

Lightpalette

Operator's Manual

Lighting control operating software v2.2



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Operating software v2.2

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Danger

This equipment is designed to operate from the mains electricity supply and contains voltages which, if touched, may cause death or injury. It should only be operated in accordance with these instructions and for the purpose of a lighting control system.

Do not open the control console. There are no user serviceable parts inside.

Avoid spilling liquid on the console. If this should happen, switch the console off immediately.



Please Recycle

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Introduction

This chapter describes the operating features which are common to the following chapters. It contains the following topics:

Introducing Lightpalette

Manual Organisation

Conventions

Console Electronics

520 Console LCD Displays

Configuring European Keyboards

Technical Assistance

Introducing Lightpalette

Strand's Lightpalette 430, 530, and 550 series consoles and mini Lightpalette 520 series consoles offer you the flexibility to choose and upgrade your console software, including the basic operating software, through an integral floppy disk drive.

The Lightpalette foundation application offers from 100 to 2000 intensity channels in steps of 50 channels and up to 2000 attribute channels with full professional functionality. This flexibility lets you update when you need to without having to buy new hardware. The maximum number of channels and attributes available depends on the hardware performance, and is different for various consoles in this series. Please contact Strand Lighting for specifics.

The CommuniquéPro software can be used to add MIDI, MIDI Show Control, DMX input, external submasters, serial, and other means of communication. The Tracker software supports advanced facilities for automated fixture control including additional types of attributes (for instance, pan and tilt), preset focus groups, and fixture libraries. The Networker software provides remote video, remote DMX via Ethernet, and access to all SN100node ports. Other software can be easily added as it is developed.

Regardless of your level of lighting knowledge, this complete family of software lets you grow as your experience increases, or start at a significantly higher level, all as economically as possible.

Manual Organization

It is recommended that you read the *Installation* chapter starting on page 11 first followed by the *Tutorial* on page 17.

Control Console Features (page 46) gives an overview of the controls on the top of the console.

Common Features (page 54) describes basic facilities which are used throughout the following chapters.

Working With Channel Levels (page 66), *Submasters* (page 90), *Cues and X Playbacks* (page 109), *Effects* (page 139), *Groups* (page 158), *Direct Output Control* (page 180), *Setup* (page 183), *Archive* (page 203), *Macros* (page 214), *Profiles* (page 220), and *Handheld Remotes* (page 237) describe the various facilities of the console in detail.

Console Connectors (page 243) describes the connectors and pinouts on the rear of the console.

510i Control Panel (page 228) describes the operation of the 510i as a Show Controller based on SMPTE timecode events and as a network tracking backup unit for a main control console.

Glossary and Abbreviations (page 247) describes the terms used in this manual.

Conventions

The following conventions are used throughout this manual.

[CUE] The console keys. This example shows the key labelled CUE.

[PREVIEW] The display keys. These are above the right LCD on the console and are shown in italics to distinguish them from other keys with the same name. (The LCDs are the three small display areas across the centre of the console.)

{BACK} The console soft keys; these are the row of 4 or 6 unmarked keys whose function can change depending on what you are doing. This example shows the soft key labelled BACK.



Level Wheel movement.



Trackball movement.



Fader movement.



A submaster bump button.



A channel level entry in Direct Entry 1 Digit format.



A channel level entry in Direct Entry 2 Digit format.



A channel level entry in Command Line format.

LCD TEXT Text which is displayed on the LCD.

Screen Text! Text which is displayed on the screen. Names of display modes are italicized, but do not use this font even though they appear at the top of the screen.

CUE	A capitalized word indicates a function or mode, for example a Cue or Independent mode. These are generally described in the <i>Glossary and Abbreviations</i> chapter.
#	Used in syntax or field descriptions as a place holder for a number. The # symbol is never actually entered.
(blank)	Used in field descriptions to indicate a blank; that is, no text.
<i>Effect Playback</i>	Italics are used to indicate a chapter or section of this manual or other manuals.

Console Electronics

The 520 console is fitted with different control electronics than earlier 430s and 530s. The new-style electronics subsystem is now fitted to all consoles, and can be recognized by the position of the Ethernet network ports on the rear panel, which are adjacent to the DMX connectors rather than being on an optional expansion card (although a second network card can be fitted in addition to the built-in port).

The new electronics provide slightly different facilities:

- Built-in Ethernet ports (no built-in ports on old electronics).
- Handheld remotes can be connected to any AUX port (AUX 3 only for old electronics).
- All 4 DMX ports are supported (only 3 DMX ports for old electronics).
- DMX 4 is of opposite gender to the others for use as DMX input, although it can be set as a 4th output (DMX 3 is available as input with old electronics).
- SMPTE input port, accessible via the Audio connector (not fitted to old electronics).

520 Console LCD Displays

520 series consoles have no centre LCD. The soft menus which pop up on the centre LCD on other consoles for **[BUMP MODE]**, **[FX TIME]** etc. use the right LCD on 520 series consoles. **[CUE]**, **[GROUP]** and **[SUB]** no longer pop up **{INTS ONLY}** and **{ATTS ONLY}** soft keys on 520 series consoles. To access these keys, press the **[REC MODE]** key when required during **[CUE]**, **[GROUP]** and **[SUB]** commands.

Macros 981 to 986 which are tied to the centre LCD soft keys are no longer preset on 430, 520, and 530 series consoles because the 520 console has no centre LCD display and because users often reprogram them. Their functions are available as follows:

- | | |
|---------------|--|
| · EXIT | Under SETUP key (for Logout or Shutdown) |
| · PB 1 * | Use the PB key; also for PB 2 * |
| · APPEND STEP | Under FX display key |
| · SAVE SHOW | Under ARCHIVE key |

There is a hardware problem on early 520s where the left LCD backlight can not be changed from the setup screen. This requires a track cut and wire link added. Contact Strand Service for details.

Configuring European Keyboards

The console is configured at the factory for the US ASCII keyboard. You need to configure keyboards for other locales.

1. Shut down the console and get to the DOS prompt
2. Edit the file c:\autoexec.bat using the DOS edit command
3. Read the instructions for configuring keyboards, but DO NOT EDIT THIS FILE. This file is replaced when you next install operating software, and the changes you make will be lost.
4. Instead, create a new file c:\220os\userexec.bat using the DOS Edit command with the appropriate line(s) added for your keyboard.

Technical Assistance

Problems

The console requires a minimum of maintenance and servicing.

If equipment fails to operate properly upon installation, or under normal load and temperature conditions, and basic troubleshooting procedures are not effective, please contact your nearest Strand Authorized Service Centre or Strand Lighting Field Service at the office serving your area.

Questions

For technical questions regarding setup, operation, or maintenance of this equipment, please contact your nearest Strand Authorized Service Centre or the Strand Lighting Field Service office serving your area.

Spare Parts

For purchase of upgrades, accessories, peripherals or documentation, please contact your nearest Strand Authorized Service Centre or the Strand Lighting office serving your area.

Comments and Suggestions

For comments regarding equipment functions and possible improvements, or for comments on this manual, please write to the Strand Lighting office serving your area.

World Wide Web

Addresses

You can access the Strand Lighting World Wide Web site at *http://www.strandlight.com*.

Addresses for all of the Strand Lighting offices are shown at the front of this manual.

Installation

This chapter gives you an overview of the console and tells you how to connect to power and install ancillary equipment such as dimmers, the monitor, and printers. It includes the following topics:

For installation of the 510i control panel, refer to page 228

Unpacking

Operating Environment

Console Connections

Turning the Console On and Off

Installing Software

Unpacking

Carefully remove packaging and check the contents as listed. Please inform your Strand dealer if any item is missing.

Console

- 3 x power leads (Europe, US, UK)
- 1 x DMX cable
- Factory Test Summary
- 2 blank floppy disks
- Hardware leaflet

Operating Software

Operating software must be purchased separately from the console, but is installed in the console prior to delivery.

- Registration card
- Operating software disk for Pentium consoles
- Operating software disk for Pentium Pro consoles (520I, 530I, 550I)
- Networker Utilities disk

Application Software

Application software must be purchased separately from the console, and may be installed prior to delivery.

Additional application software that lets you add channels or features to the console is available from Strand Lighting. Each application software package contains the following.

- Operator's Manual and binder (channel application software contains only installation instructions)
- Registration card
- Application software disk

Operating Environment

To maximize equipment life, and minimize the chance of failures, the following environmental requirements should be met:

Temperature:	0 to 40°C ambient
Humidity:	5%-95% non-condensing
Storage temperature:	-40°C to 70°C
Dust:	Good office environment

Locate the console where the fans will not be obstructed. Without adequate airflow, internal temperatures can exceed the maximum operating temperature and result in damage.

A single point mains power source must be provided for the console and screens. This should not be shared with other equipment such as power hand tools, motors, transformers and dimmers. It should be rated as follows:

110-120V, 2A + Aux, 50/60Hz or
220-240V 1A + Aux, 50/60Hz

Console Connections

This section details the connections to the console. Shut the console down while connecting or disconnecting cables.

Power

Make sure that the power supply line voltage selector switch (if fitted) is correctly set before connecting to the electric supply. Failure to do this could result in damage to your equipment. If this switch is fitted, it will be above the power input connector at the rear of the console. Consoles without this switch are auto-sensing models and do not need to be switched for any voltages between 100 VAC and 240 VAC.

Separate power leads are provided for Europe, the US, and the UK. Connect this to the power inlet marked MAINS POWER IN at the rear of the console (IEC 320 male connector) and to a suitable mains power socket.

If your console has an outlet marked MAINS POWER OUT (an IEC 320 female connector) adjacent to the power inlet at the rear of the console, this outlet is controlled by the console power switch and can be connected to the monitors, printer or other equipment as long as no more than a total current of 4A is drawn.

Monitors

530/550 consoles support one or two VGA monitors in their standard configuration. The 530 and 550 consoles can support up to four VGA monitors if the optional extra video card is purchased. Connect the monitors to a suitable mains power socket using the supplied cables or to the power outlet on the rear of the console (IEC 320 female connector) using a suitable adapter.

In this document, "monitor" is used to indicate the hardware device, while "screen" is used to indicate the surface on which data is displayed. Thus, you plug in a monitor, but software displays are shown on screens.
--

Connect the video data cables (supplied) to the ports marked VGA1 and VGA2 on the rear of the console (DB15 high density female connectors). If you have only one monitor, connect it to VGA1. If you have two monitors, VGA1 is the left monitor and VGA2 is the right monitor.

To learn how to configure the console for one or two monitors turn to *The Console Window* on page 192.

Outputs

The console has 6 output connectors on the rear of the console. *Console Connectors* starting on page 243 shows pinouts for these connectors.

DMX512	marked DMX1-DMX4 (5 pin female XLR)
AMX192	marked AMX (4 pin male XLR)
D54	marked D54 (3 pin female XLR)

The AMX and D54 connectors are output only. DMX1-DMX4 can be used for output. The last DMX connector available on your console (either DMX3 or DMX4) can be used for input if it is not being used for output.

All of the DMX signals and either the AMX192 signal or the D54 signal can be used simultaneously; each being mapped to a range of output levels generated by the console (the ranges can overlap other output signals).

The supplied DMX cable can be used to connect the console to a DMX dimmer rack.

To learn how to configure the output connectors turn to *The Output Connections Window* starting on page 197.

Accessories

Optional accessories let you add input and output capabilities to the console as required.

The printer is connected to the parallel port labelled PRINTER on the rear of the console (DB25 female connector).

The following types of printer, or printers which can emulate these, can be used:

- Plain ASCII (not manufacturer specific)
- Epson FX80
- IBM Printer
- HP DeskJet or LaserJet

To learn how to select a printer turn to *The Communications Window* starting on page 199.

The ASCII keyboard lets you enter alphabetic characters for text labels (captions) and for naming archives, and is connected to the Keyboard connector on the rear of the console.

Handheld remotes can be connected to the console. For detailed instructions on installing handheld remotes, see *Handheld Remotes* starting on page 237.

A SMPTE external timecode can be connected via the AUDIO input at the rear of the console (3-pin XLR female connector). For details of SMPTE show control, refer to the *Communique Operator's Manual*

You can connect the console to a network to control additional outputs, provide tracking backup, provide an archiving server, add additional handheld remotes or console locations, etc. Networking requires optional hardware, and requires the Networker software. Please see the *Networker Operator's Manual* for additional details.

Optional work lights can be plugged into some consoles. These plug into connectors mounted on the console, and their level can be set from the *Setup* display (see page 191)

Turning the Console On and Off

To turn the console on, press **[⓪]** at the top of the console, or turn on the rocker switch on the power supply. The GeniusPro logo appears on the screen(s).

To turn the console off, press **[SETUP] {EXIT {EXIT}}** (or if logins are enabled, **[SETUP] {EXIT} {SHUTDOWN} {SHUTDOWN}**) and wait for the **Console|shut|down|successfully** message to appear. Then turn the console off using the On/Off button (**[⓪]**) or the power switch on the power supply.

This switch also controls any equipment plugged into the mains outlet on the rear of the console.

Installing Software

The operating software comes pre-installed from the manufacturer and does not need to be loaded except to be updated.

The operating software floppy disk is labelled Lightpalette Operating Software for Pentium Consoles or Lightpalette Operating Software for Pentium Pro Consoles. Disregard the disk that does not apply to your console.

All of the options currently available are installed with the operating software. Your password unlocks the options you have purchased.

All software is provided on 3½" floppy disks. The disks should be stored and handled with care and kept away from all liquids, heat, and magnetic fields. Do not put them near your dimmer banks. Observe the handling instructions given on the disk packaging.

Checking Software Version and Options

The operating software version number is printed on the floppy disk. To see what operating software version is installed in your console, and which options are currently enabled:

1. Press **[REPORT]** to show the *Diagnostics* display. The APPL field in the *Configuration* window shows the applications installed. For example LP|350|NET shows that Lightpalette is installed with 350 channels and the Networker software is also installed. The OS field in the *Configuration* window shows the installed operating software version.
2. Press **[LIVE]** to return to the *Live* display.

If the floppy disk version number is greater than the installed version number you should update the operating software.

Loading Operating Software

If you need to update the operating software, you can load it from the LCD *Software* menu.

While you are loading operating software the DMX output from the console will stop. Make sure that this will not disrupt anything before you start loading software.

1. Turn the power on and wait for the console to finish initializing.
2. Press **[ARCHIVE]{MORE} {SOFT}** to show the LCD *Software* menu. The main screens retain the *Live* display.
3. Insert the floppy disk labelled Lightpalette Operating Software into the disk slot with the sliding cover first and the label up. Push the floppy disk in all the way until it clicks into place. The disk drive is located on the top of the console above the left LCD screen.
4. Press **{OPER}{LOAD}**. You will be asked to confirm this action.
5. Press **{LOAD}** to start loading the software or **{BACK}** to cancel the operation.
6. When the loading is complete, remove the floppy disk by pressing the small button at the side of the disk aperture.
7. Press **[REPORT]** to make sure that the operating software is loaded. The version number in the *Configuration* window should now be the same as the floppy disk.

