saved under the new name.
  - SAVE Show: the Show is saved immediately with the current name.
  - SAVE Show Enumerate: the Show is saved immediately and a consecutive number will be added to the current name.
11.2 Loading a Show from the internal harddisk
- press BACKUP
- press INTERNAL ONLY
- press LOAD Show.
- Press on the desired SHOW in the list. This will load the Show.
- The PLEASE CONFIRM window with the following options will open:
  - YES: To save the current Show before loading the new one.
  - NO: To load the new Show without saving the current one.
  - CANCEL: To abort this process.
- The show will be loaded.

11.3 Loading a empty Show
- press BACKUP
- press INTERNAL ONLY
- press Load Show.
- type the new name and confirm with Enter.
- The PLEASE CONFIRM window with the options will open:
  - YES: To save the current Show before loading the new one.
  - NO: To load the new Show without saving the current one.
- A complete new and empty show will open.
- Additionally, you can save an „empty“ Show to hard disk or floppy so that you can use it later when needed. This way, you can also transfer demo shows, standard settings, etc. to others.

11.4 Deleting the current show
- The currently loaded Show cannot be deleted! In order to delete the currently loaded Show, you have to load another Show first.

11.5 Deleting a Show from the internal harddisk
- press BACKUP
- press LOCAL DRIVE
- press DELETE Show. In the list, click on the Show that is to be deleted; the Show will be deleted immediately.
- If you press the Stay button, before deleting a Show, the Delete menu will not close automatically.

11.6 Saving the Current Show on floppy disk
- All data necessary for the SHOW can be saved on to floppy disk (even all Fixtures to be used in the show and all users with all settings for this show). Thus, you can transfer the whole show to another grandMA console or for archive storage. The current Show will be saved including its name.
- press BACKUP
- press IMPORT / EXPORT and insert floppy (if no USB drive is connected, floppy drive is selected)
- Format the floppy disk:
Saving a show:
- press **Save Show**, confirm with **OK** or cancel the operation with **Cancel**.
- press **Save Show**, enter a new name for the show, and confirm with **ENTER**.
- insert an empty IBM/PC formatted 3.5”-floppy disk, remove the write protection (small opening on the floppy must be **closed**).
- confirm with **OK**.
The SHOW will be saved, after the window has been closed. The whole operation can take some minutes. You can only save 1 show to a floppy.
- if needed, use **YES** to save the same show on a second floppy, or finish the operation with **NO**.
- in the end, remove floppy from the drive.

11.7 Loading a Show from Floppy disk
- press **BACKUP**
- press **IMPORT / EXPORT**
- press **LOAD Show**. If USB storage device is inserted, the console tries to load from this device. In this case press the green arrow and select „**FLOPPY**“.
- insert the floppy containing the Show.
- press **OK** (operation can take some minutes). The Show is being loaded.
- in the end, remove floppy from the drive, as otherwise the console will not boot on the next restart.
In order to avoid loading all users plus their respective profiles when loading a Show, you can choose one of the following options:
- accept all user profiles = **EVERYTHING**
- do not accept any user profile = **NOTHING**
- accept only the user who had created the Show = **DISK CREATOR**.
This way, you can relieve the memory space and the processor. In case the users on the floppy are identical with those already stored on the console, the request will be skipped.

Warning! You can only load shows that were created with versions 3.2 or later. If you have to convert shows created with an earlier version, please contact the hotline (see below).

11.8 Loading a Demo Show
- press **BACKUP**
- press **Demo Show**.
- press **LOAD Show**.
- select the desired show using the Encoder, and load it by pressing on the Encoder.
11.9 Saving the Current Show to an external Hard Disk
In a network environment, you can save shows to an external hard disk and load them from that location. In order to do so, you have to define the path to this hard disk from the BACKUP menu.
- press BACKUP
- press File Server
- setting up the File Server:
  - press SERVER SETUP
  - enter IP address, FOLDER path, USER, LOGIN and Server Type
- Press SAVE to save the settings.
- Saving a show:
  - SAVE Show As: Enter a name for the show and confirm with ENTER. The show will be saved under the new name.

11.10 Loading a Show from an external Hard Disk
- press BACKUP
- press File Server
- press LOAD Show.
- click on the desired Show in the list. The Show is being loaded.
The Please Confirm window will open and offer you:
  - YES to save the current Show before loading the new one.
  - NO to load the new Show without saving the current one.
  - CANCEL will abort this process.
The Show is being loaded.

11.11 Deleting a Show from an external Hard Disk
- press BACKUP
- press File Server
- press DELETE Show button. In the list, click on the Show that is to be deleted; the Show will be deleted immediately.
  - If you press the Stay button, before deleting a Show, the Delete menu will not close automatically.

11.12 Saving a Show on a USB stick (not micro and pico)
- Press BACKUP
- Insert the USB stick into the port.
- Press the IMPORT / EXPORT button (this will load the Show with all user-specific profiles that you can also transfer to another console)
- Press the Save Show button and confirm with OK. If the directory is not displayed, chose USB.
- Enter a different name for the Show (or accept the Show name already given). The 2 directories for the shows are created automatically.
- Confirm with ENTER and wait, until the procedure is completed. Remove the USB stick.
  or use the button USB DRIVE. This will load the show without user-specific profiles

11.13 Loading a Show from a USB stick (not micro and pico)
- Press BACKUP
- Insert the USB stick (there must no floppy inserted)
- Press LOAD SHOW (save the current show)
- select the show and confirm with ENTER.

NOTE: USB memory stick must be formatted FAT 32.
11.14 PARTIAL SHOW READ (loading parts of a Show)
As of version 5.0, you can import parts of another show into an existing show. Besides the Setup, you can also take over show elements like Groups, Presets, Sequences or individual Cues, Worlds, Forms, Effects, Layouts, Bitmap Effects, Macros and Matrices. Take care that all connected elements are being taken over, i.e. when a sequence refers e.g. to Presets, you have to import the Sequence plus the Presets.

The PARTIAL SHOW READ function is carried out in 2 phases:

**SETUP transfer** – here you have to decide, which fixtures of the imported show you want to transfer. If these fixtures do not correspond to the current fixtures, you can add them. If overlapping occurs, only the current or the imported fixture can be transferred. If both fixtures are to be used in the current show, the only way is to change the ID and Patch numbers of these fixtures in the respective show – it is not possible to do that in the PARTIAL SHOW READ function.

**Data transfer** – here, you can select elements of the imported show. Elements having the same name, will be overwritten or merged, depending on the command used.

**TIP:** Save the current show to a floppy in advance or make a backup. Take care that the maximum number of channels that the console can handle will not be exceeded.

- press BACKUP
- choose the Medium - internal disk (Hard Disk), external memory (FILE SERVER) or removable disk (FLOPPY DISK).
- press INITIALIZE - the SELECT SHOW for PARTIAL SHOW READ will open
- select the show, you want to load elements from, and confirm by pressing on the Encoder
  - Mind the limitations (number of parameters)

In the DEVICE MATCHING TABLE, the current Setup (green background) and the Setup of the imported Show (grey background) will now be displayed. Fixtures appearing in the same line, have the same ID number – here, the user has to decide whether to keep the current fixture or to take the imported fixture. It is possible that the settings of fixtures of the same type will change (position in the Stage view, defaults); Effects, Cues, etc. will, however, not be changed. And it can happen that for fixtures of different types, programs change, if e.g. some imported fixture’s features, a Cue refers to, are missing.

- select VIEW; you can select fixtures in all views.
- with ALL, all fixtures of the current Show (on the left) and of the imported Show (on the right) are displayed.
• with MATCH, all overlapping channels are displayed; you must choose, which fixtures to overwrite in the current Setup. Overwriting objects, even partially, in the current Setup, can affect the whole show – after starting the operation with 2x OK, the modification cannot be undone any more. If you do select none, the fixtures of the current Show are kept (the fixtures in the left half of the menu keep their green background).

• with NO MATCH, you find all fixtures that do not overlap, i.e. that can be taken over without having been selected.

The lmaps on the left side (current setup) also can be selected, they will be deleted from current setup.

• NEW here lamps are displayed, you are importing from loaded show into the current show (color has changed from grey to green)

• IGNORED here lamps are displayed, you will not import into the current setup (lamps in the right part, color stays grey) or lamps, which are deleted from the current show (lamps in the left part, color has changed from green to grey)

○ select the fixtures and press on the Encoder next to the screen – the colors of the selected fixtures will change.

or

Select in the WIZARD:

• NO NEW DEVICES - DEFAULT; will always be executed, if no other change was entered. Here, you cannot change the setup of the current show.

• ADD UNMATCHED DEVICES - Harmless; here, only those parts of the imported show will be transferred that do not overlap with the current setup – i.e. the current setup will not be changed, but only extended. No risk of ruining the current show.

• USE OLD DEVICES - Dangerous; here, the complete setup of the imported show will overwrite the setup of the current show. Only those parts that do not overlap will be kept.

○ confirm with OK, NEXT.

○ confirm PLEASE CONFIRM with OK.

○ confirm WARNING

After opening the files, the BACKUP menu will open again

○ press MERGE CONTENTS

○ select the desired show elements – will receive a dark green background.

- move the blinking frame using the Encoder. Using the Encoder, open or close the sub-folders (marked with a + or – sign), or select individual elements.

- the text note „has changed. It is older“ in red: This element is older than that having the same name in the current show. (the creation date of this element is added in brackets)

- the text note „has changed. It is newer“ in green: This element is newer than that having the same name in the current show. (the creation date of this element is added in brackets)
● select a User Profile

- **User Data is merged into my profile:** The profile elements of the selected profile will be loaded into the profile of the current user.
- **User Data is merged into the original profile:** The profile elements of the selected profile will be loaded into the profile of the user having the same name, or (if the user does not exist in the current show) the user will be created.

If **MY PROFILE** (yellow button) is chosen, after multiple profiles were selected, the current user’s profile will successively be overwritten by the selected profiles – not a good deal.

● Load parts of a Show

- **COPY:** the selected elements will be inserted into the current show, or, if there are elements having the same name, the current elements will be overwritten by the copied elements.
- **MERGE:** the selected elements will be inserted into the current show, if there are elements having the same name, the current elements will be merged with the copied elements.

Here a concise overview:

- **Remove unchanged Items:** Will delete all elements in the overview that were not changed, i.e. these elements will not exist in the current show.
- **Remove already imported Items:** Will delete all elements in the overview that were already imported using the COPY or MERGE command.

● leave the menu by pressing on the „X“

### 12 Update Software

You can only download the update from our HOMEPAGE (www.malighting.de) using an IBM compatible PC. After the download execute the file. It is a self extracting archive. You will be asked to insert some empty floppy disks into drive A:, press OK and your update disks will be created.

Do not update the grandMA right before running a show! Updating the software is a serious thing. MA Lighting can not always guarantee that your old show will play back correctly after an update!

**Update by floppy disk:**

○ press SETUP
○ **UPDATE SOFTWARE** If is should not be possible, to enter this menu (e.g. because a previous update had not been completed properly), you can open it using the F4 key on the keyboard.
○ press **Update Software from Floppy**
○ when asked to, insert the floppy and confirm with OK.
Before changing disks, make sure that the green LED on the floppy drive is off.

The update can last up to 10 minutes. After updating, it is possible to do a reset. By pressing the soft key “VERSION INFO” you can read about new functionality and fixed bugs of the latest update. To renew the Fixtures Library, insert the optional available FIXTURE UPDATE floppy and press the “Update Fixture Library from Floppy” button. This may last a few minutes. After processing the note „Fixture Library Update done“ appears. Additionally here is a possibility to import older fixtures made with version 3.2/.3.3.

**Update via network:** (for that, the new software has to be loaded onto the console)

grandMA, grandMA-Light, grandMA Ultra-Light, grandMA MICRO, NSP, OFFLINE Editor and grandMA Replay-Unit, connected via a network, can be updated among themselves.

Proceed very carefully! This operation may be carried out by qualified grandMA users only. Futhermore, this operation requires an impeccable network not overloaded at this moment. **IN NO CASE MAY THE CONSOLES HAVE THE SAME IP NUMBERS - THIS WOULD DESTROY THE OPERATING SYSTEM!**

Updating the software is only possible, if the first three number groups of the grandMAs’ IP addresses are identical, e.g. 192.168.177.X.

