

ROBE.

DMX Control 480



AT series

Version 2.8

USER MANUAL

ROBE® Lighting s.r.o. • Czech republic • www.robe.cz

User manual

DMX CONTROL 480

Table of contents

1. Safety instructions	4
2. Operating determinations	4
3. Before operation	5
3.1. Powering up	5
3.2. Sound-control	5
3.3. Building the DMX-line	5
3.4. Connecting PC	6
3.5. Projector addressing	6
4. Control elements of the controller	7
5. Operation	9
5.1. Browsing the menu	9
5.2. Menu map	9
5.3. Assigning the projectors to the projector buttons	10
5.4. Grouping the projectors	10
6. Projector library	11
6.1. Setting up the projectors not defined in the projector library	11
6.2. Copying the projectors within the projector library	13
6.3. Deleting the projectors from the projector library	13
6.4. Creating/editing the effect names	14
7. Special settings	14
7.1. LCD display adjusting	14
7.2. User setting	15
7.3. Changing the password	15
8. Remote adjusting the projectors	17
9. Uploading programs to the projectors	17
10. Operating the memory card	18
10.1. Saving data to the memory card	18
10.2. Loading data from the memory card	19
11. Manual mode	19
11.1. Manual control of the projectors	20
11.2. Controlling the pan/tilt position with PAN/TILT wheels	20

11.3.Editing/creating a chaser	21
11.4.Copying a chaser	22
11.5.Running a chaser	22
11.6.Presetting a macro	23
11.7.Running a macro	23
12.Programming mode	24
12.1.Creating a scene	24
12.2.Deleting a scene	26
12.3.Copying a scene	26
12.4.Creating a program	26
12.5.Deleting a program	29
12.6.Copying a program	29
12.7.Creating a record	30
12.8.Deleting a record	32
12.9.Copying a record	32
16.Running mode	33
15.1.Running scenes	33
15.2.Running programs	33
15.3.Running records	35
16.Factory default setting	37
17. Updating the fixture library	37
18.Technical specifications	38
19.Cleaning and maintenance	39
Appendix - Projector library	40

**Keep this device away from rain and moisture!
Unplug mains lead before opening the housing!**

**FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY
BEFORE YOU INITIAL START - UP!**

1. Safety instructions

Every person involved with installation and maintenance of this device have to:

- be qualified
- follow the instructions of this manual

CAUTION!
***Be careful with your operations. With a high voltage you can suffer
a dangerous electric shock when touching the wires!***

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this manual.

Important:

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the device.

Please consider that damages caused by manual modifications to the device are not subject to warranty.

Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution!

The power plug has to be accessible after installing the device.

Make sure that the power cord is never crimped or damaged by sharp edges. Check the device and the powercord from time to time.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power cord by the plug. Never pull out the plug by tugging the power cord.

This device falls under protection class I. Therefore it is essential to connect the yellow/green conductor to earth.

The electric connection, repairs and servicing must be carried out by a qualified employee.

2. Operating determinations

This device was designed for indoor use only.

If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

Do not shake the device. Avoid brute force when installing or operating the device.

When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. You endanger your own and the safety of others!

Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

Please use the original packaging if the device is to be transported.

Never put any liquids on the device or close to it. Should any liquid enter the device nevertheless, disconnect from mains immediately. Please let the device be checked by a qualified service technician before you operate it again. Any damages caused by liquids having entered the device are not subject to warranty!

Please consider that unauthorized modifications on the device are forbidden due to safety reasons!

If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, electric shock, etc.

3.Before operation

3.1.Powering up

Check carefully the controller voltage setting switch on the rear panel of the unit to ensure that the input voltage you are using matches to its setting. The factory setting can be 115V or 230V AC at 50/60Hz.

If you want to change the voltage setting, do not connect the controller to the mains!

Connect the controller with the power cable to the mains.

The polarity of the cable provided conforms with the current international standards; should you need to replace the cable, please note:

Cable (EU)	Cable (US)	Pin	International
Brown	Black	Live	L
Light blue	White	Neutral	N
Yellow/Green	Green	Earth	

3.2.Sound-control

If the DMX CONTROL 480 is supposed to work via a sound signal, connect the L" stereo jack female connector with the sound signal of your headphones output or a second adjustable output (if existing) of your mixer, or with the loud-speaker output of your amplifier:

Tip:	Data +
Sleeve:	Ground

By pressing the AUDIO button in run mode, the controller will use the beat signal taken from jack plug.

Caution: Never connect the sound input with the DMX output.

3.3.Building the DMX-line

The DMX CONTROL 480 is equipped with 2 DMX-outputs (3-pin XLR female connectors). In this way, it is easier for you to connect the lighting effects.

Connect the DMX-output of the DMX CONTROL 480 with the DMX-input of the nearest lighting effect. Splitting the DMX-line is not possible. Continue the DMX-line by connecting the DMX-output of the projector with the next DMX-input.

Use a data line appropriate for RS-485 or a shielded quality double-wire cable. As a plug contact use 3-pin XLR-connector:

PIN 1 - Ground
PIN 2 - Data -
PIN 3 - Data +

Caution: At the last projector, the DMX cable has to be terminated with a 120 Ω resistor. Solder the resistance into a 3 pin XLR-connector and plug it in the DMX-output of the last projector.

3.4.Connecting PC

The 9-pin female connector on the rear panel of the unit is reserved for connection the controller to the PC via RS-232 interface.

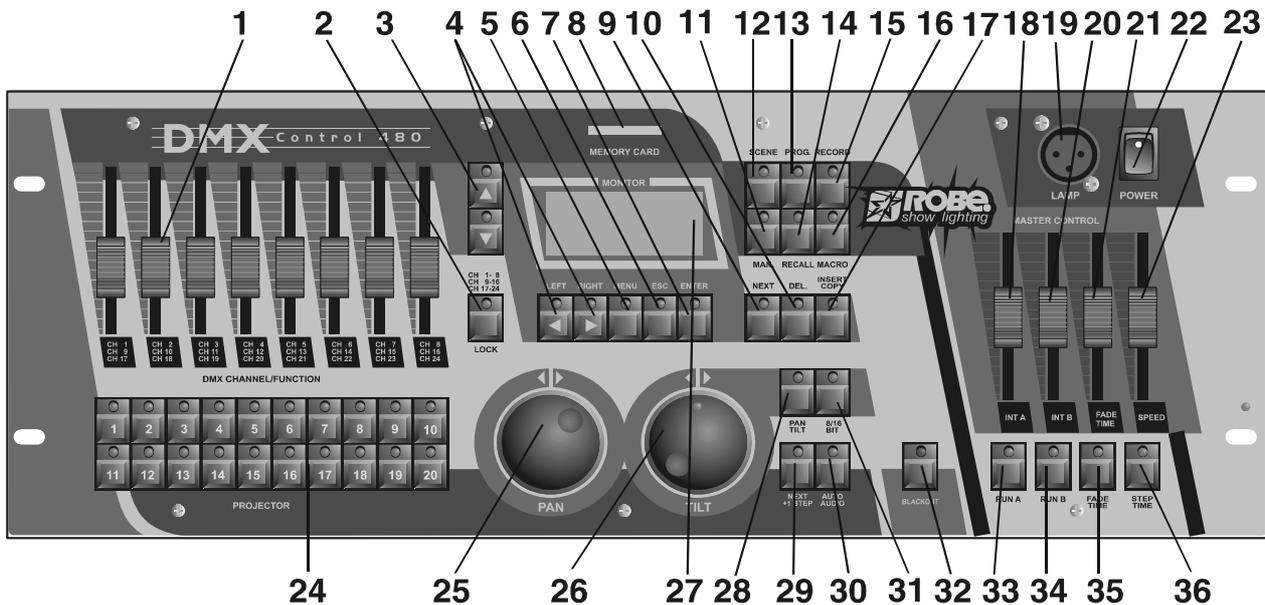
3.5.Projector addressing

The DMX CONTROL 480 assigns the DMX-starting addresses every 24 steps. You have to address every projector to the respective starting address. Otherwise, the channel assignment will not be correct. All projectors with the same starting address will work synchronically.

Projector	Starting address	Projector	Starting adress
Projector 1	1	Projector 11	241
Projector 2	25	Projector 12	265
Projector 3	49	Projector 13	289
Projector 4	73	Projector 14	313
Projector 5	97	Projector 15	337
Projector 6	121	Projector 16	361
Projector 7	145	Projector 17	385
Projector 8	169	Projector 18	409
Projector 9	193	Projector 19	433
Projector 10	217	Projector 20	457

4. Control elements of the controller

Top panel:



1 - DMX CHANNEL/FUNCTION sliders

Every slider represents a DMX-channel of the respective projector and can be individually assigned. Please take the DMX channel-occupation from the user manual of the respective projector.

2 - CHANNEL RANGE/LOCK button

The button determines the channel range for DMX CHANNEL/FUNCTION sliders or locks the controller.

3 - UP/DOWN buttons

By pressing the buttons you can adjust the desired value on the display.

4 - LEFT/RIGHT buttons

By pressing the buttons you can move between editable items on the display.

5 - MENU button

The button accesses the main menu.

6 - ESCAPE button

For return to the main menu or submenu.

7 - ENTER button

Confirming button

8 - MEMORY CARD slot

9 - NEXT/GROUP button

Function depends on menu where the button is used.

10 - INSERT/COPY button

Function depends on menu where the button is used.

11 - MANUAL button

For manual control of the selected projector.

12 - SCENE button

For scene running.

13 - PROGRAM button

For program running.

14 - RECALL button

Function depends on menu, where the button is used.

15 - RECORD button

For record running.

16 - MACRO button

17 - DELETE/CHASER button

Function depends on menu where the button is used.

18 - INT A slider

A slider for adjusting the light intensity of program(scene,record) running A.

19 - DESK LAMP socket

The 3 pin XLR socket for gooseneck lamp contains 12V AC ; pin 1=not connected

pin 2=12 V AC

pin 3= 0 V AC

20 - INT B slider

A slider for adjustment the light intensity of program(scene,record) running B.

21 - FADE TIME slider

The slider adjusts the fade time.

22 - POWER switch

24 - PROJECTOR SELECT buttons

For selecting the desired projector(s)

23 - STEP TIME slider

This slider adjusts the step time.

25 - PAN encoder wheel

26 - TILT encoder wheel

27 - LCD display

28 - PAN/TILT button

For activating the pan/tilt movement with the PAN/TILT encoder wheels

29 - NEXT/+1STEP button

With this button, you can jump from one step to another.

Caution: The button works in the run mode only.

30 - AUTO/AUDIO button

For switching to the auto mode or audio mode.

If the LED is off, the controller is in Auto-mode (normal operating mode without sound-control).

If this LED shines, the controller is in Audio-mode (operation with sound control, the sound signal has to be connected.)

31 - 8/16 BIT button

For switching the pan/tilt movement from 8 to 16-bit resolution.

32 - BLACKOUT button

The blackout function closes the light output of all connected projectors via the shutter. Please note that all other functions of the projectors are maintained and that the programs keep running.

33 - RUN A button

The button allows to run a program(scene,record) A

34 - RUN B button

The button allows to run a program(scene,record) B

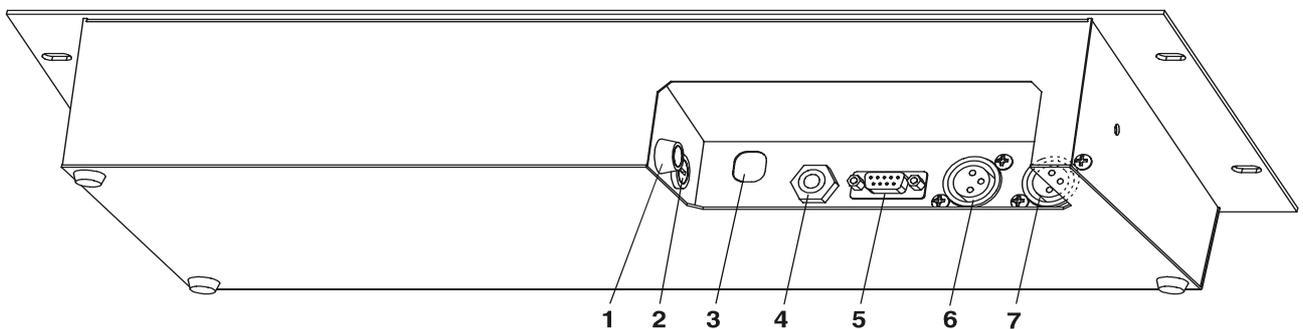
35 - FADE TIME button

The button activates the FADE TIME slider

36 - STEP TIME button

The button activates the STEP TIME slider

Rear panel:



1 - FUSE holder

2 - VOLTAGE SETTING switch

By the 2-position switch you can set the desired operation AC voltage 230 V/50-60Hz or 115 V/50-60Hz.

