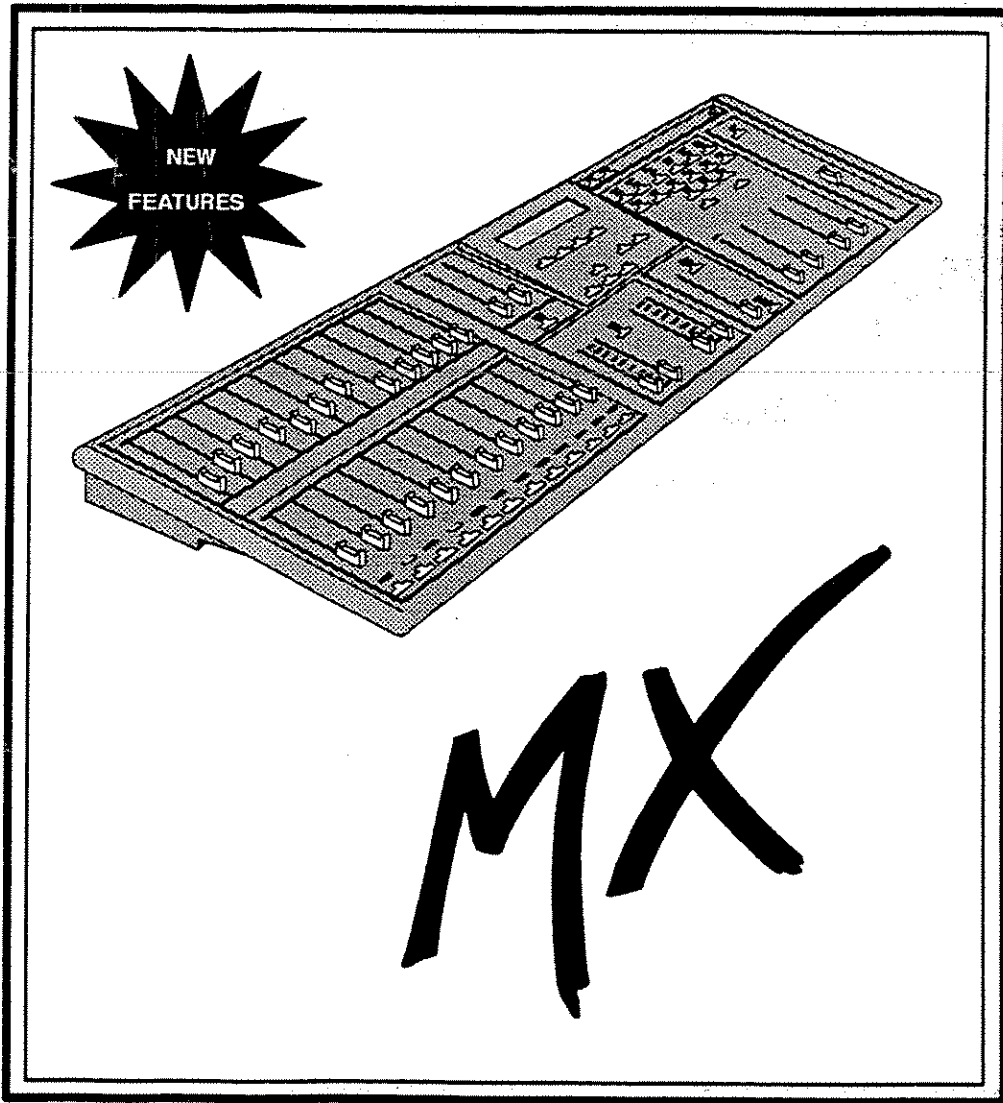


OPERATOR HANDBOOK – Supplement

(BI Version Onwards)



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Strand Lighting

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Whilst every effort has been made to ensure the completeness and accuracy of the information in this handbook, no liability can be accepted for any errors or omissions.

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TERMINAL DISPLAY

Introduction

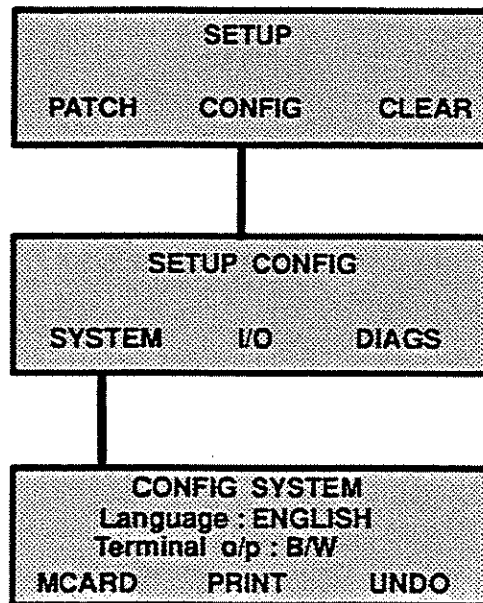
The facility now exists to view the output levels and status modes of MX 'at a glance' either directly via an ANSI terminal available from Strand Lighting, or alternatively a Terminal Emulator program is available for any PC compatible, running any level of DOS, with the option to view in colour.

Part Number for the terminal and interface lead
04 900 01.

Part Number for the lead only
04 900 02.

The emulator version is a 'display only' feature and involves no input from the PC keyboard other than booting up and exiting.

The CONFIG SYSTEM menu on the MX now shows an extra parameter, *Terminal o/p : B/W*, which is the default mode. This can be altered to *COL* or *OFF*.

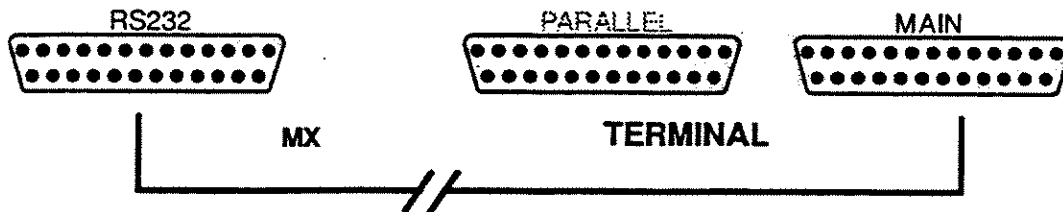


A B/W output will run slightly faster than a colour one.

OFF will stop all terminal output processing and will therefore speed up the user interface.