Configuring European Keyboards

The console is configured at the factory for the US ASCII keyboard. For other locales you will need to

1. Shut down the console and get to the DOS prompt.
2. Type CD\ and press ENTER to make sure you in the root directory.
3. Type EDIT AUTOEXEC.BAT and press ENTER to open the AUTOEXEC.BAT file.
4. Read the instructions for configuring keyboards, but DO NOT EDIT THIS FILE. This file is replaced when you next install operating software, and any changes you make will be lost.
5. Press ALT F N
6. Instead, create a new file c:\220os\userexec.bat using the DOS Edit command with the appropriate line(s) added for your keyboard.

Registration and Password

Complete the registration card included with your software options update and fax it to the Software Registration Centre at Strand Lighting UK, who will verify it and issue your password.

Enter the password from the LCD *Software* menu.

1. Press **[ARCHIVE] {MORE} {SOFT}** to show the LCD *Software* menu.
2. Press **{PASSW}** and enter your password number with no spaces or other keys.
3. Press **[*]**
4. Press **[LIVE]** to return to the *Live* display.

Once entered, the password cannot be displayed again. Be sure to keep a record of it in case it needs to be re-entered.

Enabling Software Options

When you purchase additional options (like additional channels) you will need to unlock the options you have just purchased by getting a new password. In some cases the dealer may supply you with a password on floppy disk. If not, see *Password and Registration* above. If you have been supplied with a password disk, you can load it from the LCD *Software* menu using the **{APPL} {LOAD}** command.

1. Switch the power on and let the console finish initializing itself.
2. Press **[ARCHIVE] {MORE} {SOFT}** to show the LCD *Software* menu.

Load the disk by following the procedure below.

1. Insert the disk into the floppy disk drive. This is located above the centre LCD (consoles with 3 LCD displays) consoles and in the front left of the console under the Trackball (consoles with 2 LCD Displays).
2. Press **{APPL} {LOAD}**. You will be asked to confirm this action.
3. Press **{LOAD}** to start loading or **{BACK}** to cancel the operation.
4. When the loading is complete, remove the floppy disk by pressing the small button at the side of the disk slot.

Check that the correct options have been activated by going into the *Report* display.

1. Press **[REPORT]** to show the *Configuration* window. The **APPL** field here shows the applications installed. For example **LP|350|NET** shows that Lightpalette is installed with 350 channels and the Networker software is also installed.
2. To return to the *Live* display press **[LIVE]**

Tutorial

This section will give you sufficient information to start using the console quickly and get the feel of how the console and its software operate. It will also build up skill levels and confidence to use the more advanced features that the software offers.

Before starting this tutorial you should read the *Installation* chapter to make sure that the console is set up.

Dimmers and fixtures do not have to be connected to the console since you can see the output levels on the console screen(s).

This manual generally refers to 430, 530, and 550 series consoles. See page 46 for the differences between these consoles and 520 series consoles. Also refer to page 228 for details of the 510i control panel.

Turning the Console On and Off

Setting Up For the Tutorial

Using Channel Controls

Using the X Playbacks

Using Submaster Faders


Using Effect Playbacks


Saving the Show

Printing the Show

Turning off the Console

Turning the Console On and Off

Turn the console on using the On/Off button () or the power switch on the power supply. The Lightpalette start up message appears.

To turn the console off, press **[SETUP] [EXIT] {EXIT}** (or if logins are enabled press **[SETUP]{EXIT} {SHUTDOWN}{SHUTDOWN}**) and wait for the `Console|shutdown|successfully` message to appear. Then turn the console off using the On/Off button () or the power switch on the power supply.

If your console has a mains outlet, this switch also controls any equipment plugged into it

Setting Up For the Tutorial

This tutorial makes certain assumptions about how the console is set up. If you choose to go through this tutorial without first setting up the console as described, please keep in mind that the displays and the results of your actions may not match what is shown.

Video There are up to four video monitors connected to the Lightpalette console. This tutorial assumes that you have two monitors connected. These monitors are called the *State* screen (left video screen) and the *Levels* screen (right video screen). Each of the displays that you can show using the display keys is a named display (e.g., *Live* display). A part of the display that is visually separated from the rest is called a window.

LCD There are 3 LCD screens across the middle of 430, 530, and 550 series consoles, and 2 on 520 series consoles. These are called "left LCD," "centre LCD," and "right LCD." 520 series consoles do not have a centre LCD. The left LCD is above the X playbacks, and contains soft keys related to these playbacks. The centre LCD shows the current assignment of the supermasters above it, and provides macro shortcut soft keys. The right LCD contains menus appropriate to the various displays. These menus are called "LCD xxx menu" (for instance, LCD *Live* menu).

Setup This tutorial assumes that the console is at its factory default settings for Setup and Patch, and has no recorded cues, submasters, groups, profiles, effects, or macros.

To clear these:

1. Press **[ARCHIVE] {CLR}** to show the LCD *Clear* menu in the right LCD, and the *Archive Selection* window on the *State* screen. The **WHOLE|SHOW** field on the *State* screen will be highlighted in red.
2. Press **[+]** to turn this field on. A check mark appears in the field (**WHOLE|SHOW|✓**).
3. Highlight the Setup field and turn it on. Setup will only be cleared if this is on.
4. Press **{CLEAR}**. You will be asked to confirm this action.
5. Press **{CLEAR}** to clear all show elements. Progress will be shown in the space under the *Wheel* window.

For this tutorial, we are not concerned with the actual console output. You can see everything on the displays. Ideally, you should disconnect the outputs while going through this tutorial to minimize wear and tear on the lights, and minimize surprises to anyone that is depending on those lights.

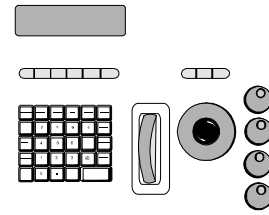
Grandmaster and Supermasters

In order to see the full output levels, make sure that the grandmaster faders (if fitted) and all supermaster faders are at full. On consoles with grandmaster faders the faders are at the top right of the console and there is a level indicator for them in the upper right corner of each display that should read GM=FL/FL. Since you have cleared submasters, the supermasters are the last 6 submaster faders.

All of the examples in this tutorial assume that both grandmasters are set to Full.

Using Channel Controls

The channel controls are used to change channel levels. When you select the *Live* display, any changes you make in levels will appear at the output of the console, and will change the lighting levels. When the wheel is active, selected channels are shown with a red background, and changing levels directly affects any fixtures connected to those channels. There can be more than one output patched to each channel, and more than one dimmer or other device connected to each output.



A channel can have both an intensity and an attribute component. Intensities are generally used for outputs connected to dimmers, which control the brightness of a fixture. Attributes are generally used for outputs connected to scrollers, which control the colour of a fixture.

When the **Channel|Display** field in the *Setup* display is set to its default value, channel numbers are shown on the *Levels* screen together with their levels. Each channel has a unique number 0001, 02, 03... starting at the top left of the screen. Intensity levels are shown on the line below the channel number, and attribute levels below this.

A screenshot of the 'Levels' screen in a lighting console. The screen has a black background with white text. At the top, there is a title bar with the following information: '8:32:28 24/06/98 LIVE *No Title GM=FL/FL'. Below the title bar, the screen displays a grid of channel numbers and their corresponding levels. The channel numbers are arranged in rows of 24, starting from 0001 in the top left and ending at 0226 in the bottom right. Each channel number is followed by a line of 24 small squares representing intensity levels, and a line of 24 small squares representing attribute levels. The channel numbers are: 0001, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 0025, 0026, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 0050, 0051, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 0075, 0076, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 0100, 0101, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 0125, 0126, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 0150, 0151, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 0175, 0176, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 0200, 0210, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 0225, 0226, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 0250. At the bottom of the screen, there is a 'LIVE *' indicator.

The title bar shows the date and time, display name, show name, and grandmaster status. You can set the date and time and format in the *Console Time* window of the second *Setup State* screen. The show name is preceded by an asterisk (*) when changes have been made to the show since you last saved it.

Intensity levels are shown as a percentage from **1** to **99** with Full shown as FL. An intensity which is off (0%) is shown with a blank level. Attribute levels are shown as a frame number from **0** to **100** (they are never shown as blank). Initially, all the channels have only an intensity. This tutorial does not cover channel attributes.

By default, the *Live* display is shown in **+LP100+** format. For an explanation of this and alternative formats turn to *The Show Details Window* starting on page 188.

[@] You can change channel levels by entering the level at the keyboard.

To set channel 1 to 20%, enter the following using the keyboard.

[1][@][2][*] Sets channel 1 to 20%. The level changes when you press **[2][*]**

The channel is highlighted when you press **[@]**. The channel level changes when you press **[*]**. This is called Command Line mode. By default, the console is in Command Line mode, which means you only need to press 1 level digit and **[*]** for levels that are multiples of 10% (entered as 0 to 9). To learn about the three channel entry modes turn to *The Show Details Window* starting on page 184.

[ON] You can use this key to set levels to a programmable On level. The default level for this key is Full, but this level can be changed in the *Setup* display.

[1][ON] Sets channel 1 to Full. The level changes when you press **[ON]**. This command does not require **[*]**.

[CLR] Commands are shown at the bottom of both screens as you type them. If you make an error while typing, press **[CLR]** to clear the previous key press. This can only be used while typing in the command; not after the command is executed.

[CLR] Clears the previous key.

[UNDO][@] To undo the last command which set intensity levels, press **[UNDO][@]**

[UNDO][@] Undoes the last set command which set an intensity level. In this case, sets channel 1 back to off from 20%.

You can undo the last command which set either intensities or attributes by pressing **[UNDO][*]**. You can undo the last command which set attributes by pressing **[UNDO][@ATT]**

In-between Levels The example above lets you set levels to 0, 10, 20 ... 90%. To set to an in-between level, for example 23%, enter the following.

[2][6][@][2][3][*]

Sets channel 26 to 23%. The level changes when you press **[*]**.

Soft keys Until you press **[@]**, the right LCD shows soft keys that can be used instead of entering a level number. Pressing these soft keys is the same as pressing **[@] # [*]**.

{FULL} This soft key can be used to set the output level to 100% (this cannot be done by directly entering a level).

[1][@]{FULL}[*]

Sets channel 1 to 100% (shown on the *Levels* screen as FL). This command works in all displays

[1]{FULL} Sets channel 1 to 100% (shown on the *Levels* screen as FL). This command only works in the *Live* display.

{UP%} and **{DOWN%}** These soft keys increase or decrease the levels by a preset level (see page 228) rather than setting them to an absolute level. If channel 1 is at 0% and the preset level was left at its default of 5%, then the following commands set it to 5% and then to 10%.

[1]{UP%} Sets channel 1 to 5%.

{UP%} Sets channel 1 to 10%. channel 1 is already highlighted, so you do not have to type its number again.

Once you press **[@]** the right LCD still shows the **{FULL}** soft key (at this stage, you must follow the soft key by **[*]** to complete the command). It also shows **[OFF]**.

{OFF} In the *Live* display this soft key is the same as using a level of 0%. In other displays it forces a channel to Off instead of On At Zero. Channels that are On At Zero are forced to zero in a cue. Channels that are Off do not change in a cue.

[2][6][@][OFF] Sets channel 26 to off.

[1][@][0][*] or

[1][@].[*] or

[1][@][*] Also sets channel 1 to off.

Arbitrary Relative Levels You can use **[+]** and **[-]** to increase or decrease the levels by an arbitrary amount.

[1][@][+][2][.][5][2][5][*] Sets channel 1 from 10% to 35%.

[1][@][-][0][.][5][0][5][*] Sets channel 1 from 35% to 30%.

Multiple Channels You can set multiple channels in the same command using **+** to add channels to the channel list, **[THRU]** to specify a range of channels, and **-** to remove channels from the channel list.

Channels are highlighted as soon as you press any non numeric key (for instance, **[+]** or **[THRU]**) to end the channel number. New channel levels appear when you press **[*]**.

.The following commands all set channels 1, 2, 3, 5, 6 to 90%.

[1][+][2][+][3][+][5][+][6][@][9][*]

[1][THRU][3][+][5][+][6][@][9][*]

[3][THRU][1][+][5][THRU][6][@][9][*]

[1][THRU][6][-][4][@][9][*]

Current Selection

After you set one or more channels, they remain highlighted on the *Levels* screen with a red background to show that they are selected. For example, after any of the above commands, channels 1, 2, 3, 5, 6 are the current selection.

The channels in the current selection can be changed without entering the channel list again. After any of the above commands, the following commands will change the levels of these channels

[@][5][*] Sets channels to 50%.

{DOWN%} Sets channels to 45%.

{DOWN%} Sets channels to 40%.

[@]{OFF}[*] Sets channels to 0%.

CLR To clear the current selection, press **[CLR]** at the end of the command (pressing **[CLR]** during the command deletes the last key press).

[*] To select all channels which currently have a level (channels that are not off), press **[*]**



You can use the Level Wheel instead of the keyboard to set channel levels. For example, entering 1 and then moving the Level Wheel fades channel 1 up or down from its current level. The **[@]** key is optional

[1]

[1][@] Both of these change the channel 1 level.

Since the Level Wheel always changes the current selection (channels with a red background), you can also select channel 1 and then use the Level Wheel to change the channel level.

[1][*] Selects channel 1 without changing its level.

Wheels the current selection

Wheeling Multiple Channels

You can select and wheel multiple channels. These two channels are first set to different levels to show how the wheeling is done.

[1][@][2][1][@][2][*] Set channel 1 to 20%.

[2][@][4][2][@][4][*] Set channel 2 to 40%.

[1][+][2] Wheel channels 1 and 2 from current levels.

Channel levels go up and down proportionally when they are wheeled. For example, wheeling channel 1 up 10% (i.e. from 20% to 30%) causes channel 2 to go up 20% (i.e. from 40% to 60%). Channel 2 changes by twice as much because its level was twice the level of channel 1 to start. Channels at zero will be wheeled up by about 2% for a 50% change in other channels. This is the default action for the Level Wheel and is called Proportional Mastering mode. For an explanation of the alternative Shaft Mastering mode *The Show Details* Window starting on page 192

[REM DIM] Often you will want to set all channels off except the ones you have selected.

[2][@][5][REM DIM]

Select channel 2 and set it to 50%, then set the remaining channels off.

Using the X Playbacks

The X playbacks are used to run a pre-recorded sequence of cues called a cue sheet.

Each cue (sometimes called a preset or memory), identifies a lighting state. This includes which channels are off, the levels of the on channels and the time to fade to the new levels.

The default type of cue is a Tracking Cue where only non-zero channels move to new levels. When you record a Tracking Cue, channel levels from the previous cue track into the new cue. For an explanation of this and the alternative fade types turn to *Fade Types* starting on page 138:-

If the *X Playback 1* window is not showing, press **[SHIFT][LIVE]** until it appears on the top of the *State* screen.