3 - POWER cord

4 - AUDIO INPUT connector

5 - SERIAL INTERFACE connector

The 9-pin female connector for connecting personal computer.

6 - DMX-OUTPUT 2 connector

7 - DMX-OUTPUT 1 connector

5.Operation

5.1.Browsing the menu

The DMX CONTROL 480 handles 20 independently controlled projectors with a maximum of 24 channels per projector and with a regular DMX 512 signal output.

Connect built DMX serial link to the controller's output(s). Connect the controller to the mains and switch it on, the initial screen appears:



Now by pressing the MENU button you access the main "MENU" where you can scroll to the desired submenu. Needed buttons and their main functions:

- <UP>,<Down> - the buttons for browsing the menu items or editing values.
 - <LEFT>,<RIGHT> - the buttons for the movement between editable items.
 - <ENTER> - the confirming button (for saving the changes you have made)
 - <ESC> - the escape button (for returning to the previous menu without saving the changes you have made).
 - <MENU> - the button accesses the main menu.
 - PAN wheel,TILT wheel - the rotating wheels for adjusting the values of displayed items
- Special buttons and their functions will be described in respective sections.

Caution: When you turn the device on, the controller is in blackout-mode (Blackout-LED shines). The controller will be locked by pressing the CHANNEL RANGE/LOCK button. We suggest you change the password after your purchase. This will prevent all unauthorized people from tampering with your programs or running your fixtures.

Only those buttons are active where the LED shines on or flashes. If you press any others, nothing will happen.

5.2.Menu map

- Make Scene
- Make Program
- Make Record
- Make Chaser
- Make Group
- Setup
 - Config unit
 - Config DMX
 - Rename effect
 - LCD Adjust
 - MM Card Menu
 - Load data
 - Save data
 - Rconfig DMX1
 - Remote confi.
 - Upload program
 - Rconfig DMX2
 - Remote confi.
 - Upload program
 - PC Connection
 - User setting
 - Set password
 - Factory setting

5.3. Assigning the projectors to the projector buttons

The first operation which needs to be performed on the DMX CONTROL 480 is projector selection. To do this, you can use the inbuilt library of projectors or create your new projectors.

1. Press <ESC> several times until the display shows the initial screen.
2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Config DMX" menu ("Setup" ==> <ENTER>==> "Config DMX"==><ENTER>). The following screen appears:

CONFIG DMX DMX Address: 001 Device name: 003 SPOT 250 XT	<i>Starting DMX address</i> <i>Device order number in the projector library</i> <i>Name of the projector</i>
---	--

3. By pressing the PROJECTOR SELECT buttons <1>, <2>.....<20> check the projector allocation to all buttons. If you want to assign another projectors to the buttons <1> - <20>, use this procedure:
 1. Press <1> (its LED shine) and by pressing <UP> or <DOWN> select desired projector from the projector library.
 2. Press <2> and select another projector. In this way assign desired projectors to all PROJECTOR SELECT buttons <1>, <2>.....<20>.
 3. Press <ENTER>. The safety question appears:

SAVE CHANGES ? ESC/ENT

4. Press <ENTER> to save the new allocation of projectors to the PROJECTOR SELECT buttons or <ESC> to leave this menu without changes.

Note: If you didn't find your projector in the projector library, see the chapter "Projector library".

5.4. Grouping the projectors

In order to simplify a control of projectors is very useful to define the groups of projectors. E.g. the first group for the projectors standing on the stage and the second one for hanging projectors. Creation (running) of scenes, programs and records is simpler. To create the groups, follow the instructions below:

1. Press <ESC> several times until the display shows the initial screen.
2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Make group" menu and press <ENTER>. The following screen appears:

MAKE GROUP Group number: 01	<i>Group order number (1-20)</i>
--------------------------------	----------------------------------

3. Use <UP>, <DOWN> to select the desired group number and by pressing the PROJECTOR SELECT buttons <1>, <2>.....<20> assign desired projectors to the current group. LEDs of wanted buttons (projectors) shine.
3. Press <ENTER>. The safety question appears:

SAVE CHANGES ? ESC/ENT

5. Press <ENTER> to confirm the projectors in the current group or <ESC> to leave this menu without saving changes.

6. Projector library

The projector library contains 100 projector positions. Projector positions No. 1-50 are reserved for ROBE projectors and projectors on these positions cannot be edited, deleted or copied.

Note: Copying projectors from positions No. 1- 50 is possible to the positions 51-100 only. In this way you can make a copy of certain projector and this copy you can edit. The projector created this way has all features as original (you can use special functions as described in sections "Remote control of the projectors" and "Uploading programs to the projectors").

All ROBE XT series projectors included in the library are defined for one DMX- channels setting (Mode 1).

Example:

Spot 160 XT has 4 DMX- channels settings:

Channel	Mode 1	Mode 2	Mode 3	Mode 4
1	Pan	Pan	Pan	Pan
2	Tilt	Fine Pan	Tilt	Tilt
3	Fine Pan	Tilt	Speed	Colours
4	Fine Tilt	Fine Tilt	Colours	R.gobos
5	Speed	Speed	R.gobos	Gobo rotation
6	Colours	Colours	Gobo rotation	Dimmer
7	R. gobos	R.gobos	Dimmer	
8	Gobo rotation	Gobo rotation		
9	Dimmer	Dimmer		

This fixture is defined for mode 1 in the projector library. If you need mode 2, make a copy of the SPOT 160 XT to the position No. 51 or higher (call it e.g. SPOT 160 XT M2) and set the channels order as required (see the instructions below).

6.1. Setting up the projectors not defined in the projector library

1. Press <ESC> several times until the display shows the initial screen.

2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Config unit" menu ("Setup" ==> <ENTER> ==> "Config unit" ==> <ENTER>). The following screen appears:

```
CONFIG UNIT
Device num: 001
SPOT 150 XT
```

*Device order number in the projector library
Name of the projector*

3. Use <UP>, <DOWN> or TILT wheel to select free device position (the 3rd line of the screen displays "NO DEVICE") and press <ENTER>. The selected device position has to be between No. 51 and No. 100.

4. Type the name of the new device (max. 16 characters). Buttons used for typing and their functions are the following:

<UP>, <DOWN>, TILT wheel finds characters
<LEFT>, <RIGHT> moves cursor left and right
 deletes characters

5. Press <ENTER> and the following screen appears:

```
CONFIG UNIT
DMX channel: 01
:----- Sld: 01
Move: NO BLK: NO
```

*DMX channel No. 1
Name of associated effect ("-----" means no effect) and associated slider (1-24)
Item **Move** determines if the channel reacts to the fade-time (NO, YES)
Item **BLK** determines if the channel has the blackout-function (NO, YES)*

You have to know the DMX channel settings for your device—please refer to the projector's user manual.

Now adjust required parameters for all projector DMX channels. Needed buttons and their functions:

<UP>, <DOWN> selects DMX channel, effect or slider
<LEFT>, <RIGHT> moves cursor between editable items
TILT wheel selects effects

You should also determine which channel will have the blackout-function (e.g. shutter channel) and which channel will react to the fade-time (e.g. zoom channel, focus channel and dimmer channel).

To do so, press <BLACKOUT> or <FADE TIME> (their LED shine) at right channels. The fade-time function will be assigned to the right channels automatically (without pressing <FADE TIME>) if you use the original abbreviations PAN, TILT, PANFINE, TILTFINE from the list of effects for describing pan/tilt movement channels. It is important for controlling the speed of the pan/tilt movement during the program running.

The list of created abbreviations (non editable) for describing projector effects :

PAN =coarse pan	PRIS.RO.= prism rotation	Y5	MACRO=macros
TILT = coarse tilt	EFFE.RO.= effect rotation	Y6	COLO.SPD=colour speed
PANFINE = fine pan	COLO.RO.= colour rotation	FUNCTI.1	GOBO.SPD=gobo speed
TILTFINE = fine tilt	EFFECT= effects	FUNCTI.2	EFFE.SPD=effect speed
DIMMER = dimmer	EFFECT1= effects 1	FUNCTI.3	PRIS.SPD=prism speed
COLOR =color	EFFECT2= effects 2	FUNCTI.4	X.SPEED=X-axis speed
GOBO =gobo	EFFECT3= effects 3	FUNCTI.5	Y.SPEED=Y-axis speed
COLOR1= colour 1	SHUTTER= shutter	FUNCTI.6	Z.SPEED=Z-axis speed
COLOR2= colour 2	STROBE= strobe	FUNCTI.7	D.SPEED
COLOR3= colour 3	IRIS= iris	FUNCTI.8	FLSH RAT
COL-GOBO=colour/gobo	ZOOM= zoom	FUNCTI.9	LAMP RGT
S.GOBO=static gobo	FOCUS= focus	FUNCTI.10	LAMP LFT
S.GOBO1=static gobo 1	SPEED= speed	FUNCTI.11	MOV.SPEED
S.GOBO2=static gobo 2	TIME=time	FUNCTI.12	GOBO POS.
S.GOBO3=static gobo 3	POWER = powering up	FUNCTION= function	GOBO SAK.
R.GOBO=rotating gobo	FAN SPD.= fan speed	CYAN= cyan	L.R.S.
R.GOBO1=rotating gobo 1	X1	MAGENTA= magenta	CTO
R.GOBO2=rotating gobo 2	X2	YELLOW= yellow	CTB
R.GOBO3=rotating gobo 3	X3	FROST= frost	FOC-ZOOM
R.PRISM=rotating prism	X4	M.T.S.= motor speed	DRUM.RO.=drum rotat.
R.COLOR	X5	BEAM= beam	RESERVED
ROTATION= rotation	X6	FILTER= filter	RESERVED
ROTAT.1	Y1	BLACKOUT= blackout	:
ROTAT.2	Y2	GAME= program sel.	:
ROTAT.3	Y3	TRIGGER= trigger	RESERVED
GOBO RO.= gobo rotation	Y4	RESET= reset	FREE=no function

Important:

Effect abbreviations which are used in the special functions:

- 1.**PAN**..... used in manual mode
- 2.**TILT**..... used in manual mode
- 3.**PANFINE**..... used in manual mode
- 4.**TILTFINE**..... used in manual mode
- 5.**DIMMER**..... must be used on channel with dimmer function(for correct function of sliders INT A,INT B)
- 6.**COLOR**..... used in manual mode (macro)
- 7.**GOBO**..... used in manual mode (macro)

These abbreviations have to be used original from the list of effects (not created by user) and be used in the new defined projectors if you want to use the special functions of the controller.

If your defined projector has two color-wheels,call one of them which you wish to use in the macro function as COLOR.

If your defined projector has two gobo-wheels (with static or rotating gobos) ,call one of them which you wish to use in the macro function as GOBO.

You can create your personal abbreviations-see the chapter **Editing the effect names**.

6.After adjusting all DMX channels,press <ENTER>.The screen for setting the range of the dimmer intensity appears:

Dimmer range: Min.:000 Max.:255 Blackout:000	<i>DMX values of dimmer positions (minimum and maximum light output)</i> <i>DMX value at which shutter is closed</i>
--	---

Use <UP>,<DOWN> or TILT wheel to adjust the range of DMX values for dimmer,press <RIGHT> and adjust DMX value for shutter's position when it is closed.

Example: the projector has the following channel settings:

Channel	DMX Values	Functions
8	0 - 63	Light intensity from 0 to 100%
	64 - 95	Shutter open
	96 - 127	Strobe-effect from slow to fast (max 8 flashes/s)
	128 - 139	Reset
	140 - 159	Shutter closed
	160 - 175	Pulse-effect in sequences with increasing speed

176 - 191	<i>Pulse-effect in sequences with decreasing speed</i>
192 - 223	<i>Random strobe effect with increasing speed</i>
224 - 255	<i>Shutter open</i>

You have to set:

Dimmer range:
Min.:000 Max.:63
Blackout:000

The blackout value may be from the range of 140-159 as well

The dimmer intensity range is important for correct function of the sliders INT A and INT B. The DMX value for blackout is needed for correct function of the BLACKOUT button.

