IMPACT

-- 960 Dimmers on 350 Channels --

-- 400 Average Memories --

-- 24 Submasters with Bump Buttons --

-- Menu Selection of AMX192 or DMX512 --

-- A Unique Feature "Multi-View" for Cue Comparisons --

-- 100 Super Cues --

-- A LAN for System Expansion --

-- Proportional Patch by Dimmer and By Channel --

-- Maximum Speed, Maximum Performance --

Catalog numbers of importance:

8400 - IMPACT control console with 1 - 25' AMX192 Data control cable and 1 power cable.

8410 - IMPACT color monitor (NEC Multi-Sync) 12" Diagonal with power cable and interconnect cable.

8405 - IMPACT hand held remote with 14 character LCD display and battery charger.

IMPACT

SPECIFICATIONS

I. GENERAL DESCRIPTION

The IMPACT console shall be a microprocessor based lighting control system specifically designed and constructed for the control of theatrical and television dimming systems. The control console shall utilize high speed random access memory for the processing of up to 960 solid state dimmers on a maximum of 350 user selectable control channels. The system shall provide memory storage for approximately 400 cues.

The operative data processing program shall be an internal non-volatile read-only-memory, available for instantaneous use at start up. The control console shall not require the use of any peripheral storage/retrieval devices such as disk drive or cassette to function. Such equipment shall be for library storage only. In case of power failure, the random access memory shall be retained a minimum of 72 hours via a maintenance free super capacitor.

Console cue information shall be available for recording, playback and blind modification at all times, unless otherwise instructed via a setup lockout. Secondary functions shall be menu accessed.

All operator controls and computational electronics shall be housed in a single desk top console, 30" long x 20" deep x 3" high. All components shall be accessible for maintenance. The console requires the use of a separate color monitor for instantaneous and explicit operation, informing the operator of lighting and memory status at all times.

Output controls shall consists of 1 manual split dipless crossfader, 2 timed crossfaders, 24 assignable additive/inhibitive submasters with bump buttons, and 1 grand master.

The console will support both AMX192 (analog multiplexed) and DMX512 (digital multiplexed) protocol.

II. REQUIREMENTS

The control system shall operate on 120VAC, 60 hz, two wire and ground AC service. Fuse protection is provided. 220/240 volts, 50 hz is available upon request. The system is operable within an ambient temperature range of 35 to 105 degrees F. A thermal cutout device shall be provided to protect the system from operating in temperatures in excess of 120 degrees F.

The system is provided with one 6' power cord and 25' data control cables.

III. STANDARD FEATURES

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

1. Memory keypad, allowing the recording and recall of cue information, channel tracking, and special functions.

2. Select keypad, allowing construction of channel and dimmer lists.

3. Display keypad, allowing access to menus and display modes.

4. Level and rate encoder wheel, knurled for tactile feedback to the operator, for channel intensity control without need for matching. The wheel shall also provide direct modification of any or all running timed fades.

5. C and D independent timed faders, each with associated CANCEL, STOP, BACK, RATE and GO pushbuttons.

6. A/B dual handle, manually operated dipless crossfaders with associated LOAD and CANCEL pushbuttons.

7. Proportional grand master of faders and submasters.

8. 24 submasters with associated bump buttons, memory assignment and cancel pushbuttons.

9. Integral digital disk drive for transfer and library storage of all recorded information onto an industry standard 3-1/2" micro diskette.

10. Battery supported real-time clock/calendar providing associated screen display of date and time of day.

11. Output port and software support for an optional RS-232 printer.

12. Input port and software support for an optional hand-held remote unit.

13. Extensive user initiated testing procedures for system component and functions diagnostics.

14. A local area network, to allow linking of consoles together for system expansion or full tracking backup operation.

IV. OPERATING FUNCTIONS

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

A. MENU PROCEDURES

1. A main setup display shall allow access to a number of secondary displays and functions.

2. A Patch-By-Channel feature shall allow display and interactive assignment of dimmers by channel numbers. Proportional levels may be assigned to each dimmer.

3. A Patch-By-Dimmer feature shall allow display and interactive assignment of channels by dimmer numbers. Proportional levels may be assigned to each dimmer.

4. A Default Patch feature shall allow system patch reconfiguration on a one-channel-to-one-dimmer basis.

5. A System Configuration display shall allow user selection of the operating parameters, including the number of dimmers and channels in the system and multiple console operation. This menu also accesses the system clock, clear memory and clear patch features. It is possible to re-establish the system parameters without clearing the memory.

6. The Print Menu allows initiation of print routines, including print memory, print patch, print set-ups, print cue sheet and printing all recorded information.

7. The Disk Menu accesses disk transfer and initialization operations. The system shall allow library transfer operations without affecting live channel levels and cue playback status.

8. The Diagnostics Menu allows selection of various levels of diagnostic testing, including simple user confidence diagnostics, which evaluate the hardware, video alignment and color displays to more advanced RAM testing.