- press **SETUP**
- press **UPDATE SOFTWARE**
- select a console from the table. If a console is not being displayed, it has a software version that cannot be updated via network; you have to do that individually using a floppy.
- press **UPDATE CONSOLE** (or cancel the operation with **CANCEL**)

**WARNING!** As of version 5.0, the selected console will receive the software version of the very console, the update was started from; i.e. it is not possible, to „get“ a software update.

- confirm the successful operation on **PLEASE CONFIRM**.

After the successful update, the console should disappear from the overview. Repeat this operation for all consoles.

- Using **CHANGE NAME and IP**, you can change the name and the IP address of a NSP directly on the console. The button will only be active, if a NSP exists in the overview.
- using **SHOW SAME VERSION**, you can call up all consoles of the session already having the same software version.

**Updating without floppy disks:**

Using the **OFFLINE - EDITOR**, you can very quickly update consoles in a network connected with one another and having internet access.

- on the internet site www.malighting.de, go to SUPPORT / SERVICE and download the **grandMA OffLine Editor** program to your PC.
- start the **grandMA OffLine Editor** on your PC
- in the **grandMA OffLine Editor**, press the **SETUP** button
- with **UPDATE CONSOLE**, update the consoles and NSPs (see above)

ATTENTION PLEASE! Deactivate Anti-Virus or Firewalls. Those can affect proper operation.
13 Utility Menu

You will need this menu, if the main program or the actual show is damaged due to a crash or some other error. For the grandMA light and ultra-light you MUST have an external keyboard.

In the Utility Menu, you can load or delete an old grandMA operating system. You can also delete shows here. You can delete the current show (this show is automatically loaded upon power-up of the console). You can renew the Firmware for the second built-in Computer (Motorola) and you can also renew the grandMA operating system via floppy disk.

During the Boot-up process you will see all loaded program segments (blue background) on the right TFT display. In order to access the Utility Menu you have to push any key as soon as the message: ?? TO ENTER UTILITY MENU PRESS ANY KEY ??? is displayed with red background during the boot-up process. The menu will open after approx. 10-20 seconds.

Press 1: Restore grandMA operating system
If you press the „1“ key on the keyboard, you will see a list with all systems existing on the harddisk. By pressing one of the displayed keys (a, b, c,...) the respective system will be installed. You have to confirm installation by pressing „o“. VERY IMPORTANT - this is the letter „o“, not the number „0“. As soon as the installation is completed, the display will show UPDATE DONE next to STATUS. You can start the console by pressing the “ESC“ key twice.

Press 2: Delete grandMA operating system
Upon every update, a safety copy of the system will be automatically created on harddisk. In order to delete an older system from harddisk, press „2“ on the keyboard. You will see a list with all systems existing on the harddisk. By pressing one of the displayed keys (a, b, c,...) the respective system will be deleted. You have to confirm the delete process by pressing „o“. VERY IMPORTANT - this is the letter „o“, not the number „0“. After deletion is completed, the display will show DELETE DONE next to STATUS. You have to confirm installation by pressing „o“.

Press 3: Delete (old) grandMA shows,
Upon every update, a new folder for the shows will automatically be created to cleanup the harddrive on the harddisk. During every update, the console will save all old shows, converted to suite the new system software, in the youngest folder. From the time of the update, all new created shows will be automatically saved in this folder, too.

In order to delete shows from an older system version from the harddisk, press „3“ on the keyboard. You will see a list with all shows in all system versions existing on this harddisk. By pressing one of the displayed keys (a, b, c,...) the respective shows will be deleted. You have to confirm the delete process by pressing „o“. VERY IMPORTANT - this is the letter „o“, not the number „0“. After deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the “ESC“ key twice.

Press 4: Delete current show
If you press „4“ on the keyboard, the current show (this show will be automatically loaded upon power-up of the console) will be deleted. You have to confirm the delete process by pressing „o“. VERY IMPORTANT - this is the letter „o“, not the number „0“. After the deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the “ESC“ key twice.

Press 5: Update firmware with display
If you press „5“ on the keyboard, you can renew the Firmware for the second built-in Computer (Motorola). In order to update the software: insert the current update disk labeled „LAST DISK“. You have to confirm the update process by pressing „o“. VERY IMPORTANT - this is the letter „o“, not the number „0“. As soon as the update is completed, the display will show UPDATE DONE next to STATUS. You can start the console by pressing the “ESC“ key twice.

Press 6: Update grandMA
In order to update the software: insert the current update disk labeled „LAST DISK“. You have to confirm the update process by pressing „o“. Shortly after, you will be asked for “DISK 1“. Now insert disk 1 and confirm again with „o“. VERY IMPORTANT - this is the letter „o“, not the number „0“. The disk will be read (might take a little while). Following that, you will be asked for „DISK 2“. Insert disk 2 and confirm again with „o“. VERY IMPORTANT - this is the letter „o“, not the number „0“ (this will take a little longer now). As soon as the update process is completed, the display shows UPDATE DONE, PLEASE REBOOT next to STATUS. Now please rebooth the console by using the combination CTRL-ALT-DEL or the RESET key on the rear of the console.

PLEASE OBSERVE:
This devices may only be operated with the software equal or higher. Down-dating to a lower version is not possible:
grandMA S/N 1228 and higher Version 5.81 and higher
grandMA Light S/N 947 and higher Version 5.81 and higher
grandMA UltraLight S/N 682 and higher Version 5.81 and higher
ReplayUnit S/N 121 and higher Version 5.751 and higher
Micro S/N 438 and higher Version 5.751 and higher
Pico S/N 1 and higher Version 5.751 and higher
NSP S/N 1000 and higher Version 5.751 and higher
14 Layout and Controls grandMA replay unit

14.1 Introduction

The grandMA Replay Unit is a small rack mount controller unit that performs nearly all of the functions of the Award winning grandMA console. At 19” x 17” x 5”, it requires a very little space, while offering 100% compatibility with the larger consoles.

The grandMA Replay Unit is designed to perform as a stand-alone show controller on exhibitions, in theme parks or other venues. In conjunction with one of the grandMA consoles, it also becomes a very powerful backup system capable of running an entire show in full tracking backup mode despite its reduced hardware.

Floppy Key

Quick and easy loading of a show from floppy disk. This key complies with the following steps on the grandMA: “Backup-Load Floppy”. If monitor and mouse are connected, you can follow the instructions in chapter 11.

Saving or loading a SHOW. Without these, you would proceed as follows: Confirm, if you wish to save the actual show on the internal harddisk in advance by pressing the page keys / key no. 1 to 3.

Key no. 1: Save actual show on harddisk before loading show from floppy.
Key no. 2: Do not save on harddisk before loading show from floppy.
Key no. 3: Cancels the actual load task.

Without a floppy disk inserted, you will get an error message on the display. Confirm with key no. 1.

This procedure is also valid for many other “Pop Up menus” of the grandMA.

Floppy Drive

The floppy drive will take all 3.5” 1.44MB HD disks and will serve to save shows or single fixtures from the library.

Off Key

The “Off Key” has the same function as the “Off Key” on the grandMA. Together with the Executor Buttons or the appearing menu on the monitor, you can switch off active executors. You can switch off the executor by simultaneously pressing the “Off Key” and the respective “Executor Button”.

5.6 OFF menu

Executor Fader

There are 5 Executor Faders available. These five faders correspond to the faders no. 1 to 5 on the grandMA. Faders no. 6 to 20 (Faders 6 to 10 on the grandMA light) are not available. This becomes especially important when programming the show on the grandMA and “running” the show afterwards with the Replay Unit. These faders are not motorized, so that the actual values have to be “grabbed” after switching pages. If the faders are not located at the actual value, the respective LEDs within the buttons will flash, until the value has been reached by moving the fader. Channel faders are not available.

Executor Fader Button

Three Executor Buttons are available for each Executor Fader (as on the grandMA). These 15 Executor Fader Buttons correspond with the Fader Buttons no. 1 to 5 on the grandMA. Fader Button no. 6 to 20 (Fader Button no. 6 to 10 on the grandMA light) are not available. This becomes particularly important when programming the show on the grandMA and “running” the show afterwards on the Replay Unit.
**Mode Key**
Has no function yet. This key is being reserved for possible special functions in the future.

**Reset Key**
This key stands for a “hard” reset. This key is only required in the unlikely event of the console freezing or crashing. The same key is located once again on the rear panel.

**Executor Buttons**
There are 5 Executor Buttons (no. 6 to 10) available (as on the grandMA). These buttons correspond with the Executor Buttons no. 21 to 25 on the grandMA. Buttons no. 26 to 40 (no. 16 to 20 on the grandMA light) are not available. This becomes particularly important when programming the show on the grandMA and “running” the show afterwards on the Replay Unit.

**Executor Fader Page Up / Key no. 1**
This key has 2 functions.
Switching pages for the Executor Faders (Page up)
Confirm key no. 1 (the respective command appears as running text on the display)

**Executor Fader Page Down / Key no. 2**
This key has 2 functions.
Switching pages for the Executor Faders (Page down)
Confirm key no. 2 (the respective command appears as running text on the display)

**Executor Key Page Up / Key no. 3**
This key has 2 functions.
Switching pages for the Executor Keys (Page up)
Confirm key no. 3 (the respective command appears as running text on the display)

**Executor Key Page Down / Key no. 4**
This key has 2 functions.
Switching pages for the Executor Keys (Page down)
Confirm key no. 4 (the respective command appears as running text on the display)

**Display**
Pop-up messages will appear on the display of the TFT monitor, which have to be confirmed (as on the grandMA).
NOTE: If these messages are not being respectively confirmed, you might not be able to continue in the process. If monitor and mouse are connected, you can also confirm the messages with these tools.

**Power Supply**
See Battery
14.2 General Instructions

14.2.1 Differences between Replay Unit and the grandMA or grandMA light

The software is identical for all of the units. However, tow 1 external monitor can be connected. The UPS functions as well as the 2048/4096 channels are also fully supported as on the grandMA or grandMA light.

Connectors for external keyboard, mouse and monitor are located on the rear of the unit (these are not included as standard). Encoder, Trackerball, Wheel, more than 5 Executor Faders and 5 Executor Buttons as well as quite a few other keys on the grandMA and grandMA light are not available with this unit. Nevertheless, most of the functions (except for the executors) can be reached and activated using the mouse and tow external monitor.

14.2.2 Working with Mouse, Keyboard and Monitor

With these tools almost all functions of the grandMA can be operated on this unit. The 3 keys of the mouse will take on the functions of the keys on the console. All required keys (such as CUE, COPY, NEXT etc.) have to be set up as "Quikeys" in advance (Assigning and Activating QUIKEYS), so that they can be operated via the mouse. Values within the fixture or channel sheets can be modified with the middle mouse key. A Command Field will appear on the monitor when clicking on those fields above the (non-existing) encoders. You can operate this Command Field with the mouse also.

14.2.3 Working in Stand Alone Mode (Playback)

This means working with the Replay Unit without the use of external mouse, keyboard and monitor. In this mode you can only activate Playback via the existing elements on the front of the unit. Please note, that you will only have 5 Executor Faders and 5 Executor Buttons available. These Executors correspond with the first 5 Executors on the grandMA and grandMA light. There is no access to any of the other Executors. This becomes particularly important when programming the show on the grandMA but "running" the show afterwards on the Replay Unit.

14.3 Specification and Technical Data

14.3.1 Integrated Harddisk and Diskdrive

The harddisk does not only save a backup for the operating system, but leaves enough space for countless shows with hundreds of sequences. Shows can also be saved on disk for archive purposes or transferring to other grandMA consoles. The floppy disk drive also allows you to update the software, which can be downloaded from the MA Homepage (www.malighting.de) on the internet.

14.3.2 Ethernet and other Options

In addition to the 4 DMX output ports the hardware of the grandMA replay unit is designed to transmit larger numbers of channels via Ethernet. ESTA is currently working on a standard protocol for this form of transmission, which will guarantee a compatibility between units of different manufacturers, similar to the DMX norm. In addition to DMX input, Sound, SMPTE timecode, it offers a printer port and a RS232 interface (only for GPS-receiver) and a USB-Port (not active) for faster communication with any kind of peripheral units.

14.3.3 System Maintenance and Software Updates

The software of the grandMA family is in a process of constant expansion and improvement. Due to the control via menus and display softkeys it is possible to realise the feedback of our customers and technical advances in our software updates. The hardware is only the basis and offers sufficient capacity to guarantee that its owner will always participate in the fascinating technical developments.