Connecting MX To The Strand Terminal Monitor

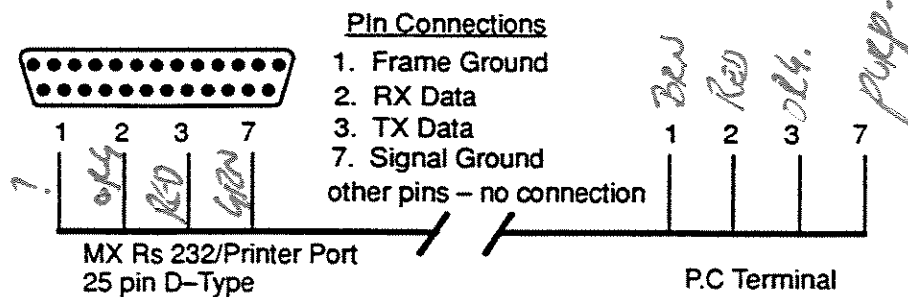
The output data from MX to the terminal is taken from the RS232 port (25 way D type connector). Connect the interface lead into the MAIN (not PARALLEL) port of your terminal and the RS232 port of the MX.



If any other terminal is to be used, connection should be made to the units' COMMS socket.

Connecting MX To a PC

A suitable interface lead needs to be sourced for connecting MX to a P.C. Wiring for this is shown below and please note that it is PIN to PIN, which is not standard for some commercially available RS232 leads.



Running MX TERM on a PC

The Emulation software is supplied on 3.5 inch floppy disc. Once connected, load the disc into the PC drive and Type:-

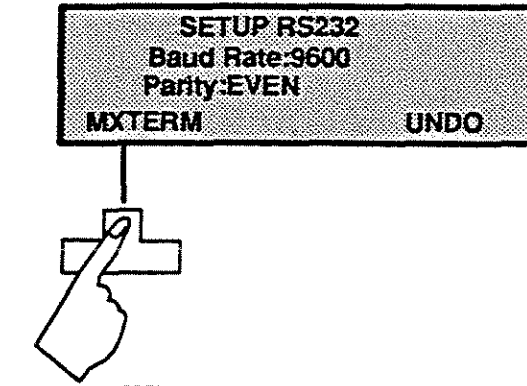
A:> Mxterm 1

If you have connected up to Port 2 then type in Mxterm 2

Setting Up Mx for Terminal Monitor & PC

MXTERM is setup up to run at: 9600 baud, EVEN parity, 1 stop & 7 data

In the RS232 menu this can be matched by simply pressing the MXTERM function key.



Once the connections have been made and the units switched on the display will now appear as shown on the default screen below.

Strand Lighting : MX 24 Version B1 GRAND MASTER 100%

CHANNEL OUTPUT

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

	C	D	Fx:	1	2	3	4	5	6
Scene	1.BL	1.BL	Step						
Fade in time			FX FADE						
Fade out time			STEP TIME						
Scene Pg : 1			Time Xfade : A/B ONLY						MIDI Mode : NORMAL
Fx Pg : 1			Audio/MIDI : AUDIO						MIDI Channel : 1
Live Dimmer Patch : 1			S to L fader : OFF						D54 Scaling : 100%
Dim Protocol : D54			Record Lock : OFF						AMX192 Scaling : 100%
MODE : CHANNEL									
Alt-F4 to exit			Mxterm A1			Strand Lighting Ltd. (c) 1992			

If the screen display does not appear correctly within a few seconds, reselect the *Terminal op* mode in the CONFIG SYSTEM LCD menu. Alternatively switching off MX and then switching back on again will rectify the problem.

Display Options

The following parameters are also displayed along the MODE line if selected on the desk:—

CHANNEL SCENE HOLD RECORD BLACKOUT FLASH OFF NUMLOCK
(BLACKOUT and RECORD will appear in inverse video when selected).

If some errors have occurred CHECK LOG will appear.

If effects are running, these are also displayed showing the CURRENT STEP, FADE TIMES and STEP TIMES.

Menu Displays

When you enter the SCENE menu, the output changes to display the contents of the currently displayed scene, together with the recorded fade times. This display is also active when in the scene time menu. Changing the scene number in the consoles LCD will automatically display the new scene contents on the terminal.

In both the SCENE and HELD screens, the currently editable level is displayed by a cursor in inverse video.

DESK LCD

Strand Lighting : MX 24 Version B1 GRAND MASTER 100%

Fade in time 00:10 **Scene: 1.01** Fade out time 00:10

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

FL 75 60 75 45 FL FL FL

	C	D	Fx:	1	2	3	4	5	6
Scene	1.BL	1.BL	Step						
Fade in time			FX FADE						
Fade out time			STEP TIME						
Scene Pg : 1			Time Xfade : A/B ONLY						
Fx Pg : 1			Audio/MIDI : AUDIO						
Live Dimmer Patch : 1			S to L fader : OFF						
Dim Protocol : D54			Record Lock : OFF						
			D54 Scaling : 100%						
			AMX192 Scaling : 100%						
MODE : CHANNEL									
Alt-F4 to exit			Mxterm A1						

Strand Lighting Ltd. (c) 1992

Entering the HELD LEVELS menu will update the terminal to show the contents of the hold memory.

DESK LCD

Strand Lighting : MX 24 Version B1 GRAND MASTER 100%

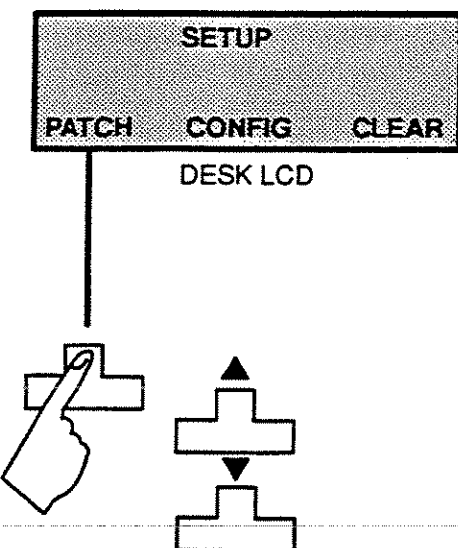
HELD LEVELS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

	C	D	Fx:	1	2	3	4	5	6
Scene	1.BL	1.BL	Step						
Fade in time			FX FADE						
Fade out time			STEP TIME						
Scene Pg : 1			Time Xfade : A/B ONLY						
Fx Pg : 1			Audio/MIDI : AUDIO						
Live Dimmer Patch : 1			S to L fader : OFF						
Dim Protocol : D54			Record Lock : OFF						
			D54 Scaling : 100%						
			AMX192 Scaling : 100%						
MODE : CHANNEL									
Alt-F4 to exit			Mxterm A1						

Strand Lighting Ltd. (c) 1992

Entering the LIVE DIMMER PATCH will firstly display the current live patch. This can be scrolled using the up and down arrow keys, they effect both cursor movement in the LCD and scrolling of the patch display.



