

120 Fader Lighting Console with Moving Light control

General Description

The lighting control console shall be a Reduced Instruction Set Computer (RISC) microprocessor based system capable of providing complete manual or memory control of stage, studio and entertainment lighting fixtures via the DMX512 digital protocol. The system shall provide for full proportional softpatching for up to 1024 dimmers. A maximum of 810 user programmable scenes, chases and stacks shall be contained within 9 pages of flash memory, the contents of which must be able to be electronically labelled and be outputted directly via the two 5 pin AXR connector located on the rear panel. A dedicated module for the control of up to 60 Intelligent fixtures shall be contained within the front operating surface of the console. The console shall have a 3.5" Disk Drive memory back up unit, plus a SVGA video output port installed as standard equipment.

Construction

All operator controls and associated electronics shall be housed in a single desk-top console of metal construction, the overall dimensions of which must be 1230mm x 515mm x 165mm and weigh not more than 20.0kg unpacked. The front fascia shall be made from a hard wearing polycarbonate with rear printing and adhered to a metal back plate. The front fascia is to extend to the rear panel and provide all labelling for the input and output connectors and options. A metal fascia, screen printed or otherwise, shall not be acceptable.

The housing must be constructed from 1.6mm Zinc-Steel and finished in a durable powdercoat paint. The bottom chassis must be easily removed and allow complete access to internal electronics and power supplies.

Power Requirements

The power supply must be fused and be able to operate within the range of 90-264VAC and with automatic frequency selection between 47-440Hz. Power consumption shall not exceed 30Watts. External plug-in type power packs will not be accepted.

The console shall provide a 12 Volt DC current limited supply to two rear panel mounted 3 pin AXR connectors, for supply to the optional gooseneck work lights.

The power supply must be designed to allow the microprocessor time to write all current console configurations and memories to Flash Memory in the event of input power interruption. The console must be able to return to its last known state once power supply is restored. Battery backed-up RAM is not acceptable.

The console must be able to withstand a power "brownout" of at least 3 seconds duration without resetting. On reapplication of power, the console shall resume where it was prior to the power fail including all timed fades and/or chases.

Standard Features

The console shall provide, but not be limited to, the following features:

- Two banks of faders labelled 1-60 and 61-120, in a typical two preset configuration for setting up general lighting looks and manual operation.
- Three preset masters labelled Red, Yellow and Blue, two Time In/Out faders and one Add/Kill level rotary fader.
- Flash/Assign pushbuttons with integral indicator LED for each of the 120 preset faders, each of the Blue playback masters and each of the 3 Preset masters.
- A 25 x 7 dot matrix display to provide information on Scene, Chase and Stack numbers or names recorded, Channel levels for editing, Dimmer numbers for patching, In/Out times for scenes, chase speed in B.P.M. and diagnostic information. The editing of these parameters shall be facilitated by an adjacent 'Edit Wheel'.
- Two single 7 segment LED display to show current page number for stored memories on the Red and Blue Fader banks.
- Pushbuttons for selecting Memory Edit, Playback Select, Function Select, Back, Forward, Stop Step, Record Scene, Record Chase, Memory Copy, Console Operation Mode and Playback Page.
- Stack Master for replaying stored memory sequences with level fader, Go, Direction, Pause, Stop-Step, Snap and Autolink function control.
- Resistive Touch Screen "Pad" for the control of intelligent fixtures by the use of a finger or suitable stylus; providing the following minimum control requirements:
 - Active control of up to 60 intelligent fixtures simultaneously
 - Maximum of 10 different types of fixtures at any one time
 - Internal library storage of up to 64 different fixture templates (personalities)
 - The ability to add fixture templates from the library via the 3.5" disk drive
 - An effects generator for creating complex movement shapes and fan-out functions
 - Control of up to 24 parameters per fixture, selected via touch sensitive buttons with colour coordinated back-lit LEDs
 - Six touch sensitive mousing scroll bars for adjusting selected Parameter functions
 - Fifteen touch sensitive function selector buttons, including clone, store, home, clear, all and menu functions
 - The ability to create, store and electronically name 60 different fixture groups
 - The ability to create, store and electronically name 240 (4 pages of 60) palettes
 - The ability to create, store and electronically name 240 (4 pages of 60) presets
 - The ability to create, store and electronically name 240 (4 pages of 60) filters
 - The ability to filter or hi-light selected parameters and fixtures.
- Two Sound to Light (STL) sources with selectable frequencies to activate stored lighting states.
- A Bass-Step-Chase facility for the triggered synchronisation of Chase steps with the regular repetitive beat of an audio source.
- SVGA compatible output port for connection of colour monitor.
- 3.5" PC compatible disk drive for storage of internally stored memories; to upgrade console software and to add fixture templates to the fixture library.