14.3.4 Peripherals

Peripheral units, such as a wireless remote control, are still in the development process. A 3D visualisation software is available.

14.3.5 Capacity:

- grandMA replay unit controls 2048 parameter, 4096 parameters as option via ethernet (dimmers and attributes of 8 or 16 bit) with softpatch to 4096 DMX addresses. Up to 16384 parameter with NSPs.
- A freely configurable monitor offers flexible operation and precise adaptation to any individual working mode.
- Playback works on the basis of dipless crossfade either in Tracking or Non-Tracking mode.
- The internal harddisk allows for virtually unlimited storage capacity of presets, memories, cues and effects.

14.3.6 Front Panel Layout

- 5 Faders as Executor-, Effect or Group-Faders, each with 3 directly assigned buttons.
- 5 Executor Buttons for direct retrieval of Sequences, Chases and other functions.

14.3.7 Setup Menu and Start Configuration

- Basic configuration available on harddisk.
- Fixture library with more than 280 multifunctional fixtures.
- All fixtures and channels can be named individually.
- Free Softpatch with MIN, MAX and INVERT of all four DMX lines.
- Definition of new fixture types on screen.
14.3.8 Display of output and data entry
- Numeric dimmer channel listing.
- Channel fader symbols.
- Fixture parameter spreadsheets for status report on moving lights and dimmers.
- Different additional options available.

14.3.9 Selection and Data Input
- Selection via Group Keys with Mouse.
- Hold and Move Mode with middle mouse key.
- Align option for proportional change of any group of values.
- Preset softkeys for the moving light features.
- Keys can be freely moved within the window.
- Presets grouped together for the 10 different function types.
- Keys of different preset groups with different colours.
- Free assignment of channels to be controlled in which preset.
- Direct access even during Playback.

14.3.10 Automatic effect generator
- A number of complex effects applicable to any channel.
- Library of all different movements.

14.3.11 Store Options
- Single cues, chase effects, sequences or effects.
- Selective programming for LTP and tracking mode.
- Basic fade times for fading channels and basic delay for switching parameters.
- Optional individual fade and delay for every single channel.
- Overwrite, Merge, Insert and Add-on option.
- Cue Lists in Tracking or Non-Tracking Mode.
- Optionally insert in Cue Only Mode.

14.3.12 Playback Options
- Free assignment between Program Pool and Playback faders or Playback buttons.
- Playback via fader or GO-button with stored timings.
- Chaser effects with Auto Run, Audio or manual X-Fade.
- Auto Loop / Single / Reverse / Bounce / Random.
- Sequence with individual timings per step.
- Go button mode / Auto Timed / Sound.
- Steps can include loops with counter or timer.

14.3.14 Executor Faders and Buttons
- Executor faders and buttons with multiple assignment options.
- Working mode of faders and buttons can be freely assigned.
- Optionally assignment of several executors for one single cue list.
- A block of special function buttons can be applied to any executor.

14.3.14 Fader working modes
- Brightness Master in HTP or LTP Mode.
- Speed, Fade Time, Rate for chaser and sequences.

14.3.15 Button working modes
- ON/OFF, GO+, GO-, Pause, Flash up and Flash down.
- Fast GO and GO- (<<< and >>>) without fades.

14.3.16 Output Listings and Cuelist Protocols
- Infading or outfading values of main sequence is marked in different colours in the channel list.
- Lists of sequences including names of steps and times
- Parameter modifications directly in the spreadsheet.

14.3.17 Overwriting a program sequence
- Constant access to all effects and channels.
- CLEAR and RELEASE functions.
- UPDATE function for fast correction of programs.
- EDIT function for direct modification of playback parameters.

14.3.18 Adjustment of Hardware
- Software Equalizer for Audio Input.
- Preselection of certain settings (Defaults).
- Free grouping of functions for selective programming.
- Preselection of save mode, times and the standard operation of playback functions.

14.3.19 Connectivity
- 4 DM X 512/1990 Output Lines via 5-pin XLR Sockets.
- DM X Input with 5-pin XLR Socket and DM X Thru.
– Audio Input Line for Mono Audio Signals >20 mV with 6.3mm socket.
– SMPTE Timecode Entry for LTC Timecode >200 mV with 6.3mm socket.
– MIDI Interface with IN/OUT/THRU.
– External control input for direct voltage signals via 25-pin SUB-D socket.
– 2 SVGA Output Lines for one colour monitor and a service monitor via 15-pin sockets.
– Parallel printer port Centronic via 25-pin SUB-D socket.
– Ethernet Interface for networking (Backup), DMX-transmission and Remote Control with RJ45-socket (10/100 Base-T) according IEEE 802.4.
– 2 serial interfaces RS-232C for future extensions (only for GPS-receiver) (9-pin SUB-D sockets).
– USB-Port (not active)
– Connections for external Keyboard (Mini-D, PS2-Type) and Mouse (Mini-D, PS2-Type).

14.3.20 Operating system
– Operating system for industrial applications named VXWORKS (no DOS, no WINDOWS).
– Fast cold boot time (approx. 1 minute).
– Software update via download from Internet.
– Off-Line Editor available.

14.3.21 Hardware
– Pentium Processor with min. 450 MHz Processor Speed and 256MByte RAM.
– Built-in Hard Disk for Show Data, Library, etc.
– Integrated 3.5" Floppy Drive for easy software updating and external storage of Show Data.
– Reset Keys on front and rear housing.
– Built-in UPS (Un-interruptable Power Supply) to withstand main power failures up to 10 minutes.
– Professional protection against electromagnetic interference in compliance with all relevant European EMC regulations.

14.3.22 Weight and Dimensions
– Robust Steel Housing (485 x 430 x 140 mm).
– Weight: 24.25 lb. (11 kg)
15 Potentialities of Network connections

In the grandMA family, there are multiple networking possibilities. In the following description, we will use the abbreviation grandMA or “unit” for any grandMA, grandMA light, grandMA ultra-light, grandMA RPU, grandMA Offline, and grandMA 3D, as they are all equipped with the same software options and only differ in their hardware (Offline and 3D, however, cannot create any DMX). The PDA remote control is not a unit in the above sense, and will not be explained. The micro can only enter into a network connection with the 3D, grandMA video and WYSIWYG.

NOTE: Connect to a network only with minimum 50% free memory.

If in the network there is a device having a transmission rate of more than 10Mbit, the whole network will be reduced to that transmission rate.

grandMA plus grandMA 3D (PC): For visualization purposes on a PC
2 grandMAs connected: Backup system or Single user
grandMAs connected: Multi User system
grandMA 3D (PC) with one or two NSPs as a complete console with DMX output
grandMA Micro with grandMA 3D (PC)

15.1 Preparing the network settings:

- Press TOOLS
- Pressing the MA Network Configuration button in the TOOLS menu will open this menu.
- Save Show before changing the IP adress

- The change it, just click on the IP address; this will open a window containing the current IP address that can be changed directly. This IP address cannot be used on different consoles within the network. Simply alter the individual IP address of each unit to unique numbers within your network. Make sure that the first three number blocks (in this case: 192, 168, and 0) are identical for all units.
- By pressing the Save and Reboot button, the new address will be saved and the console be restarted.
- Define console name
This is where the name of the console is displayed. This name will be displayed on each unit in the network and will facilitate the assignment of individual units in larger networks. To change, just click on the name, overwrite it in the window that will open, and confirm.
- Define the station name
- Define the station priority
- Set Invitation to
- Enable: It's possible to invite this console to a session.
- Disabled: It's unpossessable to invite this console.
15.2 Preparing a Session (also needed to run NSPs)

The left table will show all **sessions** stating its names and the "Unconnected" group (all not connected consoles). If a session is displayed with a red background, you can only log into this session using a password (join) above item 3: Forced Login. When clicking on a session (blue background), the units of this selected session will be displayed in the right table.

The right table will only show the units of the selected session (also grandMA-Offline and grandMA 3D). If a unit is displayed with a red background, it is not enabled for network connections. above, item: Allow Invitations.

The Master priority will only interest you, when you want to create sessions with more than 3 units. By clicking into the cell (here Normal), you can switch between Low, Normal or High. The unit with the highest priority will always have the Master function in a session, no matter, regardless of which device the session was started.

**ATTENTION:** Bei der Einstellung NEVER übernimmt dieses Pult keine Masterfunktion.

This is where the current status will be displayed: Master, Slave or Standalone.

- **Full Tracking:** Preset for Backup System or Single User. Will automatically switch to Multi User, if a session with multiple consoles is opened.
- **Multi User:** Preset for Multi User systems.

**NOTE:** In Multi User mode, you should use special network switches, e.g. PROCURVE SWITCH 2524 (managable switch). Our hotline will gladly advise you on setting up your network accordingly.

- My State - display: MASTER SLAVE
15.3 Creating a Session
- Before you start a Session, make sure that the appropriate settings from chapter 14.2 have been made.
- Connections always have to be made when starting a Session.
- Only now can the different units (3D, Offline, grandMAs,...) be integrated in this Session
After all settings are made, press the Start New Session button and confirm with OK. The name of the unit will automatically be accepted as Session name.

or:
If you want to assign a name to the Session, click into the empty cell on the side of “Session Name”, enter a name and confirm. Then press the Start New Session button and confirm with OK.

In the left table, the created Session will be displayed with its name and on a light green background. This unit will now be the only Master in this Session. Now, you must integrate another unit into this Session.

15.3.1 Expanding the Session
Before units can cooperate with each other, you have to integrate the second one (or further units, theoretically up to 10 units) into this Session.
- The Show of the second unit (and of all others) must be saved before, as these - even on the 3D - will always be overwritten by the first unit (that had created the Session).
- All users that are not present on the first unit (that had created the Session) will be deleted. If needed, you would have to set them up again.
- Master priorities have to be defined (see on the right side)

Attaching Units from the Master
In the left table, click on “Unconnected”. The table on the right will show all units that are the „free“. In the right table, click on the unit (3D, Offline, grandMA, ..) (will get a blue background). Press the Invite Stations button and confirm with OK. The data of the “invited” unit will be overwritten!

Attaching from another Unit
In the left table, click on the Session, which is to be joined. Press the Join Session button and confirm with OK. The own Show data will be overwritten now!

Master Priorities
All units of the same priority: The unit that had created the Session, remains the Master. If the Masters fails, the Slave (2nd unit) will automatically become the Master. When there are more than 2 consoles, coincidence will decide, so you should assign priorities.

If there are more the 2 unit: e.g.: 1st unit grandMA (priority “Normal”), 2nd unit grandMA light (priority “Normal”), 3rd unit grandMA RPU (priority “Low”). When the Master fails, the 2nd unit (grandMA light) will automatically become the Master, the RPU will remain Slave.
In the left table, click on “Session”. The right table will now show all units of the Session. Under „Status“, the current priority will be displayed. In this case, for the Light only „Slave“ will be displayed, the same priority as for the Master. For the RPU, “Slave will be...
displayed, i.e., the set priority of the RPU is „low“, i.e., lower than that of the Master.

As soon as the connection is established, the normal operation of the units can start.

Differences between Full Tracking, Multi User and Playback next page.

The Session will be kept, if not:
- interrupted manually by pulling the EtherNet cable (or deactivating the EtherNet converter)
- terminated automatically due to a detected communication problem
- terminated due to a hardware problem either on the Master or on the Slave

Master Unit
You can resolve the complete Session by pressing the Leave Session button on the Master.
You can also exclude a unit from a Session; to do so, click on this unit in the right table (blue background). By pressing the Disconnect Station button, it will be excluded.

Slave unit
When pressing the Leave Session button, this unit will leave the Session.
You can also exclude a unit from a Session; to do so, click on this unit in the right table (blue background). By pressing the Disconnect Station button, it will be excluded.

15.4 Full Tracking
When a Session is in Full Tracking, all data relevant for the Show plus the operations will be executed simultaneously on all units, except when currently working with Worlds next page.

15.5 Multi User
No Pages on other units will be switched over, no Selections of Fixtures transferred, and no View switchings transferred. Using Worlds will have a major effect in this case next pages.

Abort or Reconnection of a session (Autoconnect)
If a session was disconnected (for example OFF without leaving the session), slave desk tries to reconnect to the session after switching on.