Strand Lighting : MX 24 Version B1 GRAND MASTER 100%

Live Dimmer Patch : 1

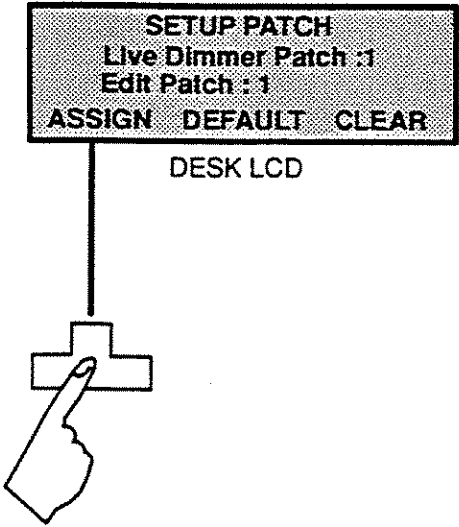
Dimmer	1	2	3	4	5	6	7	8	9	10	11	12
Chan	1	2	3	4	5	6	7	8	9	10	11	12
Level	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Dimmer	13	14	15	16	17	18	19	20	21	22	23	24
Chan	13	14	15	16	17	18	19	20	21	22	23	24
Level	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Live Dimmer Patch : 1 S to L fader : OFF D54 Scaling : 100%
 Dim Protocol : D54 Record Lock : OFF AMX192 Scaling : 100%

MODE : CHANNEL
 Alt-F4 to exit Mxterm A1 Strand Lighting Ltd. (c) 1992

When in the EDIT PATCH patch edit menu, the currently edited patch will be displayed. Unlike the live patch display this is context sensitive and will display the dimmer shown in the left most block of the LCD at the start of line 2 in the terminal display.



Strand Lighting : MX 24 Version B1 GRAND MASTER 100%

Edit Patch : 1

Dimmer	1	2	3	4	5	6	7	8	9	10	11	12
Chan	1	1	1	1	1	2	2	2	3	3	3	3
Level	100%	100%	100%	100%	100%	0%	0%	0%	50%	50%	50%	50%

Dimmer	13	14	15	16	17	18	19	20	21	22	23	24
Chan	4	4	4	5	5	5	5	5	6	6	6	6
Level	100%	100%	100%	70%	70%	70%	70%	70%	100%	100%	100%	100%

Live Dimmer Patch : 1 S to L fader : OFF D54 Scaling : 100%
 Dim Protocol : D54 Record Lock : OFF AMX192 Scaling : 100%

MODE : SCENE HOLD FLASH OFF CHECK LOG
 Alt-F4 to exit Mxterm A1 Strand Lighting Ltd. (c) 1992

Exiting from the patch menus will return the terminal to the OUTPUT display.

Printing

In order to use the printer, the terminal must be disconnected and the printer plugged in.

When entering the print menu, the terminal output is always halted, allowing a print to be made. Terminal output will resume only when not in the print menu, any printing has completed and any key is pressed on the console.

MIDI APPLICATIONS

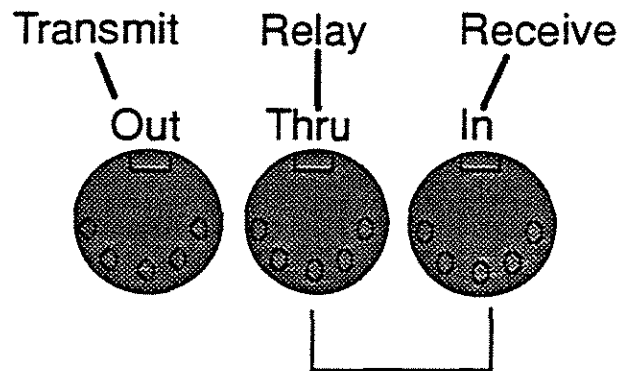
Introduction

The main purpose of incorporating MIDI into Strands lighting desks is to create an interface between light and sound. MIDI is now an industry standard, in much the same way that SMPTE is for the film industry, and all faders and switches on MX are allocated unique MIDI codes for use with this interface.

MIDI transmits and receives over 16 channels. These are dedicated MIDI channels and have nothing in common with any light channels. All MIDI devices generally default to Channel 1 including MX.

Each MIDI-equipped instrument usually contains a receiver, a transmitter, and an optional socket providing a through (THRU) facility for relaying information to other Midi devices. MX contains these three ports.

The THRU socket is a duplicate of the signals on the IN socket therefore allowing information from a master unit to be relayed to another MIDI unit. A line is normally drawn signifying this as shown in the figure below.



