

M A LIGHTING

SC EXTENSION

User's Manual

Version 4.X
July 1997

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1. Introduction (Version 4.x)

1.1 General remarks

MA Scancommander

The MA SANCOMMANDER itself features perfect and easy control of most DMX 512 compatible moving lights and multifunctional fixtures. Up to 16 units can be controlled simultaneously.

Chapter 2: SC-EXTENSION as SLAVE

Linked to a MA Scancommander with version 4.0 and higher, the SC-EXTENSION increases the number of units which can be controlled by 16 per Extension unit. This way, even shows with 36, 48 or more than 100 multifunctional fixtures can be operated from one Scancommander working as Masterboard.

Chapter 3: REMOTE PLAYBACK

A second way of operation is, to use the SC-EXTENSION as a remote controlled playback unit. Programs, stored at a Scancommander can be loaded to an Extension and be recalled via any external synchronization like SMPTE Time Code, MIDI, Touchboard or DMX 512 remote input.

Chapter 3: STAND-ALONE operation

By loading a running sequence or chase, the SC-EXTENSION can even work as a stand-alone unit. Any time when the main power supply is switched on, the Extension automatically will go on with the programs.

All functions of the SC-EXTENSION work the same way as they do at the SCANCOMMANDER itself. During Master-Slave operation they will even be transferred to the Slave automatically.

Chapter 4: SETUP functions

The SETUP section of the SC-Extension enables to adapt the programs to a new stage like it is possible with the Scancommander. Selecting new lamp types of coarse may be difficult, because any modification of programs is only possible on the Scancommander itself. Nevertheless the SC-Extension at least allows to change DMX addresses of the scans or to do the movement setup to adjust all positions to the new stage size.

!! ATTENTION !!

To avoid misunderstandings: The SC-EXTENSION unit can not be used to program a show without having a Scancommander linked.

Playback on an Extension without a Scancommander can only run automatically or remote controlled. There is no way to control a show with just an Extension!

1.2 Specifications and extras

The SC-EXTENSION is delivered as a 19" version, 3 units high. It features the same remote inputs as the Scancommander but no sound input.

*Trackball,
Computer mouse*

Is possible to connect to an Extension and makes it easy to control movements. All Atari compatible trackballs or mice can be used. Note: PC compatible mice cannot be used !!

Keyboard

Can only be used to name programs when saving them to the cue card. The connector is a 5pin Din. Every PC compatible AT/MF-keyboard can be used.

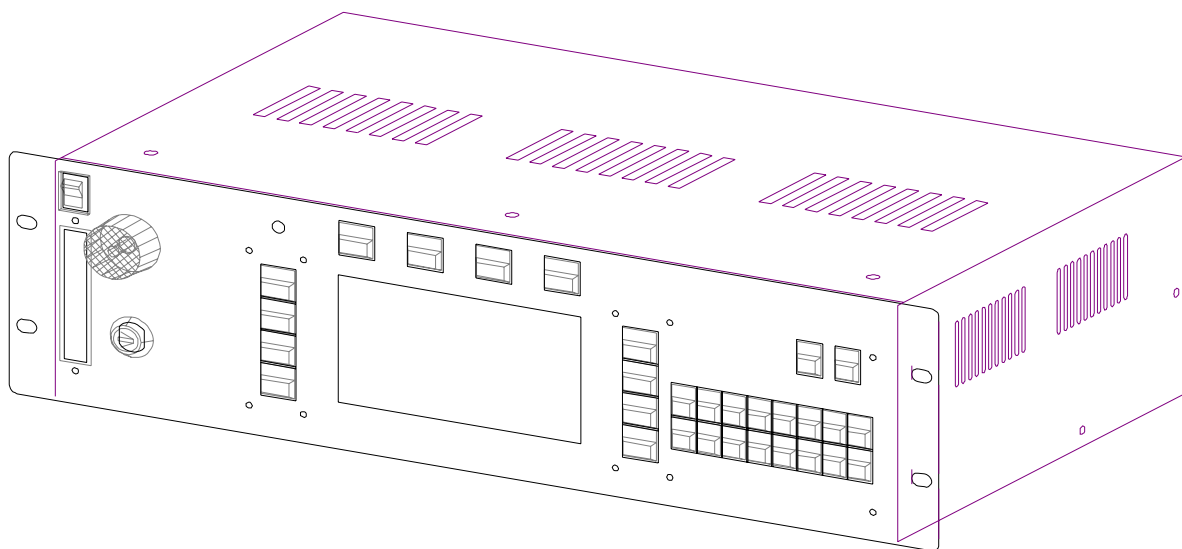
Backup cue card

All programs can be stored on a memory card in addition to the internal storage. Cards from 32 to 256 kilobyte, type ITT STAR CARD S-RAM can be used. Only programs written with software version 4.0 and higher can be read.

*Keyswitch
(works with the same key
as the Scancommander)*

The keyswitch on the left side of the front panel allows to protect the programs against unauthorized modification.

ACCESS ALL All functions of the Extension are available
LOCK PRG or LOCK DESK All buttons, encoders and faders on the front panel are locked, but internally running programs go on. Playback via any kind of remote input or master slave communication keep on working.