Recording Cues

The easiest way to record a cue is to use the Channel Control to set levels in the *Live* display (see *Working With Channel Levels* starting on page 66.) and record them into the cue. This is shown in the example below which sets up the levels of channels 1 to 7 (all other channels are off) then records these levels into cue 1.

[1][THRU][5][@][9][REM DIM]

Set channels 1...5 to 90%, and set remaining channels off.

[6][+][7][@][8][*]

Set channels 6...7 to 80%.

[RECORD][CUE][1][*]

Record channels into cue 1. Channels that remain unchanged from the previous cue are recorded in the cue at off. If you go into the *Preview* display these channels show blank levels. Channels that are explicitly set to zero in this cue will show an intensity of zero in the *Preview* display. If cue 1 already exists you will be asked to confirm this action. Press **[*]** again to record the cue or **[CLR]** or **[UNDO]** to cancel the operation.

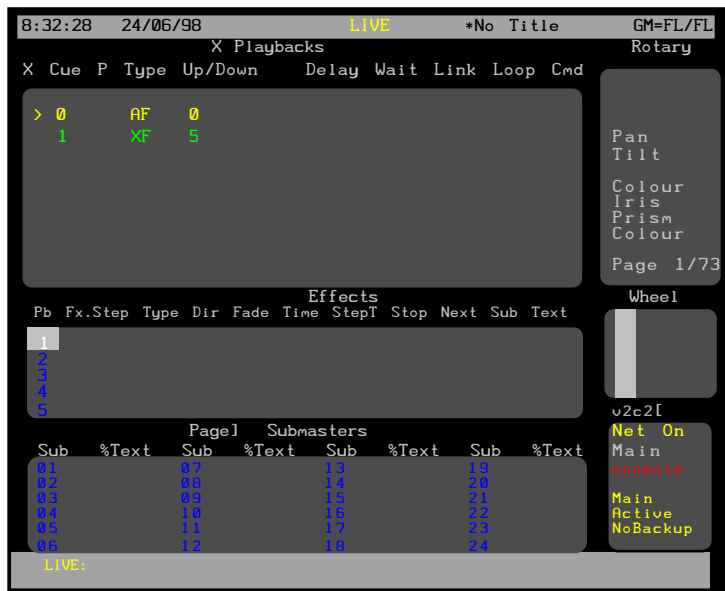
Record a second cue with channels 5 to 8 as follows:

[1][THRU][4][@][0][*] Set channels 1... 4 off.
[8] Wheel channel 8 from 0% to 70%.
[RECORD][CUE][1][.][5][*]
 Record channels into cue 1.5.

Record a third cue with the same channels as cue 1.5 but different levels as follows:

[*] Select channels which are on (5...8),
[] and wheel down by 10%.

[RECORD][CUE][3][0][*]



Cue numbers do not need to be sequential. They can range from 0.1 to 999.9. The decimal number from .0 to .9 can be used to insert extra cues between whole numbers. The .0 is optional and is the same as if omitted (i.e. cue 1 is the same as cue 1.0). In addition, a cue can be split into up to 12 parts. Channels in parts cannot overlap, but parts can start and end at different times, and proceed at different fade rates. Up to 2000 cues or cue parts can be recorded at once.

Playing Cues

Before playing these back make sure you are in cue zero and all lights are out.

[CLR][GOTO][CUE][0][*] or

[CLR][GOTO][0][*]

Clear channels from the wheel and go to cue zero (which is a blackout).

[GO] Press **[GO]** to start cue 1. You can watch the levels change in the *Levels* screen of the *Live* display as the cue fades in over a 5 second period (this is the default time). The *X Playback* window also shows cue 1 on a line at the top of the window together with the fade progress (seconds left in the fade).

[GO] Play cue 1.

The next cues in the cue sheet can be played sequentially by just pressing **[GO]** twice more. Note that the next cue that will be played is shown in the *X Playback* window in a brighter cyan than the rest of the cues, a cue that is running is shown in red, and the current completed cue is shown in yellow. Once the last cue is played, pressing the **[GO]** key has no further effect.

[GO] Play cue 1.5.

[GO] Play cue 30.

[GO] Nothing happens.

You can also use **[CUT]** to start a cue. This works like **[GO]** except that wait and delay times are ignored and the fade time is taken from the **X|Cut** field in the *Default Times* window on page 1 of the *Setup* display.

[STOP/BACK] You can use **[STOP/BACK]** to reverse back through the cue sheet. Press this three times to get back to before cue 1 (this is called blackout since all intensity channels are off. Attribute channels are not affected).

[STOP/BACK] Go back to cue 1.5.

[STOP/BACK] Go back to cue 1.

[STOP/BACK] Go back to blackout.

If you press **[GO]** before cue 1 is done, cue 1.5 levels will override cue 1 levels. Channels that go to a level in cue 1 and then return to a new level in cue 1.5 will never reach their recorded cue 1 levels.

[GO] Play cue 1.

[GO] Before it completes, play cue 1.5.

You can use **[STOP/BACK]** to reverse back through the cue sheet. Press this three times to get back to before cue 1 (this is called blackout since all intensity channels are off. Attribute channels are not affected).

[STOP/BACK] Go back to cue 1.5.

[STOP/BACK] Go back to cue 1.

[STOP/BACK] Go back to blackout.

If you press **[GO]** before cue 1 is done, cue 1.5 levels will override cue 1 levels. Channels that go to a level in cue 1 and then return to a new level in cue 1.5 will never reach their recorded cue 1 levels.

[GO] Play cue 1.

[GO] Before it completes, play cue 1.5.

You can also use **[STOP/BACK]** to stop a cue while it is fading. A stopped cue is shown with the fade progress in red.

[STOP/BACK][STOP/BACK][STOP/BACK]

Press until at blackout.

[GO] Play cue 1.

[STOP/BACK] Before it completes, stop it.

Once the cue is stopped, press **[STOP/BACK]** again to return to the previous cue in the “X Back, Cut” fade time set in the *Setup* display or press **[GO]** to restart the fade from where it was stopped. Experiment with these keys to get a good understanding of how they work.

Load a Specific Cue

You can load a cue without playing it by using the **[LOAD]** key. It becomes the next cue that will be played by the **[GO]** key.

There is a **[LOAD]** key for each X playback. In this manual, all examples use the **[LOAD]** key in X Playback 1.

[LOAD][CUE][3][0][LOAD][*]

Load cue 30 to play in its recorded time.

[LOAD][CUE][3][0][TIME][1][0][LOAD][*]

Load cue 30 to play in 10 seconds.

Go To a Specific Cue

Instead of playing the cue sheet sequentially, you can play any particular cue you want to. You can play the cue in its recorded time or you can specify a time in the command. For example, the following plays cue 30 regardless of where you are in the cue sheet.

[LOAD][CUE][3][0][LOAD][*]

Plays cue 30 in its recorded time.

[LOAD][CUE][3][0][TIME][1][0][LOAD][*]

Plays cue 30 in 10 seconds. This overrides the recorded time for this playback only.

Rather than going through the playback to do this, you can use the **[GOTO]** key. Wait and delay times are ignored and the fade time is taken from the X|Cut field in the *Default Times* window on page 1 of the *Setup* display.

[LOAD][CUE][3][0][LOAD][*]

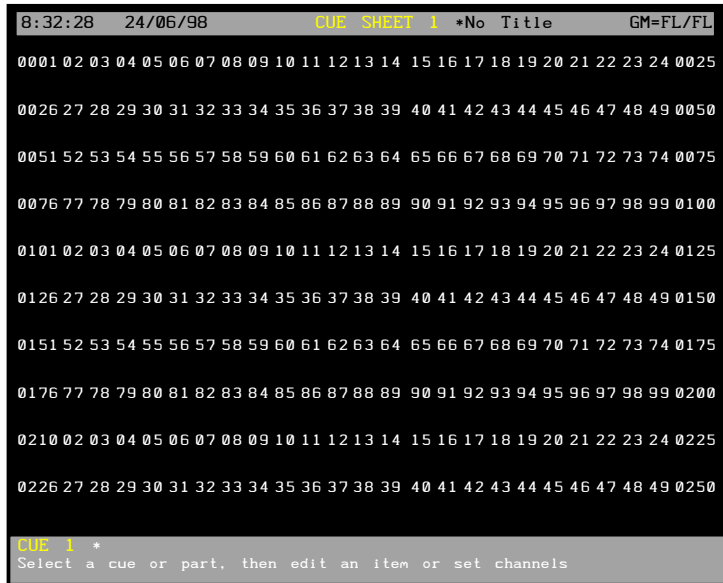
Goes to cue 30 in the time specified in the *Setup* display.

[LOAD][CUE][3][0][TIME][1][0][LOAD][*]

Goes to cue 30 in the specified time.

Modifying Cues

Once cues have been recorded, they can be viewed and modified in the *Cue/Preview* display. To show the *Cue/Preview* display, press **[CUE]**.



The *Cue/Preview* display *Levels* screen shows the recorded channel levels (intensity levels and attribute levels) of the current cue. The *Levels* screen background is grey rather than black to show that levels changed in this display are not being changed live. To change output levels you must be in the *Live* display.

Changing levels while in the *Cue/Preview* display records the changes into the current cue without requiring a record command.



The *Cue/Preview* display *State* screen shows the three cues, (1, 1.5, 30) which were recorded previously. The current cue has the cursor (>) beside it and is highlighted, and the *Levels* screen shows its recorded levels. Use **▲** and **▼** on the X playback or **[NEXT]** and **[LAST]** to move the cursor to the other cues and show their recorded levels.

▲ and ▼
[NEXT] and **[LAST]** Change the current cue. Levels for the current cue are displayed in the Level screen.

To show the main cue editing screen, switch to Spread Sheet mode.
{SPREAD SHEET} Switch to Spread Sheet mode.

The title bar shows the date and time, display name, show name, and grandmaster status. The date and time format can be set in the *Console Time* window of the second *Setup* display *State* screen. The show name is preceded by an asterisk (*) when changes have been made to the show since you last saved it.

Cue Levels

The examples below show how to edit a cue from the *Cue/Preview* display. You can also change cue levels and properties from the *Live*, *Cue/Preview*, *Group*, *Effect*, or *Submaster* displays. Remember that when you are in the *Cue/Preview*, *Group*, *Effect*, or *Submaster* displays, changes you make in channel levels are automatically recorded into the currently displayed item, but to record the currently displayed channel levels into another type of item (for instance to record a submaster from the *Group* display) you must use explicit Record commands. Some of the soft keys and the Level Wheel are available only in the *Live* display. Otherwise the syntax for recording is the same from all locations.

Once the current cue indicator (>) is on the cue you want, you can change channel levels for the cue using Channel Control commands. This automatically records the new levels in the cue without making any changes to live levels.

○ Move highlight to cue 1.5.

[5][THRU][7][@][0][*] Set channels 5...7 off.

[9][@][FULL][*] Set channel 9 to 100%.

You cannot use the Level Wheel to change channel levels in the *Cue/Preview* display.

The cue is changed and recorded immediately as commands are entered.

Cue Properties

The cue sheet window also shows other properties for this cue. The *Up/Down* field sets the fade time properties for channels which are fading up or down (a single cue may have some channels fading up while others fade down). These are both set to 5 seconds by default. The following example changes the fade times of cue 1.5 from 5/5 to 6/3 seconds; when the fade times are different, this is called a split fade. The red highlight must be in the *Up/Down* field (i.e. 5/5) for cue 1.5 to change the times.

- □ Move highlight to cue 1.5 Up field (i.e. 5).
- [+] Increase the time to 6 seconds.
- □ Move highlight to the Down field (i.e. 5).
- [GOTO] Press twice to decrease the time to 3 seconds.

The Wait field is initially OFF. This can be used to automatically run the following cue a certain time after this cue is started.

The following example sets the wait time of cue 1.5 to 10.5 seconds. The highlight must be on the cue 1.5 Wait field to change the times.

- □ Move the highlight to the cue 1.5 Wait field.
- [1][0][.][5] Enter time of 10.5 seconds.

As shown, you can enter times in tenths of a second by using [.]. You can specify minutes by using a 3 or 4 digit number. For example, enter [1][2][3] for 1 minute 23 seconds (shown as 1:23). on entries over one minute, the tenths are ignored. The maximum time is 5959 (59 minutes, 59 seconds).

You can also change times using [+], [-] or the Level Wheel. If there is no number after the decimal point, the time changes one second at a time as you use these controls. If there is a number after the decimal, they change the time by one tenth of a second at a time until the first whole second is reached, then change the time by one second at a time.

When entering values, you can use [CLR] to restore the original value of a field as long as you have not moved the highlighting to another field.

When entering values, you can use CLR to restore the original value of a field as long as you have not moved the highlighting to another field.

To learn how to use the Time, Delay, Link and Loop properties, turn to *Cues and X Playbacks* starting on page 1099

Rerun the Cues

Now that cue 1.5 has been modified, it can be run again. First, return to the *Live* display by pressing [LIVE]. Replay the cue sheet from cue 1.

- [CLR][GOTO][CUE][1][*] or
- [CLR][GOTO][1][*]

Clear channels from the wheel and go to cue 1.

- [GO] Play cue 1.5 (cue 30 automatically runs).

When cue 1.5 plays, notice that channels 1 to 7 fade down to 0 in 3 seconds whereas channels 8 and 9 fade up in 6 seconds. Also, 10.5 seconds after cue 1.5 starts, the next cue (30) automatically runs. The wait time can be used to automatically run a whole series of cues at preset times.

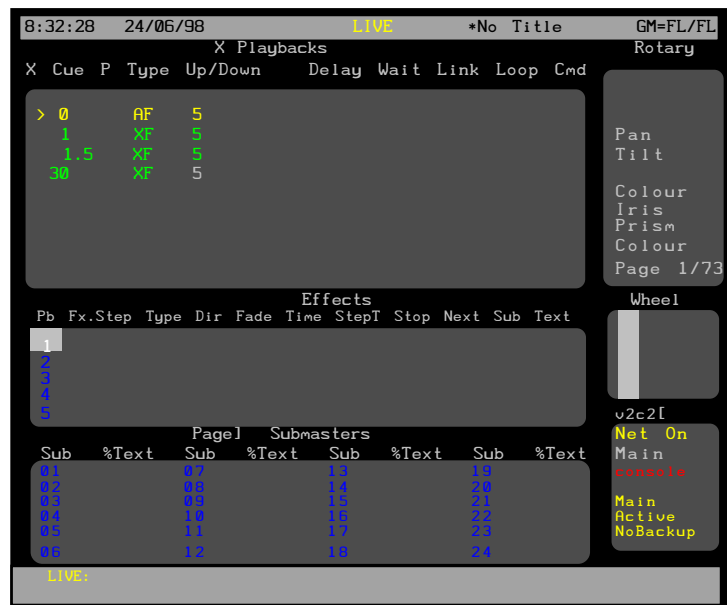
Using Submaster Faders

Submaster faders are used to manually fade in a lighting state.