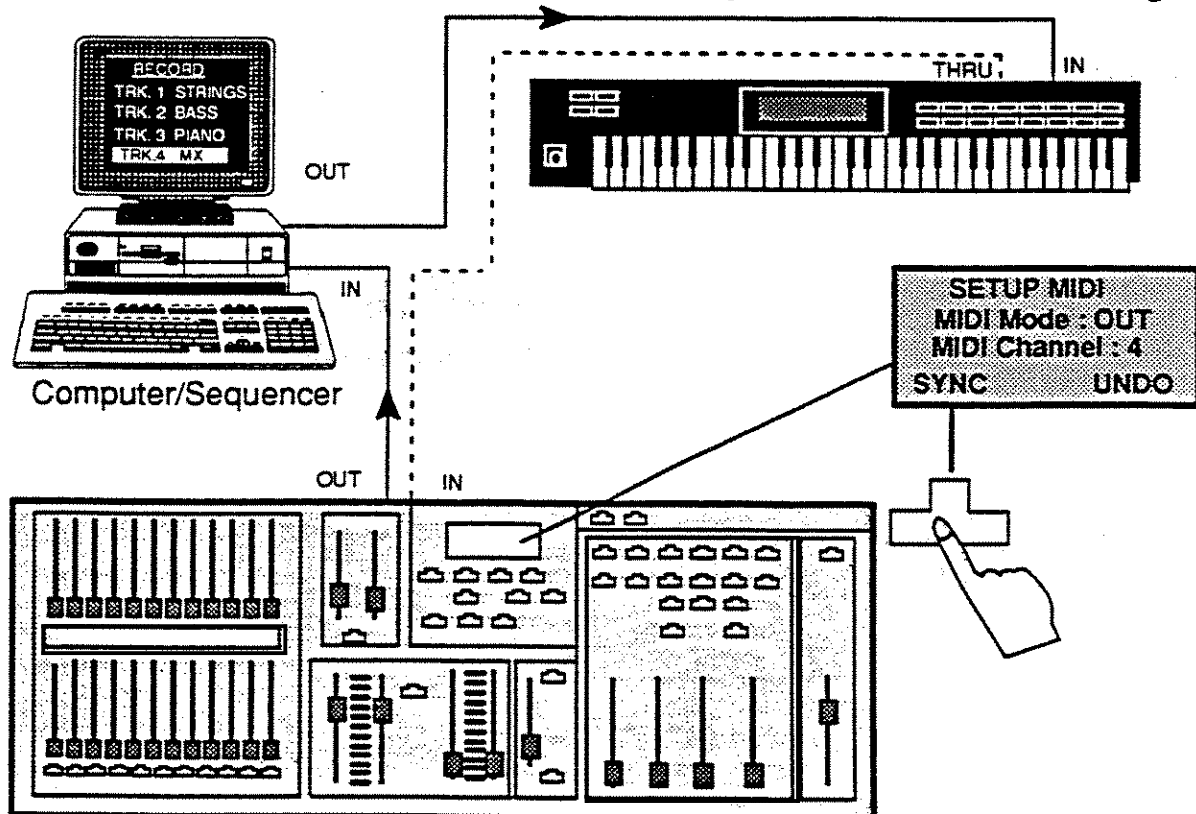
Most Midi sequencers are software orientated and run on a variety of personal computers, the most popular being the Atari, Mac. and more recently the P.C. . At present only the Atari has built in Midi Sockets, hence to date this has been the most popular computer for Midi applications, others require separate interfaces to be purchased before Midi software can be utilised.

Recording MX with Music Sequencers

EXAMPLE 1 – The purpose of this exercise is to make lighting changes occur automatically in harmony with a musical sequence. The figure below shows a typical setup ready for recording utilising sequencer software available for most popular computers. A good understanding of your particular sequencer is essential before attempting to overdub lighting scenes.

Recording Procedure

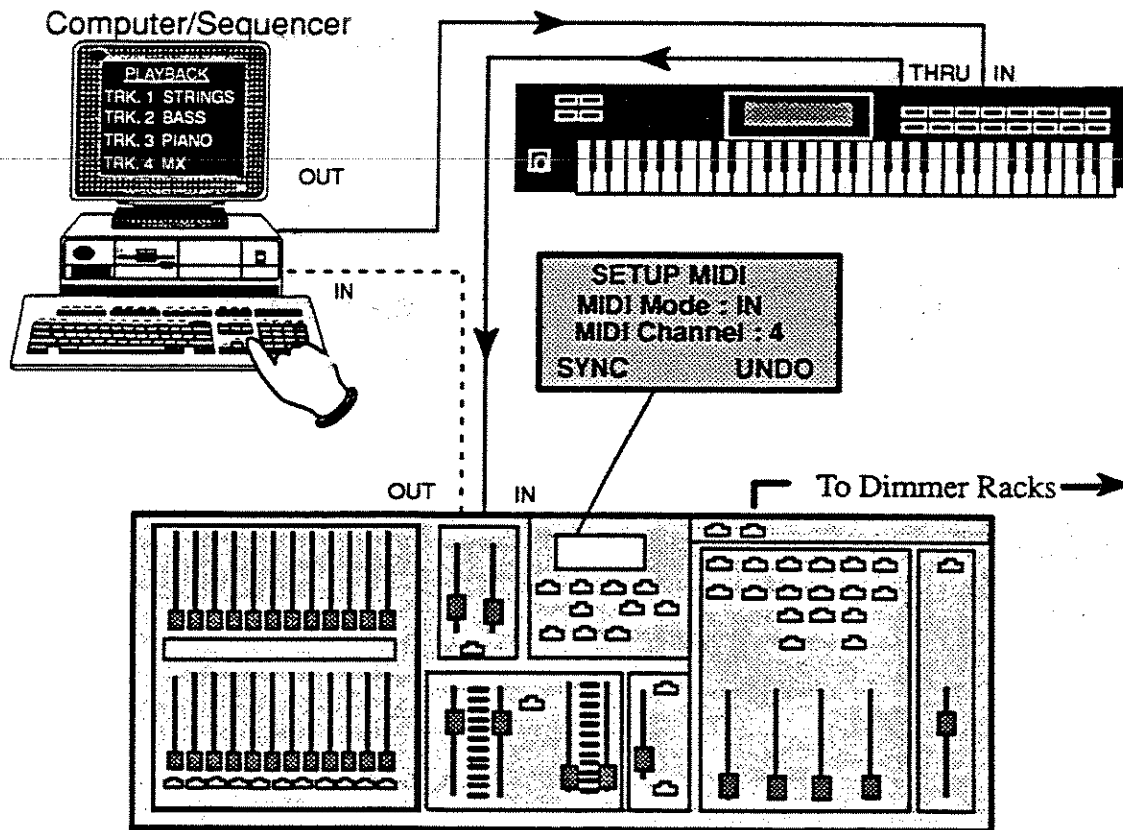
- 1.) Connect three MIDI leads as shown, those not in operation at this stage are shown in dotted lines.
- 2.) Record music sequence, tracks 1–3, in this case.
- 3.) The music sequence is played back via the MIDI OUT link on the computer to the keyboard.
- 4.) Set MX to MIDI OUT – CHANNEL 4.
- 5.) Set sequencer in record mode.
- 6.) Press SYNC on MX as soon as possible after step 5 is completed, (see SYNC function following this section).
- 7.) Information from MX can now be input in 'real time' i.e the music sequencer will recognise fader/switch operations in the correct sequence and at the correct time. These are overdubbed onto track 4, just like normal sound recording.