7. Press <ENTER>. The safety question appears:

SAVE CHANGES ?
ESC/ENT

8. Press <ENTER> to save the new created projector or <ESC> to leave this menu without saving changes.

6.2. Copying the projectors within the projector library

The projectors assigned at positions No.1-50 can be copied only to the projector positions No.51-100. Copying within the range of positions No.1-50 is not possible.

1. Press <ESC> several times until the display shows the initial screen.
2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Config unit" menu ("Setup" ==> <ENTER> ==> "Config unit" ==> <ENTER>). The following screen appears:

CONFIG UNIT
Device num: 001
SPOT 150 XT

Device order number in the projector library

3. Use <UP>, <DOWN> to select the free projector position where you want to copy a projector (example: 051).
4. Press <INSERT/COPY>, the following screen appears:

COPY UNIT
From: 001 To: 051
NO DEVICE

*Target position:051
Copied projector*

Use <UP>, <DOWN> to select the projector you want to copy and press <ENTER>. The safety question appears:

SAVE CHANGES ?
ESC/ENT

5. Press <ENTER> to confirm the new projector position or <ESC> to leave this menu without saving changes.
- Note:** If the target position contains projector, it will be overwritten.

6.3. Deleting the projectors from the projector library

The projectors assigned at positions No.1-50 cannot be deleted.

1. Press <ESC> several times until the display shows the initial screen.
2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Config unit" menu ("Setup" ==> <ENTER> ==> "Config unit" ==> <ENTER>). The following screen appears:

CONFIG UNIT
Device num: 001
SPOT 150 XT

Device order number in the projector library

3. Use <UP>, <DOWN> to select the desired projector you want to delete (e.g. projector at position 52).
4. Press . The safety question appears:

Delete unit?
ESC/ENT

5. Press <ENTER> to confirm the projector deleting or <ESC> to leave this menu without changes. After pressing <ENTER> the following screen appears:

CONFIG UNIT
Device num: 052
NO DEVICE

6.4. Creating/editing the effect names

There are 255 positions for effect names, 127 of these are factory assigned and the rest ones are free (editable)

1. Press <ESC> several times until the display shows the initial screen.

2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Rename effect" menu ("Setup" ==> <ENTER> ==> "Rename effect" ==> <ENTER>). The following screen appears:

RENAME EFFECT
Effect num: 128
PAN

Effect order number
Effect name (abbreviation)

3. Use <UP>, <DOWN> or TILT wheel to select the desired effect name position (128-255) in which you want to create (edit) the new effect name and press <ENTER>.

4. Type the name of the new abbreviation (max. 8 characters). Buttons used for typing and their functions are the following:

<UP>, <DOWN> TILT wheel finds characters
<LEFT>, <RIGHT> moves cursor left and right
 deletes characters

5. Press <ENTER> and the safety question appears:

SAVE CHANGES ?
ESC/ENT

6. Press <ENTER> to save the new abbreviation or <ESC> to leave this menu without saving changes.

7. Special settings

7.1. LCD display adjusting

1. Press <ESC> several times until the display shows the initial screen.

2. Press <MENU> and use <UP>, <DOWN> to scroll to the "LCD adjust" menu ("Setup" ==> <ENTER> ==> "LCD adjust" ==> <ENTER>). The following screen appears:

Adjust LCD param.
Contrast: 13
Backlight: 04

3. Use <UP>, <DOWN> to adjust the desired contrast of the LCD (0-15) and press <RIGHT>.

4. Use <UP>, <DOWN> to adjust the desired backlight of the LCD (0-7) and press <ENTER>.

The safety question appears:

SAVE CHANGES ?
ESC/ENT

5. Press <ENTER> to save the adjusted LCD parameters or <ESC> to leave this menu without saving changes.

7.2. User setting

There are 3 items which determine the controller's behaviour: Start Val ; S.Blackout ; S.Lock.

Item "**Start Val.**"-determines the slider position at which starts program/record its running.

Value limits: 0- bottom position of the slider track

255- upper position of the slider track

Adjusted value is accepted for both sliders INT A and INT B.

Example:

"Start Val." = 128

If the slider INT A (INT B) is halfway of its track, the scene/program/record will start its running .

Item "**S.Blackout.**" (**Start Blackout**)-determines whether blackout mode is active after switching the controller on ("YES"=STROBE button is on, "NO"= STROBE button is off).

Item "**S.Lock.**" (**Start Lock**)-determines whether the password is active after switching the controller on ("YES"=the controller is locked, "NO"= the controller is unlocked after switching the controller on).

To set above mentioned items:

1. Press <ESC> several times until the display shows the initial screen.

2. Press <MENU> and use <UP>, <DOWN> to scroll to the "User setting" menu ("Setup" ==> <ENTER>==> "User setting"==><ENTER>). The following screen appears:

```
USER SETTING
Start Val.: 100
S.Blackout: YES
S.Lock: NO
```

3. Use <UP>, <DOWN> or TILT wheel to adjust desired "Start Val" value (1-255), press <RIGHT> and adjust desired "S.Blackout" value (YES, NO) with <UP>, <DOWN>, then press <RIGHT> and adjust desired "S.Lock" value (YES, NO) with <UP>, <DOWN>.

4. Press <ENTER> and the safety question appears:

```
SAVE CHANGES ?
ESC/ENT
```

5. Press <ENTER> to save the adjusted values or <ESC> to leave this menu without saving changes.

7.3. Changing the password

The controller operating is protected from unauthorized person by the password, which contains a combination of any of 4 PROJECTOR SELECT buttons <1>, <2>, <20>.

The default password is <1>, <2>, <3>, <4>.

To be locked the controller after switching it on, set the Item "S.LOCK." to **YES** in the "User setting" menu).

During its operation the controller can be locked by pressing the CHANNEL RANGE/LOCK button (the initial screen has to be displayed).

To change the password:

1. Press <ESC> several times until the display shows the initial screen.

2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Set password" menu ("Setup" ==> <ENTER>==> "Set password"==><ENTER>). The following screen appears:

```
SET PASSWORD
Please enter
old password
```

3. Enter the old password by pressing the matching PROJECTOR SELECT buttons and the new password screen appears:

```
SET PASSWORD
Please enter
new password
```

4. Enter the new password (combination of any of 4 PROJECTOR SELECT buttons) by pressing the corresponding buttons and the screen appears:

SET PASSWORD
Please verify
new password

5. Enter the new password again and confirming screen appears:

SAVE CHANGES ?
ESC/ENT

6. Press <ENTER> to save the new password. The controller is locked by pressing the CHANNEL RANGE/LOCK button (the initial screen has to be displayed).

CAUTION:IF YOU CHANGE THE PASSWORD ,DO NOT FORGET TO MAKE A REMARK FOR THE SAKE OF OBLIVION !

8. Remote adjusting the projectors

The controller enables remote adjusting the projectors - projector's display is "transferred" on controller's display and with <UP>,<DOWN>,<ESC>,<ENTER> you can set desired projector's functions.

The projectors have to be only from ROBE XT-series or AT-series and have master/slave operation. The projectors should be operated in controller mode (no master/slave mode) to ensure a proper running of this function.

Before using this function, make sure which projectors are connected to DMX output No.1 (use the function "Rconfig DMX1") and which ones to the DMX output No.2 (use the function "Rconfig DMX2").

1.Press <ESC> until the display shows the initial screen.

2.Press <MENU> and use <UP>,<DOWN> to scroll to the "Rconfig DMX1" menu ("Setup" ==> <ENTER>==> "Rconfig DMX1" ("Rconfig DMX2")==> <ENTER>).The following screen appears for a moment:

```
SEARCHING
DEVICES
Wait a minute
*****
```

In a while the next screen appears (for example):

```
SELECT DEVICE
Device No.: 01/05
Device ID: FFFF
```

*Order number of the found projector /total number of the found projectors
ID (identification number) of the found projector*

You need to know the identification codes (ID) for all projectors connected to DMX output No.1(No.2).These values you will find in projector's menu of the current projectors: A001---->SPEC--->Code.The projectors have to be from ROBE XT-series or AT-series and have master/slave operation.

3.Use <UP> , <DOWN> to select the desired projector (according to its ID) and press <ENTER>.Next menu appears:

```
SELECT FUNCTION
Remote config.
Upload program
```

*Menu for controlling the selected projector
Menu for uploading programs to the selected projector*

4.Use <UP> , <DOWN> to select the "Remote config."menu and press <ENTER>.The following screen appears:

```
REMOTE CTRL UNIT
Device ID: FFFF
Display: A001
```

*ID (identification number) of the projector
projector's display*

Now you can use <UP>,<DOWN>,<ESC>,<ENTER> to control the projector.

5.Press <MENU> to leaves this menu.The displayed projector's menu won't be changed.

9.Uploading programs to the projectors

This function enables copying previously created programs to the projectors.

The projectors have to be only from ROBE XT-series or AT-series and have master/slave operation. The projectors should be operated in controller mode (no master/slave mode) to ensure a proper behaviour of this function.

Before using this function, make sure which projectors are connected to DMX output No.1 (use the function "Rconfig DMX1") and which ones to the DMX output No.2 (use the function "Rconfig DMX2").

1.Press <ESC> until the display shows the initial screen.

2.Press <MENU> and use <UP>,<DOWN> to scroll to the "Rconfig DMX1" menu ("Setup" ==> <ENTER>==> "Rconfig DMX1" ("Rconfig DMX2")==> <ENTER>).The following screen appears for a moment:

```
SEARCHING
DEVICES
Wait a minute
*****
```

In a while next screen appears (for example):

SELECT DEVICE
Device No.: 01/05
Device ID: FFFF

Ordinal number of the found projector /total number of the found projectors
ID (identification number) of the found projector

You need know the IDs for all projectors connected to DMX output No.1(No.2).These values you find in projector's menu of the current projectors: A001---->SPEC--->Code.The projectors have to be from XT-series or AT-series and include master/slave operation.If you use a copy of ROBE projector,be sure that you did not change the names of the channels (e.g. channel name GOBO you change to R.GOBO).

3.Use <UP>,<DOWN> to select the projector (according to its ID) to which you want to send data and press <ENTER>,next menu appears:

SELECT FUNCTION
Remote config.
Upload program

Menu for controlling the selected projector
Menu for uploading programs to the selected projector

4.Use <UP> , <DOWN> to select the "Upload program"menu and press <ENTER>.The following screen appears:

UPLOAD PROGRAM
Source prog.: 001
Target prog.: 001

Number of the source program (max.of 50 steps) in the controller
Number of target program in the projector, which will be overwritten

Use <UP>,<DOWN> or TILT wheel to select the source program (if program contains a loop,only steps from No.1 to step which included sign **Loop** in "Sce" field,will be sent) for the current projector. Press <LEFT> and use <UP>,<DOWN> to select the number of the target program (No.1- 3) in the projector and press <ENTER>.The message appears on the display:

Select device
from upload

This message allows you to select the projector included in previously selected program "whose" program will be uploaded. E.g. In step 3 you have selected program No.10. There are 5 active projectors in this program and you wish to upload program of projector No.3 to the selected projector.

5.Press the respective PROJECTOR SELECT button and the data transfer begins. Message "UPLOADING PROGRAM" appears during data transfer.After data transfer last message appears:

Program uploaded

Press <ENTER>.

10.Operating the memory card

Important shows should always be saved on the memory card.Only in this way you can avoid that data are lost due to misuse or accidental deletion.The controller uses a MultiMedia Card (MM Card). The capacity of the MultiMedia Card (16,32,64,128MB) is enough to save all scenes,programs,records,chasers,colour/gobo macros,effect names and assigning projectors to the projector buttons.Data are saved to the banks on the MultiMedia Card.The number of the banks depends on the capacity of MM Card (**32 MB MM Card contains 60 banks**).

10.1.Saving data to the memory card

1.Press <ESC> several times until the display shows the initial screen.
2.Press <MENU> and use <UP>,<DOWN> to scroll to the "MM Card Menu" menu ("Setup" ==> <ENTER>==> "MM Card Menu" ==> <ENTER>).The following message appears on the display:

MM Card Menu
Insert MM Card
Press Enter

Insert a MultiMedia Card into the MEMORY CARD slot.

When inserting the MultiMedia Card to the slot, its skewed side has to aim at POWER switch.

Maximum memory capacity of used MultiMedia Card can be 128MB.