9. A Direct Record procedure is provided to establish system default fade times.

B. LEVEL SETTING AND RECORDING

1. A channel or group of channels may be addressed using the [Thru] and [And] buttons. Levels may be set digitally and on the encoder.

2. It shall be possible to proportionally adjust channel levels via the encode wheel without need for matching.

3. It shall be possible to capture the entire stage picture or just the contents of a selected memory for modification with the encoder.

4. Channel levels may be set, modified and displayed in stage (live) or preview (blind) mode.

5. A specified channel or group of channels may be held at their levels while all other are driven to zero.

6. Any or all channels may be recorded into a cue, regardless of their level origin.

7. Cues may be recorded in any order. Up to nine cues may be inserted between any two numerically sequential cues.

8. Cues may be copied into new cues, deleted and re-named in both live and blind modes.

9. The amount of memory remaining shall be displayed at all times.

10. It shall be possible to record cues with:
    -- Up fade time in minutes, seconds and segmented seconds, up to sixty minutes.
    -- Down fade time in minutes, seconds and segmented seconds, up to sixty minutes.
    -- Up or down Delay fade time in minutes, seconds and segmented seconds, up to sixty minutes.
    -- User selectable default fade times.

11. Cue timing information may be modified live or blind with a simple address, without affecting stage levels.

12. Channel levels may be changed in a single cue only, or modifications may track forward through a series of cues. Several channels may be "tracked" simultaneously.

13. Initiation of simultaneous fade sequences shall be possible via a series of memories which record all status and cue information on the faders and submasters. Recall of this information shall be instantaneous.

14. It shall be possible to record cues with link-to commands for cue execution out of numerical sequence.

15. Activation of the "Multi-View" feature shall allow comparison of the cue in preview with the cue on stage.

C. PLAYBACK

1. Cues and submasters shall interact in a highest level takes precedence manner.

2. Cues may be accessed in sequence or randomly and played back in a recorded time or manually.

3. Two independent timed faders, each capable of executing simultaneous cue sequences, shall be provided.

4. It shall be possible to execute any number of pile-on and subtractive fade actions on the independent timed faders.

5. A timed cue sequence may be instantaneously stopped via the HALT button; it shall be possible to "step back" through the cue list through use of the BACK button.

6. The recorded times values for cues may be proportionally adjusted while running with the encoder.

7. Displays of running fade times and delays are dynamic.

8. A manual split dipless crossfader, capable of executing pile-on fade action, shall be provided.

9. Changes or adjustments in fade sequences and time values shall be possible on one fader without affecting the action of any other fader.

10. Any channel or group of channels may be accessed independently for instantaneous modification without affecting their recorded levels.

11. The maximum level of any channel may be temporarily limited without affecting recorded values.

12. Any channel or group of channels may be place any channel on independent, so that its level is not affected by changes in cue, grand master, or submaster operation.

13. Subroutines and cue loops may be established and recorded with any cue. This function will allow automatic initiation of any designated cue or cue sequence.

14. A grand master shall be provided for proportional control of channel levels provided by the submasters and the cue playback faders.

D. SUBMASTERS

1. 24 submaster potentiometers shall be provided.

2. Each submaster shall have an associated momentary flash button. The channels currently controlled by the selected submaster shall be forced to their active level assignment.

3. Any number of submaster assignments may be recorded.

4. Any number of channel level assignments may be recorded.

5. Submaster channel and level assignments may be previewed and modified at any time.

6. Submasters may be individually selected for additive or inhibitive operation.

7. Solo operation for the momentary flash buttons may be selected on an individual fader basis.

E. DIAGNOSTICS

1. Diagnostics shall be menu accessed procedures.

2. Two levels of diagnostics shall be provided.

3. The first level, known as user confidence diagnostics, perform simple hardware test routines. A video generator test and color bar test are also accessible. These diagnostic tests maybe run while the system is in operation, not affecting stage output.

4. The second level shall be provided for more extensive testing of the RAM and disk.

V. PERIPHERAL EQUIPMENT

Required peripheral equipment:

1. **Color Video monitor (included)**
A high resolution multi-sync color monitor is necessary for system operation. A 13" diagonal CRT display on a swivel tilt base is provide. This monitor shall display all system information.

Optional peripheral equipment may be added to an existing system at any time. All wiring and software provisions are furnished in the system on its initial delivery.

2. **Hard Copy Printer** (optional)
Provides a printed record of cue level and time information, the complete cue sheet, patch information and additional system information. It shall be driven from an RS-232 port.

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3. **Remote Control Module** (optional)
   This hand held unit shall provide a 14 character lcd display and shall duplicate most of the actions of the main console. The unit shall be provided with a 12' straight control cable for system interconnection.

4. **Remote Display** (optional)
   The system shall have provision for support of a remote amber display.