1.3 Installation

Powersupply

100-240 Volt, 40-60 Hz via Euro plug. No switching of voltage necessary.

DMX 512 output

According to USITT DMX 512 (1990) protocol. The output is opto insulated and even better than RS 485 or RS 422. The pins in the 5 pin XLR plug are: Pin 1: ground, Pin 2: Data-, Pin 3: Data+ (Pin 4 and 5: not used)
 Other in- and outputs see chapter 7.

2. MASTER-SLAVE OPERATION

Actual Scan Selection

When controlling more than 16 scans, two Scancommander or additional Extension units can be linked in a master-slave mode. All operations are controlled via the master board, at the slave only the display and the single scan selection buttons keep on working.

Different software versions

Linking two Scancommanders resp. SC Extensions with different software versions 3.X and 4.x is only particularly possible. We recommend to have the same software in both units.

Linking a Scancommander with version 4.2x and an Extension with version 4.1x is possible, but at the master's setup the function "MODE: OLD MASTER" has to be activated.

2.1 Installation

MIDI OUT connector of the master has to be connected to MIDI IN at the first slave unit.

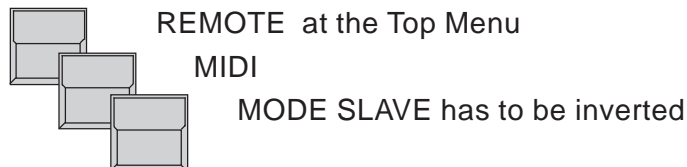
More slaves can be added using the MIDI THRU port of the previous slave

The DMX output of all coupled units can be used as separate DMX lines. The control signals of more than one Scancommander or Extension can be send on one DMX line via the DMX input and by patching all scans to different DMX address numbers, .

2.2 Starting the couple mode

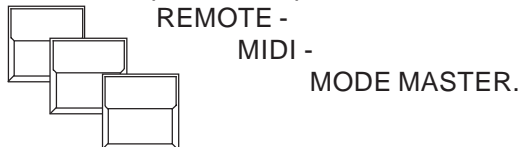
The first step is to prepare the slave units

SC-Extension



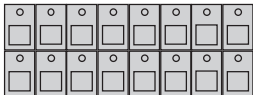
The last step is to set up the master Scancommander via

Scancommander



The following RESET will send all necessary data from the master to all slave units. If any slave comes later than the master, it will wait for a master reset (lowest display button left side or switching off and on the master power supply).

2.3 Working on master-slave mode



All functions including trackerball movements, group selection and brightness master are send from the master to the slave units.

Just the single scan selection button have to be operated at the according units. To make sure that during DMX PATCH and MOVEMENT SETUP only one scan is handled at a time, all other scans have to be deselected manually.

Instead of a SC-Extension, a second Scancommander can be used as slave.

2.4 Storage and Backup of Slave Programs

When running an Extension as a slave, the data for all scans, controlled by the Extension, are stored in the Extensions internal memory. This includes the setup data as well as all Preset, Memory, Chase or Sequence data. No data are send back to the Master!

The SC-Extension features a cue card slot at the front panel. For any backup on cue card the data of the Extension have to be stored to a cue card as well as the data of the Master Scancommander. This can be done to the same card, but take care to use another name for the Extension data!

(See chapter 7 for more information)

3. REMOTE OPERATION

Any time, the programs of a Scancommander are ready and are supposed to be recalled in remote operation only, this Scancommander can be exchanged by a SC-Extension unit.

Remote operation are typical for SMPTE Time Code or MIDI synchronized shows like on exhibition stands or Multi-Media-Shows.

Even when controlling scans in a Lightshow with remote control of the Scancommander via DMX 512 from the main lighting desk, it is possible to exchange the Scancommander by an Extension, but it is not recommended. Using the Extension it is strictly remote, there is no way to alter the effects. Manual control can only be done by the Trackerball, working on the selected Scans.

3.1 Preparing Remote Programs

3.1.1 Assigning board functions

All programs like memories, chases and sequences have to be set up at a Scancommander and can be transferred to the Extension via the cue card. Alternatively the programs can be setup at the Extension as long as it is connected to a Scancommander as a slave (see Chapter 2).

3.1.2 Assigning board functions

As the SC-Extension has no buttons to recall any playback effect, the assignment of the effects to the inputs has also to be done at the Scancommander before the program is loaded down to the Extension.

All necessary steps to start the remote operation and even changes of the setup can be done at the Extension unit directly.

3.1.3 Brightness Control

As the Extension unit has no brightness master faders, the SETUP function "MASTERS ALL 100%" has to be switched on as long as the masters are not remote controlled via DMX.

3.2 Preparing Remote Input

3.2.1 Touchboard Input

Touchboard input

Located on the SCANCOMMANDERS backpanel is a 25 pin SUB-D connector (female) which can be used to interface a standard 16 channel touchboard.

Pin 1-16 : Input channel 1 to 16

Pin 25: Ground.

The touchboard can only be used to control on and off functions.

0 to +2 Volt : Off +5 to +15 Volt : On.