There are 24 submaster faders in 520 series consoles, 30 in 430 and 530 series consoles, and 54 in 550 series consoles. In the default setup the last 6 are supermasters. In 430, 530, and 550 series consoles these supermasters are over the centre LCD screen and are labelled in the centre LCD screen. Each of these faders can be set to be a submaster or a supermaster, so you can rearrange the controls as needed. Each submaster fader has a fader with a bump button below it.

There are 6 pages of submasters, each of which can have different intensity and attribute levels and fade times. In addition, you can record an effect, macro, or external fader on a per fader (rather than a per page) basis. For more details on special submaster features such as pages turn to *Submasters* starting on page 90.

For this tutorial, we will assume that all submasters and supermasters are set according to the default setup. Make sure that all of the supermasters are at full. And all of the submasters are at zero. If the *Submasters* window and the *Effects* window are not currently displayed as shown below, press and hold **[SHIFT]** and then press **[LIVE]** repeatedly until they appear on the screen



Recording Submasters

The easiest way to record a submaster is to set up the levels on the Live display *Levels* screen, using the Channel Control as described above, then record them into the submaster. This is shown in the example below which sets up the levels of channels 10 to 13 (all other Channels are off) then records these levels into submaster 1.

[1][0][THRU][1][2][@][1][.][5][*]

Set channels 10 through 12 to 15%,

[REM DIM]

and set remaining channels off.

[1][3][@][3][*]

Set channel 13 to 30%.

[RECORD][SUB][1][RECORD][*]

Record channels into submaster 1.

Record the second submaster with channels 12 to 15 as follows:

[1][2][THRU][1][5][@][5][REM DIM][*]

Set channels 12 through 15 to 50% and set remaining channels off.

[RECORD][SUB][2][RECORD][*]

Record channels into submaster 2.

The lights over submaster faders 1 and 2 light to show the submaster is loaded and ready to use.

Using Submasters

Before using the submasters make sure that you are in a blackout.

[CLR][GOTO][0][*]

Clear channels from the wheel and go to cue zero (which is a blackout).

All submaster faders are marked from 0 (off) to 10 (100%). Make sure that all of the submaster faders are at zero, and all of the supermaster faders are at 10.

Markings and Initial Settings

Move the submaster 1 fader to the position marked 10. Channels 10 to 13 will fade to their recorded levels of 15% and 30%.

Fading



Move the submaster 1 fader to 10.

Similarly, move the submaster 2 fader to bring up channels 12 to 15. Channels 12 and 13 are in both submasters. If both submasters are on, the output level is the highest of them both (highest level takes precedence).

Bumping



Move the submaster 1 fader to 10.



Move the submaster 2 fader to 10. Note that the channel 12 and 13 levels from submaster 2 are used, since they are higher than the submaster 1 levels.

First move the submaster 1 fader to 5; this sets the levels to 50% of their recorded levels. Then press and hold the Bump button below it; this forces the output to the levels recorded into the submaster without moving the fader. Releasing the Bump button returns to the previous levels. (The operation of the Bump buttons can be changed per submaster in the *Submaster* display).

Modifying Submasters



Move the submaster fader to 5.



Bump submaster 1.

Once you have recorded submasters, you can view and modify them in the *Submaster* display.

To show the *Submaster* display press **[SUB]** in the Display keypad (not **[SUB]** in the Levels keypad). Then move all of the submaster faders to 0.

Changing levels while in this display records the changes into the current submaster without requiring a record command. ³¹

The *Submaster* display *Levels* screen shows the recorded channel levels (intensity levels and attribute levels) of the current submaster. The *Levels* screen background is grey rather than black to show that levels changed in this display are not being changed live.

The *Submaster* display *State* screen shows a page of submasters and their associated fields. The current submaster number is highlighted with a red background. The current page is shown at the top of this window.



Submaster Levels

The *Submasters* window shows the current submaster settings. Submaster 1 is highlighted in red and the *Levels* screen shows its recorded levels. Use the Trackball or **[NEXT]** and **[LAST]** to move the cursor to the other submasters and show their recorded levels.

 or **[NEXT]** and **[LAST]** Move highlight between submasters.

The recorded channels and levels can be changed by using commands the same as the Channel Control.

As long as the submaster is at zero, this does not change the current console output levels. However, if the submaster is not at zero the console output levels will change as you set new levels.

To change submaster 2, use the Trackball to highlight the submaster 2 Sub field and then change the submaster levels.

 or **[NEXT]** and **[LAST]** Move the highlight to Sub|2.


[1][5][@][0][*] Set channel 15 off.

You cannot use the Level Wheel to change channel levels in the *Submaster* display. The Level Wheel changes the submaster display page rather than channel levels.


The submaster is changed and recorded immediately as commands are entered.

Submaster Properties

The *Submasters* window also shows other properties for this submaster. The *In/Out* field sets the fade time properties when moving the fader up and down. These are both set to 0 by default. The following example changes the fade times of submaster 2 from 0/0 to 3/10 seconds. The highlight must be on the *In/Out* field (0/0) for submaster 2 to change the times.

 or **[NEXT]** and **[LAST]** Move highlight to the submaster 2 *In* field (i.e. 0).

[+][+][+] Press **[+]** three times to increase the time to 3 seconds.


 or **[NEXT]** and **[LAST]** Move highlight to the *Out* field (i.e. 0).

[1][0] Set the time to 10 seconds.

To learn how to use the *Att*, *Ext*, *Macro* and *Function* properties turn to *Submasters* starting on page 90.

Rerun the Submaster

Now that submaster 2 has been modified, it can be run again. Press **[LIVE]** to return to the *Live* display. Move submaster 2 from 0 to 10 then back to 0.

 Move the submaster from 0 to 10 then back to 0.

Channel 15 no longer has a level in submaster 2. Also, the channels fade in and out rather than moving instantly as the fader is moved. For example, moving the fader from 10 to 0 takes 10 seconds for the channels to fade out. The fade time is proportional to the fader movement so that fading from 10 to 7 or 8 to 5 will have a 3 second fade time (i.e. 30% of the fade time).

The submaster 2 bump button also uses these fade times. If you release of the bump button before the submaster reaches full it will fade back to zero without ever reaching full.

Using Effect Playbacks

Effect playbacks are used to run a repeated set of lighting states called effect steps. A set of effect steps is called an effect.

Effects can be recorded and then run on one of the effect playbacks in a variety of ways to give different chase, build, flicker and random output levels.

If the *Effects* window is not showing, press and hold **[SHIFT]**, and then press **[LIVE]** repeatedly until it appears on the screen

Recording Effects

The easiest way to record an effect step is to set up the levels in the *Live* display, using the Channel Control as described above, then record them into the step. This is shown in the example below which sets up the levels of channel 21 (all other channels are off) then records this into effect 5 step 1.

[2][1][FULL] Set channel 21,
[REM DIM] and set remaining channels off.
[RECORD][FX][5][.][1][RECORD][*]
Record channel 21 into effect 5 step 1.

Record a second step as follows. If you do not enter a number before the decimal point you are recording a new step to the same effect number as you last used.

[2][2][FULL] Set channel 22
[REM DIM] and set remaining channels off.
[RECORD][FX][.][3][RECORD][*]
Record channel 22 into effect 5 step 3.

Record two more steps. When recording, use **[SHIFT][NEXT]** instead of a step number to record the step after the current step.

[2][3][FULL] Set channel 23
[REM DIM] and set remaining channels off.
[RECORD][FX][SHIFT][NEXT][RECORD][*]
Record channel 23 into effect 5 step 4.

[2][4][FULL] Set channel 24
[REM DIM] and set remaining channels off.
[RECORD][FX][SHIFT][NEXT][RECORD][*]
Record channel 24 into effect 5 step 5.

Effect 5 now consists of these four steps. Effects and effect steps do not need to be sequential. Effects can be numbered from 1 to 600 with steps numbered from .1 to .99.

Playing Effects

The *Effects* window initially shows that no effects are running. Before playing an effect make sure you are in a blackout.

[CLR][GOTO][0][*]
Clear channels from the wheel and go to cue zero (which is a blackout).

Supermaster All effect output levels are mastered by the Effect Supermaster fader. By default this is above the **FX SUPER** label in the centre LCD (consoles with 3 LCD displays) or on submaster 21 (consoles with 2 LCD displays). If the supermaster locations have been shifted, see the *Submaster* display for its location. Move this fader to 10 to ensure that the effects play at full recorded levels.



Move Effect Supermaster to 10.

Loading and Starting an Effect

This effect can be played on any of the 30 effect playbacks. The example below shows it being played back on effect playback 2. To load it on the next available playback, don't specify a playback number ([PB][2]).

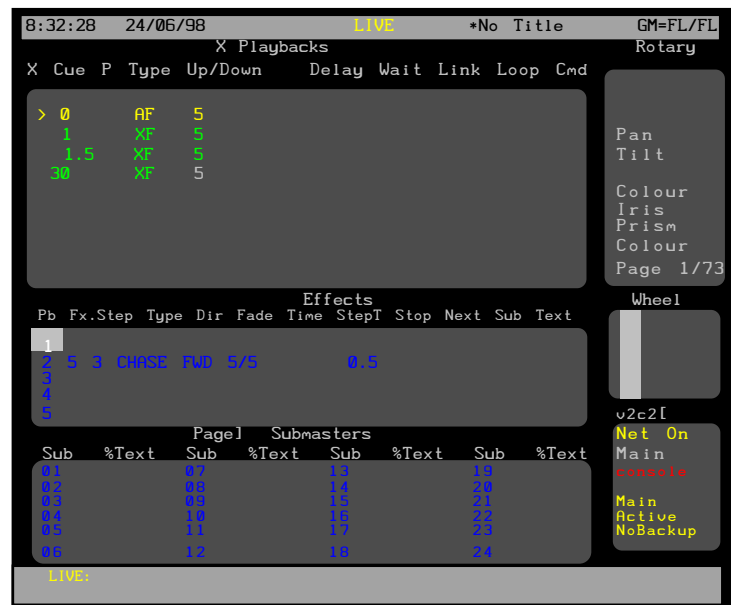
[FX LOAD][FX][5][PB][2][FX LOAD][*]

Loads effect 5 on Effect Playback 2.

[FX GO] Runs effect 5.

Each step shows for 0.5 seconds before moving onto the next step, cycling through channels 21, 22, 23, and 24. The whole effect fades in over a 5 second period.

The effect is highlighted in the *Effects* window which shows it is playing.



You can load an effect and immediately run it, or you can load the effect and start it later.

Setting the Effect Type

The effect above is called a chase since channels in only one step are on at any given time. When a new step starts, the levels in the previous step are turned off. You can change the effect to a different type of effect using **[FX TYPE]** and a soft key. The effect type is shown in the middle of the *Effects* window as CHASE.

[FX TYPE]{BUILD}

BUILD type. Each step goes to Full and stays at that level until all steps are at Full when it starts from the first step.

[FX TYPE]{CHASE}

Changes back to CHASE type.

Setting the Effect Direction

Normally, the effect runs forward from the first step to the last step, and then repeats again from the first step. You can run CHASE and BUILD effects in other directions using [FX DIR] and a soft key. The effect direction is shown at the bottom of the *Effects* window as FWD.

[FX DIR]{REV} REV direction. The effect starts at the last step and runs towards the first step, and then repeats from the last step.

[FX DIR]{BOUNCE}

BOUNCE direction. The effect goes from the first step forward to the last step and then reverses and goes from the last step to the first step. When it reaches the first step it reverses again to repeat the cycle.

[FX DIR]{RANDOM}

RANDOM direction. The effect steps are taken in random order, changing from cycle to cycle.

[FX DIR]{FWD} Changes back to FWD direction.

Pausing an Effect

While an effect is running, [FX PAUSE] will pause or restart the effect.

[FX PAUSE] Pause the effect at the current step.

[FX PAUSE] Restart the effect from where it stopped.

You can always tell when an effect is paused because the effect step number will flash while it is paused.

Stopping an Effect

The **[FX STOP]** key stops and unloads the effect on the current effect playback, fading it out over a 5 second period before it actually stops. To start the same effect again you must reload it.

[FX STOP] The effect fades out, stops, and is unloaded.

To stop and unload a specific effect playback, load effect zero into the desired playback, or use **[FX SEL]** and **[SHIFT][FX SEL]** to move the highlight to the desired playback and then use **[FX STOP]** to stop the effect and unload it.

[FX LOAD][FX][0][PB][2][FX LOAD][*]

The effect fades out, stops, and is unloaded.

Changing the Effect

You can change any effect while it is running. First highlight the effect playback with the desired effect, and then change the effect type, direction, or time. To change the effect direction:

[FX LOAD][FX][5][FX LOAD][*][FX GO]

Loads and starts effect 5 on the next available playback.

[FX DIR]{REV} Reverses effect playback 2.

To change the effect type:

[FX TYPE]{BUILD}

Changes the effect on effect playback 2 to a build effect.

To change the step time for the effect:

[FX TIME] 

Changes the step time for the effect on effect playback 2. This uses the Rate Wheel (between the X playbacks and the effect playback) on consoles with 2 wheels, or the Level Wheel on consoles with one wheel

To change the fade rate for the effect:

[FX TIME]{FADE RATE} 

Changes the fade rate for the effect on effect playback 2. This uses the Rate Wheel (between the X playbacks and the effect playback) on consoles with 2 wheels, or the Level Wheel on consoles with one wheel.

Making Your Changes Permanent

Once the effect is to your liking, you can make the changes to the effect permanent. This actually rerecords the specified effect with the values currently on the effect playback. It does not change any step channel levels.

[UPDATE][FX][5][RECORD][*]

Records changes you made to the effect back into the effect.

The Effect Display

To show the *Effect* display press **[FX]** in the Display keypad (not **[FX]** in the Levels keypad).

The *Effect* display *Levels* screen shows the recorded channel levels (intensity levels and attribute levels) of the current effect step. The *Levels* screen background is grey rather than black to show that levels changed in this display are not being changed live. To change output levels using an effect you must load and play back the effect on an effect playback.

Changing step levels while in the <i>Effect</i> display records the changes into the current effect step without requiring a record command.
--

In the *Effect* display *State* screen, the *Effect Settings* window shows the effect properties for the current effect and the *FX Step* window shows a page of steps and their associated properties. Use **{EDIT STEPS}** and **{EDIT FX}** to switch between these windows



Effect Channel Levels

The *FX Step* window shows the four steps, (5.1, 5.3, 5.4, 5.5) which were recorded previously.

To get the cursor into the effect step section of the display, press **{EDIT STEPS}**.

Step 5.1 is highlighted in red and the *Levels* screen shows its recorded levels. Use the Trackball to move the cursor to the other effect steps to show their recorded levels.

- Move highlight between steps.

The recorded channels can be changed by using commands the same as the Channel Control.