To playback our automated music and light sequence, the THRU socket comes into play.

Playback Procedure

- 1.) Set MX to MIDI IN
- 2.) Simply press the appropriate computer key to playback the complete sequence, light and sound should be synchronised as required.
- 3.) Save the sequence if happy, if not re-record or even overdub more lighting changes by following the same procedure. Most sequencers will allow you to overdub on the same track, so it is quite possible to build up complex and subtle lighting changes very easily.



Note:- As mentioned earlier, the THRU socket relays the signals from the computer to MX via the MIDI IN socket on the musical instrument. Whilst in MIDI IN mode most MX functions are suppressed and the console becomes under the control of the external sequencer or other Midi device.

The Grand Master and Blackout switch take precedence over the MIDI controlled grand master and blackout switch in a lowest-takes-precedence manner. This gives you the option to shut off the console's output at all times.

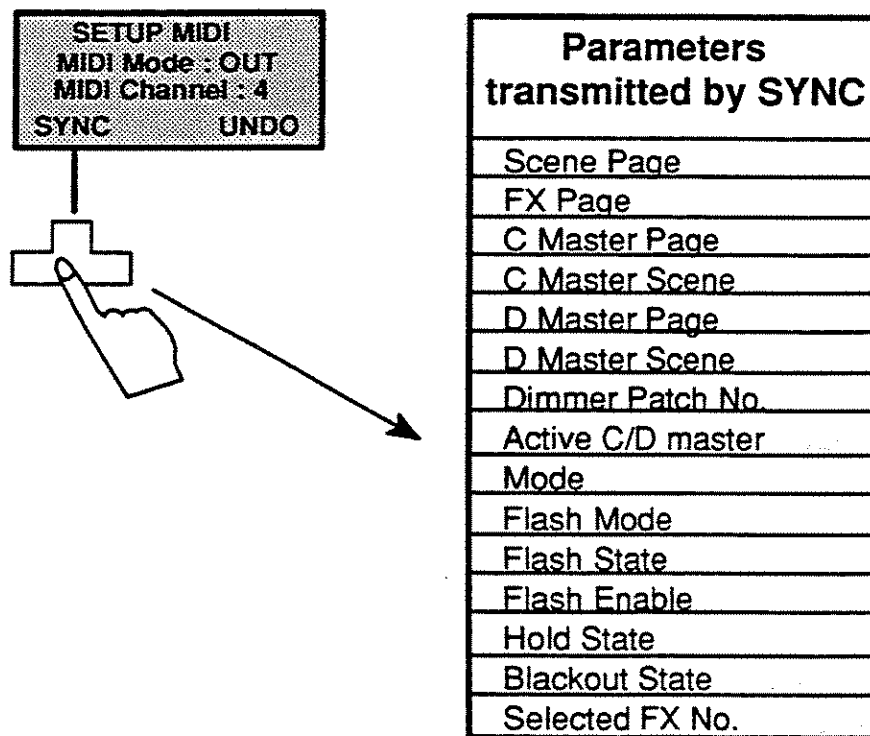
During MIDI IN mode, the LCD will be fixed to a MIDI IN mode display. However, the MIDI mode may be changed to MIDI OFF, MIDI OUT or MIDI SLAVE mode. Normal console operation can only occur in MIDI OFF and MIDI OUT modes.

Note:– When the mode is changed back to either MIDI OFF or MIDI OUT mode, the output will be controlled immediately by the fader levels set on the console.

The state of the console, as set by MIDI (such as effect control and selection of operating modes) will be maintained when MIDI modes are switched.

SYNC Function

SYNC records a ‘snapshot’ of the desk i.e it acts as a form of reset signal by resetting the MX parameters shown back to the state they were in just before the button is pressed. A good illustration of this is when used with our musical sequence example just explained.



In effect this means that when MX is set up for other applications the information for the previous setup is not lost as it has been stored with the music sequence software.

When the example is used again and the sequencer is played back, the first bit of information transmitted to MX will be the code for resetting MX back to its starting position, assuming the recording procedure has been correctly adhered to.

Slave Mode

In this mode, it now becomes possible to link-up 2 MXs for the purposes of increasing channel capacity. The maximum channel capacity of MX is 48, should more channels be desirable, another MX can be linked and setup via the MIDI ports.

In the configuration shown, the 48 way MX becomes the master unit whilst the 12 way becomes the slave. All controls on the 12 way unit are inhibited apart from the Channel faders, Master faders and Blackout switch.

EXAMPLE : – An extra 12 channels are required to supplement scene 10 of a production.

Scene Pg : 1	C : 10
Fx Pg : 1	D : 11
SCENE	FX SETUP

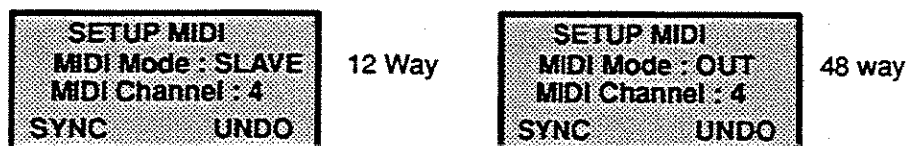
Procedure

Record

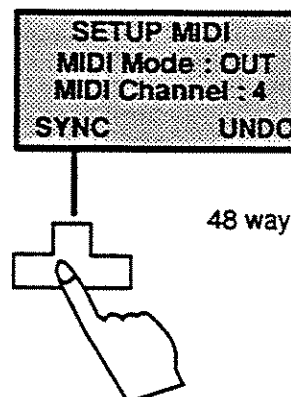
- 1.) Another MX is linked to the existing 48 Way as shown overleaf.
- 2.) Both MXs should be set at MIDI NORMAL for this stage.
- 3.) Set up the scene as required using BOTH desks.
- 4.) RECORD as scene 10 on BOTH desks

Playback

- 1.) Set the 12 way to SLAVE and the 48 way to OUT both on the same MIDI channel.