3.2.2 DMX 512 Input

Daisy chaining a DMX signal

The male DMX 512 input XLR connector on the backpanel can be used to mix the signals of any lighting console with the control data of the MA SCANCOMMANDER or Extension and send them to the stage on one DMX line. For any channel which is controlled from both consoles simultaneously, the two values get compared and the highest level will be sent to stage.

Remote via DMX

In addition, up to 24 DMX 512 input channels can be used to remote control single functions on the SC-Extension or SCANCOMMANDER.

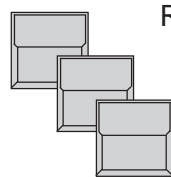
The pin layout for the DMX 512 input connector conforms with USITT protocol. Pin 1 = Ground, Pin 2= Data - , Pin 3 = Data +

3.2.3 MIDI

MIDI Sequencer

The SCANCOMMANDER enables to record playback commands like recalling memories, chasers, sequences and GO button pushes on to a MIDI sequencer. During playback of the sequencer, the SCANCOMMANDER will receive these commands as soon as the MIDI input is activated. During Playback the Scancommander can be exchanged by a SC-Extension.

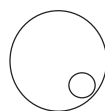
Selecting a MIDI channel



REMOTE at the Top Menu

MIDI

MIDI IN will be displayed inverted.



Encoder

Selection of one of the MIDI channels 1-16.

Applied MIDI format

When recording a show of the Scancommander, the console will send the according MIDI signals automatically. For generating MIDI commands directly please see the following MIDI command listing:

MIDI FORMAT: Control Change Data

Start byte: 1011nnnn (Control Change and MIDI channel)

1.Data byte:0000nnn (0= Memory A1 to B30, 1= C1 to D30
2= Sequence 1-16, 3= GO+/GO-)

2.Data byte:0nnnnnnn (Number of the memory etc.)

3.2.4 SMPTE Time Code Network Technics

Time Code synchronization

Time Code synchronization can be used to recall the programs of one or more controllers simultaneously to a recorded music.

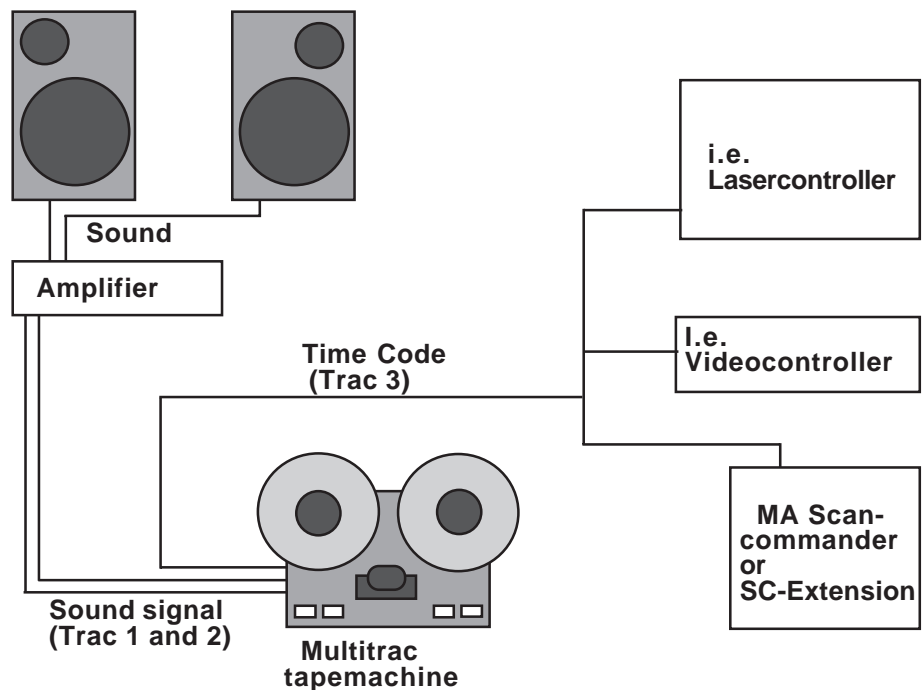
Time Code generation

SMPTE and EBU Time Code are digitally coded time informations, which for example can be recorded to a separate track of a tape machine. The frequency domain covers 1 to 2 kHz. Usually this Time Code will be recorded when preparing the music for a presentation, but it can also be added afterwards by any sound studio. When using stereo sound it is necessary to have at least a third track on the machine, for preparing a Time Code show .

Time Code Input

Complete shows can be synchronized via Time Code. The Scancommander works with 24 to 30 frames per second. Selecting the right frame number will be done automatically as soon as a Time Code signal is supplied or can be selected manually.

The Time Code input at the Scancommander is on the 1/4" jack at the backpanel. The electrical connection is the ring + common (galvanic insulated). The input impedance is about 3 kOhm, the minimal level about 200mV.



Synchronized playback

During playback of the tape the Time Code signals are sent to all connected controllers. Each device has stored in memory, which program has to be recalled at which time.

3.3 Start of Remote Operation

The SC-Extension like the Scancommander features several remote input facilities. The different incoming signals can recall the playback functions.



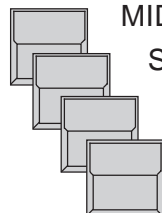
REMOTE button in the Top Menu

The display switches to the REMOTE Top Menu.