Press <ENTER>.The following menu appears:

MM Card Menu
Load data
Save data

3. Use <UP> , <DOWN> to select "Save data" and press <ENTER>. The bank selection screen appears:

MMC Save Data
Select bank:10

No. of bank (0-60 for 32 MB MM Card) to which the data will be saved

4. Use <UP>,<DOWN> or TILT wheel to select suitable bank and press <ENTER>(If the bank is not empty,data are overwritten).The controller saves data to the Multimedia card.After saving,this screen appears:

Data successfully
saved!
Press Enter

5. Press <ENTER> to return to the menu.

10.2.Loading data from the memory card

1. Press <ESC> several times until the display shows the initial screen.

2. Press <MENU> and use <UP>,<DOWN> to scroll to the "MM Card Menu" menu ("Setup" ==> <ENTER>==> "MM Card Menu" ==> <ENTER>). The following message appears on the display:

MM Card Menu
Insert MM Card
Press Enter

Insert MultiMedia Card into the MEMORY CARD slot and press <ENTER>. The following menu appears:

MM Card Menu
Load data
Save data

3. Use <UP>,<DOWN> to select "Load data" and press <ENTER>. The bank selection screen appears:

MMC Load Data
Select bank:10

No. of bank (0-60 for 32 MB MM Card) from which the data will be loaded

4. Use <UP> , <DOWN> or TILT wheel to select suitable bank (0-60 for 32 MB MM Card) and press <ENTER>. The controller starts loading data to its memory. After loading, the screen appears:

Data successfully
loaded!
Press Enter

5. Press <ENTER> to return to the menu.

Note: Message "**Format data error!**" means that the current bank is empty or doesn't contain controller's data.

11.Manual mode

Manual mode allows you to directly control the functions of any projector connected to the controller.

In order to control each projector it is necessary to know what function each individual channel controls on the respective projectors. This information is normally found in the user manual of each individual projector.

Active buttons, sliders and wheels in the manual mode:

- | | |
|----------------|--|
| <UP>,<Down> | - the buttons for editing DMX values |
| <LEFT>,<RIGHT> | - the buttons for selecting channels(effects) |
| <CH 1-8> | - the button for switching the channel range of the DMX CHANNEL/FUNCTION sliders |
| <MAN.> | - the button for returning the displayed effect(channel) to the control of the currently |

- <RECALL> active scene/program/record
- the button for returning all manually controlled effects(channels) to the control of the currently active scene/program/record
- <PAN/TILT> - the button activates the PAN/TILT wheels
- <8/16BIT> - the button activates 16-bit movement resolution
- <AUTO/AUDIO> - the button switches between AUTO mode and AUDIO mode.
- <MACRO> - the button accesses colour/gobo macros
- <ENTER> - the confirming button (for saving the changes you have made)
- <ESC> - the escape button (for returning to the previous menu without saving the changes you have made)

DMX CHANNEL/FUNCTION sliders - for adjusting DMX values of the respective effects

PAN/TILT wheels - for selecting effects(channels),adjusting DMX values and controlling the pan/tilt movement

11.1.Manual control of the projectors

1.To enter into the manual mode press <MAN.> and the following screen appears:

```

MANUAL MODE
NO DEVICE
CH:01-08 Sld:001
----- Val:001

```

Selected projector
Channel range and matching slider
Effect name and its DMX value

2.Select desired projector by pressing the PROJECTOR SELECT button(its LED shines).

You can select more than one projectors - in this case the selected projectors are controlled together and the displayed projector name flashes if selected projectors are not the same. **This name (and displayed effect) corresponding to the selected fixture with the highest DMX address.**

If you previously defined the groups of projectors ,you can press <NEXT/GROUP> and select desired group by pressing matching PROJECTOR SELECT button.

3.Select the desired effect (channel):

- by pressing <LEFT>,<RIGHT>
- by moving the matching DMX CHANNEL/FUNCTION slider
- by rotating the PAN wheel (PAN/TILT button LED has to shine)

4.Adjust the DMX value of the selected effect(channel):

- by pressing <UP>,<DOWN>
- by moving the matching DMX CHANNEL/FUNCTION slider
- by rotating the TILT wheel (PAN/TILT button LED has to shine)

The flashing sign "MAN" appears in the top right-hand corner of the screen.

Example:

```

MANUAL MODE MAN
SPOT 160 XT
CH:01-08 Sld:006
COLOR Val:050

```

Flashing sign "MAN" indicates that channel No.6 is in MANUAL mode
Selected projector
Channel range and matching slider
Effect name and its DMX value

If any PROJECTOR SELECT button LED flashes,it means that one or more channels of the respective projector is in manual mode.To control desired channel of this projector,press the PROJECTOR SELECT button again (its LED shines).

5.Press <MAN.>to return the displayed channel (its matching PROJECTOR SELECT button LED shines) to the control of the currently active scene/program/record.

If you manually controlled more effects or projectors(matching PROJECTOR SELECT button LEDs shine),press <RECALL> to return all manually controlled channels to the control of the currently active scene/program/record.

6.To return to the previous screen,press <ESC>.

11.2.Controlling the pan/tilt position with PAN/TILT wheels

Enter into manual mode and by pressing the PAN/TILT button (its LED has to flash) you activate the control of the pan/tilt movement with PAN and TILT wheels .If for example you turn either PAN or TILT wheel the following screen appears:

```

MANUAL MODE MAN
SPOT 160 XT
PanH:001 PanL:000
TitH:020 TitL:050

```

PanH: - coarse pan DMX value , PanL: - fine pan DMX value
TitH: - coarse tilt DMX value , TitL: - fine tilt DMX value

For fine pan/tilt movement press <8/16BIT> (its LED starts flashing).
 To deactivate the control of the pan/tilt movement with PAN and TILT wheels ,press <PAN/TILT>(its LED stops flashing).

Important:

If you adjusted the pan/tilt position of fixtures with DMX CHANNEL/FUNCTION sliders or <UP>,<Down> buttons, all controlled fixtures have the same pan/tilt coordinates as shown on the screen.

If you adjusted the pan/tilt position of fixtures with the PAN/TILT wheels ,only that active fixture which has the highest DMX address has its pan/tilt coordinates as shown on the screen. The rest of the fixtures has incremental coordinates.

Example:

Original position of the fixtures:



Tilt position is adjusted with the TILT wheel :

MANUAL MODE MAN
 SPOT 160 XT
 PanH:066 PanL:000
 TiltH:128 TiltL:050



Tilt position is adjusted with the DMX CHANNEL/FUNCTION slider:

MANUAL MODE MAN
 SPOT 160 XT
 PanH:066 PanL:000
 TiltH:128 TiltL:050



11.3.Editing/creating a chaser

There are 20 presetted chasers in DMX CONTROL 480 with up to 60 steps per each. The time length of the chaser step can be from 40 milliseconds to 5.04 seconds but can be extended up to 10.12 seconds during chaser running. If none of the presetted chaser suit you, you can edit them according to your requirements:

1. Press <ESC> several times until the display shows the initial screen.
2. Press <MENU> and use <UP>,<DOWN> to scroll to the "Make chaser" menu and press <ENTER>. The following message appears:

MAKE CHASER
 Select chaser: 01

Chaser order number

3. Use <UP>,<DOWN> to select the desired chaser (e.g. 01) and press <ENTER>. Next screen appears:

MAKE CHASER 01
 Step: 01
 Speed:001 CONST

Chaser's step (01-60)

*Lasting of the step (1-126) "Speed:001" means 40 milliseconds
 "Speed:126" means 5.04 seconds(126 x 40mS)
 "Speed: End" means the end of chaser
 Speed: Loop" means that chaser runs in loop*

The number of steps in the chaser will be determined by the position in which you place **End**.

The **Loop** means that the chaser will run in loop.

4. Use <UP>,<DOWN> to browse all chaser's steps (PROJECTOR SELECT button LEDs of active projectors shine). Press <RIGHT> to move on "Speed" item and adjust the step speed or change the abbreviation "CONST"

or "ADJUST" by pressing <UP>,<DOWN> or by rotating the TILT wheel. Active projectors you determine by pressing matching PROJECTOR SELECT buttons (their LEDs shine).

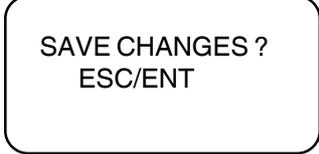
By pressing <NEXT/GROUP> the current chaser's step is copied to the next step.

Note:

The abbreviation CONCT (constantly) means that the lasting of the chaser step can't be changed during chaser running.

The abbreviation ADJUST(adjustable) means that the lasting of the chaser step can be changed during chaser running.

After editing all chaser's steps,press <ENTER>.The safety question appears:

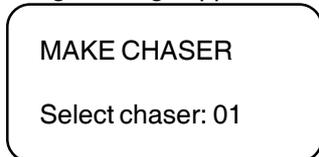


11.Press <ENTER> to save the new chaser or <ESC> to leave this menu without saving changes.

11.4.Copying a chaser

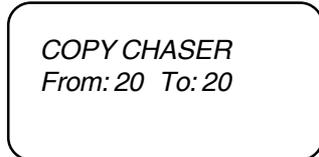
1.Press <ESC> several times until the display shows the initial screen.

2.Press <MENU> and use <UP>,<DOWN> to scroll to the "Make chaser" menu and press <ENTER>.The following message appears:

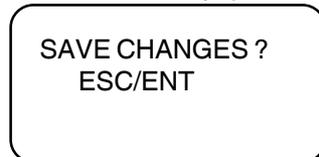


Chaser order number

3.Use <UP>,<DOWN> to select the chaser No. (e.g. 20) to which you want to copy another chaser and press <INSERT/COPY>.The following screen appears:



4.Use <UP>,<DOWN> to select the chaser which you want to copy to previously selected chaser and press <ENTER>.The safety question appears:

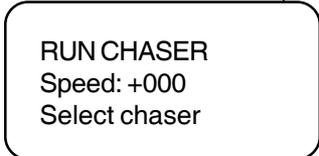


5.Press <ENTER> to confirm the copying.

11.5.Running a chaser

The chaser can run during a scene/program/record running or manual controlling of the projectors.The created chasers (1-20) are assigned to the PROJECTOR SELECT buttons <1>,<2>.....<20>.Please note that all other functions of the projectors are maintained and that the scenes/programs/records keep running.

1.Press <DEL./CHASER> (its LED starts flashing) and the chaser running screen appears:



Speed for chaser running from -128 to +127,time unit=40 mS
Chaser order number

2.Adjust the speed of the chaser running by pressing <UP>,<DOWN> or by rotating TILT wheel .This speed can be also changed during chaser running (chaser running screen has to be displayed).

3.Select desired chaser (1-20) which you wish to run by pressing the matching PROJECTOR SELECT button and the chaser starts running.To see the previous screen,press <ESC>.

Note:Adjusted chaser speed affects only the chaser's steps with mark "ADJUST".

Examples:

Adjust time:+ 000..... The chaser will run with speed as was determined during its creation

Adjust time:+001.....All steps with mark "ADJUST" will be increased by 40 milliseconds
 Adjust time:+127.....All steps with mark "ADJUST" will be increased by 5.08 seconds (127x40 mS)
 Adjust time:-001.....All steps with mark "ADJUST" will be decreased by 40 milliseconds
 Adjust time:-128.....All steps with mark "ADJUST" will be decreased by 5.12 seconds (128x40 mS)

4.To stop the chaser running ,press <DEL./CHASER> (the chaser running screen has to be displayed).

11.6.Presetting a macro

In macro mode you can preset up to 20 color or gobo values for one ore more projectors.

1.Enter into manual mode by pressing <MAN>.and select desired projector or projectors (e.g. SPOT 160 XT) as described above in "**Manual control of the effects**".

2.Press <MACRO>.Its LED flashes and the screen shows:

MACRO MODE	<i>Bank of colour macros</i>
COLOR BANK	<i>Channel range and slider</i>
CH:01-08 Sld:006	<i>Matching effect name and its DMX value</i>
COLOR Val:001	

3.Select "COLOR" in the effect field:

- by pressing <LEFT>,<RIGHT>
- by rotating the PAN wheel (PAN/TILT button LED has to shine)
- by moving the matching DMX CHANNEL/FUNCTION slider

4.Press the PROJECTOR SELECT button No.1 and adjust desired DMX value for "COLOR":

- by pressing <LEFT>,<RIGHT>
- by rotating the TILT wheel (PAN/TILT button LED has to shine)
- by moving the matching DMX CHANNEL/FUNCTION slider

5.Press <ENTER> to assign the adjusted "COLOR" value to the PROJECTOR SELECT button No.1.