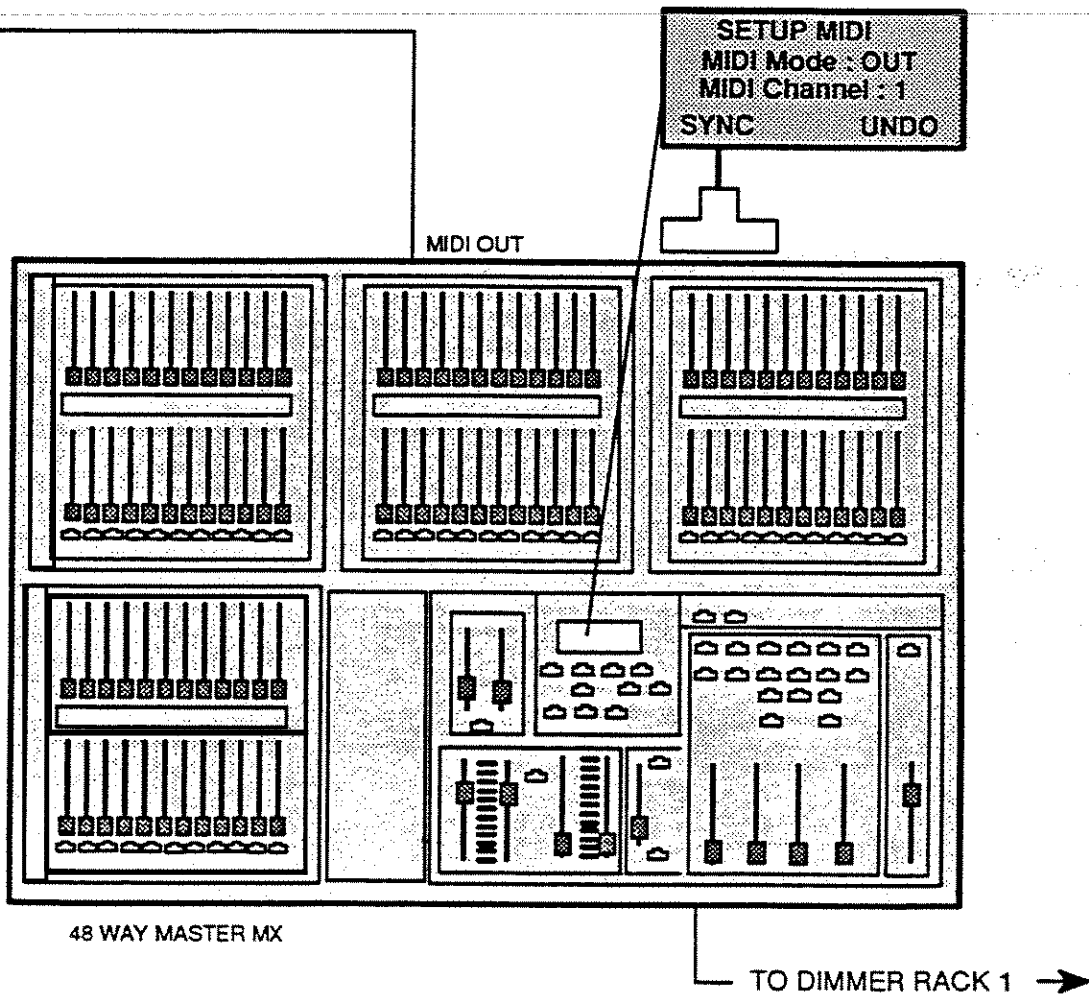
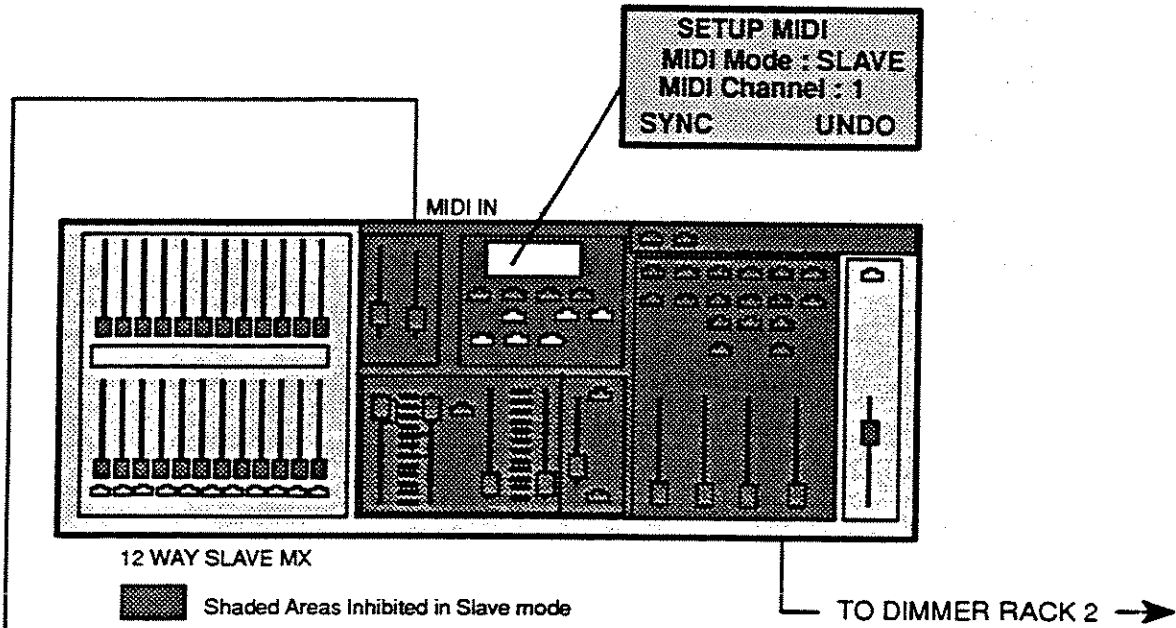


- 2.) Press SYNC on the MASTER MX, this will reset the SLAVE MX to the same settings as the MASTER.



- 3.) Playback scene 10 which is now under the control of the 48 way desk.

Note:– The Multiplexed outputs cannot be linked and require routing to separate dimmer units.





REMOTE GO CUE

It is now possible to remotely trigger lighting scenes that have been pre-recorded into the CD sequencer by means of an external control such as an audio signal, MIDI timing signal or a MIDI PROGRAMME CHANGE command. This feature will be extremely useful to any production that has music or sound effects, whether it be on tape or played 'live' by one of today's modern keyboards.