REMOTE Top Menu

MIDI	TOUCHBOA. MENU	DMX MENU	SMPTE MENU
MIDI IN ON/OFF		NO EVENT	
SMPTE ON/OFF		NO EVENT	
TOUCHBOA. ON/OFF		NO EVENT	X X X X X X X X X X X X X X X
DMX ON/OFF		NO EVENT	
X X			

Switching remote inputs on and off



MIDI IN ON/OFF

SMPTE ON/OFF

TOUCHBOARD ON/OFF

DMX ON/OFF


An inverted block indicates, that the appropriate input is activated. MIDI and SMPTE inputs can not be active at the same time.


Indicating incoming remote signals

NO EVENT
X X X X X X X X X X X X X X X

With MIDI the last incoming signals will be listed in the display. With DMX and Touchboard inputs, small icons show the actual status of the input channels.

X Input Channel is not connected to any function.

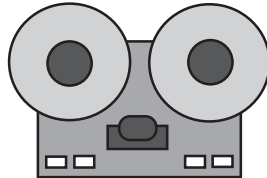
 Input channel controls fader. Inverted icon shows the value of the incoming signal.

 Input channel controls button. Icon inverted indicates button active.

Across the top of the REMOTE Menu are four buttons which activate the remote initialization menus.

3.3.1 Time Code Playback

Playback start via taperecorder



Tape machine

When starting a new playback of the tape, the Time Code will be sent to the controllers again. As long as the Time Code input is active, the Scan-commander will recall the events as they are stored inside.

The Remote Top menu shows the incoming time and the last event.



SMPTE MENU

The SMPTE menu shows the incoming time and the actual section of the event list.

MODIFY		FRAMES	30	OFF	RECORD
009	00 : 00 : 10 : 05			MEM. A/02	DELETE
010	00 : 00 : 10 : 15			MEM. A/03	EVENT
011	00 : 00 : 11 : 02			SEQU. 01	INSERT
012	00 : 00 : 11 : 03			GO +	OVERWRITE
013	00 : 00 : 12 : 15			MEM. B/02	RECORD:
014	00 : 00 : 13 : 15			MEM. A/05	NEW
015	00 : 00 : 15 : 02			GO +	
016	00 : 00 : 18 : 03			GO -	
017	00 : 00 : 18 : 15			MEM. A/01	FINE
▲ (053)		00:00:12:15			

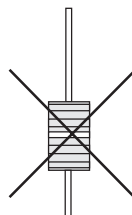
Unreadable or missing Time Code signal



in the SMPTE menu

The input is waiting for a Time Code signal.

No Brightness faders



Master Fader

As the brightness masters are not recorded on Time Code, during playback the SETUP function "MASTERS ALL 100%" has to be switched on.

Periodical playback

Playback of Time Code synchronized shows recommend no further operation at the Scancommander. Every time the tape starts to send the Time Code, the Scancommander will recall the programmed events. Even after switching off and on the power supply, the Scancommander will stay in the Time Code playback mode.

Starting playback in the middle of a show

A Time Code show can be started at any point of the tape. Using selective memories or sequences this may cause changes in the effect on stage. (GO commands do not recall well defined stage pictures, but do just trigger the last selected sequence to go to the next step).

4. STAND-ALONE Operation

Programming

As long as the SC-Extension is working as a Slave of a Scancommander , any activity of the operator at the Scancommanders front panel will be automatically transferred to the SC-Extension.

Swap to STAND-ALONE

Switching of the Slave Mode and disconnecting the Master will not stop the running programs like on stage memories, chases or sequences. The Scancommander can be removed and the SC-Extension will go on with the playback of the programs. The EXTEN-GO input may be used to trigger the sequence steps. For more control facilities see chapter 3 - REMOTE Operation.

Extern GO

Any time, the main power supply is cut of and switched on again, it will go on with this program.

Automatic start

4.1 Sequence playback menu

Sequence playback menu

The SEQU. button at the top menu swaps the display to list informations about the running sequence program.



SEQU. button

recalls the menu with number and name of the running program at the top line. The total number of steps is shown in brackets.

SEQ. 1		NAME				NEXT
STEP		TIME	FADE	TRIG	NAME / MATRIX	
02	2.0	5.075 Sec	0.0	00%		
03	2.1	0.075 Sec	15	00%	A/10 COLOR CHASER 1	
04	3.0	12.00 Sec	1.5	50%		
05	3.1	0.00 Sec	0.0	00%		
GO						

Line one lists the step which was recalled last. Line 2 to 4 show the next steps. Each line shows step number, indicator of go mode, steptime, fadetime and triggerpoint.



Right hand a small graphic shows the matrix of the steps (see 4.3), indicating which channels get affected by this step.

If the step is a LINK MEMORY step, the number and name of the memory is listed instead of the graphic.

Left side on the bottom line the go mode is shown on black background. If the next step is a timed automatic, the remaining time is listed on the display.

5. SETUP

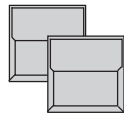
All SETUP operations work the same way as on the MA Scancommander. Please see the Scancommanders manual for more information.