6.Repeat the step 4 and assign next "COLOR" value to the PROJECTOR SELECT button No.2.

In this way assign the desired colours to the buttons No.3-20.

7.Press <MACRO> again.The gobo bank screen appears:

MACRO MODE	<i>Bank of gobo macros</i>
GOBO BANK	<i>Channel range and slider</i>
CH:01-08 Sld:007	<i>Matching effect name and its DMX value</i>
GOBO Val:001	

8.Select "GOBO" in the effect field:

- by pressing <LEFT>,<RIGHT>
- by rotating the PAN wheel (PAN/TILT button LED has to shine)
- by moving the matching DMX CHANNEL/FUNCTION slider

9.Assign the gobos to the PROJECTOR SELECT buttons No.1-20 as you have done for colours.

10.To save the macro,press <ESCAPE>.The safety question appears:

SAVE CHANGES ? ESC/ENT

11.Press <ENTER> to save the macro you have made or <ESC> to leave the macro menu without saving changes.

Note:You can select more than one projectors - in this case the macro will run with all selected projectors.The projectors should be of the same type.

The macro mode will run correct only with these effect names:"COLOR" and "GOBO".

11.7.Running a macro

1.Enter into manual mode by pressing <MAN>,select projector(s) you wish to use in a macro running.

2.Enter into macro mode by pressing <MACRO> and by pressing PROJECTOR SELECT buttons No.1-20 you can activate the previously created colour macros.

3.Use <MACRO> to switch between the colour and gobo macros.

Note:Colour/gobo macros are matched to the PROJECTOR SELECT buttons No.1-20.If you change the projector assigning to the PROJECTOR SELECT buttons,you will have to make new macros.

4.To stop the macro running,press <ESC>.

12. Programming mode

12.1. Creating a scene

Scene consists of various effect created by the lights (colours, figures and positions)
You can create up to 750 scenes.

1. Press <ESC> several times until the display shows the initial screen.
2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Make Scene" menu and press <ENTER>. The following message appears:

Scene: 001
FREE

Scene number (1-750)
Scene status: FREE or USED
FREE.....scene was not edited (it contains data of the scene No.000)
USED.....scene was edited

The scene 000 (its all DMX values are set to 0 but you can edit them, its mask includes a maximum of assigned projectors and can't be changed, scene status is still FREE) is used in these cases:

1. After switching the controller on (data of the scene 000 is transmitted to the DMX outputs).
2. After deleting the current scene (data of the scene 000 is copied to the deleted scene).
3. Use <UP>, <DOWN> or Pan wheel to select desired free scene. All LEDs of the PROJECTOR SELECT buttons, which have been assigned to the projectors, shine.

Now you have to determine the projectors, which will be used in the scene - the mask. Press the PROJECTOR SELECT buttons matched to the projectors, which you don't want to use in the scene (their LEDs become off).

Only those projectors will be active in the scene where the PROJECTOR SELECT button LEDs shine.

If you wish to create a scene for a previously defined group of projectors, press <NEXT/GROUP>, select desired group (1-20) by pressing the respective PROJECTOR SELECT button. If you select more than one group, the last selected group will be active only. The selected group of projectors can be expanded/reduced by pressing the respective PROJECTOR SELECT buttons.

Note: The scene should be created with a maximum of active projectors (in run mode, you can simply reduce the number of active projectors).

Press <ENTER> and the following screen appears:

MAKE SCENE: 001
NO DEVICE
CH: 01-08 Sld: 001
----- Val: 000

Scene number (1-750)
Name of assigned projector (after pressing PROJECTOR button)
Channel range and slider
Matching effect name, Effect DMX value (0-255)

4. Press the first PROJECTOR SELECT button whose projector is defined in the mask and adjust DMX values for all projector's effects. You can use the 3 ways:

1. DMX CHANNEL/FUNCTION sliders:

After moving any slider, the name of assigned effect appears on the 4th row of the screen and its current DMX value. With CHANNEL RANGE button you can change the channel range (1-8, 9-16, 17-24) for sliders.

2. UP/DOWN buttons and LEFT/RIGHT buttons:

<UP>, <DOWN> - the buttons for editing DMX values
<LEFT>, <RIGHT> - the buttons for selection of the channels/effects
CHANNEL RANGE button - the button for changing the channels range

3. Wheels (PAN/TILT button LED has to shine):

PAN wheel - for selecting the channels/effects
TILT wheel - for adjusting DMX values

Note: You can select more than one projectors - in this case the selected projectors are controlled together and the displayed projector name flashes if selected projectors are not the same. **This name (and displayed effect) corresponding to the selected fixture with the highest DMX address.**

If you adjust the DMX value for the channel, to which the dimmer is assigned and you want to use the dimmer function, make sure that the dimmer value is in the range as defined in "Config unit" menu for correct functions of the sliders INT A and INT B. If adjusted value is out of the range, the sign "DIMMER" flashes.

Example:

MAKE SCENE: 001
SPOT 150 XT
CH: 01-08 Sld: 008
DIMMER Val: 094

*Sign "DIMMER" flashes, the dimmer value has to be between 0-64, because the dimmer intensity for SPOT 150 XT is defined in "Config unit" menu as follows:
Intensity: 000 Max: 64*

The channel setting for SPOT 150 XT (Mode 1):

Channel	DMX Values	Functions
8	0 - 63	Light intensity from 0 to 100%
	64 - 95	Shutter open
	96 - 127	Strobe-effect from slow to fast (max 8 flashes/s)
	128 - 139	Reset
	140 - 159	Shutter closed
	160 - 175	Pulse-effect in sequences with increasing speed
	176 - 191	Pulse-effect in sequences with decreasing speed
	192 - 223	Random strobe effect with increasing speed
	224 - 255	Shutter open

If you set e.g. DIMMER =30,you will change the DMX values of the dimmer intensity from 0 to 30 with sliders INT A or INT B.On this account you won't be able to adjust full intensity of the light (100% intensity=64)!

For controlling the pan/tilt movement you can activate the PAN and TILT wheels :

- 1.by pressing <PAN/TILT> (its LED has to flash) for coarse pan/tilt movement
- 2.by pressing both <PAN/TILT> and <8/16 BIT> (their LEDs have to flash) for fine pan/tilt movement

For example,the screen will show :

MAKE SCENE: 001	Scene number (1-750)
SPOT 150 XT	Name of assigned projector
PanH:107 PanL:041	DMX values: coarse pan, fine pan
TiltH :037 TiltL:255	DMX values:coarse tilt, fine tilt

5.Repeat the step 4 for all projectors in the mask.

6.Press <ENTER>.The safety question appears:

SAVE CHANGES ? ESC/ENT

7.Press <ENTER> and the scene is recorded or <ESC> to leave this menu without saving changes.

Note 1:

By pressing <RECALL> during creating the scene- you can recall previously stored scenes.

Example:

MAKE SCENE: 004	Current scene No.4
SPOT 250 XT	
CH: 01-08 Sld:007	
COLOR Val:064	

Press <RECALL>,its LED flashes and the following screen appears:

MAKE SCENE: 004	
SHOW SCENE: 004	Active scene

Use <UP>, <Down> or TILT wheel to call up previously created scenes.To return to the current scene No.4,press <RECALL> again.

Note 2:

It is possible "to copy projectors" from previously stored scenes to the current scene:

Press <INSERT/COPY> (its LED starts flashing) and for example this screen appears:

MAKE SCENE: 010
Copy scene: 004
Select copy mask

Select projectors you wish to copy from previously created scene by pressing PROJECTOR SELECT buttons .Select desired scene with <UP>, <Down> or TILT wheel and press <ENTER>.All DMX values of selected projectors from desired scene are copied to the current scene.These DMX values are permanently saved after leaving the current scene with <ENTER>.

12.2.Deleting a scene

- 1.Press <ESC> until the display shows the initial screen.
- 2.Press <MENU> and use <UP>,<DOWN> to scroll to the "Make Scene" menu and press <ENTER>.The following message appears:

Scene: 001
USED

- 3.Use <UP>,<DOWN> or TILT wheel to select the scene you want to delete (e.g.010) and press .The safety question appears:

Delete scene ?
ESC/ENT

- 4.Press <ENTER> to confirm the scene deleting.Data from the scene 000 will be sent to the current scene:

Scene: 010
FREE

12.3.Copying a scene

- 1.Press <ESC> several times until the display shows the initial screen.
- 2.Press <MENU> and use <UP>,<DOWN> to scroll to the "Make Scene" menu and press <ENTER>.The following message appears:

Scene: 001
USED

- 3.Use <UP>,<DOWN> or TILT wheel to select the scene position (e.g.020) to which you want to copy another scene and press <INSERT/COPY>.The following screen appears:

COPY SCENE
From:020 To:020

- 4.Use <UP>,<DOWN> or TILT wheel to select the desired scene you want to copy (e.g.15) to the previously selected scene position and press <ENTER>.The safety question appears:

SAVE CHANGES ?
ESC/ENT

- 5.Press <ENTER> to confirm this action.Original scene is overwritten with selected scene.

12.4.Creating a program

Creating a program is simply a matter of assigning each step a previously recorded scene number. You can create up to 255 programs with a maximum of 50 steps each.

- 1.Press <ESC> several times until the display shows the initial screen.
- 2.Press <MENU> and use <UP>,<DOWN> to scroll to the "Make Program" menu and press <ENTER>.The following message appears:

MAKE PROGRAM
Program: 001
FREE

Program No.1
Program status: FREE.....the program was not edited
USED.....the program steps have assigned scenes

3. Use <UP>, <DOWN> or Pan wheel to select desired free program. All LEDs of the PROJECTOR SELECT buttons, which have been assigned to the projectors, shine.

Now you have to determine the projectors, which will be used in the program - the mask. Press the PROJECTOR SELECT buttons matched to the projectors, which you don't want to use in the program (their LEDs become off). Only those projectors will be active in the program where the PROJECTOR SELECT button LEDs shine.

If you wish to create program for previously defined group of projectors, press <NEXT/GROUP>, select desired group (1-20) by pressing the respective PROJECTOR SELECT button. If you select more than one group, the last selected group will be active only. The selected group of projectors can be expanded/reduced by pressing the respective PROJECTOR SELECT buttons.

Note: The program should be created with a maximum of active projectors (in run mode, you can simply reduce the number of active projectors).

Press <ENTER> and the following screen appears:

Step: 01 Sce: 001
 LStp: -- N Lop: ---
 Prg.time: 1.0s
 Fati: 10 StTi: 10

Program step(1-50) and matching scene(1-750, End, Loop)
 Starting loop step, number of loop repetitions (1-255; --- means permanent rep.)
 Total program time (in seconds) from first step to current step (including a loop)
 Fati=fade time (0.1s-9.9s), StTi=step time (0.1s-9.9s)
 Note: 01 means 0.1s; 99 means 9.9s

Note: The projectors used in the program should be used in the scenes you will assign:

Example:

Projectors mask

in the created program: Projector No.1 Projector No.2 Projector No.3 Projector No.10

Projectors mask

in the scene No.1 Projector No.1 Projector No.2 Projector No.3 Projector No.10

These projectors will not be active during program running:

Projectors mask

in the scene No.2 Projector No.1 Projector No.2 **Projector No.6** **Projector No.15**

4. Fill items on the screen:

1. Use <UP>, <DOWN> to select desired program step.
2. Press <RIGHT> and use <UP>, <DOWN> or TILT wheel to assign the scene (1-750). If you want to view effects of the selected scene, press <RECALL> (the slider INT A has to be in upper position of its track).
3. Press <FADE TIME> (its LED shines) and adjust the fade time with FADE TIME slider (0.1s-9.9s).
4. Press <STEP TIME> button and adjust the step time with the STEP TIME slider (0.1s-9.9s).
5. Press <LEFT> and use <UP>, <DOWN> to select the next program step and repeat steps 1-5 in this point.

Note: By pressing <NEXT/GROUP> the current program step is copied to the next step.

The maximum viewable range of total program time "Prg. time" is 9999,9s (167 minutes) but in fact the total program time can be longer.

In many cases, you may not wish to use all 50 program steps. To end the program, choose **End** in the field "Sce". The number of steps in your program will be determined by the position in which you place the **End**.

Examples:

You wish to end the program No.5 at step 30:

Step: 30 Sce: 130
 LStp: -- N Lop: ---
 Prg.time: 65.5s
 Fati: 10 StTi: 20

Step: 31 Sce: End
 LStp: -- N Lop: ---
 Prg.time: 65.5s
 Fati: -- StTi: --

If you do not enter **End** to the field "Sce", the steps No.31-No.50 will be executed.