Abort Autoconnection:
● press Abort: Connection will not re-established; desk works as stand-alone with the current show

Allow Autoconnection:
● press X or after approx. 4 Seconds automatically: Connection with session (see picture: session GM edi of desk with IP 192.168.177.113) will be re-established (only when session master is available)

SESSION Collision:
If between abort and reconnection to a session, the session was changed, this collision warning will pop up after reconnection. Choose an action to connect the desk to this or another session.

Join other session:
The desk connects to another session
Take over other session:
Other desks (when Invitaion is enable) will be invited to this session
Change my ID:
The ID of this session will be changed
15.7 Worlds

In the World pool, you can create, call up or manage so-called "Worlds". Worlds can be created individually. Worlds can be used e.g. to split up complete Scanners (all Attributes) or individual Attributes of Scanners or just Dimmer channels or all Scanners and Dimmers for programming purposes - and, what is even more important, to run Executors.

Creating Worlds

E.g.: In a World, the Scanners 1-10 are saved with the Dimmer and Color function. If you call up this World, only these Scanners will be displayed in the Fixture Sheet. Furthermore, only the Dimmer and Color functions can be modified. In the Channel or Fader Sheet, the Dimmer channels will no longer be displayed.

- Select Scanner or Dimmer channels.
- If you just want to store some Scanner attributes, you can activate these by double-clicking on them (these Attributes will be displayed in red for the selected Scanners).
- Press the STORE key shortly.
- By clicking a button in the World pool, the World will be stored and operational. You can also give it a name directly by using the keyboard.

If not all Attributes are stored in a World, this will be indicated by a small red triangle in the left upper corner of the appropriate button.

Working with Worlds

For the programming (creating the Show), Worlds are a great deal of help when it comes to creating Cues. If you select a World, only the assigned Scanner and Dimmer channels will be displayed, ready to be modified and stored.

NOTE: Starting a console will always reload the last setting; if a World was active when the console was shut down last time, only this World will be displayed on the next start. In the stage window, only fixtures of this World can be seen – in the stage window, however, under SETUP, all registered fixtures can be found.

If you are in a network session that means that different users (units) can use different or overlapping Worlds. Call up a World by clicking on it (will be displayed in dark green).

CONTROL shows, if you have full control over the selected World (green) or just a partial Playback control (yellow)

Full World. By pressing the Full button, all existing Scanner and Dimmer channels will be displayed again (complete World). The button will be displayed in green.

If you see a warning symbol on a button, it means that this World is presently being used by another User (user).

With the Exec Sync function, multiple users (units) can start calling Executors simultaneously (synchronously). In order to do so, this function must be switched on on both appropriate units by pressing this button (will be displayed in green).

This special function only serves synchronizing two different Worlds (Playback). And this function has to be switched on in a Playback session, if the Playback commands are to be transferred.
15.8 Remote Network Monitor

In the menu Tools/Remote Network all remotes, e.g. PDA’s are displayed. Button Disconnect Remote disconnect the selected remotes.
With Show Remote the selected remote is displayed on the right touchscreen.
With Send Message you can chat with the selected remotes.
With ENABLE / DISABLE REMOTES you can reject or enable a remote connection to your desk. Pressing Disable Remotes does not interrupt the actual connection with a remote - press Disconnect Remote first.

BE ON THE SAFE SIDE: During life-situation switch remote access to DISABLED!
16 Full Tracking Backup on grandMA consoles

16.1 Why using a backup system?
Anytime the grandMA or another member of the grandMA family is running a show it already provides a maximum level of stability in operation based on its unique hardware concept and the built-in UPS power supply. For applications like big theatre shows, live broadcasting or larger touring events even more security is sometimes required.

With other systems this is very often achieved by a second console loaded with the same show. This second desk (“backup system”) is then manually tracked to take over control whenever the main system fails. Sometimes both consoles may be linked together via MIDI, MIDI Show Control or any other serial signal to perform a “playback tracking” which keeps both systems on the same cue. In a backup situation only the DMX-outlets need to be cross-switched.

The grandMA now offers a complete concept of show backup for moving light and conventional controllers.

16.2 grandMA with show backup
As the DMX signal distribution via EtherNet has been implemented to all grandMA systems the software release brings full backup capability via EtherNet.

16.2.1 Backup options via EtherNet
The Backup system can be used to combine multiple grandMA consoles (up to 10) to form a Master-Slave configuration. The console having the Slave function will permanently be provided with the current Show data, and furthermore, all Playback commands can be executed, so that it could take over the Show at any time, if the Master console fails or the connection is interrupted manually. Both the connected consoles will always run the same Show.

16.2.2 Tracking the Console Status
As soon as the grandMA Full-Tracking Backup has been set up and is operational, all important operating elements of the Master are simultaneously transmitted to the Slave system for parallel execution. If not set up this way, the Slave system will only follow the commands of the Master (main system), if the latter is operational. If the connection to the Master system is interrupted, or the Master itself crashes due to a hardware or software failure, the Slave system would not accept this invalid condition.

All these features as a whole let the grandMA provide a complete “Full Backup” without any compromise, offering maximum safety in any Show.

16.2.3 Using the True-Tracking Backup live
The grandMA Full-Tracking Backup system has been developed mainly, to ensure and cover any kind of live situation and critical Show conditions. Show recordings and final rehearsals will, however, be even better protected, by saving Show data at regular intervals, in between (by activating the „Autosave“ or double clicking on the BACKUP button). One major advantage of a synchronisation via EtherNet is the possible combination with the DMX-EtherNet distribution (in this, the currently installed ArtNet, and PathPort protocols will be used). In order not to have to switch the DMX signals from the Master system to the Backup system in case of an emergency, the grandMA Master and the Slave console can be connected in a network via an Ethernet-DMX converter.

As long as the Master-Slave connection remains established in the network, the grandMA Master will actively transmit DMX data via the protocol; the Slave system will ignore the DMX-EtherNet settings. As soon as the Slave system is switched over into Master mode, it will immediately activate ArtNet protocol and start transmitting DMX data. All internal DMX interfaces will be active at any time.
16.3 Setting up a Network System

In order to set up a network configuration within the grandMA family, you can connect consoles of different types or with different numbers of DMX channels. The grandMA software is very flexible and can "correct" possible differences in the current hardware.

16.3.1 Connecting consoles of different types

The master console always demands the slave(s) to behave like the master hardware. This means a "full" grandMA master forces a grandMA light slave to be a "full" grandMA temporarily. This results in phantom executor faders and buttons as the grandMA light (or grandMA replay unit) has a reduced hardware platform. Switching executor pages will then renumber the executors as given by the first executor on the master console.

When the connection is either manually or automatically (by a user-definable timeout) broken the slave console can be switched to master mode with maintaining the setup and configuration of the "lost" master. For example, a grandMA master connected to a grandMA light slave will force the "light" to operate like a grandMA, even when the connection is lost and the grandMA light is forced to solo mode.

The table shows what master/slave connections are possible and how many and which executor faders and buttons are available on the slave during Tracking Backup and in solo mode afterwards. Please note that the slave's assignment of executor faders and buttons restores to the hardware default after the console is once re-booted.

16.3.2 Connecting consoles with different DMX channel count

In a Full Tracking Backup system the DMX channel count of the master console demands a temporary update or downgrade of the connected grandMA slave automatically. If a 4096 channel master is connected to a 2048 channel slave the grandMA slave will take over the 4096 channels and process them in all conditions even when the connection is broken regardless of what the original installed channel count. Rebooting the slave will restore the installed channel count immediately. In a Full Tracking Backup situation where the master is defective this may cause a loss of show data as only DMX channels 1 to 2048 are processed on "smaller" 2048 channel systems. Therefore please make sure that the channel upgrade is being implemented on the slave.

16.3.3 Using a PC as master or slave console

Though the grandMA Offline Editor software cannot be used to actively control DMX-channels as the DMX-Ethernet protocol is permanently disabled it still can be used in a master/slave connection with "real" grandMA consoles. Because of the limitations of the PC hardware in combination with Windows@operation systems the grandMA Offline Editor must be seen as "weakest" part of the EtherNet chain therefore it may only be operated as slave console.

You may use this setup with a PC as slave to easily transfer show file data to other grandMA consoles (whatever type they are), especially when they are used on a distributed network.
16.4 Connecting consoles for a Network Backup system

Any True Tracking Backup configuration with grandMA components may only be connected via a EtherNet communications network. The grandMA consoles currently support two different hardware types of transmission media.

16.4.1 10 Base-2 EtherNet (not for grandMA ultra-light)

EtherNet with 10 Base-2 connection media (also known as “Cheapnet”) has lost its importance in today’s networking technology. Nevertheless, as 10 Base-2 systems are very easy to configure and they do not require additional networking nodes or hubs, they might be used to easily link two or more grandMA consoles. As the built-in EtherNet card of the grandMA console autosenses the used connection media, there is no need to configure the console’s hardware at any time.

The connection cable used for 10 Base-2 EtherNet is a 75 ohm coaxial cable (RG-58U) with male BNC connectors on both ends. The maximum cable run is up to 180 metres from end-to-end.

All connections to any kind of networking units (like consoles, PCs or Hubs) require the use of a “T”-connector, which has to be connected to the BNC output of the console. Extension cords are not permitted.

“T”-connector to be used with 10 Base-2 network nodes

Any connection cable used for 10 Base-2 EtherNet has to be terminated on both ends with 75 ohm resistors. If these resistors are disconnected or of the wrong value, no network operation will be possible.

Line termination on 10 Base-2 network

10 Base-2 EtherNet can be used for grandMA master/slave connections when no ArtNet DMX-Nodes or other distribution equipment is planned to be used. For longer cable runs or distributed networks, 10 Base-2 EtherNet is not recommended any more.

Two grandMA consoles connected on a 10 Base-2 network
16.4.2 10 Base-T EtherNet

The most common EtherNet connection is the “twisted pair” link using 10 Base-T EtherNet. Hereby a peer-to-peer connection is established by minimum 4-wire cable connection at a maximum length of 100 metres. The cable is always equipped with 8-pole RJ-45 crimp-connectors.

“Twisted pair” cable to be used for 10 Base-T with RJ-45 connectors

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Colour of Wire (POS/258A)</th>
<th>10BASE-T Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T2 white, orange stripes</td>
<td>Data transmit +</td>
</tr>
<tr>
<td>2</td>
<td>R2 orange</td>
<td>Data transmit -</td>
</tr>
<tr>
<td>3</td>
<td>T3 white, green stripes</td>
<td>Data receive +</td>
</tr>
<tr>
<td>4</td>
<td>R1 blue</td>
<td>Not used</td>
</tr>
<tr>
<td>5</td>
<td>T1 white, blue stripes</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>R3 green</td>
<td>Data receive -</td>
</tr>
<tr>
<td>7</td>
<td>T4 white, brown stripes</td>
<td>Not used</td>
</tr>
<tr>
<td>8</td>
<td>R4 brown</td>
<td>Not used</td>
</tr>
</tbody>
</table>

Pin numbers on RJ-45 connector and 10 Base-T standard signal assignment

As 10 Base-T EtherNet always requires an EtherNet hub to distribute the signal (connections from console to console go via a hub) a useful application will be any network where more than two consoles or consoles with additional equipment (such as ArtNet DMX-Nodes) are proposed.

For a simple peer-to-peer connection between two consoles a “crossed” 4-wire cable MUST be used.

“Crossed” cable to be used for 10 Base-T peer-to-peer connections

<table>
<thead>
<tr>
<th>Master Console End</th>
<th>Slave Console End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin No.</td>
<td>Colour of Wire</td>
</tr>
<tr>
<td></td>
<td>white, green stripes</td>
</tr>
<tr>
<td>1</td>
<td>T2 white, orange stripes</td>
</tr>
<tr>
<td>2</td>
<td>R2 orange</td>
</tr>
<tr>
<td>3</td>
<td>T3 white, green stripes</td>
</tr>
<tr>
<td>4</td>
<td>Not used</td>
</tr>
<tr>
<td>5</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
</tr>
<tr>
<td>7</td>
<td>Not used</td>
</tr>
<tr>
<td>8</td>
<td>Not used</td>
</tr>
</tbody>
</table>

Pin 8 Pin 1
When deciding for a Switch, please make sure that its Cache is as big as possible.

Using a “crossed” 10 Base-T cable will allow a direct console-to-console connection but no additional components can be added to this connection type later on.