Usually it makes no sense to change the setup, because all programs are based on this setup and there is no way to change programs at the SC-Extension.

But at least DMX addresses and even the stage setup for movement control can be used to adapt the programs to a new stage.

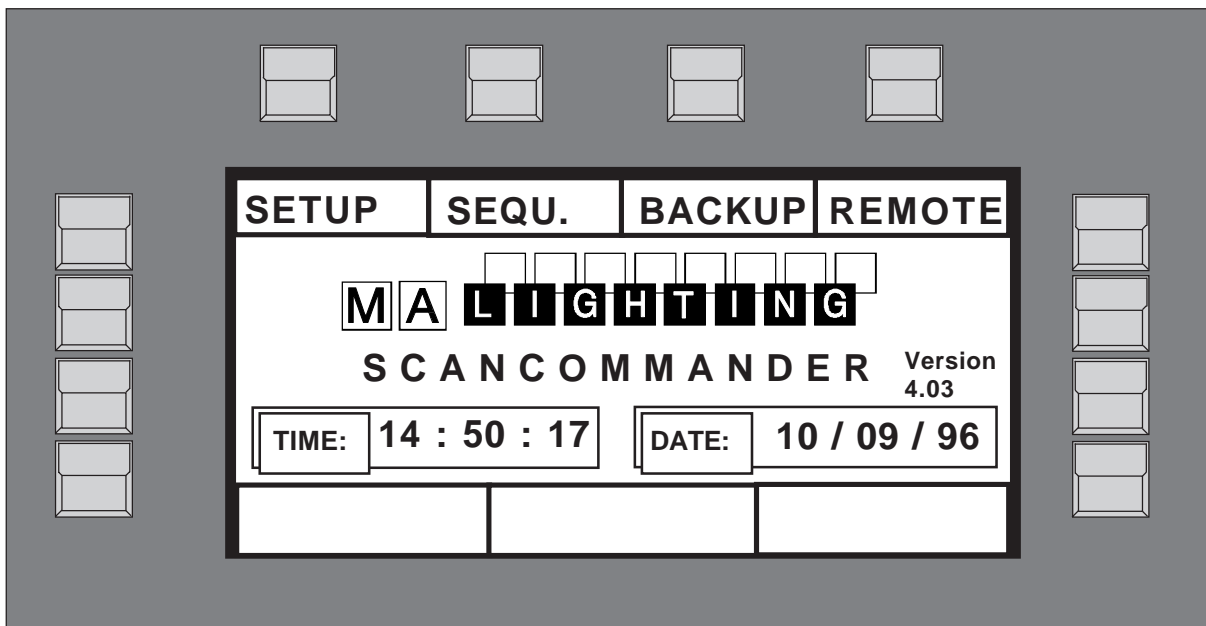
5.1 Top menu

Top Menu



QUIT button (2x)

Starting point for all operations is the TOP MENU. To go back to the TOP MENU during any operation press Quit button 2 x.



Display buttons

The squares in the display show the current function of your 12 buttons around the display. The encoder is dedicated to the lower squares of the display.

Quit button

By pressing the Quit button 2 x you can return to the TOP MENU. The current operation will be cancelled and the board returns to the normal operation mode.

5.2 Lamp type

The MA SCANCOMMANDER or SC-Extension is able to control various lamp types. All necessary adjustments are made by simply choosing a lamp type from the list.

Selecting the Lamp Type Menu



SETUP

The button on top of the display label "SETUP" switches the board to the setup menu.

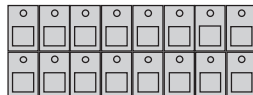


LAMPTYPE

The display shows in 10 sections names of manufactures. MORE 1(3) turn the page for more manufactures. First digit shows current page, second digit shows number of available pages. The list in the centre shows the 16 selected lamp types.

CAMELEON FRANCE	CLAY PAKY ITALY	COEMAR ITALY	FAL ITALY
B + K GERMANY	LAMPTYPE SETUP		FLY ITALY
AMPTOWN GERMANY	1 GOLD 2	9 GOLD 2	JB GERMANY
USER SCAN	2 GOLD 2	10 GOLD 2	LAMPO ITALY
MORE 1(3)	3 GOLD 2	11 TIGER	READY
	4 GOLD 2	12 TIGER	
	5 GOLD 2	13 INTEL7	
	6 GOLD 2	14 INTEL7	
	7 GOLD 2	15 INTEL7	
	8 GOLD 2	16 INTEL7	
SELECT TYPE	GOLDEN SCAN 2		3 (12)

Selecting number of Scans



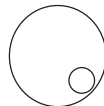
In the "Scan Selection" block the buttons have to be switched on according the number of scans to be registered.

Selecting manufacturer and lamp type



Manufacturer Name

When pushing the desired button, the square of that manufacturer will be shown inverted.



Encoder:

In the lower section of the display you find the first types of fixtures of the selected manufacturer. Turning Encoder 1 will scroll through the list of available lamps.

Registration of selected lamp type



READY

After selecting the desired lamp type, press READY

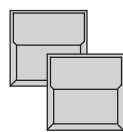


INIT:SCANS+VALUES+NAMES

All necessary data for this scan type is now downloaded. The three other kinds of initialization are for registration of different scan types for simultaneous operation.