If you wish executed all 50 steps, do not enter **End** to the field "Sce" at last step No.50:

Step: 50 Sce: 005
 LStp: -- N Lop: ---
 Prg.time: 150.5s
 Fati: 18 StTi: 25

If you want to play certain steps in a loop, choose **Loop** in the field "Sce". Use <RIGHT> to move to the field "LStp" and with <UP>, <DOWN> select the starting step of the loop, press <RIGHT> and with <UP>, <DOWN> select the number of repetitions.

Examples:

You wish to repeat steps from No.20 to No.25 three times:

Step: 25 Sce: 124
LStp: -- N Lop: ---
Prg.time: 320.0s
Fati: 10 StTi: 20

Step: 26 Sce: Loop
LStp: 20 N Lop: 003
Prg.time: 425.0s
Fati: -- StTi: --

You wish to repeat step No.25 ten times:

Step: 26 Sce: Loop
LStp: 25 N Lop: 010
Prg.time: 439.0s
Fati: -- StTi: --

This setting repeats steps from No.20 to No.25 permanently:

Step: 26 Sce: Loop
LStp: 20 N Lop: ---
Prg.time: 9999.9s
Fati: -- StTi: --

The FADE TIME and STEP TIME sliders are not active in these "Loop"screens.When the loop is running,the fade and step times are used as were previously defined at each program step.

5.To save the program which has been created,press <ENTER> and the safety question appears:

Save changes ?
ESC/ENT

6.Press <ENTER> to save the program or press <ESC> to leave the menu without saving changes.

Deleting the program step

1.Use <UP>,<DOWN>or TILT wheel to select the program step which you want to delete.

2.Press .The safety question appears:

Delete step ?
ESC/ENT

3.Press <ENTER> to remove the program step or press <ESC> if you do not want delete the step.

Example:You want to delete the step No.6.

Step: 05 Sce: 011
LStp: -- N Lop: ---
Prg.time: 40.0s
Fati: 10 StTi: 30

Step: 06 Sce: 012
LStp: -- N Lop: ---
Prg.time: 46.0s
Fati: 15 StTi: 60

Step: 07 Sce: 013
LStp: -- N Lop: ---
Prg.time: 52.0s
Fati: 20 StTi: 60

Step: 08 Sce: 014
LStp: -- N Lop: ---
Prg.time: 58.0s
Fati: 25 StTi: 60

Press at step 6; the step sequences will change (the following step 7 will become step 6):

Step: 05 Sce: 011
LStp: -- N Lop: ---
Prg.time: 40.0s
Fati: 10 StTi: 60

Step: 06 Sce: 013
LStp: -- N Lop: ---
Prg.time: 46.0s
Fati: 20 StTi: 60

Step: 07 Sce: 014
LStp: -- N Lop: ---
Prg.time: 52.0s
Fati: 25 StTi: 60

Step: 08 Sce: 015
LStp: -- N Lop: ---
Prg.time: 60.0s
Fati: 30 StTi: 80

Inserting the program step

1.Use <UP>,<DOWN>or TILT wheel until you reach the step prior to the one where you wish to insert the new step.The inserted step will contain the same data as the current displayed step.

2. Press <INSERT/COPY>. The safety question appears:

Insert step ?
ESC/ENT

3. Press <ENTER> to insert the new program step or press <ESC> if you do not want to insert this step.
Example: You want to insert the step prior to the step No.4

Step: 02 Sce: 011 LStp: -- N Lop: --- Prg.time: 10.0s Fati: 10 StTi: 60	Step: 03 Sce: 012 LStp: -- N Lop: --- Prg.time: 16.0s Fati: 15 StTi: 60	Step: 04 Sce: 013 LStp: -- N Lop: --- Prg.time: 22.0s Fati: 20 StTi: 60	Step: 05 Sce: 014 LStp: -- N Lop: --- Prg.time: 28.0s Fati: 25 StTi: 60
--	--	--	--

Press <INSERT/COPY>, the step sequences will change (the following step 4 will become step 5:

Step: 02 Sce: 011 LStp: -- N Lop: --- Prg.time: 10.0s Fati: 10 StTi: 60	Step: 03 Sce: 012 LStp: -- N Lop: --- Prg.time: 16.0s Fati: 15 StTi: 60	Step: 04 Sce: 012 LStp: -- N Lop: --- Prg.time: 22.0s Fati: 15 StTi: 60	Step: 05 Sce: 013 LStp: -- N Lop: --- Prg.time: 28.0s Fati: 20 StTi: 60
--	--	--	--

12.5. Deleting a program

1. Press <ESC> several times until the display shows the initial screen.

2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Make Program" menu and press <ENTER>. The following message appears:

MAKE PROGRAM
Record: 001
USED

3. Use <UP>, <DOWN> or TILT wheel to select the program which you want to delete and press . The safety question appears:

Delete program ?
ESC/ENT

4. Press <ENTER> to confirm the program deleting.

12.6. Copying a program

1. Press <ESC> several times until the display shows the initial screen.

2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Make Program" menu and press <ENTER>. The following message appears:

MAKE PROGRAM
Program: 001
USED

3. Use <UP>, <DOWN> or TILT wheel to select the program (e.g. 021) to which you want to copy another program and press <INSERT/COPY>. The following screen appears:

COPY PROGRAM
From: 021 To: 021

4. Use <UP>, <DOWN> or TILT wheel to select the program which you want to copy to previously selected program and press <ENTER>. The safety question appears:

SAVE CHANGES ?
ESC/ENT

5. Press <ENTER> to confirm the copying.

12.7. Creating a record

The record consists of connected programs
You can create up to 100 records with a maximum of 50 programs each.
Creating a record is simply a matter of assigning each step a previously recorded program number.

1. Press <ESC> several times until the display shows the initial screen.
2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Make Record" menu and press <ENTER>. The following messages appears:

MAKE RECORD
Record: 001
FREE

*Record No.1
Record status: FREE.....the record was not edited
USED.....the record steps have assigned programes*

3. Use <UP>, <DOWN> or Pan wheel to select desired free record .All LEDs of the PROJECTOR SELECT buttons, which have been assigned to the projectors, shine.
Now you have to determine the projectors, which will be used in the record - the mask. Press the PROJECTOR SELECT buttons matched to the projectors , which you don't want to use in the record (their LEDs become off). Only those projectors will be active in the record where the PROJECTOR SELECT button LEDs shine.
If you wish to create record for previously defined group of projectors, press <NEXT/GROUP>, select desired group (1-20) by pressing the respective PROJECTOR SELECT button. If you select more than one group, the last selected group will be active only. The selected group of projectors can be expanded/reduced by pressing the respective PROJECTOR SELECT buttons.
Note: The record should be created with a maximum of active projectors (in run mode, you can simply reduce the number of active projectors).
Press <ENTER> and the following screen appears:

Step: 01 Prog: 01
Start step: 01
Rec. tim: 50.00
Fati: 01 StTi: 01

*Record step(1-50) and assigned program(1-50, End)
Step from which the assigned program will start running
Total record time (in seconds) from first step to current step (included)
Fati=Fade time multiplier (0.1-9.9) , StTi=Step time multiplier (0.1-9.9)
Note: 01 means 0.1 ; 99 means 9.9*

Note: The projectors used in this record should be used in the programs which you will assign:
Example:

Projectors mask
in the created record:

Projector No.1	Projector No.2	Projector No.3	Projector No.10
----------------	----------------	----------------	-----------------

Projectors mask
in the program No.1

Projector No.1	Projector No.2	Projector No.3	Projector No.10
----------------	----------------	----------------	-----------------

These projectors will not be active during record running:

Projectors mask
in the program No.2

Projector No.1	Projector No.2	Projector No.6	Projector No.15
----------------	----------------	-----------------------	------------------------

4. Fill the items on the screen.
 1. Use <UP>, <DOWN> to select the desired record step.
 2. Press <RIGHT> and use <UP> , <DOWN> or TILT wheel to assign the program No. (1-50).
 3. Press <RIGHT> and use <UP> , <DOWN> to select starting program step.
 4. Press the <FADE TIME> (its LED shines) and adjust the fade time multiplier with FADE TIME slider (0.1-9.9). Press the <FADE TIME> again (its LED is off).
 5. Press the <STEP TIME> and adjust the step time multiplier with the STEP TIME slider (0.1-9.9). Press the <STEP TIME > again.
*E.g. If you have adjusted fade time multiplier=5, the assigned program will have the fade time at all steps 5 times longer
If you have adjusted step time multiplier=3, the assigned program will have the step time at all steps 3 times longer.*
 6. Press <LEFT> and use <UP>, <DOWN> to select the next record step and repeat steps 1-6 in this point.
- Note:** By pressing <NEXT/GROUP> the current record step is copied to the next step.

The maximum viewable range of total record time "Rec. tim" is 99999.9s (1667 minutes) but in fact the total record time can be longer.

6. In many cases, you may not wish to use all 50 steps. To end the record, choose the **End** in the field "Prog.". The number of steps in your record will be determined by the position in which you place the **End**.

Example:

You wish to end the record at step 30:

Step: 30 Prog.: 30
Start step: 01
Rec.tim: 650.00
Fati: 10 StTi: 20

Step: 31 Prog.: End
Start step: 01
Rec.tim: 650.00
Fati: 10 StTi: 20

If you do not enter **End** to the field "Prog.", the steps No.31-No.50 will be executed.

If you want executed all 50 steps, do not enter **End** to the field "Prog." at last step No.50:

Step: 50 Prog.: 30
Start step: 01
Rec.tim: 820.00
Fati: 10 StTi: 20

5. To save the record which has been created, press <ENTER>, the safety question appears:

Save changes ?
ESC/ENT

6. Press <ENTER> to save the record or press <ESC> to leave the menu without changes.

Deleting the record step

1. Use <UP>, <DOWN> or TILT wheel to select the record step which you want to delete:

2. Press . The safety question appears:

Delete step ?
ESC/ENT

3. Press <ENTER> to remove the record step or press <ESC> if you do not want to delete this step.

Example: You want to delete the step No.6.

Step: 05 Prog.: 011 Start step: 01 Rec.tim: 240.00 Fati: 10 StTi: 60	Step: 06 Prog.: 012 Start step: 01 Rec.tim: 560.00 Fati: 15 StTi: 20	Step: 07 Prog.: 013 Start step: 01 Rec.tim: 1320.00 Fati: 20 StTi: 30	Step: 08 Prog.: 014 Start step: 05 Rec.tim: 1560.00 Fati: 20 StTi: 15
---	---	--	--

Press , the step sequences will change:
(the following step 7 will become step 6)

Step: 05 Prg.: 011 Start step: 01 Rec.tim: 240.00 Fati: 10 StTi: 60	Step: 06 Prg.: 013 Start step: 01 Rec.tim: 760.00 Fati: 20 StTi: 30	Step: 07 Prg.: 014 Start step: 05 Rec.tim: 1000.00 Fati: 20 StTi: 15	Step: 08 Prg.: 015 Start step: 02 Rec.tim: 1230.00 Fati: 10 StTi: 10
--	--	---	---

Inserting the record step

1. Use <UP>, <DOWN> or TILT wheel until you reach the step prior to the one where you wish to insert the new step. Inserted step will contain the same data as a current displayed step.

2. Press <INSERT/COPY>. The safety question appears:

Insert step ?
ESC/ENT

3. Press <ENTER> to insert the new record step or press <ESC> if you do not want to insert this step.

Example: You want to insert the step prior to the step No.4.