**GrandMA Master/slave configuration with 10 Base-T “crossed” cable**

The console(s) can only work on one transceiver type at a time - when the 10 Base-2 port is in use anything connected to the 10 Base-T outlet is ignored and vice versa. If you want to connect more consoles at one time or the use of an ArtNet DMX Node is required a 10/100 Base-T EtherNet-switch must be installed. Also for security reasons on longer cable runs or branched wiring a 10/100 Base-T switch is strongly recommended (like a DMX-booster on larger DMX-networks).

The following example shows a network configuration with two identical consoles and an ArtNet DMX-Node for DMX changeover and distribution. All components are star-wired from a central EtherNet hub using standard 10/100 Base-T cabling.

**GrandMA Master/slave configuration with 10/100 Base-T Switch and ArtNet DMX-Node**

When deciding for a Switch, please make sure that its Cache is as big as possible.
17 Channel extension with the NSP NETWORK SIGNAL PROCESSOR*

With a NSP, grandMA consoles (except MICRO and PICO) can be extended to 32,768 channels / 16,384 parameters. The console can be connected to up to 16 NSP, so that you can control 32,768 channels. This way, you save cable metres and can bridge greater distances easily. The NSP has to be connected to the console within a session, and has to be adopted in the DMX / NSP configuration menu.

NOTE: If more than 4096 channels are to be used, you absolutely need a network having a 100Mbit transmission rate. Make sure that there are no elements in the network potentially reducing your speed to 10Mbit. No problems will occur in a network environment with consoles having the following serial numbers:

- grandMA as of SN 490 onwards
- grandMA Light as of SN 317 onwards
- grandMA UltraLight as of SN 232 onwards
- grandMA Replay Unit as of SN 38 onwards
- grandMA MICRO with all devices

Consoles with lower serial numbers must be upgraded with 256 MB RAM and a 100MBit network adapter.

Start a session:
- press TOOLS
- press MA NETWORK CONFIGURATION
- press CONSOLES
- enter SESSION ID (1-31), all stations within this session must have the same ID-number
- press START SESSION and enter name and password (if required)
- press NSP to open the NSP configuration menu

Register a NSP on the console: (the NSPs should be switched on, connected to the network and have unique IP addresses – you can change their names and IP addresses in SETUP under UPDATE SOFTWARE) and a session must be started!
- press ADD NSP
  - if needed, enter a name
  - select the IP address of the desired NSP and click on it using the Encoder
  - assign the DMX lines to the NSP outputs (lines 1 – 8 equal A – H; lines 9 – 64 will only receive numbers)
  - repeat the operation for each NSP

Delete a NSP on the console:
- click on a NSP in the overview
- press REMOVE NSP

EXPANSION MODE: You can choose between 4,096 channels, whether the DMX channels are output from the console (Expansion Mode inaktiv) or via network (Expansion Mode activated). For shows with more than 4,096 channels, the Expansion Mode will switch on automatically.

SOFTWARE UPDATE:
For updating purposes, the NSPs must not be set to ARTNET - set them to MAnet!
- Update the NSP like the other consoles in SETUP using UPDATE SOFTWARE and UPDATE CONSOLE.
17.1 NDP Configuration*

NDP Configuration*
You can use this menu to configure an MA Dimmer cabinet. Fault messages and status reports are shown in the NETWORK DIMMER menu. Please read the NDP manual if you wish to configure the dimmers; it can be downloaded from our homepage.

Connecting the NETWORK DIMMER PROCESSOR (NDP) with the grandMA:
- Press TOOLS
- Press MA NETWORK CONFIGURATION
- Press NDP
The NDP Configurations menu appears

IP: The IP network addresses of the devices
MAC: The MAC addresses of the devices
NAME: This displays the entered name of the device. The name can be entered or changed with EDIT
STATUS:
- yellow JOINING = the network connection is being constructed, please wait a moment
- green DAT OPEN = the network connection is active
SESSION ID: This displays the ID number. All devices intended to work together in a session have to have the same SESSION ID number. The ID number can be changed with EDIT and pressing the relevant field
RACK No: This displays the number of the displayed racks.

MA NETWORK DIMMER:
- Click an empty screen and press the button NETWORK DIMMER in the section OTHER
The MA NETWORK DIMMER menu appears
Here you can acknowledge all fault and status reports, and faults.
17.2 2-Port Configuration*

In this menu, you can configure a 2-port node. For further information refer to the manual „2_port Node“ you can download from our homepage www.malighting.com

**Saving the 2-Port Nodes configuration:**
- press TOOLS
- press MA NETWORK CONFIGURATION
- press 2-Port
- press the SAVE CONFIG button
- Press OK to load the configuration in the Showfile. This will make the configuration part of the Show; variances like e.g. the failure of a 2-Port Node will be displayed in the Desk Status.

This will automatically bring up the next request, if the configuration is to be saved as a backup on the console or to an external disk.

- Press OK and use the Filebrowser to save the configuration on the console or to a floppy disk (chose this option by touching HARD DISK).
- Enter the name of the configuration and confirm with ENTER.

**Loading the 2-Port Nodes configuration:**
- press TOOLS
- press MA NETWORK CONFIGURATION
- press 2-Port
- press the LOAD CONFIG button
- in the Filebrowser, select the source (chose this option by touching HARD DISK)
- select the configuration and confirm with ENTER
- confirm the request Upload? with OK. This will overwrite the Nodes with the new configuration.

**NOTE:** Some settings of the 2-port can cause flickering output. See manual of the 2-port node.

17.3 grand MA Video

This menu can only be used in connection with the grandMA Video software. For further information on the installation an operation, please refer to the grandMA Video manual that you can download from our website www.malighting.com.

17.4 REMOTE

This menu can be used to see the connected remote handheld PCs.

**NOTE:** Disable Remote when a show is running
18 PDA-Remote Control

Introduction
The PocketPC is the ideal complement to our grandMA console. It combines the functionality of a console with the mobility of a compact organizer. It serves to remotely control the major operations and must be used together with the console. It is not intended to and cannot replace the programming at the console, as for reasons of visibility, only the most important menus will be displayed. Working with these menus is explained in the appropriate chapters of the grandMa User’s Instructions; alternative operation and special key layout will be explained on the following pages.

The following devices are suitable
So far, the following products have proved successful: (as of 02/2009)
- COMPAQ iPaq Serie 36/38xx with extension Pack PCMCIA
- TOSHIBA e740/e750 version WiFi (recommended by MA Lighting)
- TOSHIBA e800 (recommended by MA Lighting)
- DELL Axim X5 with Linksys CF Wireless Adapter
- HP iPaq Pocket PC H5400 family with ROM-update (from 17.03.2003)
- Fujitsu-Siemens Pocket Loox 710, N560 and Loox N520 (recommended by MA Lighting)
- HP iPaq H4155 / HP iPaq H 5550 BT
- APPLE iPod and iPhone (Note: Phonecall interrupts Remote function)

as access points: (as of 02/2009)
- ASUS SpaceLink WL-300 (recommended by MA Lighting)
- D-Link DI-614+
- 3-COM WLAN Access point 2000
- D-Link DWL-900APP+ Wireless Access Point
- D-Link DWL-800AP+
- E-POX EWL-A11 Accesspoint
- US ROBOTICS USR 5450
- LANCOM L-54-g Wireless (recommended by MA Lighting)
- APPLE AirPort Extreme 802.11n Wi-Fi

If in the network there is a device having a transmission rate of more than 10Mbit, the whole network will be reduced to that transmission rate. At the time being, all Access Points work with this rate, using a PDA can potentially affect the network.

Installation
Install the Wireless Access Point according the the manufacturer’s instructions.
On the PocketPC, select the installed adapter under SETTINGS / CONNECTIONS / NETWORK ADAPTER and enter the IP address plus subnet mask number 255.255.255.0 under PROPERTIES (see Preparing the Network settings).
Download the „REMOTE X.X“ software from our website and connect the PocketPC via COM or USB interface with a PC. The program ACTIVE SYNC must be installed. Start the SETUP.EXE file - the software for remote controlling
When all software and hardware requirements are met, the PocketPC is operational:

- Switch on the console
- Switch on the PocketPC
- Call up the GMA-REMOTE program
- Select the desired console
- Log in with a user name and password (has to be registered in the console) it is not possible to log in as an administrator. On the grandMA-MICRO (without user management), the login will be skipped and the user be logged in with administrator rights.

You can connect up to 6 remote controls. ATTENTION: selected fixtures apply for all connected units and for the console.

The grandMA console will be installed on the PocketPC. The software will recognize the operating systems Pocket PC, Windows Mobile pocketpc 2002, Windows Mobile pocketpc 2003, Windows Mobile pocketpc 2003 SE (Second Edition), Windows Mobile 5.0, Windows Mobile 6.0 Classic and will automatically install the respective modules.

Installation APPLE iPod: see instructions of manufacturer.

Depending on the menu, the cursor can have different functions, but will always have the purpose of moving (scrolling) or entering values (value - pressing on the outer edges) or confirm or switching over (pressing in the middle).

The key layout is identical for most PocketPCs, even if the symbols on the keys differ, have other symbols or the keys are arranged differently.

**will always and at once** switch to Select View

**will always and at once** switch to Command 1 / Command 2 and toggles between the both menues (with long press)
The setting can be performed either
using this key, and with each press you will
switch from one setting speed to the next one,
or
pressing the Cursor Scroll key **long** and
selecting the setting speed in the menu

or
1. using **toggle** in the taskbar, and with each
press the setting speed will be switch to the
next one.

Besides the label, the buttons have, depending on their operational task, different symbols, to
make orientation easier:

- ▼ (black) = pressing shortly or long will bring up a menu
- → (black) = reference to the next menu, you could open

The following terms are used to explain the keys to refer to different effects:

- **short:** = short press on the key, to get to the function
- **long:** = long press (time can be set in the PocketPC) the function
  will be started after this time (acoustic signal)
- **toggle:** = each time you press the key, the next function is selected
- **press center:** = press on the cursor in the middle

To set values by the Cursor, you can define three setting speeds: coarse - fine - finest

The setting can be performed either
1. using this key, and with each press you will
  switch from one setting speed to the next one,
or
2. pressing the Cursor Scroll key **long** and
  selecting the setting speed in the menu

or

1. using **toggle** in the taskbar, and with each
press the setting speed will be switch to the
next one.

= finest
= fine
= coarse

Using more than one remotes can cause bad screen display (parts of the menu are missing). Press REFRESH SCREEN to actuate the screen.
**Buttons:**
Here you can adjust the hold-down time for some hard- and softkeys.
Here you can switch on/off the horizontal cursor buttons during the value setting. The cursor left/right can adjust the next parameter e.g. if in COLRM IX the parameter CM1 is set the vertical Cursor adjusts CM1, the horizontal Cursor may adjust (this setting) CM2.