5.3 DMX output addresses

All control signals from the SC-Extension are on DMX 512 and are sent on a two conductor cable to stage. Therefore the single scans need to have a DMX start address to know, to which data they must respond.. Usually this address can be selected by a DIL switch directly on the lamp or at their DMX interface. On the SC-Extension these addresses have to be set for the individual scans.



SETUP
DMX

The DMX Output Patch Menu shows three lists of 16 DMX addresses each. The first list concerns the scans, list 2 and 3 are for additional dimmers and color changers (>>Extra1,Extra2).

PATCH CLEAR SCANS EXTRA 1 EXTRA 2 131	1	1 (6)	1	-- (3)	1	-- (3)
	2	7 (6)	2	-- (3)	2	-- (3)
	3	13 (6)	3	-- (3)	3	-- (3)
	4	19 (6)	4	-- (3)	4	-- (3)
	5	25 (6)	5	-- (3)	5	-- (3)
	6	31 (6)	6	-- (3)	6	-- (3)
	7	37 (6)	7	-- (3)	7	-- (3)
	8	43 (6)	8	-- (3)	8	-- (3)
	9	49 (6)	9	-- (3)	9	-- (3)
	10	55 (6)	10	-- (3)	10	-- (3)
	11	61 (6)	11	-- (3)	11	-- (3)
	12	67 (6)	12	-- (3)	12	-- (3)
	13	73 (6)	13	-- (3)	13	-- (3)
	14	79 (6)	14	-- (3)	14	-- (3)
	15	85 (6)	15	-- (3)	15	-- (3)
	16	91 (6)	16	-- (3)	16	-- (3)



SCANS

The square SCANS has to be inverted.

Adjusting DMX start addresses



SCAN Selection buttons

DMX start addresses have to be set one by one for all scans. The scans have to be selected by their respective button in the SCAN SELECTION block.



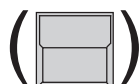
Encoder:

Selects the startaddress. An address is only possible to select, if the number of channels, needed for this scan, is freely available (Number in brackets shows the number of channels, necessary for the registered lamptype)



PATCH

Registers the selected address for the activated Scan. To go on the next scan has to be selected.

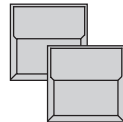


Clear

Clears the registered address and enables the selection of a new start address.

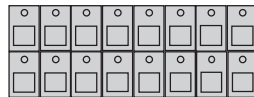
5.4 Movement direction on DMX mode

At the SC-Extension the movement of the beams can be controlled via an external tracker ball or computer mouse. To reach an ergonomic handling of the trackerball it is possible to do a course adjustment of the movement.



SETUP
DMX MOVEMENT

	CENTRE		
	PAN: 128 , TILT : 266		
CHANGE PAN<>TILT	4		
INVERT PAN			
INVERT TILT			
PAN		T I	



SCAN Selection
Selection of one single scan.



CHANGE PAN<>TILT
Exchanges the DMX signal of the pan and the tilt channel.

INVERT PAN or INVERT TILT
Changes the direction of the pan or tilt channel.

Using the DMX mode, the values, adjusted on the display, are send directly as DMX values to the lamps.

Beside this mode the Scancommander and SC-Extension offer a stage adapted way of controlling pan and tilt. The difference between this two modes are listed in the following chapter.

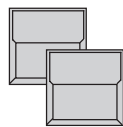
5.5 Initializing of stage

Basic features of movement control

Optionally movement and positions of the light beam are handled as X/Y coordinates on stage. The value 0/0 corresponds to the middle of the stage. Changing the X value relates to movement right or left, changing Y moves between front and backside of the stage. This way of calculation makes it necessary to do an initialization before starting the programming of scenes, but gives you a list of advantages

- Programs can be easily transferred to a new stage setup.
- On followspot mode via trackball all beams stay together.
- Moving the trackball or mouse in one direction will move the beam of all lamps the same direction.

To be able to use these advantages, the stage has to be "shown" to the single scans. This initialization is done by pointing with the beam to the 4 corners of the stage. (The most exact way to do this initialization is by using nearly closed iris or small dot gobo >> see chapter 3 Direct access.)



SETUP

STAGE MOVEMENT

The Display shows the MOVEMENT SETUP Menu.

RESET	Centre		STORE
	PAN: -254 , TILT : 312		SET <input type="checkbox"/>
CHANGE PAN<>TILT	4		SET <input type="checkbox"/>
INVERT PAN			SET <input type="checkbox"/>
INVERT TILT			SET <input type="checkbox"/>
PAN		T I	



SCAN SELECTION block

Selection of one scan.



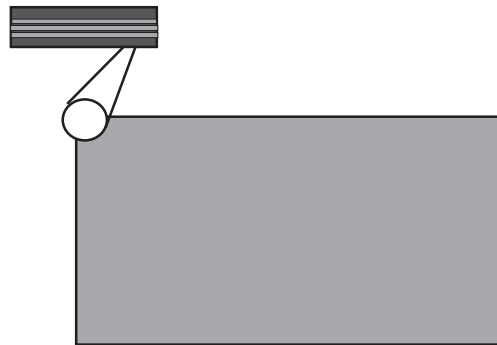
RESET

Clears all former initializations and gives the scan a standard movement. This is helpful if the movement of the scan in some way is restricted by a former initialization.