Step: 02 Prg.: 011 Start step: 01 Rec.tim: 800.00 Fati: 10 StTi: 20	Step: 03 Prg.: 012 Start step: 01 Rec.tim: 1200.00 Fati: 15 StTi: 60	Step: 04 Prg.: 013 Start step: 01 Rec.tim: 1800.00 Fati: 20 StTi: 20	Step: 05 Prg.: 014 Start step: 01 Rec.tim: 3200.00 Fati: 25 StTi: 20
--	---	---	---

Press <INSERT/COPY>, the step sequences will change:
(the following step 4 will become step 5)

Step: 02 Prg.: 011 Start step: 01 Rec.tim: 800.00 Fati: 10 StTi: 20	Step: 03 Prg.: 012 Start step: 01 Rec.tim: 1200.00 Fati: 15 StTi: 60	Step: 04 Prg.: 012 Start step: 01 Rec.tim: 1600.00 Fati: 15 StTi: 60	Step: 05 Prg.: 013 Start step: 01 Rec.tim: 2200.00 Fati: 20 StTi: 20
--	---	---	---

12.8. Deleting a record

1. Press <ESC> several times until the display shows the initial screen.

2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Make Record" menu and press <ENTER>. The following message appears:

MAKE RECORD
Record: 001
USED

3. Use <UP>, <DOWN> or TILT wheel to select the record which you want to delete and press . The safety question appears:

Delete record ?
ESC/ENT

4. Press <ENTER> to confirm the record deleting.

12.9. Copying a record

1. Press <ESC> several times until the display shows the initial screen.

2. Press <MENU> and use <UP>, <DOWN> to scroll to the "Make Record" menu and press <ENTER>. The following message appears:

MAKE RECORD
Record: 001
USED

3. Use <UP>, <DOWN> or TILT wheel to select the record (e.g. 021) to which you want to copy another record and press <INSERT/COPY>. The following screen appears:

COPY RECORD
From: 021 To: 021

4. Use <UP>, <DOWN> or TILT wheel to select the record which you want to copy to the previously selected record and press <ENTER>. The safety question appears:

SAVE CHANGES ?
ESC/ENT

5. Press <ENTER> to confirm the copying.

16.Runnig mode

The following instructions needed to recall and run previously created scanes, programs and records.You can run 2 scenes,programs or records at the same time (RUN A,RUN B buttons).The combinations scene-program,scene-record or program-record are possible.

15.1.Running scenes

- 1.Press <ESC> several times until the display shows the initial screen.
- 2.press <SCENE>.The following screen appears:

```
RUN SCENE
Select Scene
Scene num:001
USED
```

Current scene
FREE.....scene was not edited (contains data from the scene No.000)
USED.....scene was edited

- 3.Use <UP> , <DOWN> or TILT wheel to select the No. of the scene you wish to run.
- 4.Check the scene running mask (= projectors which will be used in the scene running) and press the PROJECTOR SELECT buttons matched to the projectors ,which you don't want to use in the scene running (their LEDs become off).
 Only those projectors will be active in the scene running where the PROJECTOR SELECT button LEDs shine. If you wish to run the scene for previously defined group of projectors,press <NEXT/GROUP>,select desired group (1-20) by pressing the respective PROJECTOR SELECT button.The selected group of projectors can be expanded/reduced by pressing the respective PROJECTOR SELECT buttons.
- 5.Press <RUN A> (its LED shines) and the scene is prepared for running.
- 6.Press <RUN A> again (its LED flashes) and the scene starts running (light intensity can be adjusted with the help of the slider INT A):

```
INTENSITY A
Rec.: --- Step:--
Prog.:--- Step:--
Scene: 001
```

Current running scene

- 7.Press <RUN A> to stop the scene running.
- 8.If you want to run 2 scenes at the same time,repeat the instructions 1-6 to start the scene running A .
- 9.Press <SCENE> to set the scene running B.Repeat the steps 2 -6 for slider INT B.The screen shows:

```
INT A  Rec:---
Prog.:--- Sce.:001
INT B  Rec: ---
Prog.:--- Sce.:002
```

Scene running A
Current scene in the scene running A
Scene running B
Current scene in the scene running B

Note :The scene running B "takes" the projectors assigned in the scene running A and vice-versa.
Example:

	<i>assigned projectors No.</i>	<i>active projectors in scene running</i>
<i>Scene running A</i>	<i>1,2,5,10,15</i>	<i>5,10</i>
<i>Scene running B</i>	<i>1,2,15,16,</i>	<i>1,2,15,16</i>

For correct scene running,the scene running mask should be the same like the mask of the created scene.

- 10.To stop the scene running A or B, press <RUN A> or <RUN B>.

15.2.Running programs

- 1.Press <ESC> several times until the display shows the initial screen.
- 2.press <PROG>,the following screen appears:

```
RUN PROGRAM
Program num: 001
Start step:01
USED
```

Selected program No.1
Step from which the selected program will start running
Program status: FREE.....the program was not edited
USED.....the program steps have assigned scenes

- 3.Use <UP>,<DOWN> or TILT wheel to select No. of the program which you want to run.

4. Press <LEFT> and use <UP>, <DOWN> to select the starting step of the program.
5. Check the program running mask (= projectors which will be used in the program running) and press the PROJECTOR SELECT buttons matched to the projectors, which you don't want to use in the program running (their LEDs become off). Only those projectors will be active in the program running where the PROJECTOR SELECT button LEDs shine. If you wish to run the program for previously defined group of projectors, press <NEXT/GROUP>, select desired group (1-20) by pressing the respective PROJECTOR SELECT button. The selected group of projectors can be expanded/reduced by pressing the respective PROJECTOR SELECT buttons.
6. Press <RUN A> (LED shines) and the program is prepared for running (projectors wait at the first prog. step):

```

INTENSITY A
Rec.: --- Step:--
Prog.:001 Step:01
Scene: 002

```

*Current running program and its current step
Current running scene*

7. Now you can adjust the program fade time multiplier and the program step time multiplier. To do so, press <FADE TIME> (its LED shines) and adjust the program fade time multiplier with the FADE TIME slider (from 0.1 to 9.9). Press <STEP TIME> (its LED shines) and adjust the program step time multiplier with the STEP TIME slider (from 0.1 to 9.9).

Example:

If you have adjusted the program fade time multiplier=5, the selected program will have the fade times at all steps 5 times longer).

If you have adjusted the program step time multiplier=3, the selected program will have the step times at all steps 3 times longer). If the <STEP TIME> and <FADE TIME> are not active, than the program step time multiplier=1 and the program fade time multiplier =1.

	<i>fade time multiplier=5 step time multiplier=3</i>		<i>Running Program No.1</i>
<i>Original program No.1</i>		<i>step 1:</i>	<i>fade time =10s (5 x 2s) step time =12s (3 x 4s)</i>
<i>step 1: fade time =2s step time =4s</i>		<i>step 2:</i>	<i>fade time =12.5s (5 x 2.5s) step time =15s (3 x 5)</i>
<i>step 2: fade time =2.5s step time =5s</i>		<i>step 3:</i>	<i>fade time =15s (5 x 3s) step time =18s (3 x 6s)</i>
<i>step 3: fade time =3s step time =6s</i>			

The screen shows:

```

INTENSITY A
Rec.: --- Step:--
Prog.:001 Step:01
Fati:50 StTi:30

```

*Fati=Program fade time multiplier (5), StTi=Program step time multiplier (3)
Note: 01 means 0.1 ; 99 means 9.9*

8. Press <RUN A> again (LED flashes) and the program starts its running (the slider INT A has to be in an upper position of its track if **Start Val**=100 in "User setting") and by moving the slider INT A from a bottom position to an upper position of its track you can adjust the light intensity of projectors from minimum to maximum. If you want to pause the running program, adjust the slider to the bottom position of its track (shutters of fixtures are closed). After ending the program running the initial screen appears on the display.
9. Long running program or program with endless loop can be stopped by pressing <RUN A>.
10. If you want to run 2 programs at the same time, repeat the instructions 1 - 8 to start the program running A.
11. Press <PROG> to set the program running B. Repeat the steps 2-8 for slider INT B. (If you adjust the step time and fade time multipliers, these values are used for program running A as well). The screen shows:

```

INT A    Rec:---
Prog.:001 Sce.:001
INT B    Rec: ---
Prog.:005 Sce.:002

```

*Program running A
Selected program and current running scene
Program running B
Selected program and current running scene*

Note :The program running B "takes" the projectors assigned in the program running A and vice-versa.

Example:

	<i>assigned projectors No.</i>	<i>active projectors in program running</i>
Program running A	1,2,5,10,15	5,10
Program running B	1,2,15,16,	1,2,15,16

After starting the program running B, projectors No.1 and No.2 go to the program step No.2 by reason of synchronization with the projectors No.15 and No.16 which were prepared at step No.1 for the program running B.

The adjusted fade time and step time multiplier are used for both program running A and program running B. For correct program running, the program running mask should be the same like the mask of the created program.

12. To stop the program running A or B, press <RUN A> or <RUN B>.

Note: By pressing the AUTO/AUDIO button (its LED flashes) the running program will follow the music's beat. By pressing the NEXT/+1STEP (its LED shine) button you can step the running program.

15.3. Running records

1. Press <ESC> several times until the display shows the initial screen.
2. Press <RECORD>, the following screen appears:

RUN RECORD Record num: 001 Start step: 01 USED	<i>Selected record No. 1</i> <i>Step from which the selected record will start running</i> <i>Program status: FREE.....the record was not edited</i> <i>USED.....the record steps have the assigned programs</i>
---	---

3. Use <UP>, <DOWN> or TILT wheel to select the No. of the record which you wish to run.
4. Press <LEFT> and use <UP>, <DOWN> to select the starting step of record.
5. Check the record running mask (= projectors which will be used in the record running) and press the PROJECTOR SELECT buttons matched to the projectors, which you don't want to use in the program running (their LEDs become off).
Only those projectors will be active in the record running where the PROJECTOR SELECT button LEDs shine. If you wish to run the record for previously defined group of projectors, press <NEXT/GROUP>, select desired group (1-20) by pressing the respective PROJECTOR SELECT button. The selected group of projectors can be expanded/reduced by pressing the respective PROJECTOR SELECT buttons.
6. Press <RUN A> (its LED shines) and the record is prepared for running (projectors wait at the first prog. step):

INTENSITY A Rec.: 001 Step: 01 Prog.: 001 Step: 02 Scene: 002	<i>Current running record and its current step</i> <i>Matching program and its current step</i> <i>Matching running program scene</i>
--	---

7. Now you can adjust the record fade time multiplier and the record step time multiplier. To do so, press <FADE TIME > (its LED shines) and adjust the record fade time multiplier (from 0.1 to 9.9) with FADE TIME slider. This value will be used for record running instead of the fade time multiplier which was assigned during record creation. Press the <STEP TIME> (its LED shines) and adjust the record step time multiplier (from 0.1 to 9.9) with the STEP TIME slider. This value will be used for record running instead of the step time multiplier which was assigned during record creation.

If the <STEP TIME> and <FADE TIME> are not active, the values, which were assigned during the record creation, are used.

Example 1 (record with 1 step only):

	<i>record fade time multiplier=3</i> <i>record step time multiplier=4</i>	<i>Running record 1</i>
<p>Original record 1</p> <p>Step 1 - Program 1</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Values assigned during record creation: Fade time multiplier = 2 Step time multiplier = 3</p> <p>step 1: fade time = 2s step time = 4s</p> <p>step 2: fade time = 1.5s step time = 3s</p> <p>step 3: fade time = 3s step time = 5s</p>		<p>Step 1 - Program 1</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Values assigned during record creation: Fade time multiplier = 2 Step time multiplier = 3</p> <p>step 1: fade time = 12s (3 x 2s) step time = 16s (4 x 4s)</p> <p>step 2: fade time = 9.0s (3 x 1.5s) step time = 12s (4 x 3s)</p> <p>step 3: fade time = 18s (3 x 3s) step time = 20s (4 x 5s)</p>

The screen shows:

```

INTENSITY A
Rec.: 001 Step:01
Prog.:001 Step:01
Fati:20 StTi:30
    
```

Fati=Record fade time multiplier (2) , StTi=Record step time multiplier (3)
 Note:01 means 0.1 ; 99 means 9.9

Example 2 (record with 1 step only):

	Original record 1	FADE TIME button is not active STEP TIME button is not active	Running record 1
	Step 1 - Program 1		Step 1 - Program 1
Values assigned during record creation: Fade time multiplier = 2 Step time multiplier = 3	step 1: fade time =2s step time =4s		step 1:fade time =4s (2 x 2s) step time =12s (3 x 4s)
	step 2:fade time =1.5s step time = 3s		step 2:fade time =3s (2 x 1.5s) step time =9s (3 x 3s)
	step 3:fade time =3s step time =5s		step 3:fade time =6s (2 x 3s) step time =15s (3 x 5s)

8.Press <RUN A> again (LED flashes) and the record starts its running (the slider INT A has to be in an upper position of its track if **Start Val**=100 in "User setting") and by moving the slider INT A from a bottom position to an upper position of its track you can adjust the light intensity of projectors from minimum to maximum.

.If you want to pause the running record,adjust the slider to the bottom position of its track (shutters of fixtures will be closed).After ending the record running the initial screen appears on the display.