**Chat:**
set the acoustic signal on/off

**Current IPs:**
shows the actual IP-address of this pocketPC

**Shortcuts:**
Switch on the shortcut options.
Disable (without check mark): shortcuts are disabled.
Enable (with check mark): shortcuts can be switched on and off.
Close menu with

**Shortcuts:**
If shortcut - option is on ENABLED, activate shortcuts with this button (bright background) or deactivate shortcuts (dark background).
If you use a hardware keyboard with the remote-software on the PDA, you can use shortcuts for better access. The shortcuts correspond to the shortcuts of the grandMA-onPC-software (picture left displays a part of grandMA-onPC screen; shortcuts are written in brackets)

- In the button menu (in the Toolbar) choose „Shortcuts” and close menu.
- Activate Shortcuts in the toolbar (button has light background)

NOTE: with activated short cuts the PAN/TILT-values are not adjustable by the hardware buttons. Deactivate the short cuts (dark background) and adjust values as usual.
Command Time

To set the Fade / Delay times; after having selected Fixture and Feature, enter in the following sequence:
- Fade / Delay
- numeric value
- time dimension (must have a red background)
- ENTER

**Backspace** to delete the last entry in the CommandLine

**Escape** to delete the CommandLine

blue background + **short:**

toggle:
hours/minutes/seconds

long:
marked dimension will get a red background and remains set as it is

After confirming with ENTER, the COMMAND 2 menu will be called up automatically

**short:** choose the
Feature

**long:** Pull down menu of the Features
toggle: Fixture / Channel / Fader

toggle: Sort Dir / Sort By / Readout

Switching to Values and Presets / fades / Delays / Values Only / DMX / Executor ID / Cue ID

toggle: Presets - Sheet

In the Channel/Fader sheet, activate the Cursor scroll in the Fixture sheet

toggle: Cursor scroll / Cursor value

short: Select the parameter (if more than one)
long: Calculator - when name marked in the Fixture

short: Choose the Feature
short: same function as of NEXT key on the console
long: Pull down menu

for Cursor Scroll:
● scrolling in the Sheet when name is marked (frame around the name blinks)
● press: OPTIONS will be displayed

for Cursor Values (name must be marked and frame around the Feature blinks)
● \[\uparrow \downarrow\] changes the values of the chosen parameter
● \[\leftrightarrow\] only with activated „Change Parameter“ in the Button menu
  - with feature PAN/TILT change values in PAN and TILT
  - with other features change values of the right neighboured parameter
● press: to the next parameter (e.g. Color1, Color 2...)
displays the current Sheet

toggle: Fixture Sheet / Fader Sheet / Channel Sheet

short: Selection

short: toggle between scroll / value
long: cursor mode

short: The figure indicates, how many channels will be displayed in one column. Enter a new number (x - x) and confirm with OK

for Cursor Scroll

- scrolling in the Sheet for Cursor Values
- to change the values of the marked Dimmers

for marked name (frame around the name blinks)

- press: OPTIONS of the Dimmers will be displayed

displays the current Sheet

toggle: Fixture Sheet / Fader Sheet / Channel Sheet

short: Selection

short: toggle between scroll / value
long: cursor mode

short: shows name of Channel or Fader

for Cursor Scroll

- scrolling in the Sheet for Cursor Values
- to change the values of the marked Dimmers

for marked name (frame around the name blinks)

- press: OPTIONS will be displayed
**Executor / Edit**

**toggle:**
Run / Edit

**long:**
to select the Executor

**toggle:**
Times / Loops

**Changing values:**
- press **Edit Cue**
- mark the relevant value with cursor
- Center Press on Cursor
- value input with the Calculator, confirm with **ENTER**
- press **Update**

**SETUP**

**DUAL DIGIT VALUE ENTRY:** Entries performed over the numeric block, have to be done in the conventional way; entry 2_0 will yield a value of 20.

**SINGLE DIGIT VALUE ENTRY:** Entries performed over the numeric block will be done in factors of ten; entry 2 will yield 20, 0_5 will become 5, and 1_5 will yield 15 (without switching to DUAL).

**Default AT:** Here, enter the percentage value that the selected fixtures or dimmers are to take when the 2x AT command is used

**HIGHLIGHT NORMAL / IS SOLO:** The function of the button in COMMAND 1 will be set to the respective function
- **IS SOLO:** has the SOLO function, i.e. all fixtures not selected will be set to the dimmer value 0 (except they were set to NO MASTER in SETUP)
- **NORMAL:** The HIGHLIGHT button has the normal Highlight function.
**Executer / Run**

**short:**
Changes the function of the three right buttons: if CHANGE FUNCTION lights green press one of the buttons and select a new function. After the second press on CHANGE FUNCTION the chosen functions will be executed.

Buttons with functions differing from the default setting, have a blue background. The modified setting can be saved with AS A DEFAULT FOR ALL as new default setting.

**short:** the chosen functions will be executed

**set master with fader or cursor**

**Makros**

Macros can only be started or stopped. Creating or modifying macros has to be performed on the console.

Use the cursor to scroll in the Sheet, if only some of multiple macros are displayed.
**Patch**

Note: on the console, FULL ACCESS may NOT be opened in the SETUP!
Only LIVE ACCES is available with the PDA.

- switch with Touch, active part has a heading with a dark blue background
  - scrolling in the Sheet
  - for the marked cell
    - press center, to change the contents of the cell or make entries
      (depending on the cell’s contents) - same function as the Encoder of the console

**Groupmaster**

- short:
  - **All Full** sets all groupmaster to full
  - **Full** master is set to full
  - **Out** master is set to zero
  - scroll the master to the desired value

- scroll
display can show max 12 masters; if more masters are created, scroll to the next page with also 12 masters
### Groups

**toggle:**
- **Groups / Presets**

**toggle:**
- **Fixture / Groups**
  - ![Diagram](image)
  - ![Diagram](image)

- **jump to the next Group button**
- **jump to the next Group area**
- **press:** OPTIONS will be displayed

### Presets

**Pull Down menu of the Features**

**toggle:**
- **Groups / Presets**

**toggle:**
- **Fixture / Presets Pool**
  - ![Diagram](image)
  - ![Diagram](image)

- **jump to the next Preset button**
- **jump to the next Preset area**
- **press:** OPTIONS will be displayed
Declaration of Conformity
according to directives 2004/108/EG

Manufacturer's name: MA Lighting Technology GmbH
Manufacturer's address: Dachdeckerstraße 16
                        D-97297 Waldbüttelbrunn
                        Germany

declares that the product
Product category: Control unit
Name of product: MA grandMA, grandMA light, grandMA ultra-light, grandMA RPU, grandMA Micro
Type: MA GM

complies with the following product specifications:

Safety: EN60065, EN60950
EMV (EMC): EN55103-1 (E1), EN50081-1
                      EN55103-2 (E2), EN50082-1

Additional information: DMX512 and analogue inputs and outputs must be shielded and the shielding
                        must be connected to the earthing resp. to the housing of the corresponding plug.

10.07.2009
Dipl. Ing. Michael Adenau
### FAQ / TROUBLESHOOTING

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why will my console, on which I have created a session, suddenly become SLAVE, after inviting another console?</td>
<td>The other console’s priority is higher than that of the „founder“ console. see chapter 14.1</td>
</tr>
<tr>
<td>Why will the 3D not function?</td>
<td>When working with the 3D Visualizer, you have to activate TOOLS / MA NETWORK MULTIUSER on the console.</td>
</tr>
<tr>
<td>IP addresses do not correspond. The first three groups of the IP have to be identical, e.g. 192.168.177.xxx, the figures of the forth group (here xxx) have to differ for each device connected.</td>
<td></td>
</tr>
<tr>
<td>The 3D version is not compatible to the console software; the first three figures of the version number have to correspond: 4.3.6X</td>
<td></td>
</tr>
<tr>
<td>Some anti virus programs like e.g. NORTON ANTIVIRUS, can disturb the interplay with the 3D - deactive these programs.</td>
<td></td>
</tr>
<tr>
<td>Why will my console, on which I have created a session, suddenly become SLAVE, after inviting another console?</td>
<td></td>
</tr>
<tr>
<td>Why will the 3D not function?</td>
<td></td>
</tr>
<tr>
<td>Will only boot up to the message: COULD NOT FIND ATA (blue scree)</td>
<td>Hard disk failure or not present or cable disconnected. Repairs should be performed by a service technician, see hotline contact on the bottom margin.</td>
</tr>
<tr>
<td>Will boot up to the message: (screen will remain black, will not become blue), „no system found“</td>
<td>Flash corrupt, not present or bad contact. Repairs should be performed by a service technician, see hotline contact on the bottom margin.</td>
</tr>
<tr>
<td>Features are not assigned correctly; e.g. the wheel changes the PAN setting, or the fixture cannot be triggered.</td>
<td>The patch number used for patching has to correspond to the fixture address – if e.g. for a moving head, the figures do not correspond or</td>
</tr>
</tbody>
</table>
Moving Heads or Scanners are hanging in 90° or 180° angles on the traverse - what do I have to consider when using the PAN / TILT function?

- Adapt the fixtures using the parameters X*, Y* and Z* in SETUP / FULL ACCESS - if needed, use INVERT to adjust the sense of rotation of PAN and TILT.

When loading a new show (from the hard disk), the console will freeze showing the message REBOOTING - PLEASE WAIT. After resetting (using the yellow button on the rear side of the console), the show will load.

- It is highly probable that a software error has occurred on the hard disk. Repairs should be performed by a service technician, see hotline contact on the bottom margin.

When starting a sequence (using the Executor button or the Executor fader), the fixtures will not light up on the stage, but the Channel Sheet shows some values (nothing in the STAGE window).

- Master open ?/ Group master open?
  If in the Channel / Fader and Fixture Sheet the ID numbers or the names have a blue background, the master has a subordinate priority.

When loading a show from floppy that had been created on another console, no fixtures will appear.

- World assigned correctly?
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>The configuration of my console (Tracker ball, Screen Off, etc.) has suddenly changed, settings and IP numbers have changed.</td>
<td>If the DELETE SHOW button was pressed while loading a show, all configuration settings were reset to their defaults. All settings must then be entered anew. Sorry.</td>
</tr>
<tr>
<td>In the NETWARE CONNECTIONS menu, I cannot see some consoles, although they are in the network.</td>
<td>The consoles have different version numbers and will, therefore, not be recognized by the network. Update the consoles to the current software version.</td>
</tr>
<tr>
<td>Can I select active fixture (e.g. an active Cue) automatically to form a group?</td>
<td>All fixtures of a Cue can be selected using the EDIT function; in this setting, you can save a group using STORE, that is a SELECT ALL ACTIVES function, so to speak.</td>
</tr>
<tr>
<td>Can I exchange fixtures that are part of a seqency? e.g. dimmers of another manufacturer, or fixtures having more features?</td>
<td>If you delete or exchange fixtures in the SETUP, all values of the matching sequence that are not necessary will also be deleted (cannot be restored). I.e. if a new fixture does not have e.g. a color wheel, the color wheel values for this ID will be deleted - and cannot be triggered, even if you install the old fixture again afterwards. If the new fixture has more features than the old one, these will not be accounted for. It is recommended to copy the show to another name and test exchanging the fixture there.</td>
</tr>
<tr>
<td>Group master moves on each page, even if the fader is „empty“; or a group master moves, although it was not switched on.</td>
<td>Under LOOPS / LINKS (possibly in a macro, too) only the fader number without page number has been entered for the sequence - e.g. fader 14 instead of 1.14; that is why fader 14 will be moved, disregarding the program for this fader.</td>
</tr>
<tr>
<td>In case of an, admittedly improbable, crash of the console, can I troubleshoot the cause?</td>
<td>Best thing is to make use of the MA Lighting service. After the crash, reboot the console using the RESET button (on the back of the console) or the POWER switch. Have an empty floppy available. After booting, the following message will displayed:</td>
</tr>
</tbody>
</table>

Now you have 4 seconds to press the SAVE LOG TO FLOPPY button. Insert the empty floppy and confirm the next request with OK. It is advisable to email the log file to our service department.
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can I switch the console on and off using an powerline-integrated timer, to start a show automatically?</td>
<td>A timer does the same as an interruption of the power supply, i.e. the grandMA, Light and the ReplayUnit will immediately switch over to battery supply and will shut down the console after 3 minutes. No problems here, as all active applications will restart after a reboot. After switching on, the UltraLight will possibly try to access the BIOS and not boot correctly. In general, it is advisable to let the console switched on and have the show run via the AGENDA menu.</td>
</tr>
<tr>
<td>Can I re-patch a fixture during a show (e.g. because a malfunction has occurred)?</td>
<td>In the Command line, you can patch fixtures or change the patch number, without disturbing the show. Same applies to the DMX sheet, when using the mouse.</td>
</tr>
<tr>
<td>Being in a specific sequence, can I start the cue of another sequence?</td>
<td>In the sequence, start the cue in the LINK column with <code>GOTO x</code> (cue no.) <code>EXECUTOR x.xx</code> (Executor no.)</td>
</tr>
<tr>
<td>Can I run any show on any console?</td>
<td>All shows will run on all grandMA consoles; only exception with the Micro: the show may only have 1,024 channels; when loading a bigger show, the channels in excess have to be deleted, as the performance would not be able to handle it, and only 2 DMX universes could be output.</td>
</tr>
<tr>
<td>AUTOBACKUP in a session?</td>
<td>In a session only the Master should have AUTOBACKUP. Slaves with AUTOBACKUP will cause problems with the performance.</td>
</tr>
<tr>
<td>The desk gets slower and slower when starting and storing a show</td>
<td>If the ENUMERATE button is on ON in the BACKUP menu under QUICK SAVE, every saving procedure saves a new copy of the show - with AUTO SAVE, this happens automatically. In this way several 100 versions of the show can quickly burden the hard disk. Delete superfluous show versions and set the button to ENUMERATE OFF. Store backup copies on floppy disc.</td>
</tr>
<tr>
<td>I can no longer perform tasks in the network with my UltraLight</td>
<td>This may mean that free memory is less than 50%. Delete shows or backups to create free memory space. Networking in the UltraLight does not work any more when more than 50% of memory is already used by the show</td>
</tr>
</tbody>
</table>
**SERVICE - TIMETABLE**

In order to guarantee the legendary reliability of our products over a long period of time, you should mind the service lives of some hardware components. These parts are heavily stressed in continuous duty and are subject to normal wear and tear. By replacing these parts in time, you can avoid malfunctions in time-critical situations. The replacement intervals depend on the stress and environmental conditions; the specifications listed below, are based on our experience data.