Note:
RESET data can be used for controlling the movement, but cannot be adapted to new stage setups

Changing movement directions after RESET

After RESET (square inverted) the buttons CHANGE PAN<>TILT, INVERT PAN and INVERT TILT offer the chance of a course adaptation of the trackball movement to the beam movement.

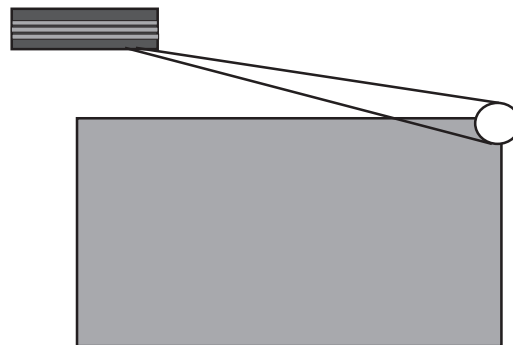


Heading the first corner on the left backside of stage with the beam (To be sure to get the same corner points for all the scans, the corners should be marked on stage with white tape crosses.)

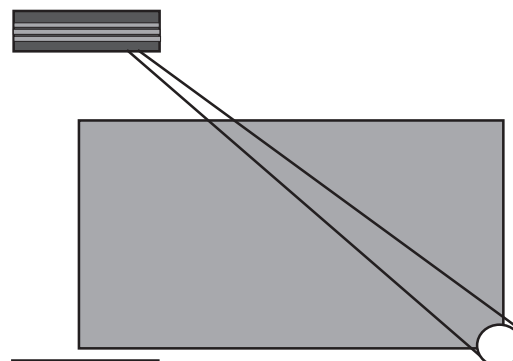
As soon as the beam meets the corner point,



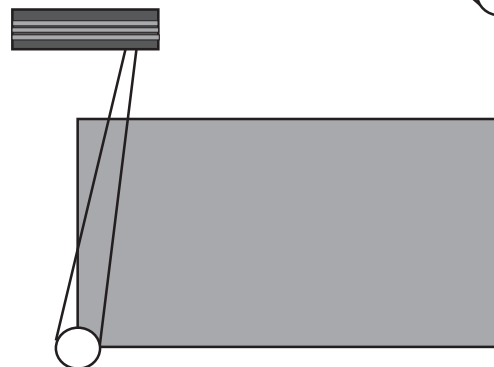
stores the position in a temporary data register. The mark "✓" shows, that this corner was already adjusted.



Heading the second corner



Heading the third corner



Heading the fourth corner



! Attention !



! STORE !

button in the DISPLAY

Initializes the new movement. Changing to the next scan without STORE will clear the register of the corner positions.

6. Backup on to memory card

Backup on cue card

Beside the internal storage, programs can be stored externally on to cue card. Storing on a cue card can be done in sections, for example only SETUP data or only memory and chaser programs.

The SCANCOMMANDER and SC-Extensions accept cue cards of the type ITT Star Card S-RAM from 32 to 256 KByte, but as accessories it is recommended to use a 256 KByte card.

The card fits into the slot on the upper left side of the frontpanel, the arrow on the card has to point to the left side.



BACKUP on the Top Menu

The SCANCOMMANDER changes to the backup menu and tests the card.

WRITE : ENABLED - PROTECTED

A small switch on the card can be used to protect the programs stored in the card.

FILES : and FREE : (.....)

Number of files already saved on the card and freely available storage capacity.

ALL (86254)	PRESET (16210)	MEMORY (34556)	SEQUENCE (512)
	TEST 1 10.10.58	256 K 01 / 19 / 93	SMPTE (512)
FORMAT	WRITE : ENABLED		SETUP (5120)
DELETE	FILES: 2	FREE: (124233)	
SAVE			

BOOT SECTOR ERROR

New cards have to be formatted after adjusting the battery. If this warning comes on a cue card,

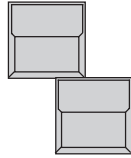
which is not new but should contain your old memories, the batterie is empty and all programs are lost.

!! ATTENTION !!

The date of inserting a new battery should be noted on the cue card in order to replaced it after 1 year. When exchanging the battery the card will keep its memory for at least 30 second.

Please remove the card from the desk as long as the card is not in use!

*Formatting the cue card
(only for new cards -
clears all data on card)*



FORMAT

A name can be set for the card via the keyboard.

OK.

Formats the card, clears all data on the card and prepares a file administration.

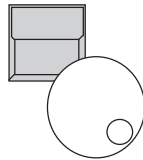
*Selecting a section for
backup operation*



**ALL / PRESET / MEMORY / SEQUENCE /
SMPTE / SETUP**

Selects the section to be stored or loaded. The according block is displayed inverted.

Save data to card



**SAVE
ENCODER**

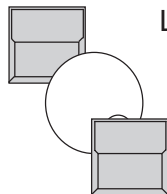
Scrolls through the list of files on card, available for the selected data type. ("....." offers to create a new file, to be named via keyboard.)