9.Long running records can be stopped by pressing <RUN A>.

10.If you want to run the 2 records at the time,repeat the instructions 1- 8 to start the program running A.

11.Press <RECORD> to select the record running B.Repeat the steps 2-8 for slider INT B.(If you adjust the step time and fade time multipliers, these values are used for program running A as well).The screen shows:

```

INT A    Rec:001-
Prog.:001 Sce.:001
INT B    Rec: 002
Prog.:005 Sce.:003
    
```

Record running A
 Selected program and current running scene
 Program running B
 Selected program and current running scene

Note:The record running B "takes" the projectors assigned in the record running A and vice-versa.

Example:

	<i>assigned projectors No.</i>	<i>active projectors in record running</i>
Record running A	1,2,5,10,15	5,10
Record running B	1,2,15,16,	1,2,15,16

After starting the record running B,projectors No.1 and No.2 go to the program step No.2 by reason of synchronization with the projectors No.15 and No.16 which were prepared at program step No.1 for the record running B.

The adjusted fade time and step time multipliers are used for both record running A and record running B. For correct record running,the record running mask should be the same like the mask of the created records.

12.To stop the record running A or B, press <RUN A> or <RUN B>.

Note:By pressing the AUTO/AUDIO button (its LED flashes) the running record will follow the music's beat. By pressing the NEXT/+1STEP(its LED shine) button you can step the running record.

16.Factory default setting

The DMX CONTROL 480 allows you to reset all memory contents to the factory setting. The operation described below will permanently erase :

- all scenes, programs and records
- user created projectors No.51-100 in the projector library
- user created effect names No.128-255 in the projector library
- groups of projector
- assignment of projectors to the PROJECTOR SELECT buttons

We recommend you to save memory contents to the memory card prior to effecting a factory setting!

The following items will be set to their default values:

- contrast value for LCD display= 13
- backlight value for LCD display= 04
- items in "User settings" menu: "Start Val."=100
"S.Blackout"=YES
"S.Lock"=NO
- password =<1>,<2>,<3>,<4>.

To restore a factory default setting:

- 1.Press <ESC> several times until the display shows the initial screen.
- 2.Press <MENU> and use <UP>,<DOWN> to scroll to the "Factory setting" line ("Setup" ==> <ENTER>==> "Factory setting"==><ENTER>). The safety question appears:

Really load
factory setting ?
ESC/ENT

- 3.Press <ENTER> to start loading the factory default setting:

Loading factory
setting
Wait a minute !

After loading the factory default setting, the screen returns to the "Factory setting" line.

17. Updating the fixture library

The following are required in order to update the DMX CONTROL 480 library:

- the flashdev.exe file (for Windows 95 or higher) or flashdev (for Linux) ,available for download from ROBE web site ([http:// www.robe.cz](http://www.robe.cz))
- PC/AT-compatible computer
- serial interface cable

- 1.Make sure both the controller and the computer are turned off.
- 2.Connect one end of the serial interface cable to the computer serial port and the second end to the controller serial input.
- 3.Turn on both the controller and the computer.
- 4.On the controller, press <MENU> and use <UP>,<DOWN> to scroll to the "PC connection" menu ("Setup" ==> <ENTER>==> "PC connection"==> <ENTER>). The following screen will appear:

PC CONNECTION
Rcvd. pkt: *Number of received packets*
Sent pkt: *Number of sent packets*

- 5.Run the flashdev.exe file on your computer, choose corresponding serial port and then click "Connect" button. (Status line changes to "Connected"). Click "Start uploading" button. After uploading the controller library, click "OK" button.

Note:User defined library (positions 51-100) will not be overwritten.

18. Technical specifications

Number of control channels: 480
 Maximum number of programs: 255 with up to 50 steps each
 Maximum number of records: 100 with up to 50 steps each
 Maximum number of scenes: 750
 Maximum number of scenes within a program: 50
 Maximum number of programs within a record: 50

Memory: 512 kB
 Memory Card: MultiMedia Card (32-128 MB max.)

Power supply: 230V or 115 V AC, 50-60 Hz
 Maximum power: 10 VA
 Fuse: T63mA@230V, T125mA@115V

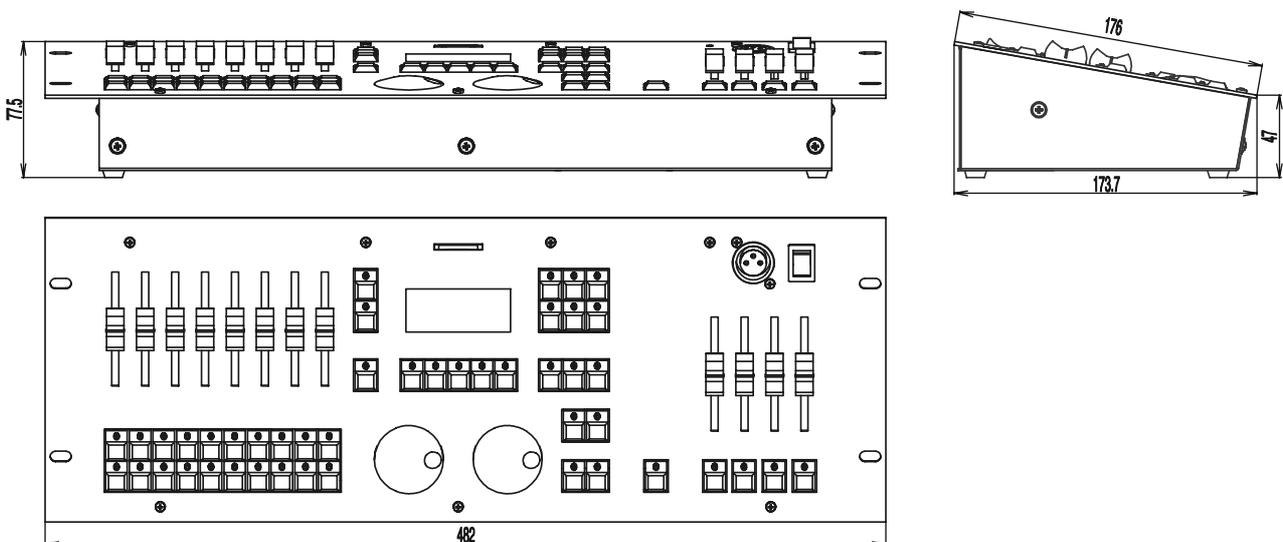
Maximum number of channels on a projector: 24
 Maximum number of independently controlled projectors: 20
 Maximum number of projectors in library: 100

Audio signal input: 400 mV (pick to pick)
 Sound input connector: 1/2" stereo jack
 DMX 512 output connectors: two 3-pin XLR female connectors
 PC connection: 9-pin female connector for RS-232
 3-pin XLR socket for service light (12V AC, 3W)

Accessory in packing:

MultiMedia card 32 MB.....1 piece
 User manual.....1 piece

Ambient operation temperature: 5 - 35°C
 Rack size: 19" 4U rack mountable
 Weight: 3 kg
 Dimensions (mm):



19.Cleaning and maintenance

DANGER!
**Disconnect the device from the mains before starting any
maintenance work**

There are no user-serviceable parts inside the device. Maintenance and servicing should be carried out by authorized personnel only.

When cleaning the controller do not use cleaning solutions or aggressive detergents which may damage the surface! Rather use a soft and damp cloth.

Appendix - Projector library

No.	Manufacturer	Name	Name in the controller	Mode	Channels
1	ROBE show lighting	Spot 150 XT/ClubSpot 150CT	SPOT 150XT	Mode 1	8
2	ROBE show lighting	Spot 160 XT/ClubSpot 160CT	SPOT160XT	Mode 1	9
3	ROBE show lighting	Spot 250 XT/ClubSpot 300 CT	SPOT250XT	Mode 1	16
4	ROBE show lighting	Spot 575 XT/ClubSpot 600CT	SPOT575XT	Mode 1	16
5	ROBE show lighting	MSZOOM 250 XT	MSZOOM 250XT	Mode 1	16
6	ROBE show lighting	DJ Scan 150 XT	DJ SCAN 150XT	-	4
7	ROBE show lighting	DJ Scan 250 XT	DJ SCAN 250XT	-	6
8	ROBE show lighting	Scan 250 XT	SCAN 250XT	Mode 1	16
9	ROBE show lighting	Scan 575 XT	SCAN 575XT	Mode 1	16
10	ROBE show lighting	Scan 1200 XT	SCAN 1200XT	Mode 1	16
11	ROBE show lighting	Beam 250 XT/FiberBeam 250AT	BEAM 250XT	-	4
12	ROBE show lighting	DJ Roller 150 XT	DJ ROLLER 150 XT	-	4
13	ROBE show lighting	Wash 150 XT	WASH 150XT	Mode 1	8
14	ROBE show lighting	Wash 250 XT/ClubWash 300CT	WASH 250XT	Mode 1	16
15	ROBE show lighting	Wash 575 XT/ClubWash 600CT	WASH 575XT	Mode 1	16
16	ROBE show lighting	Ecolor 250 XT	ECOLOR 250XT	-	6
17	ROBE show lighting	ColorSpot 170 AT	COLORSPOT 170AT	Mode 1	12
18	ROBE show lighting	ColorMix150 AT Wash	COLORMIX150 WASH	-	3
19	ROBE show lighting	ColorMix150 AT Profile	COLORMIX150 PROF	-	4
20	ROBE show lighting	ColorMix 240 AT	COLORMIX 240AT	Mode 1	11
21	ROBE show lighting	ColorMix 250 AT	COLORMIX 250AT	Mode 1	11
22	ROBE show lighting	Recessed Wash 150	RECESSED WASH150	Mode 1	8
23	ROBE show lighting	Recessed Spot 170	RECESSED SPOT170	Mode 1	12
24	ROBE show lighting	ColorSpot 1200 AT(1200E)	COLORSPOT 1200 AT	Mode 1	24
25	ROBE show lighting	Dominator 1200 XT	DOMINATOR 1200XT	-	12
26	ROBE show lighting	ColorSpot 250 AT	COLORSPOT 250AT	Mode 1	18
27	ROBE show lighting	Colorspot 575 AT	COLORSPOT 575AT	Mode 2	19
28	ROBE show lighting	ColorMix 550 AT	COLORMIX 550AT	Mode 2	8
29	ROBE show lighting	ColorMix 575 AT	COLORMIX 575AT	Mode 2	11
30	ROBE show lighting	ClubSpot 250 CT	CLUBSPOT 250CT	16bit	10
31	ROBE show lighting	ClubWash 250 CT	CLUBWASH 250CT	16bit	10
32	ROBE show lighting	ClubScan 150 CT	CLUBSCAN 150CT	-	6
33	ROBE show lighting	ClubScan 250 CT	CLUBSCAN 250CT	-	6
34	ROBE show lighting	Fusion	FUSION/FUNKY	-	3
34	ROBE show lighting	Funky	FUSION/FUNKY	-	3
35	ROBE show lighting	ColorWash 1200E AT	COLORWASH 1200AT	Mode 3	24
36	ROBE show lighting	DJ Roller 250 XT	DJ ROLLER 250 XT	-	6
37	ROBE show lighting	ClubRoller 150 CT	CLUBROLLER 150 CT	-	6
38	ROBE show lighting	ClubRoller 250 CT	CLUBROLLER 250 CT	-	6
39	ROBE show lighting	ColorWash 575 AT	COLORWASH 575AT	Mode 3	24
40	ROBE show lighting	ColorWash 575 AT Zoom	COLORWASH 575ATZ	Mode 3	21
41	ROBE show lighting	ColorWash 250 AT	COLORWASH 250AT	Mode 3	20
42	ROBE show lighting	Hip-Hop	HIP-HOP	-	4
43	ROBE show lighting	LED Blinder 148 LT	LED BLINDER 148LT	Mode 1	9
44	ROBE show lighting	LED Blinder 196 LT	LED BLINDER 148LT	Mode 1	15
45	ROBE show lighting	LED Wash 136 LT/ArcWash 136	LED WASH 136LT	Mode 1	14
46	ROBE show lighting	ClubSpot 500 CT	CLUBSPOT 500CT	Mode 2	13
47	ROBE show lighting	ClubWash 500 CT	CLUBWASH500CT	Mode 2	13
48	ROBE show lighting	StageBanner 10/50 AT	STAGEBANNER	-	4
49	ROBE show lighting	Flare	FLARE	-	2
49	ROBE show lighting	Euphoria	EUPHORIA	-	3