This does not change the current console output levels. You can only change output levels from the *Live* display.

To change step 5.5, first highlight it using the Trackball, then change the levels.

- Move the highlight to the step 5.5 FX|Step field.

[2][5][FULL] Add channel 25.

The step is changed immediately as commands are entered; you do not need to save it.

Effect Properties

The *Effects Sheet* window also shows other properties for this effect. These properties apply to all steps in the effect.

To get the cursor into the effect editing section of the display, press **{EDIT FX}**.

The `Type` field sets the type of effect and is initially CHASE. It can also be set to BUILD. These are the same options as the **[FX TYPE]** key in the *Playing Effects* section above. The following example changes the type of effect 5 from chase to build.

- Move the highlight to the `Type` field.
- [+] or [-]** Sets the `Type` field to BUILD.

The `Dir` field sets the effect direction and is initially forward (FWD). It can also be set to REV (reverse), BOUNCE, or RANDOM. These are the same options as the **[FX TYPE]** key in the *Playing Effects* section above.

The following example changes the direction of effect 5 from forward to reverse.

- Move the highlight to the `Dir` field.
- [+]** Set the `Dir` field to REV.

The `Level` field sets how the effect channel levels are interpreted and is initially normal (NORMAL). It can be set to the following values:

- NORMAL Channels in active steps are set to the high level and channels in inactive steps are set to the low level.
- NEGATIV Channels in active steps are set to the low level and channels in inactive steps are set to the high level.
- NRM|NEG Levels start as NORMAL and then alternate between NEGATIV and NORMAL.
- NEG|NRM Levels start as NEGATIV and then alternate between NORMAL and NEGATIV.
- RANDOM Levels are randomly set between the high and low levels.

The following example changes the Level of effect 5 from normal to negative.

- Move the highlight to the `Level` field.
- [+]** Set the `Level` field to NEGATIV.

The `FadeUp` and `FadeDn` fields set the time for the overall effect to fade up and down when it is started and stopped. These are both normally set to 0.5 seconds. The following example changes the fade time of effect 5 from 0.5/0.5 to 0.3/0.7 seconds.

- Move the highlight to the `FadeUp` field.
- [GOTO]** Decrease the time to 0.3 seconds.
- Move the highlight to the `FadeDn` field.
- [0].[7]** Enter a time of 0.7 seconds.

The `NextFx`, `Profile`, `Mode`, `StopAfter`, and `StepControl` fields let you further tailor the effect to do exactly what you want it to. To learn more about these effect properties turn to *Recording Effect Properties* starting on page 140.

The `StepDefaults` fields just above the caption bar that divides effect properties from effect step properties let you set default values for step time, in, dwell, and out time, attribute step time, and low/high scaling. When you set a value, any individual step value that is still at the default setting (the field value is black) will change to the new value. To learn more about these effect step properties turn to *Recording Effect Step Properties* starting on page 144.

Rerun the Effect Now that effect 5 has been modified, it can be run again. First, press **[LIVE]** to return to the *Live* display. Both effect playbacks are still running the old effect steps. Reload Effect Playback 2 as follows.

Stop the Effect To stop one effect, load effect 0 to the effect playback that you wish to stop. To stop all effects, load effect 0 without specifying an effect playback.

[FX LOAD][FX][0][PB][2][FX LOAD][*]

Stops and unloads Effect Playback 2.

Saving the Show

Each time you make changes to your show they are stored on an internal hard disk drive (drive C:, or the local disk), so that when you turn your console on the data is still there.

You can also save copies of a show to the local disk or to a floppy disk for later retrieval. You can store up to 200 shows on the local disk, and can store one show per floppy disk.

When you save to the local disk, the console automatically saves any existing version of the show as a backup copy on the local disk. It will save the last 10 versions of the show as backup copies so that you can easily go back to previous versions if necessary.

When you save a show, all data including Setup information is saved, regardless of what you check in the *Archive* display.

Why Save the Show?

It's important to save your show frequently, both to restore a show if it is lost due to disaster or equipment failure, and to retrieve information from previous versions of a show if necessary.

- Save the show to the local disk several times during a recording session. This automatically saves up to 10 backup copies of the show, and it's as simple as pressing **[ARCHIVE]{SAVE SHOW}{SAVE SHOW}**.
- Save each different show in your current repertory with a different name.

- Save the show you are working on to a floppy disk at the end of each recording session. Rotate floppy disks each day so that you have a record of several days sessions.
- Save archive copies at the end of a show so that you can reproduce it at some later date if necessary.

Storing Floppy Disks

Floppy disks are your ultimate backup and archiving medium. A few precautions will ensure that the backup is there when and if you need it.

- Store floppy disks away from the console, even in a different building if possible, so that they are not damaged if the console is damaged by some external cause (fire, pipes bursting, etc.).
- Don't store floppy disks near large magnetic sources, such as the dimmers and power transformers.
- Don't store floppy disks where there will be extreme fluctuations in temperature and/or humidity.
- Don't leave floppy disks where they may be exposed to direct sunlight.
- If you archive the show for future use, make at least two copies and store them in different locations.
- Floppy disks are not rated as an archival medium, which means that they have a lifetime rating of less than 10 years. For important shows, make new copies of the show after each season of use, even if no changes were made to the show.

The Show List

The show list appears at the bottom of the *Archive* display when you press **[ARCHIVE]**.



To move the highlight to the show list, press **BROWSE FILES**. To move the highlight back to the *Archive Selection* window, press **BACK**.

The following show list data is displayed:

Local Disk	The current drive and directory when it is on the internal hard disk. This is the drive and directory to which the currently loaded show will be saved
Floppy Disk	The current drive and directory when it is the floppy disk.
Loaded Show	Show currently loaded in console.
Show to Load/...	Currently highlighted show. The show which will be loaded, copied, deleted, or restored.

The following data is displayed for each show.

Show	The show name.
Cues	The number of cues in the show.
Date	The date the show was last saved.
Time	The time of day the show was last saved
Filename	The file name of the show on the disk. All shows are saved with an .ssf extension.
Backups	Shows whether any backup copies are stored on the disk.

To select a directory, highlight it and press **[*]**. To select a show once you are in the correct directory, highlight the show.

Naming the Show

Before you store your show, you should name it so that you can easily identify it when you need to load it back into the console.

1. Press **[ARCHIVE]** to see the *Archive* display.
2. Type **[TEXT][M][Y][S][H][O][W][*]** to name the show. To clear a name type **[TEXT][*]**

The name you set here appears at the very top of each screen, to the right of the display name.

Now that you have set up the show name, you can use **[ARCHIVE]{SAVE SHOW}** to save the show periodically to the default drive. The default drive appears in the centre of the *Archive State* screen when you press **[ARCHIVE]**.

Changing the Current Drive and Directory

Shows are always saved to the current drive and directory. The first time you turn on the console the current drive is set to Floppy Disk (drive A:) if there is a disk in the floppy disk drive. Otherwise it is set to Local Disk (drive C:). The console saves the current drive and directory setting when you shut down and tries to use the same drive or directory when you turn the console on again. If the current drive was set to Floppy Disk when you shut down, and there is no disk in the floppy disk drive when you turn the console on again and open the *Archive* display, the current drive is reset to the local disk directory you used.

1. Press **[ARCHIVE]{BROWSE FILES}** to get to the LCD *Browse* menu. This menu lets you select where you want the console to save shows to and load, copy, delete, and restore shows from.

2. Use the Trackball to highlight a drive or directory. To change to the parent directory of the current directory, highlight [. .].
3. Press [*] to select the drive or directory. The new drive and directory appear in the LocalDisk/FloppyDisk field above the show list.

Saving a Show

When you save a show, the current show is saved in the current drive and directory. All data, including the setup, is saved. The disk and directory that the show will be saved into is shown in the LocalDisk/FloppyDisk field above the show list.

To save a show to the current drive and directory, press **[ARCHIVE]{SAVE SHOW}{SAVE SHOW}**

To save a show to a different drive and directory, do the following:

1. Press **[ARCHIVE]{BROWSE FILES}** to see the LCD *Browse* menu.
2. Switch to the drive and directory that you want to save to.
3. Press **{BACK}** to return to the LCD *Archive* menu.
4. Press **{SAVE SHOW}** to request the save. You will be asked to confirm this action.
5. Press **{SAVE SHOW}** to save the show or **[CLR]** or **[UNDO]** to cancel the operation.

Now that you have set up the show name and the destination, you can use **[ARCHIVE]{SAVE SHOW}** to save the show periodically to the default drive.

When you save a show, all data including Setup information is saved, regardless of what you check in the *Archive* display.

Loading a Show

You can store and load shows from floppy disk or local disk. Storing a show on floppy disk is a good way to transfer shows between consoles or store a copy in another location. Storing a show on the local disk is a convenient and quick way to save and retrieve shows that you use often. If you are running shows in repertory you can easily retrieve the correct show for the day. To load a show, select which parts of the show you want loaded, then select a show, and then load it.

1. Press **[ARCHIVE]** to get to the LCD *Archive* menu.
2. If you don't want to load the whole show, use **[-]** to turn the **WHOLE|SHOW** field off. Then use the Trackball to highlight each item you want to load and use **[+]** to turn its **SELECT** field on. Type the desired numbers in the **FIRST**, **LAST**, and **NUMBER|FROM** fields.
3. Press **{BROWSE FILES}** to get to the LCD *Browse* menu.
4. Switch to the drive and directory containing the show you want to load.
5. Use the Trackball to highlight the show.
6. Press **[*]** to request the load. You will be asked to confirm this action.
7. Press **[*]** again to load the show or **[CLR]** or **[UNDO]** to cancel the operation.

Once you load a show, if you don't change the current drive and directory you can use **[ARCHIVE]{SAVE SHOW}** to save the show periodically to the same drive and directory.

Restoring a Backup Copy of the Show

Each time you save the show to the local disk it makes a backup copy of the show. The console automatically saves the last 10 copies of the show, which you can reload if necessary.

1. Press **[ARCHIVE]** to get to the LCD *Archive* menu.
2. If you don't want to load the whole show, use **[-]** to turn the **WHOLE|SHOW** field off. Then use the Trackball to highlight each item you want to load and use **[+]** to turn its **SELECT** field on. Type the desired numbers in the **FIRST**, **LAST**, and **NUMBER|FROM** fields.
3. Press **{BROWSE FILES}** to get to the LCD *Browse* menu.
4. Switch to the drive and directory containing the show you want to restore.
5. Use the Trackball to highlight the show.
6. Press **{BACKUP VIEW}** to see a list of backup copies for the selected show.
7. Use the Trackball to highlight the backup version you want to load.
8. Press **{LOAD BACKUP}** to request the load. You will be asked to confirm this action.
9. Press **{LOAD BACKUP}** to load the backup or **[CLR]** or **[UNDO]** to cancel the operation.

Once you load a show, if you don't change the current drive and directory you can use **[ARCHIVE]{SAVE SHOW}** to save the show periodically to the same drive and directory.

Formatting a Floppy Disk

Before using a floppy disk, it must be formatted. To save time you can use preformatted floppy disks compatible with MS/PC-DOS (either 720Kb or 1.44Mb disks). If you need to format your own floppy disks, follow the procedure below, which formats a 1.44Mb disk. You cannot format a 720Kb disk with on this console, though you can use pre-formatted 720Kb disks.

This procedure will erase any data already on the floppy disk.

1. Press **[ARCHIVE]{BROWSE FILES}** to get to the LCD *Browse* menu.
2. Insert the floppy disk.
3. Press **{FORMAT FLOPPY}** to request formatting. You will be asked to confirm this action.
4. Press **{FORMAT FLOPPY}** to start the format operation or **[CLR]** or **[UNDO]** to cancel the operation.

A progress indicator appears while the console is formatting the disk.

Write Protecting the Floppy Disk

After saving, the floppy disk can be write protected by moving the write protect tab so that the hole is open. This stops it being accidentally formatted or overwritten by another save.

Printing the Show

Since the default printer is ASCII, you should be able to print the show you just recorded without selecting a specific printer. However, for the best possible printouts with your printer, you can set the printer type using the `Type` field in the *Printer Setup* window of the *Print* display.

1. Press **[ARCHIVE]{PRINT}** to show the *Print* display.
2. Use the Trackball to highlight the `Type` field in the *Printer Setup* window.
3. Use the Wheel to select a printer type compatible with the printer connected to your system. If you aren't sure which printer type will work best, try printing few cues with each printer setting.
4. Select the parts of the show to print from the *Archive Selection* window, or select `Whole Show`. Use the Trackball to move the red highlight and **[+]** or **[-]** to select or clear the parts to load. Type the desired numbers in the `FIRST`, `LAST`, and `NUMBER FROM` fields.
5. Select the channels you want to print. You can select a range of channels in use and a range of channels not in use that you want to print. Channels in use are channels that are used in any cue, group, effect, or submaster, not just channels in cues, and includes intensity and attribute channels.
6. Select the printing options you want.
7. Press **{PRINT LEVELS}** to start printing. To cancel printing while it is in progress, press **{STOP}**. To go back to the LCD *Archive* menu press **{BACK}**

Instead of **{PRINT LEVELS}**, you can use **{PRINT LIST}**, **{PRINT LOG}**, or **{PRINT NOTES}** to print the cue sheets, the contents of the status log, or the Notes pages.

Turning off the Console

To turn off the console you must first shut it down and then turn the power switch off.

1. Press **[SETUP]{EXIT}{EXIT}** (or if logins are enabled press **[SETUP]{EXIT}{SHUT DOWN}{SHUT DOWN}**) and wait for the `Console shutdown successfully message`.
2. Turn the console off using the On/Off button (**[⏻]**) or the power switch on the power supply.

If your console has a mains outlet, this switch also controls any equipment plugged into it.