<table>
<thead>
<tr>
<th>Part</th>
<th>Recommended replacement after:</th>
<th>Delivery situation (in Europe)</th>
<th>Installation (follow safety instructions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery</td>
<td>4 years</td>
<td>2-3 workdays</td>
<td>Simple installation by experienced amateur</td>
</tr>
<tr>
<td>not UL and MICRO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard disk</td>
<td>3-5 years</td>
<td>2-3 workdays (should be in stock when using several devices)</td>
<td>By electronic specialist having appropriate tools or MA service</td>
</tr>
<tr>
<td>not MICRO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touchscreen</td>
<td>after mechanical damage</td>
<td>2-3 workdays</td>
<td>By electronic specialist having appropriate tools or MA service</td>
</tr>
<tr>
<td>Encoder</td>
<td>2-3 years</td>
<td>2-3 workdays</td>
<td>By electronic specialist having appropriate tools or MA service</td>
</tr>
<tr>
<td>Motor fader</td>
<td>depending on env. situation</td>
<td>2-3 workdays</td>
<td>By electronic specialist having appropriate tools or MA service</td>
</tr>
<tr>
<td>only grandMA and Light</td>
<td>immediately if liquid has entered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On malfunction, clean slot with a Q-tip</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Spare parts can be ordered from:

- MA Lighting GmbH
  Dachdeckerstraße 16
  D 97097 Waldbüttelbrunn
  info@malighting.de
- Lightpower GmbH
  An der Talle 26
  D-33102 Paderborn
  info@lightpower.de

For your order, please have the serial number of the device at hand.
Special functions
Some function keys of the external keyboard are reserved for special functions. You will only need these functions, when components malfunction; you would not use them during normal operation.

F1 SCREENSHOT (without figure)
To transfer screenshots to a PC using FTP

F2 TASKDISPLAY
Here, important operational data are displayed for service engineers.

F3  RIGHT TOUCH SCREEN TO RIGHT EXTERNAL SCREEN (not on the MICRO)
To transfer the contents of the right screen to an external monitor. Some menus, e.g. SETUP, will only be displayed on the right screen; if this screen fails, you can use F3 to switch to an external monitor. You can then operate the menus using the mouse.

F4 UPDATE
To update the software, if the SETUP menu cannot be accessed, e.g. after a cancelled update). Here you can update the software of the console, the library and the processor* (not for MICRO).

F7 COMMAND WINDOW
Here you find the most important buttons as softkeys. Will especially be useful, e.g. when operating the ReplayUnit.

F9 SWITCH OFF ALL TOUCHSCREENS
To switch off all touch screens, if e.g. a screen is blocked by a failure so that you can make no entries. After switching off, you can only proceed using the mouse.
Special functions: grandMA1-Software with grandMA2-Hardware (Compatibility mode)

Shows, created on a grandMA1 console, can be played in the compatibility mode on the grandMA2 console - but with some limitation in operating. This mode also allows to run grandMA1 and grandMA2 consoles within the same session.

Start up in GM1 mode
- switch on grandMA2 (set key switch on the back panel on „I“ and press button on the front panel); selection menu appears after approx 20 seconds.
- with the buttons (keyboard) select GM1(Compatibility Mode) and confirm with PLEASE. The console automatically starts with grandMA1-Software Version 6.x.
- Load show as usually from USB-storage device.

Due to the new hardware of grandMA2-Konsole some fader and button functions and locations have changed.

The small monitor (MultiTouch Screen) is not active, it displays the debug monitor (press V10 button). Information from this screen are not relevant for programming shows.

Fader allocation

full-size and light: faders 11 - 15 and 26 - 28 of grandMA2 are not active in GM1-mode, 29 and 30 see Preset- and Executorfader „Set Time / Man Fade“

Full-size: faders 1 - 10 are displayed on the left screen, faders 16 - 25 are displayed on the center screen
Light: faders 1 - 10 are displayed on the left screen

ultra-light: faders 11 - 13 of the grandMA2 are not active in GM1-Mode, faders 14 and 15 see Preset- and Executorfader „Set Time / Man Fade“

light / ultra-light: faders 1 - 10 are displayed on the screen
faders 11 - 13 are not active; faders 14 and 15 works as Preset- and Executorfader „Set Time / Man Fade“

full-size: faders 1 - 10 are displayed on the left screen, faders 16 - 25 are displayed on the center screen; faders 11 - 15 and 26 - 28 are not active; faders 29 and 30 work as Preset- and Executorfader „Set Time / Man Fade“
**Executor Buttons**
The lower bank of buttons (from 101) and the buttons below the small monitor (X1 - X20) are usable as executor buttons. Allocation differs between the consoles.

**Full-size:**
**Light** and **Ultra-light**: SETUP / NORMAL EXECUTOR MODE is recommended

**Preset- and Executor fader „Set Time / Man Fade“**

- **Full-size**: Fader 29 and 30 - adjustable with the subjacent buttons. Display at the center screen. Function is identical with grandMA1.
- **Light**: Fader 14 and 15- adjustable with the subjacent buttons. Display at the left screen. Function is identical with grandMA1.
- **Ultra-light**: Fader 14 and 15 - adjustable with the subjacent buttons. Display at the right screen. Function is identical with grandMA1.

![Diagram of light console with labeled buttons and functions.](image-url)
Open Views
Create, store and assign views as usual. Open view either with the softbutton on the right rim of the screen or

with the buttons V4 - V9 for the right monitor
or with the buttons below the monitor

To empty a screen press V4 und V9 simultaneously (right monitor) or press buttons 11/11 or 26/26 (picture above) simultaneously for center and left monitor.
Mouse
Button Mouse has same function as button Pan/Tilt (grandMA 1 light) or button TRACKERBALL ON (grandMA 1 full-size).
The button toggles the function according to setup in SETUP / DEFAULT.
The 3 buttons next to the Mouse button acts as left, center and right mouse button.

External monitors
If you connect external monitors, note this path to enter the screens with the mouse. Direct changeover between the two external monitors is not possible.

Ultra-light: leave the monitor on the left and right side to enter the external monitor
Light: leave the monitors on the top side to enter the external monitor
Full-size: leave the left and right monitor on the top side to enter the external monitor
Keyboard
- Press buttons MA + List
Keyboard opens for labeling names, values....

Debug- Monitor
Press button V10 to open the debug-monitor (small screen). Information of this screen are not relevant to normal programming.

Only ultra-light!
- List - button opens overview of executor buttons
- user2 - button opens overview of executor fader
### Colors in the FIXTURE, CHANNEL and FADER window

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>value grey with dark blue background</td>
<td>default value</td>
</tr>
<tr>
<td>ID/F/C and name yellow</td>
<td>fixture is selected and has default value</td>
</tr>
<tr>
<td>value white with red background (Default)</td>
<td>fixture is selected with manual activation or fader/Encoder movement</td>
</tr>
<tr>
<td>value red with dark red background (Theatrical)</td>
<td>fixture is selected with manual activation or fader/Encoder movement</td>
</tr>
<tr>
<td>value white with dark red background (Default)</td>
<td>selection is cleared (e.g. 1x Clear)</td>
</tr>
<tr>
<td>value red with very dark red background (Theatrical)</td>
<td>selection is cleared (e.g. 1x Clear)</td>
</tr>
<tr>
<td>value white with dark blue background (Default)</td>
<td>activation is cleared (e.g. 2x Clear)</td>
</tr>
<tr>
<td>value red with dark blue background (Theatrical)</td>
<td>activation is cleared (e.g. 2x Clear)</td>
</tr>
<tr>
<td>value light blue with red background (Default)</td>
<td>selected, value from a preset</td>
</tr>
<tr>
<td>value light blue with dark red background (Default)</td>
<td>not selected, value from a preset</td>
</tr>
<tr>
<td>value white with green background (Default)</td>
<td>not selected, not active, value from a preset</td>
</tr>
<tr>
<td>value red with dark red background + light blue bar (Theatrical)</td>
<td>selected, value from a preset</td>
</tr>
<tr>
<td>value red with very dark red background + light blue bar (Theatrical)</td>
<td>not selected, value from a preset</td>
</tr>
<tr>
<td>value red with dark blue background + light blue bar (Theatrical)</td>
<td>not selected, not active, value from a preset</td>
</tr>
<tr>
<td>value yellow</td>
<td>value from a sequence</td>
</tr>
<tr>
<td>value light blue</td>
<td>value from the selected sequence</td>
</tr>
<tr>
<td>value green</td>
<td>value from the selected sequence and has been reduced</td>
</tr>
<tr>
<td>value magenta</td>
<td>value from the selected sequence and is „tracked“ - with different background colour, depending on origin</td>
</tr>
<tr>
<td>white square (only fix)</td>
<td>PAN position of a moving head fixture. 3 settings possible</td>
</tr>
</tbody>
</table>
**COLOR CODE**

<table>
<thead>
<tr>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violet bar</td>
<td>These attributes have modulator values</td>
</tr>
<tr>
<td>Blue bar</td>
<td>The channels are “parked”. On the DMX output, no changes will be output (the last value will be kept); internally, however, they can be changed and saved.</td>
</tr>
<tr>
<td>Magenta bar</td>
<td>These attributes have engine values (e.g. from an effect)</td>
</tr>
<tr>
<td>Blue background</td>
<td>the fixture has been switched to No Master in the “Dimmer Option” or “Fixture Options” menu; these fixtures will not react on the GrandMaster, i.e. for GrandMaster on 0, they will react on changes made using the wheel or the Group master, to which these fixtures belong.</td>
</tr>
<tr>
<td>Grey background</td>
<td>the values have been changed by another user within one session (this value will not be taken into account when saving, and can only be modified after having selected the fixtures)</td>
</tr>
</tbody>
</table>
COLOR CODE

Colors used for displaying the DMX output sheet

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>values yellow</td>
<td>value of an Executor (changes while sequence is running)</td>
</tr>
<tr>
<td>Dimmer value light grey</td>
<td>default value of the fixtures</td>
</tr>
<tr>
<td>value light blue</td>
<td>value of the selected sequence</td>
</tr>
<tr>
<td>value magenta</td>
<td>tracked value</td>
</tr>
<tr>
<td>dimmer value green</td>
<td>value has been reduced</td>
</tr>
<tr>
<td>value white with red background and yellow frame (Default)</td>
<td>manual activation or fader/Encoder movement</td>
</tr>
<tr>
<td>value red with dark red background and yellow frame (Theatrical)</td>
<td>manual activation or fader/Encoder movement</td>
</tr>
<tr>
<td>value white with dark red background (Default)</td>
<td>not selected, but changed manually selection deleted with CLEAR</td>
</tr>
<tr>
<td>value red with dark red background (Theatrical)</td>
<td>not selected, but changed manually selection deleted with CLEAR</td>
</tr>
<tr>
<td>value white with black background (Default)</td>
<td>not selected, but changed manually activation deleted with CLEAR</td>
</tr>
<tr>
<td>value red with dark red background (Theatrical)</td>
<td>not selected, but changed manually activation deleted with CLEAR</td>
</tr>
<tr>
<td>background black</td>
<td>empty = DMX channel is not patched</td>
</tr>
<tr>
<td>background dark blue with dash</td>
<td>DMX channel is patched, no values will be output by the current cue</td>
</tr>
<tr>
<td>blue frame</td>
<td>value is parked</td>
</tr>
<tr>
<td>yellow frame</td>
<td>fixture is selected</td>
</tr>
</tbody>
</table>
Colors used for the screen display in the Tracking Sheet

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dash</td>
<td>No value entered (the default value will be output)</td>
</tr>
<tr>
<td>value cyan</td>
<td>Entered value or value that has been changed in this cue</td>
</tr>
<tr>
<td>Dimmer value green</td>
<td>Value has been reduced</td>
</tr>
<tr>
<td>value magenta (Default)</td>
<td>Tracked value (is defined by the previous cyan-colored value and is not saved, i.e. if you change the cyan-colored value in a cue above, all magenta-colored values following will also change)</td>
</tr>
<tr>
<td>value magenta (Theatrical)</td>
<td>Tracked value (see above)</td>
</tr>
</tbody>
</table>

Note: The tracked values will only be executed within the sequence, if the Tracking option had been selected in the Assign menu; otherwise, the values will not be executed, although they appear in the Sheet. If only some of the fixtures are to be tracked, you have to block those values not to be tracked and have to set them to 0.