Operation Requirements

Preset Mode

Preset mode shall be for the basic creation and setting up of all lighting looks in a typical two preset operation. A basic lighting look shall be created by setting the required channel on one of the coloured coded presets and setting the same coloured preset master. Other looks may be created in the same manner on the opposite coloured preset. It shall be possible to invert the Yellow preset master to allow a simultaneous manual crossfade from one preset master to the other Preset master.

Wide Mode

The Wide mode shall utilise both banks of faders as a single preset of 120 channels. The yellow faders shall control the low channels and the red faders shall control the high channels. The yellow preset master shall control the total output of this single wide preset.

Scene Mode

Scene mode shall primarily be for the replay of user programmed scenes and chases. In this mode, the faders of the red bank shall become playback masters containing 9 pages of the various stored memories. It shall be possible to concurrently run up to 60 scenes or chases on the Red playbacks.

Blue Playbacks

Playbacks shall be provided for the replay of user programmed scenes and chases. The faders of the Blue bank shall become playback masters containing 9 pages of the various stored memories. It shall be possible to concurrently run up to 30 scenes or chases on the blue playbacks and up to 90 scenes or chases on the red and blue playbacks simultaneously.

It shall be possible to playback a stack on the Stack master, regardless of the current mode of the console.

Flash/Assign Pushbuttons

Each pushbutton associated with the 120 preset faders and the 3 masters, shall be multipurpose and provide, but not be limited to, the following functions:

- To 'Flash' or 'Bump' the contents of a particular fader.
- Provide an alphanumeric entry.
- Select various secondary functions.

Parameter Selector buttons

Each touch sensitive "virtual" buttons shall be used to select up to 24 associated parameters for Intelligent fixture control and be backlit with a multicolour LED to indicate current status and function.

Parameter Scroll Bars

Each of the touch sensitive scroll bars shall be used to activate and control selected parameters for Intelligent fixtures, by the use of a finger or suitable stylus. Changes to parameter values shall be by either mousing or tapping the area within each scroll bar. Each scroll bar shall be transparent and have a LED display beneath, indicating the following:

- Name of the active parameter
- Positional values of the parameter in 8 bit or 16 bit resolution
- Wheel stop positions and relevant names of the positions as determined by the fixture template
- Movement times of the parameter
- Delay times of the parameter

Indicator LEDs

The Indicator LED on each pushbutton, associated with each preset fader or master, shall be multipurpose and provide, but not be limited to, the following functions:

- Indicate valid key options during operation.
- Indicate that a timed fade is in progress by flashing slowly.
- Indicate contents of the playback masters during editing, selecting or programming
 - Scene – "on"
 - Chase – "double flash"
 - Stack – "slow flash".
- Indicate the level of its particular output with a brightness proportional to its equivalent numerical value.

System Design

The console system shall provide, but not be limited to, the following:

- Diagnostic routines to check the status of available memory, switches, LEDs, and the linear performance of faders and the rotary encoder.
- Individual In and Out fade times up to 999 seconds, to be programmable on every scene, or controlled directly from the In and Out Time Faders.
- Provide a 'Page-freeze' function, to prevent the contents of any Red fader from being changed if its fader is above a level of 5% when a different mode is selected, or the current page is changed.
- Yellow preset master operation is to be optional in that 'Normal' or 'Inverted' operation can be selected in the console Preferences function.
- Softpatching to be fully proportional and allow the allocation of any or all 1024 dimmers to any one channel fader.
- LTP (Lastest Takes Precedence) control of Intelligent fixtures to be conducted on touch-sensitive scroll bars and selector buttons, whilst HTP (Highest Takes Precedence) to be controlled by the desks faders.
- Up to 500 steps to be programmed in any one stack, of which each step may be a scene, chase or a Snapshot of the output. Delays and Autolinks can be programmed between any step.
- Up to 250 steps to be programmed in any one chase.
- The facility to copy playback information directly to any another memory location.
- The facility to easily add-on a Moving Light Control module, without having to send the console back to the factory or an authorised representative to undertake the installation.
- The facility to save data on to a 1.44MB disk via the disk drive option. The entire memory contents of the console shall constitute one 'Show', and it shall be possible to save multiple shows onto one disk.
- The facility to upgrade system software insitu via the disk drive. Systems requiring any tools or removal of panels to upgrade software will not be acceptable.
- The use of PCMCIA cards or equivalent, for the purpose of saving or backing up internal memory or show data, will not be acceptable.

**The Console shall be a maXim-XXLP from LSC Control Systems Pty Ltd,
or approved equivalent.**