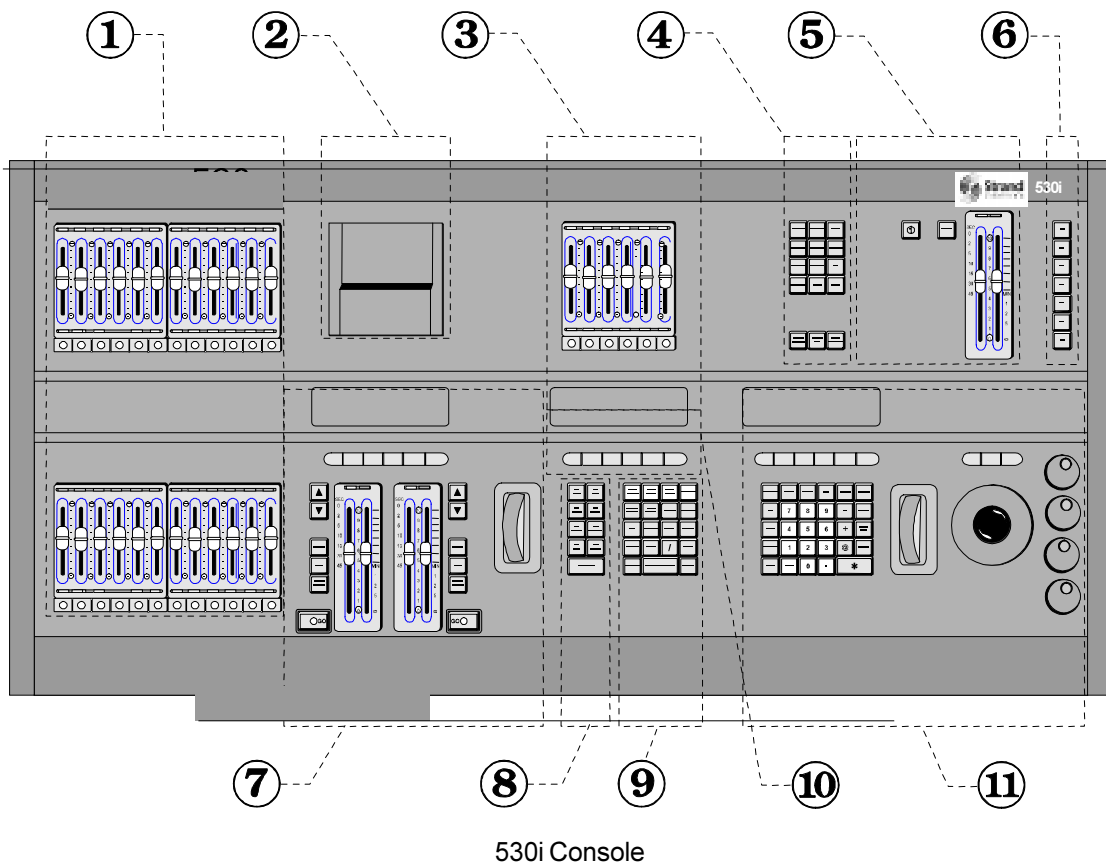
Control Console Features

This chapter describes the control console features and layout. It contains the following topics:

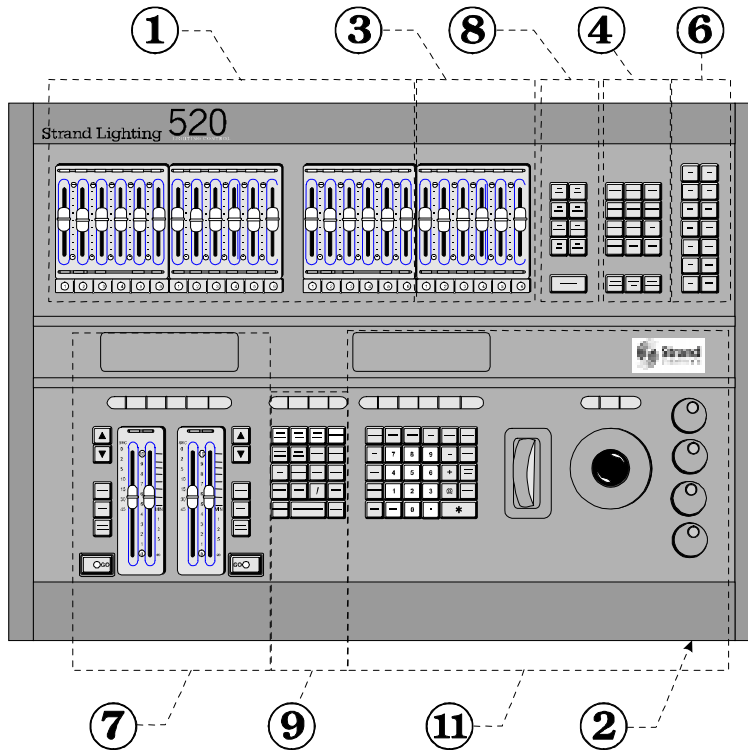
Console Controls

Floppy Disk Drive

The following picture shows the various control areas on the console; these are explained in the next section.



The 550 series console differs from the 530 series in the addition of two more banks of 12 submasters to the left of the submasters shown in this picture.



520i Console (mini Lightpalette)

This manual generally refers to 430, 530, and 550 series consoles. 520 series consoles do not have the following items.

- an On/Off button (S) and Stop button at the top of the console
- grandmasters
- a separate Rate Wheel (the Level Wheel doubles as a Rate Wheel)
- a centre LCD

In addition, 520 series consoles have only 4 centre soft keys, and have 14 direct macro keys rather than 7.

Console Controls

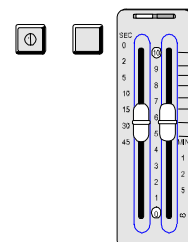
Macro Keys


The controls on the top panel of the console are grouped in a way that makes them easy to use. These 7 keys (14 keys on 520 series consoles) are at the top right of the console and labelled from **[P1]**. Pressing a macro key, or pressing **[SHIFT]** and a macro key runs the associated macro. For more information turn to *Macros* starting on page 214




Master Controls


These controls, at the top right of the console, include the two grandmaster faders, the Stop key and the power On/Off button ([⊞]). 520 series consoles do not have these controls.



 The two grandmaster faders are labelled GM1 and GM2, each with a light at the top of the fader. This masters all intensity output levels from 0% to 100% of their levels. The **GM=** field at the top right of the screen shows the grandmaster fader levels. You can assign channels to the grandmasters using the special groups numbered 999.1 and 999.2. If a channel is assigned to both grandmasters the lower of the two grandmaster levels is used on the output of the console. Initially, all channels are assigned to both submasters. The grandmaster does not affect attribute channels.

[STOP] Stop toggle key. The operation of this depends on the STOP I KEY field in the *Setup* display (see *The Console Window* starting on page 197.).

 Power switch. Press this to switch the console on and again to switch the console off. This key is recessed to avoid being accidentally pressed.

Always use **{EXIT}** to shut down the console before switching power off. press **[SETUP]{EXIT}{EXIT}** (or if logins are enabled, **[SETUP]{EXIT}{SHUT DOWN}{SHUT DOWN}**) and wait for the *Console shutdown successfully* message to appear. Then turn the console off using the On/Off button () or the power switch on the power supply.

Display Keypad

The display keypad is above the right LCD in 430, 530, and 550 series consoles, and above the Trackball in 520 series consoles. These keys are used to switch to one of several displays, and are shown in italics to distinguish them from other keys of the same name elsewhere on the console, for example **[MACRO]** instead of **[MACRO]**.



[MORE] Shows the soft keys **{PROF DISP}**, **{NOTES DISP}**, **{BACKUP CMDS}** and **{EVENT LIST}** lets you open the *Profiles* display, *Notes* display, *Backup Commands*. and *Event List*. To learn about the *Profiles* display turn to *Profiles* starting on page 220. To learn about the *Notes* display turn to *Notes* starting on page 59. To learn about the *Backup Commands* turn to *Backup Commands* on page 62 To learn about the *Event List* refer to *Timecode Events* in the *Communicate Manual*

[REPORT] Shows the softkeys **{DIMMER LOG}**, **{STATUS LOG}** and **{NET DIAG}** and allows access to the *Dimmer Log*, *Status Log* and *Network Diagnostics* displays. From the *Diagnostics* display the *Test Software* can be started. To learn about these displays turn to *Report Displays* starting on page 225.

[HELP] Shows the *Help* display which gives a summary of commands. To learn about online help turn to *Online Help* starting on page 58.

- [ARCHIVE]** Shows the *Archive* display which enables software, disk, clearing, and printing operations. To learn about the archiving functions turn to *Archive* starting on page 201.
- [SETUP]** Shows the first of four *Setup* display pages. Press **{MORE}** to see each additional page of the *Setup* display. To learn about your setup options turn to *Setup* starting on page 183.
- [MACRO]** Shows the *Macro* display which enables macro viewing and editing. For example **[MACRO][1][MACRO]** switches to the *Macro* display and selects macro 1 or the next macro if there is no macro 1. To learn how to record, use, view, and edit macros turn to *Macros* starting on page 214.
- [GROUP]** Shows the *Group* display which enables group viewing and editing. You can select a specific group by preceding this with the group number. For example **[GROUP][1][GROUP]** switches to the *Group* display and selects group 1 or the next group if there is no group 1. To learn how to record, use, view, and edit groups turn to *Groups* starting on page 158.
- [PATCH]** Shows the *Patch* display which enables patch viewing and editing. To learn how to edit, use, and view patches turn to *Patches* starting on page 164.
- [FX]** Shows the *Effect* display which lets you view and edit effect steps. You can select a specific effect step by preceding this with the effect and step numbers. For example **[FX][1].[2][FX]** switches to the *Effect* display and selects effect 1 step 2 or the next step if there is no effect 1 step 2. To learn how to record, use, view, and edit effects turn to *Effects* starting on page 139
- [CUE]** Shows the *Cue/Preview* display, which lets you record and view cues blind. You can select a specific cue by preceding this with the cue number. For example **[CUE][1].[2][CUE]** switches to the *Cue/Preview* display and selects cue 1.2, or the next cue if there is no cue 1.2. To learn how to view, and edit cues in the *Cue/Preview* display turn to *Viewing and Editing Cues* starting on page 135.
- [SUB]** Shows the *Submaster* display which lets you record and view submasters. A specific submaster can be selected at the same time by preceding this with the submaster number. For example **[SUB][2][SUB]** switches to the *Submaster* display and selects submaster 2. To learn how to view and edit submasters in the *Submaster* display turn to *Submasters* starting on page 90.

[LIVE] Shows the *Live* display which lets you control the console output levels. To learn about output channel control turn to *Working With Channel Levels* starting on page 66. To learn how to record from the *Live* display turn to *Recording Cue Levels* starting on page 124, *Recording Submaster Levels* starting on page 91, *Recording Effect Step Levels* starting on page 140, or *Recording Group Levels* starting on page 160

[LAST SCREEN] Switches between the current screen, selected by one of the above keys, and the previously selected screen.

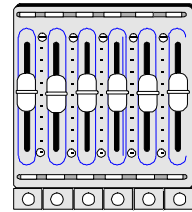
[SHIFT][LAST SCREEN] Swaps the contents of video 1 and video 2.

[PAGE DOWN] Shows the next higher numbered page of channel levels on the screen. If levels are not being displayed, this has no effect.

[PAGE UP] Shows the next lower numbered page of channel levels on the screen. If levels are not being displayed, this has no effect.

Supermaster Controls

These are the 6 faders above the centre LCD labelled 25 to 30 (for 530) or 49 to 54 (for 550). The labels at the top of this LCD indicate the usage of each supermaster fader above it. The bump button and lights associated with each fader are disabled when the fader is a supermaster. On 520 series consoles the last 6 submasters (19 to 24) are the supermasters by default.



SUB SUPER The Submaster Supermaster masters the output levels of all submasters.

FX SUPER The Effect Supermaster masters the output levels of all effects.

FLASH SUPER The Flash Supermaster sets the level when bumping or flashing a submaster. Channel control flashes and bumps always go to full.

NORMAL This is used as a normal submaster rather than a supermaster. If the *CommuniquéPro* software is installed, this changes to **DMX CHAN**. See the *CommuniquéPro Operator's Manual* for more details.

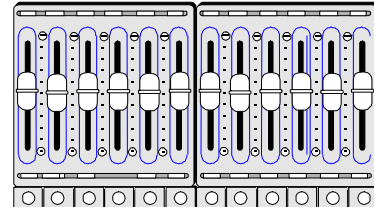
AUDIO THRESH The Audio Threshold Supermaster adjusts the sensitivity of the Audio Input which can then be used to control the speed of an effect. This supermaster is available only if the *CommuniquéPro* software is installed. See the *CommuniquéPro Operator's Manual* for more details.

MIDI RATIO The MIDI Ratio Supermaster divides the rate of the Midi Input Synchronization pulses, which can then be used to control the speed of an effect. This supermaster is available only if the *CommuniquéPro* software is installed. See the *CommuniquéPro Operator's Manual* for more details.

Each supermaster can be changed to operate as a submaster and other submasters can operate as supermasters.

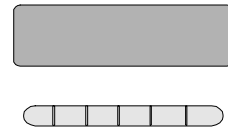
Submaster fader

Each submaster has its own fader and Bump button labelled 1 to 24 (for 520 series consoles), 1 to 30 (for 430/530 series consoles), or 1 to 54 (for 550 series consoles). For more information turn to *Submasters* starting on page 90.



LCDs and Soft Keys

There are three liquid crystal displays on 430, 530, and 550 series consoles, called the left LCD, centre LCD, and right LCD. There are 2 displays on 520 series consoles, called the left LCD and the right LCD. Each LCD display has 6 soft keys below it. The bottom of the LCD labels the function of each soft key below it. 520 series consoles also have 4 unlabelled soft keys that correspond to the first 4 of 6 soft keys under the centre LCD of consoles with 3 LCD display.



Left LCD The left LCD and soft keys are only used by the X Playbacks and are described in the *X Playbacks* chapter.

Centre LCD The centre LCD labels the 6 macro soft keys below it and the 6 Supermaster faders above it. The bottom of the LCD shows soft keys for bump modes and record modes at appropriate times. The centre of the LCD indicates the current bump mode while the bump mode soft keys are showing. 520 series consoles do not have this LCD, and the mode keys appear in the right LCD while in use.

Right LCD The right LCD and soft keys change according to the current screen display and the current command being entered.

The top line reflects the current screen being displayed. For example, if the monitors show the *Live* display, the right LCD shows the *Live* menu (called the LCD *Live* menu in this manual).

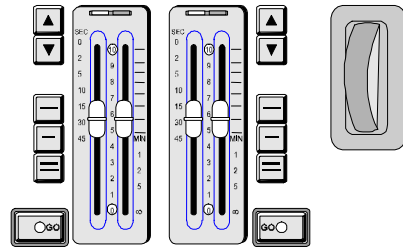
The centre of this LCD shows the current channel, cue, effect, and group. The channel level is shown next to the channel number.

The bottom line displays the labels for the soft keys below it. These change according to the current menu and the keys pressed. For example, if you press **[CUE]** in the *Live* menu, the soft keys change to give the **{PART}** soft key amongst others.

In consoles with only 2 LCD displays, these soft keys can also be temporarily associated with commands such as bump modes and record modes.

X Playback Controls

Each X Playback has its own faders and keys. To learn how to use these controls see *Using the X Playbacks* starting on page 125. On 430, 530, and 550 series consoles there is also a Rate Wheel to help you directly control fade rate changes while cues are running. On 520 series consoles the Level Wheel acts as a Rate Wheel while the Rate function is in use.



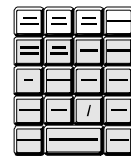
Effect Playback Keypad

The Effects Playback keypad is used for controlling the effects playbacks. To learn how to play back effects see *Using Effect Playbacks* starting on page 146.



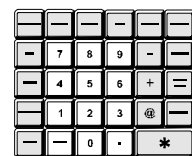
Record Keypad

The Record keypad is mainly used for recording cues, effects, submasters, etc.