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>value red (Default)</td>
<td>Blocked value (the value that was defined by the previous cyan-colored value, will be saved. Changes on the previous cyan-colored value will no longer affect the value - the first (upper) tracked value will turn from red to cyan.</td>
</tr>
<tr>
<td>value white (Theatrical)</td>
<td>Blocked value (see above)</td>
</tr>
<tr>
<td>times (Fade, Delay) (Defaults)</td>
<td>Individual value</td>
</tr>
<tr>
<td>yellow</td>
<td>Tracked value from a cue</td>
</tr>
<tr>
<td>magenta</td>
<td>Value from a cue</td>
</tr>
<tr>
<td>grey</td>
<td>Tracked value (see above)</td>
</tr>
<tr>
<td>Index (i)</td>
<td>Individual tracked value</td>
</tr>
<tr>
<td>dark value</td>
<td>Value from a cue</td>
</tr>
<tr>
<td>background blue green (Default)</td>
<td>Value is from a preset</td>
</tr>
<tr>
<td>lateral blue green bar (Theatrical)</td>
<td>Value is from a preset</td>
</tr>
<tr>
<td>background red</td>
<td>This fixture is selected</td>
</tr>
<tr>
<td>Fixture name yellow (header bar)</td>
<td>This fixture is selected in the Fixture Sheet</td>
</tr>
<tr>
<td>Sequence name in title bar white</td>
<td>Figures in the cells are dimmer values. Display can be adjusted over an option</td>
</tr>
<tr>
<td>Sequence name in title bar green</td>
<td>Figures are fader times (press TIME 1x)</td>
</tr>
<tr>
<td>Sequence name in title bar orange</td>
<td>Figures are fader times (press TIME 2x)</td>
</tr>
</tbody>
</table>
**COLOR CODE**

### Colors used for the screen display in PRESET POOL

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red triangle</td>
<td>The preset can only be used for those fixtures, it was created and saved for</td>
</tr>
<tr>
<td>Text very faint</td>
<td>The preset was deleted in SETUP and cannot be applied any more</td>
</tr>
<tr>
<td>Blue frame</td>
<td>Preset is selected</td>
</tr>
<tr>
<td>Green area</td>
<td>These presets can be applied to the selected fixtures - the higher figure shows the number of fixtures, on which the preset is applied to (the small figure is the button number)</td>
</tr>
<tr>
<td>Yellow area</td>
<td>These presets can be applied to the selected fixtures - the higher figure shows the number of fixtures, on which the preset is applied to (the small figure is the button number)</td>
</tr>
<tr>
<td>Grey area</td>
<td>No lamps selected or the preset is not available for the selected lamps</td>
</tr>
<tr>
<td>Black frame</td>
<td>The preset also contains values from another preset - an embedded preset</td>
</tr>
<tr>
<td>Purple numeral</td>
<td>Shows the number of selected lamps that were activated with the preset</td>
</tr>
<tr>
<td>Blue numeral</td>
<td>Shows the number of the lamps that were activated with the preset, when lamps are selected at the same time that were not activated with this preset</td>
</tr>
<tr>
<td>White/black points on bottom edge</td>
<td>The preset contains „foreign“ values (e.g. dimmer values in a PAN/TILT preset). The white points signal active „foreign“ values in the relevant parameters; 1 field=PAN, 2nd field=TILT, 3rd field=DIM etc., see Chapter PRESETS</td>
</tr>
</tbody>
</table>

### Colors used for the screen display in the Group Sheet

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grey area</td>
<td>group with several fixtures</td>
</tr>
<tr>
<td>Grey area with</td>
<td>group with several</td>
</tr>
<tr>
<td>Blue frame</td>
<td>fixtures are selected</td>
</tr>
<tr>
<td>Blue area</td>
<td>group consists of one fixture</td>
</tr>
</tbody>
</table>
COLOR CODE

Colors used for the screen display in EFFECT POOL

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pink button</td>
<td>Effect group with assigned scanners / dimmers</td>
</tr>
<tr>
<td>Red button</td>
<td>Effect group without assigned scanners / dimmers</td>
</tr>
<tr>
<td>Green button</td>
<td>Temporary Effect group, will be deleted after switch-off, if not saved before</td>
</tr>
<tr>
<td>Blue button</td>
<td>Displays, how often this sequence is assigned; this means, for example, sequence 1 is assigned to 3 executor fader or executor buttons.</td>
</tr>
<tr>
<td>Circulating white dot</td>
<td>The effect is running</td>
</tr>
<tr>
<td>Flashing green dot</td>
<td>EDIT menu is still open</td>
</tr>
</tbody>
</table>

Colors used for the screen display in SMART Window

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Button yellow</td>
<td>The Channel Value button can only be used for some of the selected fixtures</td>
</tr>
<tr>
<td>Button green</td>
<td>The Channel Value button can be used for all selected fixtures</td>
</tr>
<tr>
<td>Red square</td>
<td>The Feature or Attribute has been activated and the values have been entered in the Fixture or Fader Sheet</td>
</tr>
</tbody>
</table>

Colors used for the SEQUENCE POOL

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow key symbol</td>
<td>Sequence is locked and cannot be edited</td>
</tr>
<tr>
<td>Blue frame</td>
<td>Sequentz is selected</td>
</tr>
<tr>
<td>Number top left</td>
<td>Displays, how often this sequence is assigned; this means, for example, sequence 1 is assigned to 3 executor fader or executor buttons.</td>
</tr>
<tr>
<td>T</td>
<td>When the letter T is displayed, these sequence is in Tracking-Mode</td>
</tr>
</tbody>
</table>
COLOR CODE

Colors used for the screen display in the Executer Fader

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>White triangle</td>
<td>Shows the priority when overwriting in LTP mode</td>
</tr>
<tr>
<td>(title bar)</td>
<td>No triangle = medium priority</td>
</tr>
<tr>
<td>Light green</td>
<td>This sequence is the master sequence (SELECT + Executor No.) All store commands will always affect this sequence, on the grandMA, only the yellow keys that are available in a sequence will have an effect on this sequence</td>
</tr>
<tr>
<td>(title bar)</td>
<td>Only 1 master sequenz possible</td>
</tr>
<tr>
<td>Dark green</td>
<td>These sequences are default sequences. The yellow buttons or the command combination (e.g. GO+, GO-, Pause, etc.) and ENTER will affect all light and dark green Executors at the same time. The setting is temporary and will not be adopted when saving</td>
</tr>
<tr>
<td>(title bar)</td>
<td>Possible for multiple Executors</td>
</tr>
<tr>
<td>Orange (cues)</td>
<td>This sequence is fixed and, even after switching the pages, will be visible (sequences or chasers that are on this position, but on a different page, will only be covered, but otherwise not affected, even if they are currently running)</td>
</tr>
<tr>
<td>For several cues</td>
<td>The selected sequence can also be fixed (green + orange)</td>
</tr>
</tbody>
</table>

When scrolling through the pages, fixed sequences can cover other sequences on the same position - this will not affect the operation as such. After resetting the fixed sequence, sequences that had „disappeared“ can be reloaded from the pool.

When the letter T is displayed, these sequence is in Tracking-Mode.

Colors used for the screen display in the Group Master

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text white (starting with a + sign)</td>
<td>Name of the group master</td>
</tr>
<tr>
<td>Text pink (starting with a - sign)</td>
<td>For this group master, the NEGATIV INHIBIT option has been selected</td>
</tr>
</tbody>
</table>
| Pink bar + blinking LED | The motorized fader has been blocked when adjusting it and has not reached the given value |<br>if the pink bar is on zero, only the dark red background can be seen.
| Yellow bar | Shows the position of the group master<br>if the yellow bar is on zero, only the black background can be seen |
COLOR CODE

Colors used for the screen display in the Worlds Sheet

<table>
<thead>
<tr>
<th>Color or symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red triangle in the upper left corner of the World button</td>
<td>This world does not contain all attributes of the fixtures</td>
</tr>
<tr>
<td>Warning sign on the World button</td>
<td>This World is being used by another user</td>
</tr>
</tbody>
</table>

Colors used for the CONTENT / COMPACT CONTENT SHEET

<table>
<thead>
<tr>
<th>Color or icons</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Identical with the Tracking Sheet</td>
</tr>
</tbody>
</table>

Colors used for the COMMAND LINE

<table>
<thead>
<tr>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Command was executed</td>
</tr>
<tr>
<td>Red</td>
<td>Command was not executed. An entry was missing or a command was not possible, because e.g. a triggered button was empty</td>
</tr>
<tr>
<td>Green</td>
<td>Macro was executed</td>
</tr>
<tr>
<td>Blue</td>
<td>Time code was executed</td>
</tr>
</tbody>
</table>

Colors used for the VIEW BUTTONS

<table>
<thead>
<tr>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>Here, the screen dumps of several monitors are saved, i.e. with this button, you can also switch other monitors.</td>
</tr>
<tr>
<td>Orange</td>
<td>The saved screen dump only refers to this monitor</td>
</tr>
<tr>
<td>Brown with green text</td>
<td>This View is currently shown on the monitor</td>
</tr>
<tr>
<td><strong>Delay Output</strong></td>
<td>39</td>
</tr>
<tr>
<td><strong>DELETE</strong></td>
<td>56, 156, 168</td>
</tr>
<tr>
<td><strong>DELETE Point</strong></td>
<td>35</td>
</tr>
<tr>
<td><strong>Desk Lamp</strong></td>
<td>45</td>
</tr>
<tr>
<td><strong>Desk, Locking the</strong></td>
<td>50</td>
</tr>
<tr>
<td><strong>DESK STATUS</strong></td>
<td>55</td>
</tr>
<tr>
<td><strong>Dim Path</strong></td>
<td>96</td>
</tr>
<tr>
<td><strong>DIMER CHANNELS, accessing directly</strong></td>
<td>70</td>
</tr>
<tr>
<td><strong>Dimmer channels, assigning colors</strong></td>
<td>25</td>
</tr>
<tr>
<td><strong>Dimmer, creating a</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>Dimmer, editing a</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>Dimmer Group, creating a</strong></td>
<td>58, 112</td>
</tr>
<tr>
<td><strong>Dimmer Option</strong></td>
<td>74</td>
</tr>
<tr>
<td><strong>Dimmer, patching a</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>Dir (direction)</strong></td>
<td>126</td>
</tr>
<tr>
<td><strong>Dir (direction) access</strong></td>
<td>42</td>
</tr>
<tr>
<td><strong>Discrete Values</strong></td>
<td>34</td>
</tr>
<tr>
<td><strong>Display language</strong></td>
<td>46</td>
</tr>
<tr>
<td><strong>Display Panel, Adjusting the</strong></td>
<td>57</td>
</tr>
<tr>
<td><strong>DMX</strong></td>
<td>4, 27</td>
</tr>
<tr>
<td><strong>DMX IN, Remote Control by</strong></td>
<td>151</td>
</tr>
<tr>
<td><strong>DMX Input, using the</strong></td>
<td>151</td>
</tr>
<tr>
<td><strong>DMX Lines</strong></td>
<td>54</td>
</tr>
<tr>
<td><strong>DMX List</strong></td>
<td>26, 34</td>
</tr>
<tr>
<td><strong>DMX Output Window</strong></td>
<td>42</td>
</tr>
<tr>
<td><strong>DMX Pan</strong></td>
<td>24</td>
</tr>
<tr>
<td><strong>DMX-Hub</strong></td>
<td>40</td>
</tr>
<tr>
<td><strong>Dongle</strong></td>
<td>37</td>
</tr>
<tr>
<td><strong>Dot, Zero</strong></td>
<td>48</td>
</tr>
<tr>
<td><strong>Dots in Preset button</strong></td>
<td>75</td>
</tr>
<tr>
<td><strong>DOUBLE SPEED</strong></td>
<td>101</td>
</tr>
<tr>
<td><strong>Double Speed</strong></td>
<td>101</td>
</tr>
<tr>
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