OK.

Saves the selected data section into the card with name, time and date of storing.

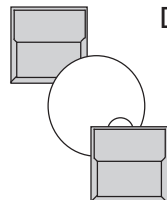
Load data from card



LOAD - Encoder - OK

Loads all data of the selected file into the boards internal storage register and therefore overwrites the data, already stored in the desk.

Deleting a file on card



DELETE

Encoder

Selection of one of the files on card

OK.

Deletes the file on card.

7. Inputs and outputs

Mains (Power Supply)

The Scancommander can be connected to an AC Powersource between 90 and 240 Volt AC (40-60Hz). The powerswitch is located on the front panel.

DMX 512 output

The DMX output conforms to USITT DMX 1990. Every unit using this protocol can be successfully interfaced with the Scancommander or SC-Extension.

The DMX Output is optically isolated and exceeds the RS485 Norm.

Pinout: pin 1 = Shield pin 2 = Data -
 pin 3 = Data + pin 4 + 5 = not connected

DMX 512 input

The DMX Input allows operation of two different functions:

- a. All incoming DMX-Data will be merged with the Data produced by the Scancommander. The highest value takes precedence at the DMX output.
- b. To remote various functions of the Scancommander via DMX, e.g. coupling a lightning desk and a Scancommander. For configuration see "Remote".

SMPTE Time Code

The Time Code Input is a 1/4" jack at the back panel.

The electrical connection is the ring + common (galvanic insulated). The input impedance is ca. 3 kOhm, the minimal level ca.200mV.

Remote GO input

The Remote Go input is a 6.3 mm Phone Jack connector.

- a) For electrical contact-switch use the ring and tip.
- b) For 5 Volt Impulse use the tip and common.

Danger! Maximum 5 Volt at this input; a higher voltage may damage the Scancommander.

Touch board input

The connection is a 25 pin Sub-D. This input is used to control 16 different functions (similar to the DMX-Input). For the configuration see "Remote".

Pinout: pin 1 = function 1
 pin 2 = function 2 etc....
 pin 25= common

The threshold level is between 4V and 10V. Input impedance is 100 kOhm.

Trackball or mouse

Necessary to work comfortably in the Follow Mode and to set the Pan/Tilt position. The trackerball connector is compatible with the ATARI norm. PC compatible trackerballs will not work with the Scancommander.

Keyboard

Only necessary to enter the names of the backup. The connector is a 5pin Din. Every PC compatible AT/MF-keyboard can be used.

ATTENTION!!

All DMX512 and analogue inputs and outputs must be shielded and the shielding must be connected to the ground and the case of the corresponding plug.

8. Safety Instructions

1. Read all the instructions in the user's manual.
2. Keep the user's manual for later use.
3. Follow all the instructions on the unit.
4. Pull the plug before cleaning the unit; don't use any liquid or spray cleaner. Clean with a damp cloth.
5. Don't use the unit near water.
6. Don't put the unit on unstable tables etc.. It might fall down and get damaged.
7. There are slots in the case for aeration; don't cover these slots up because they guarantee the reliable use of the unit and protect it against overheating. Don't install the unit into a frame unless sufficient aeration is guaranteed.
8. The unit is provided with a safety plug. This plug can only be used with safety sockets. These safety measures should by all means be followed. In case the plug doesn't fit into the socket (e.g. with old sockets), the socket should be replaced by an electrician.
9. Don't put any objects on the wire and make sure nobody steps on it.
10. In case you use an extension wire make sure the sum of the power consumption of the connected units does not exceed the maximum power of the wire. The sum of the units plugged in the socket should not exceed 10 Ampere.
11. Don't spill any liquid over the unit. Don't put any objects through the slots of the unit, as these might get in contact with parts that are live or might cause short circuits. This may cause fires and shocks.
12. Don't service the unit yourself as parts that are live might be exposed when you open the case; you run the risk of getting shocked. All services should only be carried out by a specialist.
13. If one of the following conditions occurs, please pull the plug out and call the service:
 - A. Wire or plug is damaged or worn.
 - B. Liquid got into the unit.
 - C. The unit was exposed to rain or got damp.
 - D. The unit doesn't work properly even if you follow the instructions of the user's manual.
 - E. The unit fell down and the case was damaged.
14. Only use wires which are marked safety proof.
15. Don't use any high-power walkie-talkies near the unit.

9. DECLARATION OF CONFORMITY

according to guide lines 89/336 EWG and 92/31 EWG:

Name of producer: MA Lighting Technology GmbH
Address of producer: Höhenweg 6
D-97249 Eisingen

declares that the product


Name of product: MA Scancommander & MA Scancommander Extension
Type: MA SC1 & MA SCX I

answers the following product specifications:

Safety: EN60065, EN60950
EMV (EMC): prEN55103-1 (E1), EN50081-1
prEN55103-2 (E2), EN50082-1

Additional informations: All DMX512 and analogue inputs and outputs must be shielded and the shielding must be connected to the ground resp. to the case of the corresponding plug.

Eisingen, 7.11.1995



Dipl. Ing. Michael Adenau

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