Levels Keypad

The Levels keypad includes the number keys and other general purpose keys. Most of the keys other than numbers on the keypad are used for channel control.



Many of these keys are marked the same as Display keys, but their functions are quite different. The usage of these keys are explained in cases where they are used.

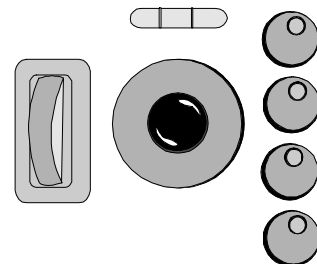
Linear Controls

Level Wheel

This area includes the Level Wheel, Trackball, 4 rotary knobs and the 3 unmarked keys above.

When you are in the *Live* display, the Level Wheel is used by the Channel Control to change levels. In other displays it lets you change values for

highlighted fields. Moving the Level Wheel up (away from you) increases value(s). Moving the Level Wheel down (towards you) decreases value(s). On 520 series consoles this wheel also acts as a Rate Wheel while the Rate function is in use.



Trackball The Trackball moves between fields (if any) in the current display. It can be moved up, down, left and right. The current field is highlighted with a red background.

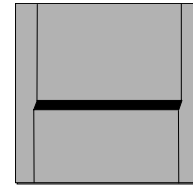
The Trackball is also used by the Tracker software. For more information see the *Tracker Operator's Manual*.

Rotary Knobs The top rotary is used by the Channel Control to change colour scroller attributes. All four rotaries are used by the Tracker software for additional attribute control. For more information see the *Tracker Operator's Manual*.

Trackball Keys These three keys are above the Trackball. They are used by the Tracker software. For more information see the *Tracker Operator's Manual*.

Floppy Disk Drive

Depending on the console, the floppy disk drive is above the left LCD or under the right hand corner of the console. It is used for loading operating and application software and saving and restoring show information. It uses standard DOS compatible 720Kb or 1.44Mb formatted 3½" floppy disks



Insert the floppy disk into the disk drive slot with the sliding cover first and the label up. Push it in until it clicks into place. To remove the floppy disk, press the small button beside the disk slot.

You cannot save show information on floppy disks until they are formatted. It is usually easier to purchase disks already formatted (IBM PC/MS-DOS compatible), but if you need to format your own 1.44Mb disks turn to *Formatting a Floppy Disk* starting on page 210.

Common Features

This chapter describes the operating features which are common to the following chapters. It contains the following topics:

Number of Screens

The Display *State* Screen

Editing the Command Line

Channel Control Modes

Editing Properties

Time Formats

Messages

Online Help

Notes

Console Reporter

Number of Screens

The standard console can display one or two screens of data. A hardware upgrade is available to let the console display up to four screens. Set the `Number | Screens` field in the *Setup* display to the number of monitors that are connected to the console.

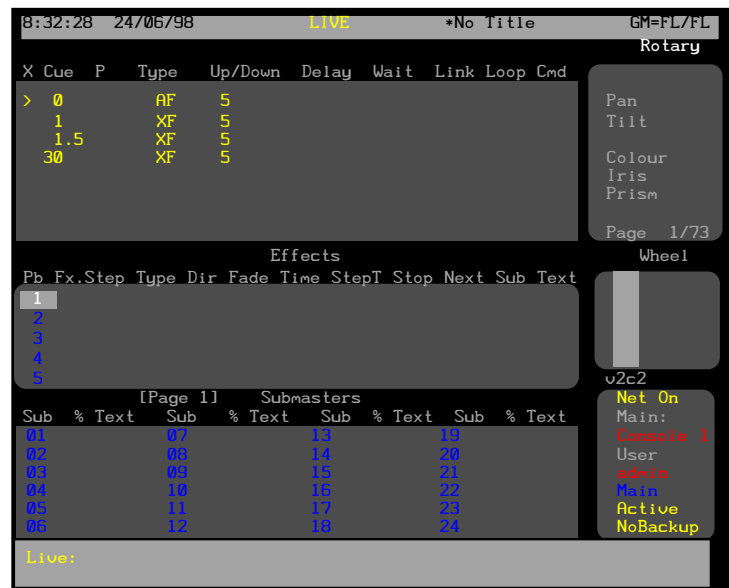
If a console is set for one screen, it is divided horizontally between a window at the top for the channel levels and one or more windows at the bottom for X playback, submaster and effect state information.

If a console is set for two screens, one screen shows state information and the other shows channel levels.

If the console is set for three or four screens, one screen shows state information and the other three screens show channel levels.

Throughout this manual, “*State* screen” means the screen showing state information (or the bottom half of a single screen), and “*Levels* screen” means the other monitor(s) (or the top half of a single screen).

The Display State Screen



The Live!ScreenLayout field in the *User Setup* display controls what is shown in the *Live* display State screen, as follows:

PB	The <i>State</i> screen includes <i>X Playback</i> window(s) only (default)
-SUBS	The <i>State</i> screen includes the <i>Submasters</i> window only.
FX	The <i>State</i> screen includes the <i>Effects</i> window only.
PB+SUBS	The <i>State</i> screen includes <i>X Playbacks</i> windows and the <i>Submasters</i> window.
PB+FX	The <i>State</i> screen includes <i>X Playback</i> windows and the <i>Effects</i> window.
PB+SUBS+FX	The <i>State</i> screen includes <i>X Playback</i> windows, the <i>Submasters</i> window, and the <i>Effects</i> window. This setting will not appear on systems set for one screen.
EVENT	The <i>State</i> screen includes the <i>Event Playback</i> window only
PB+EVENT	The <i>State</i> screen includes the <i>X Playback</i> window and the <i>Event Playback</i> window.
PB+EVENT+FX	The <i>State</i> screen includes the <i>X Playback</i> window, the <i>Event Playback</i> window and the <i>Effect</i> window.

To change *Live* display formats without going to the *Setup* display, press **{SHIFT}[LIVE]**. Each time you press **{SHIFT}[LIVE]** the display format changes to the next format on the list.

The picture above shows the *Live* display set to PB+SUBS+FX.

There will only be an *X Playback 1* window when the *Playbacks* field is set to SINGLE. Otherwise there will be an *X Playback 1* window and an *X Playback 2* window.

The title bar shows the date and time, display name, show name, and grandmaster status. The date and time format can be set in the *Console Time* window of the second *Setup* display *State* screen. The show name is preceded by an asterisk (*) when changes have been made to the show since you last saved it.

The *Rotary* window is only displayed on dual screen consoles when the Tracker software is installed (Tracker software requires two screens). The entries in this window show the attributes currently being controlled by the TrackBall (the top two entries) and the 4 rotary controls to the right of the TrackBall. For more information see the *Tracker Operator's Manual*.

The *Wheel* window is used to show wheel movement. It shows the selected channel with the lowest intensity.


The *X Playback*, *Submasters*, and *Effects* windows show the current state of each of these. See the associated chapters for more information on each of these three windows.

Disk Indicator

The data for the show is held on an internal hard disk drive (called the local disk). When recording or updating cues, effect steps, submasters, patches etc. the data is automatically saved to the local disk. A flashing magenta box replaces the / between grandmaster levels during a save.

If the console loses power before changes are saved, these changes are preserved in RAM (console memory) and saved when the console is next powered up.

To turn the console off, press **[SETUP]{EXIT}{EXIT}**

To ensure data integrity, when you turn the console off press **[SETUP]{EXIT}{EXIT}** (or if logins are enabled press **[SETUP]{EXIT}{EXIT}**) and wait for the Console shutdown successfully message to appear. Then turn the console off using the On/Off button () or the power switch on the power supply.

Editing the Command Line

At any time before a command on the command line is complete, you can back through the command line to correct it.

[CLR]

Clears the last entered key when a command is being entered. If no command is being entered this has no effect except in the *Live* display when it clears the current channel selection.

[SHIFT][CLR]

Clears the complete command line when a command is being entered. If no command is being entered it has no effect.

Channel Control Modes

There are three ways to enter channel control commands, which are controlled by the ChannelControlMode field in the *Setup* display. Its value is COMMANDLINE (default), DIRECT11DIGIT, or .DIRECT12DIGIT

COMMANDLINE

Commands are generally only carried out after you press [*] although it is sometimes not required. In general, the syntax is action first, then object (for instance, **[RECORD][CUE][1][*]**)

Channel levels are entered as a single digit number which represents a multiple of 10% or a double digit number which lets you enter fractions of 10%.

[1][@][0][2][*] sets channel 1 to 2%.

[1][@][3][*] sets channel 1 to 30%.

[1][@][4][5][*] sets channel 1 to 45%.

DIRECT|1|DIGIT Commands are carried out as soon as they are fully entered although the **[*]** key is required for some commands. In general, the syntax is object first, then action (for instance, **[CUE][1][RECORD]**)

Channel levels are entered as a single digit number which represents a multiple of 10%. This can be followed by . and a second digit for fractions of 10%.

[1][@][0].[2] sets channel 1 to 2%.

[1][@][3] sets channel 1 to 30%.

[1][@][4].[5] sets channel 1 to 45%.

DIRECT|2|DIGIT Commands are carried out as soon as they are fully entered although the **[*]** key is required for some commands. In general, the syntax is object first, then action (for instance, **[CUE][1][RECORD]**).

Channel levels are entered as a two digit number.




[1][@][0][2] sets channel 1 to 2%.

[1][@][3][0] sets channel 1 to 30%.

[1][@][4][5] sets channel 1 to 45%.

Editing Properties

Properties for setup, cues, submasters, effects, and groups can be changed by editing property fields in the *State* screen of the appropriate display

-  To select a field, use the Trackball to move the highlight to the field.
- [+] or [-] or  To cycle through the possible values for the field, use [+] or [-] or .
- [0] through [9] Numbers can be entered directly into numerical fields.
- [A] through [Z] Characters can be entered directly into text fields.
- [CLR] To clear a single number or character from a field, press [CLR]. If there no more numbers or characters in the field, press [CLR] to restore the previous value.
- [DEFLT] To reset a field to its default value, press [DEFLT]. This soft key only appears in the *Setup*, *Patch*, and *Effect* displays.
- [*] To select the first field in the *Setup* display press [*]. This works only in the *Setup* display.

Time Formats

Times are used for fades, delays and waits and are entered in minutes and seconds or in seconds and tenths of a second. You can only specify tenths of a second for times less than one minute.

entry format	displayed format	value
[0][.][1]0.1	0.1	0.1 second
[1]	1	1 second
[1][.][2]	1.2	1.2 seconds
[1][2]	12	12 seconds
[1][2][3]	1:23	1 minute, 23 seconds
[1][2][3][4]	12:34	12 minutes, 34 seconds
[5][9][5][9]	59:59	59 minutes, 59 seconds

Messages

The console beeps and displays an error message below the Command Line if entries do not fit with the current syntax, or values are out of range.

The console also beeps and posts a message on screen if an entry needs to be confirmed or canceled. To confirm the action you usually press the same key again or press [*]. To cancel the action, press [CLR] or [UNDO].

If the optional Console Reporter software is installed and a fault has occurred on a patched dimmer, the fault condition is displayed on all screens below the command line. For further information on dimmer fault reports turn to Console Reporter starting on page 60

Online Help

To get context sensitive help for the current display, press [HELP].

To get context sensitive help for a particular console key, press [HELP] and then press the key. Until you press [HELP] to exit Help mode you can continue pressing other keys to jump to their definitions.

To jump to help for a different display once you are in help mode, press the desired display key.

To jump to help for a different console key once you are in help mode, press the key.

To page through topics, press **{NEXT TOPIC}** or **{LAST TOPIC}**.

To exit the help system, press **{END HELP}** or **[HELP]**.

Notes

The notes default display lets you keep notes for yourself or for your installation. It also provides a means of viewing the Readme First file to learn about changes made when you install a new operating system or software. If you have the Tracker software installed, you can load and edit the ATC Page and the Fixture Library. For information about what is in these Tracker files and how to edit them, see the *Tracker Operator's Manual*. If you have the Console Reporter software installed, you can load and edit the Rack and Web Configuration file. For information on the Console Reporter Configuration files, turn to *Console Reporter* starting on page 60

Opening a new file automatically saves the file you are currently working on.






Changes to the Notes Pages, the ATC Page, the Fixture Library and the Rack Configuration file are saved with the show. New shows access the original Fixture Library ATC Page and configuration files until they are edited.

Writing Notes

You can easily edit parts of the notes pages, or add to them, to leave notes or messages for yourself or for your fellow operators.

1. To get to the notes page, press **[MORE] {NOTES DISP}**.
2. If the display shows one of the other files (not your notes pages), then press **{LOAD FILE}{NOTES PAGES}**.
3. Use the arrow keys on the ASCII keyboard or the Trackball on the console to position the cursor to where you want to add text.
4. Add the text as needed.

While editing you can use standard keys on your alphanumeric keyboard that you are familiar with from word processors, as well as some additional soft keys in the right LCS screen. The *Notes* display is always in insert mode, and text is inserted to the left of the blinking cursor.

[DEL]	Deletes the character that the cursor is blinking on.
[BACKSPACE]	Deletes the character to the left of the character that the cursor is blinking on.
	The Trackball lets you move around the screen. You can also use  ,  ,  , and  to move around the screen.
{COPY LINE}	Sends the entire line of text that contains the blinking cursor to the clipboard and does not delete the line of text. The location of the cursor in the line of text is not important.

{CUT LINE}	Sends the entire line of text that contains the blinking cursor to the clipboard and then deletes the line of text including the paragraph return. The location of the cursor in the line of text is not important.
{PASTE LINE}	Inserts the contents of the clipboard (a line of text you already copied or cut), above the line of text that contains the blinking cursor. The location of the cursor in the line of text is not important.

Loading Files

There are a number of files that you can load into the *Notes* display to read or edit.

To load a new file, press **{LOAD FILE}** and then press **{NOTES PAGES}**, **{README FIRST}**, **{ATC PAGE}**, **{FIXT LIB}**, or **{CONF FILES}** to open the desired file. Selecting **{CONF FILES}** provides a Notes sub-menu enabling the operator to select either **{NET CONFIG}** (refer to the Shownet Operators Manual) or **{RACK CONFIG}** (refer to Console Reporter, page. 60)

The Readme First file is read only and cannot be edited. The Fixture Library the ATC Page and the Configuration files can be edited just like you edit the Notes Pages. Changes in any of these files are saved with the show.

Console Reporter

Console Reporter is an add-on software package to GeniusPro and Lightpalette and is designed to monitor the status of all patched dimmers and dimmer racks and to alert the operator when a fault condition occurs.

The optional software, if enabled by the password, may be toggled On or Off in the *Setup* display by pressing **[SETUP] {MORE} {MORE}**. and using the [+] or [-] buttons or the Level Wheel to change the status.