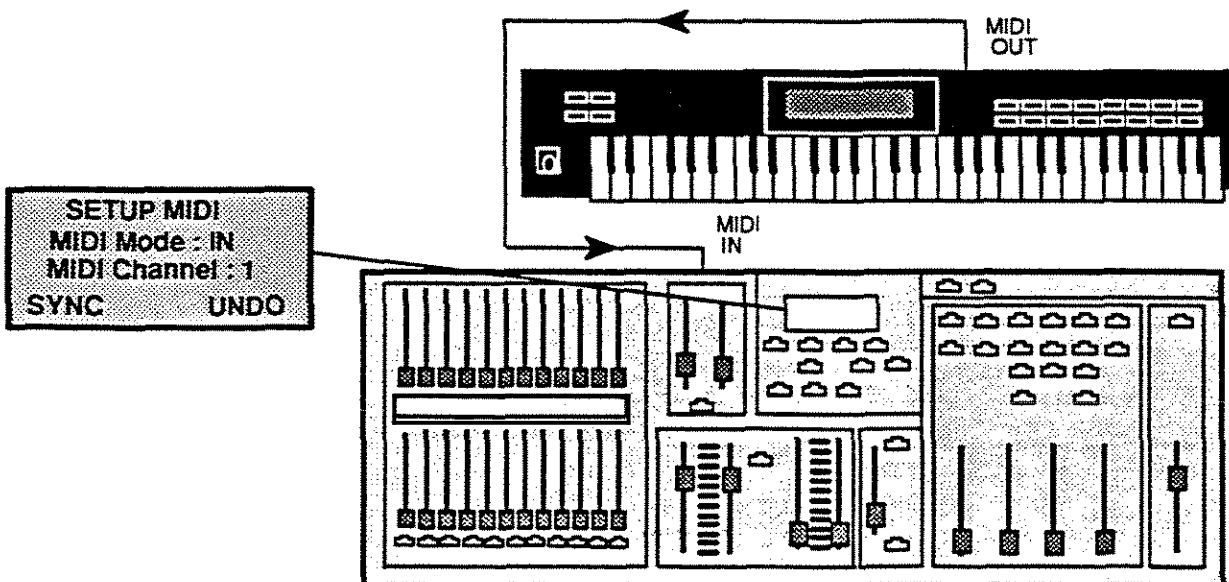
Midi GO

Most of today's keyboard synthesisers are Midi based and are classed as MULTI TIMBRAL which means that different instrument voices can play on different MIDI channels at the same time. Pressing a button on the synth to change the 'voice' normally sends out a PROGRAMME CHANGE command over a MIDI channel and it is this command that can be utilised by MX.

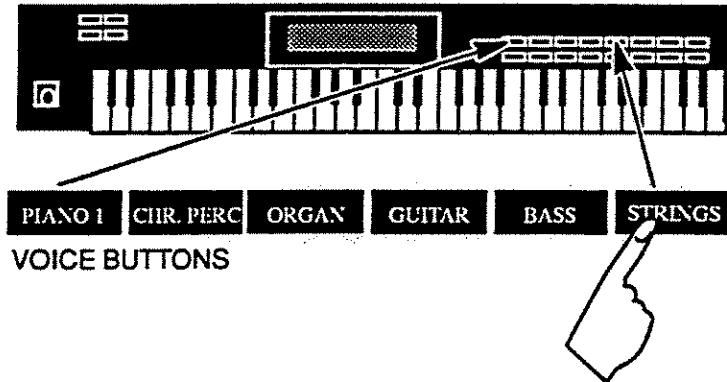
The effectiveness of the GO cue will depend on the MIDI capabilities of the device used, some have 2 or 3 banks of buttons to change voices and some have only 1 or 2 and need to be programmed to change voices, but as long as a PROGRAMME CHANGE is sent possible the GO cue will work.

EXAMPLE – We wish to change a lighting scene every time we change voices. This makes sense, as switching from a percussive piano sound to some lush sounding strings will obviously create a different mood.

- 1.) Programme the sequence of lights in the CD sequencer inclusive of both fade in and fade out times.
- 2.) Check that AUDIO/MIDI on CONFIG SYSTEM menu is on AUDIO (i.e. MIDI timing signals are ignored).
- 3.) Set MX to MIDI IN.
- 4.) Connect the synth MIDI OUT to MIDI IN on MX.
- 5.) Set MX to receive on MIDI CHANNEL 1 and the synth to transmit on the same channel. (MIDI CHANNEL 1 is always the default channel for all midi devices).



- A musical piece can now be played 'live' and at the appropriate time the synth voice button can be pushed and as the sound changes a lighting crossfade will occur as programmed.



Note:— The buttons are not scene selective i.e if you had 20 scenes in the CD sequencer, pressing button 10 does not mean the sequence will jump to scene 10. ANY button pressed will make MX go to the next scene in sequence.

Audio / MIDI Fader

The primary function of the Audio /MIDI fader is to act as a threshold level for triggering audio signals which may be used to control remote GO cues (see next Section). If the AUDIO/MIDI parameter in the SYSTEM SETUP menu is set to MIDI however, then it is possible to control cues by means of clock cycles i.e in reality these can be regarded as actual beats of music.

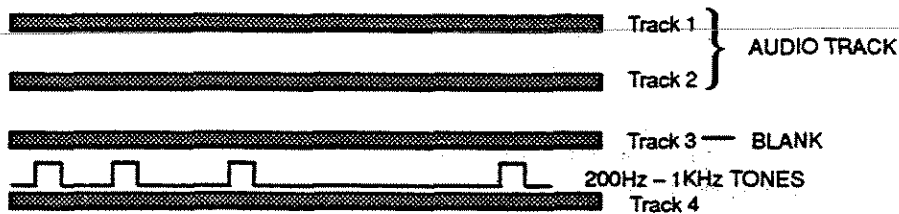


Audio GO

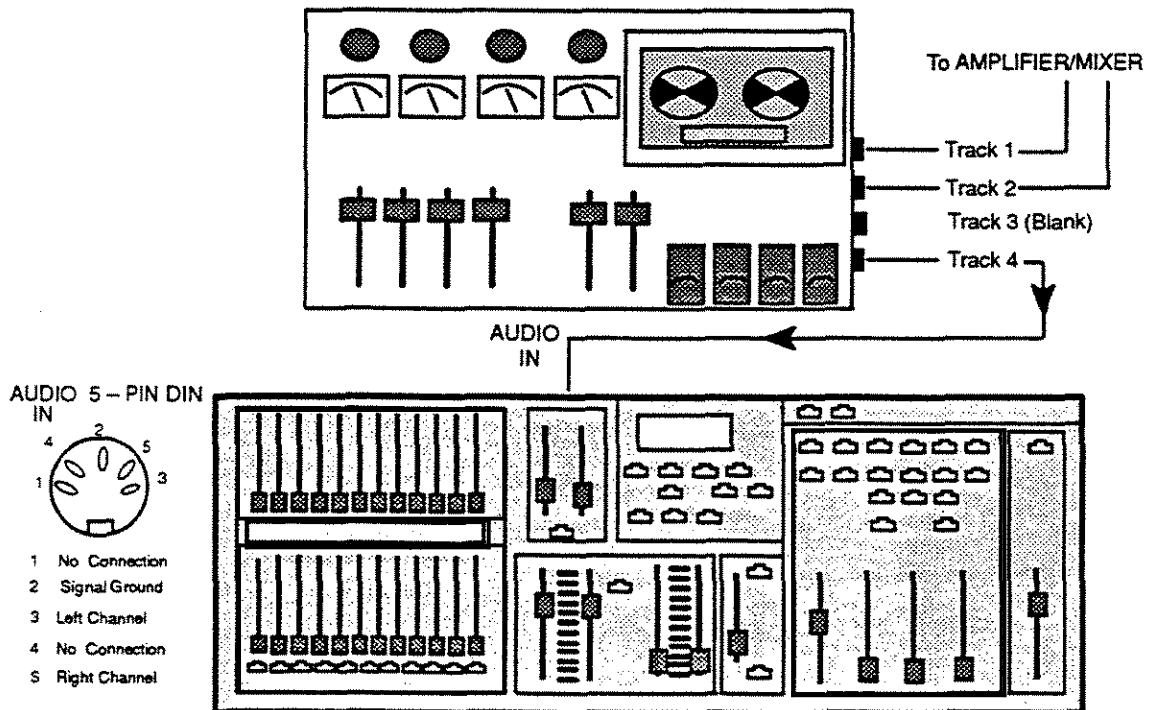
By recording a tone of below 1 KHz on one of the tracks of a Multi-Track tape recorder it is possible to trigger a sequence of lighting scenes automatically in perfect sync with a sound-track.

EXAMPLE – A piece of music has been recorded in stereo on tracks 1 and 2 of a 4-track recorder. At various stages in the composition lighting changes are required.

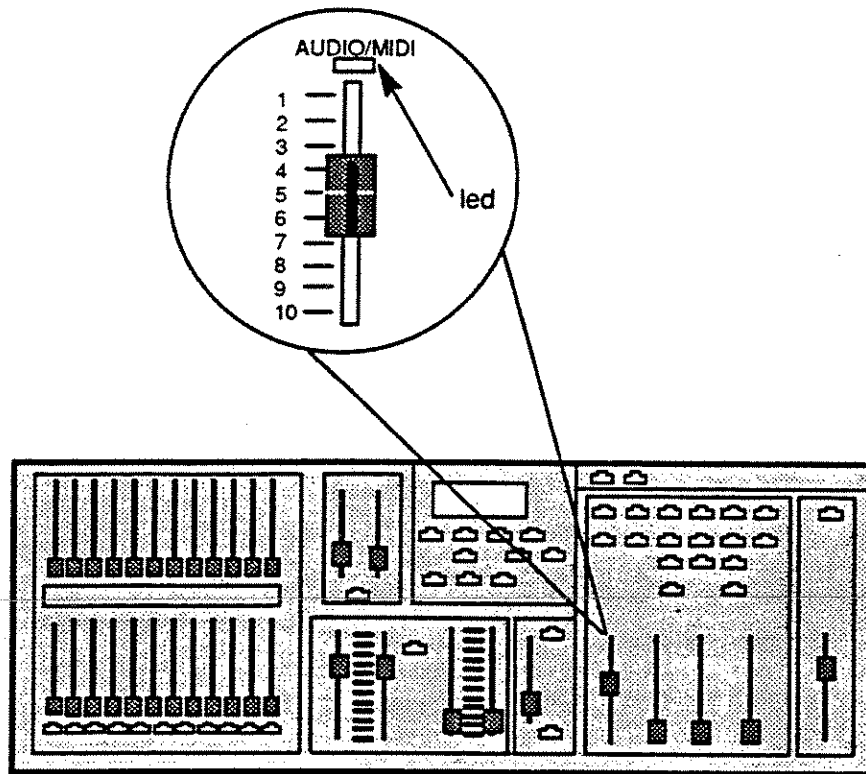
- 1.) The sequence of lights is programmed in the CD sequencer.
- 2.) A suitable tone, such as a bass beat or low speaking voice, should be recorded on Track 4 wherever a lighting scene change is required. Using the adjacent track 3 is likely to result in cross-talk problems and is not advisable. The duration of this audio signal is not important as it only requires a signal of less than 50 milliseconds to activate a GO cue.



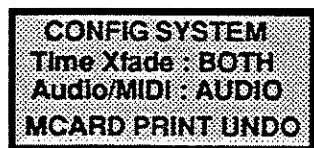
- 3.) A suitable connection must now be made to the tape deck – TRACK 4 OUTPUT – and the MX –AUDIO IN. Make up a suitable lead and connect as shown in the diagram below.



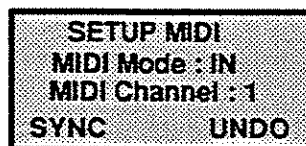
4.) The complete piece should now be played back and the trigger level set by adjusting the MIDI/AUDIO fader on MX. i.e. the led should flicker on with the recorded tones.



5.) Set MX to AUDIO on CONFIG SYSTEM menu.



6.) Then set to MIDI IN. **Important DO NOT PERFORM THIS STEP BEFORE STEP 4 or 5 AS ONCE IN MIDI MODE, MX CONTROLS BECOME INHIBITED.**



7.) The performance can now be played back and at the appropriate time the lighting scenes will change automatically.