Setting Up the Rack Configuration

To set up and edit the Reporter Rack Configuration file, press [MORE] and {NOTES DISP} keys to display the *Notes Menu* on the right-hand LCD, then select {LOAD FILE} then {Conf Files} and {Rack Config}

The operator can setup and edit the rack configuration file, (220rack.cfg) using the *Notes* editor to set up the rack address, port and node for up to 99 dimmer racks in the format.

```
RACK=RACK_NUM ADDR PORT NODE
```

where

RACK_NUM = 1 to 99

ADDR = SMX rack processor address 1 to 65535

PORT = Console auxiliary 1 to 3(RS485 or RS232 with 232 to 485 converter) or SN10x Reporter port 2 or 3 (2=RS232, 3=RS485 later)

NODE = IP address of SN10x (xxx.xxx.xxx.xxx). A node address of 0.0.0.0. is interpreted as the local console.

At start up, Reporter will automatically interrogate all configured racks to determine the mapping between rack and dimmer id to console output which is used in all subsequent analysis of dimmer faults.

Dimmer Fault Messages On All Screens

When one or more faults occur on a patched dimmer, a one or two line error message will be displayed on all screens as yellow on a red background as shown in the following example. Unpatched dimmers are ignored.

Fault on Dimmer 12345: Load Error, xxxxW, expected xxxxW

Only the first fault is displayed. In order to display full details of the dimmer fault, the operator must press the **[DIMMER]** key and **{SUMMARY}** softkey to access the *Dimmer Status* log for the dimmer number entered in the command line.

In addition, in order to draw the operator's attention to the fault condition, the word DIMMER is displayed in red on the top line of the *Status* screen.

The error message is removed from the current display on the next key press, however, the DIMMER warning remains on the *Status* screen until the operator enters the *Dimmer Summary* screen.

When the *Channel* Screen is displayed, and one or more dimmer faults exist, the channel number to which the faulty dimmer is patched will be highlighted with a red background.

Dimmer command menu

Pressing the **[DIMMER]** key will display the Dimmer softkey menu as follows:

The Dimmer menu can be selected from any display except *Setup*, *Archive*, *Notes*, *Report* and *Help*.

- | | |
|------------------|---|
| {REPATCH} | Re-patches all dimmers patched to each channel (or range specified on command line. (Refer to 'Direct Output Control') |
| {UNPATCH} | Un-patches all dimmers patched to each channel (or range) specified on the command line. (Refer to 'Direct Output Control') |
| {AT CHAN} | Specifies that the number following in the command line is a channel number rather than a dimmer number. |

The **{AT CHAN}** softkey enables the operator to address dimmer command line entries to channels patched to dimmers, without knowing the dimmer numbers.

- | | |
|-----------------|--|
| {STATUS} | Displays the Status Screen showing details of the dimmer specified in the command line, e.g.
[DIMMER][2][3][4][5][P7]{STATUS}
Shows the status display for dimmer 2345.
[Dimmer]{AT CHAN}[1][2][3][4]{STATUS}
Shows the status display for the first dimmer patched to channel 1234. |
|-----------------|--|



{BACKUP} Enables a dimmer backup scene to be recorded for the selected dimmer. In the event of a major failure, the dimmer backup condition can then be set manually at the dimmer. When **{BACKUP}** is selected, the menu shows a **{CLEAR}** softkey used to clear the recorded backup scene. The following command line examples, show how to set a backup scene for a dimmer.

[RECORD][DIMMER]{BACKUP}[8][*]

Records backup scene 8 for displayed dimmer. (0-99 recordable), 254 = fully on, 0 = blackout.

[RECORD][DIMMER]{BACKUP}[8][TIME][5][*]

Records backup scene 8 and sets fade time of 5 seconds.

{FILTER} Displays a softkey menu enabling the operator to determine which fault types will be displayed on the *Dimmer Filter* display.

The softkeys shown below are used to set up the format of the *Dimmer Filter* display. No action is taken until the **{DIMMER FILTER}** softkey is selected from the *Dimmer Log* screen.

**{HIGH DC} {OVERLOAD} {OVERHEAT}{OUTPUT ERROR}
{LOAD LIMIT} {TRIP}**

By default, the filter status of all fault types is Off, e.g., no filtering, or all fault conditions displayed on the *Dimmer Filter* display. When one or more of the above softkey commands are included in the command line, the fault type is inhibited from the *Dimmer Filter* display. To re-instate a fault type, include the command [-] before the softkey, as shown

[DIMMER][2][3][4][5]{FILTER}
{OVERLOAD}{OVERHEAT}
[-]{HIGH DC}{*}

Sets Overload and Overheat filter On (not displayed) and resets the High DC filter Off (displayed) for faults on dimmer number 2345

[DIMMER]{AT CHAN}[2][THRU][5]{FILTER}
{OUTPUT LIMIT} {LOAD LIMIT}{*}

Sets Output Limit and Load Limit filter On (not displayed) for faults on dimmers patched to channels 2 to 5.

[DIMMER][2][3][4][5][THRU][2][3][5][0][SHIFT]
[FILTER]

Sets all filters of dimmers 2345 to 2350 to On (all fault displays inhibited in range)

Dimmer Filter settings cannot be printed

Dimmer log screen

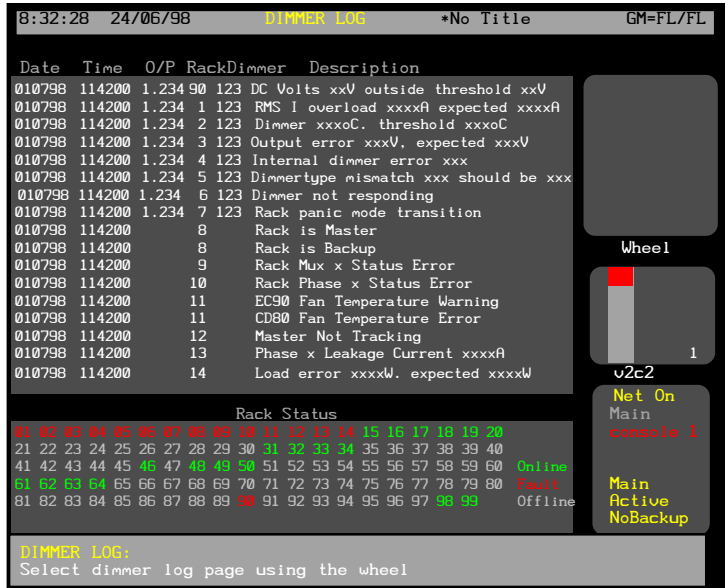
Pressing the **[REPORT]** key and the **{DIMMER LOG}** softkey will display the *Dimmer Log* screen comprising a scrolling display showing a maximum of 200 date stamped fault reports in chronological order. The log is automatically updated every time the screen is entered.

The log shows the date and time that each fault occurred, the rack and dimmer number and a description of the fault.

The lower portion of the screen shows a map of all configured racks (max. 99) color-coded as follows to show their status:

- Green: Online
- Red: Fault on rack, or on one or more of its dimmers
- Grey: Offline
- (Blank): Not configured

If a rack number is flashing, at least one dimmer in that rack is load learning.



The following softkeys are available on the *Dimmer Log* Screen:

- {CLEAR}** Clears all logged faults, e.g., 9* (command mode) or 99 (direct action). Confirmation is required.
- {RE-SYNC}**: Re-synchronizes dimmer log to current rack status. E.g., **{RE-SYC}*** (command mode) or **{RE-SYNC}{RE-SYNC}** (direct action)
- {LEARN LOAD}**: Used as part of command line as follows:
 - {LEARN LOAD} {RACK} [#] [#] [*]**
Learns load on specified rack number
 - {LEARN LOAD} [DIMMER] [#] [#] [#] [#] [*]**
Learns load on specified dimmer number
 - {LEARN LOAD} {AT CHAN} [#] [#] [#] [#] [*]**
Learns load at specified channel number.
 - {LEARN LOAD} [DIMMER] {AT CHAN} [#] [#] [#] [#] [*]**
Learns load on all dimmers on the specified channel number.
- {RACK}**: Allows selection of Rack, as above.
- {DIMMER FILT}**: Displays *Dimmer Filter* screen
- {BACK}** Returns to previous menu

Dimmer filter display

This screen is accessible from the *Dimmer Log* screen by selecting the **{DIMMER FILT}** softkey from the *Dimmer Log* screen. The screen will scroll one full screen at a time, using the level wheel.

Only faults not filtered out by the **{FILTER}** command in the *Dimmer Command* menu will be displayed. Fault conditions filtered out in this way are identified with a 'v' marker in the appropriate column of the display

Pressing the **{BACK}** softkey on the *Dimmer Filter* display will return to the *Dimmer Log* screen.

8:32:28 24/06/98 DIMMER FILTER *No Title GM=FL/FL

Output	DC	High	Over- load	Over- heat	Output Error	Load Limit	Trip
1.1			✓	✓			
1.2			✓				

✓ = filter on
(no fault displayed)

DIMMER FILTER:
Select dimmer filter page using the wheel

Wheel
v2c2
1
Net On
Main
console 1
Main
Active
NoBackup

Working With Channel Levels

The Channel Control is used to manually select and modify channel levels to record submasters, cues, groups, and effects, or for overriding the recorded show. The Control Console, Remote Consoles, and Handheld Remotes have separate channel controls and operate independently of each other on a latest takes precedence basis. Using remote consoles requires the *Networker* software. See the *Networker Operator's Manual* for more details.

A channel can have an intensity, an intensity plus attributes, or just attributes. Once a channel is selected in the *Live* display, you can change the intensity with the Level Wheel and the attributes with the Trackball and the rotary controls. In other displays you can control the intensity and all attributes, but not at the same time.

When you select channel, they are stolen from effects, submasters (except independent submasters and effects) or X playbacks which are controlling those channels. Effects set for latest takes precedence instead of independent operation steal back channels only when a new effect is run. Submasters steal back channels when the fader is moved off 0 or a bump button is pressed. X playbacks steal when a new cue is run. Or you can return to the state before channel changes by pressing **[UNDO][*]**

The Channel Control also lets you modify cues, submasters, effects, and groups blind, though the Level Wheel and some of the soft keys are not available while doing this.

This chapter contains the following topics:

The Live Display *Levels* Screen

Selecting Channels

Setting Levels With the Keypad

Using Recorded Items in Channel Lists

Using the Level Wheel

Setting Attribute Levels

Setting DMX Levels

Copying Channel Levels

Undoing Level Changes

Holding Channels on the Channel Control

Restoring Playback Levels

Flashing Channel Levels

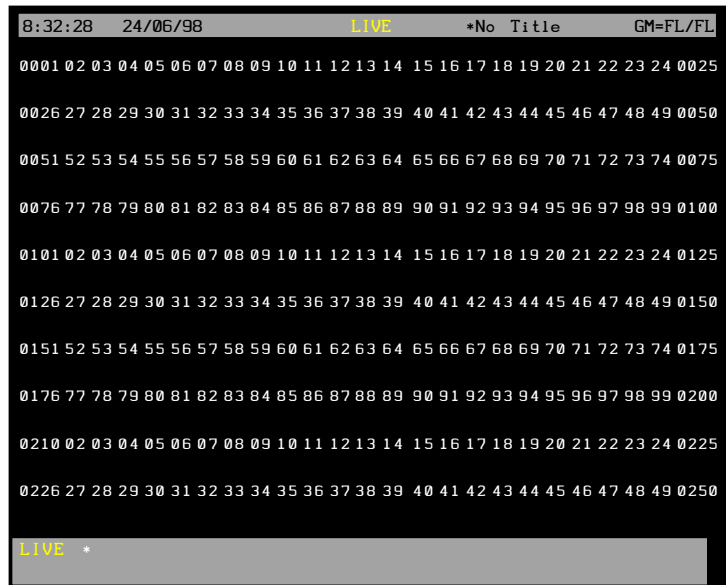
Bumping Channel Levels

Channel Check

Changing Levels in Blind Displays

The Live Display Levels Screen

The *Live* display *Levels* screen shows the current output levels; these can be selected and changed by the Channel Control. To show the *Live* display, press **[LIVE]** .



Status Line

The top line on all displays shows the time and date, display name, show name, the MEMORY|LOCKED indicator, and the positions of the grand masters.

To learn how to set the time and date and its display format, see page 195.

To learn how to set the show name and manage show archiving, see *Archive* starting on page 201.

To learn how to lock and unlock memory, see page 200

Levels Screen Layouts

You can change the layout of the levels screen to suit a particular show or venue by changing the settings of the Channel|Display field, the Smart|Channel|Display field, and the Channel|Formatting field in the *Setup* display. Some of the display formats show intensity only, so are not suitable if you are using automated fixtures.

The Channel|Display field can be set to CONTROL, GENIUS, GEMINI, GALAXY, LP+, LP100+ (the default), GENIUS+, GALAXY+, or PRESET. For more details on these settings, see page 186.

The `ChannelFormatting` field controls whether or not all channels will be shown on screen, and can be set to OFF (the default), COMPACT, DISPLAYIGROUP, or AUTO. For more details on these settings, see page 188.

Channel Colours

The channel numbers in the *Levels* screen use brightness to indicate what type of channel this is.

cyan	The channel is an intensity with no attribute.
magenta	The channel has a non-dim intensity and may have an attribute
light grey	The channel has an attribute and may have an intensity
dark grey	The channel has no dimmers patched to it

If the Console Reporter software is installed and a fault occurs on a patched dimmer, the channel number is displayed on a red foreground.

Level Colours

The levels in the *Live display Levels* screen use colours to indicate what is controlling the channel and whether it is fading up or down.

(blank)	The channel is off.
white on red	The intensity is currently being controlled by the console channel controller. To remove the channels from channel control press [CLR] . Channel levels turn red to indicate they have been changed.
white on magenta	The intensity is currently being controlled by the handheld remote channel controller. To remove the channels from channel control press [CLR] . Channel levels turn red to indicate they have been changed
red on black	Channels were "changed" by a channel controller (console or handheld) but are no longer under active control. Assigning a channel to the channel controller sets the "changed" indicator. To clear this indicator and set channels back to cyan, press [SHIFT][CLR] .
magenta on black	An intensity channel is controlled by an X playback and is fading up.
green on black	An intensity channel is controlled by an X playback and is fading down.
blue on black	An attribute channel is controlled by an X playback and is fading up or down.
cyan on black	An intensity or attribute channel is controlled by an X playback and is not fading.
yellow on black	The channel is controlled by a submaster fader. This does not show whether it is fading or the fade direction.
white on grey	The channel is controlled by an effect playback. This does not show whether it is fading or the fade direction.

black on grey	The channel is being held by the Hold command. Only the channel control can change its level.
yellow on red	The channel is being mastered by an inhibitive submaster.
black on yellow	The channel is being mastered by an exclusive submaster.
white on black	DMX CHAN input levels. Used only if you have the Communiq�Pro software loaded.

The indicator colours used are different in other displays.

Selecting Channels

The Channel Control acts on a set of channels called the current selection. This can be one or more channels, each of which can include both attributes and intensities. The current selection can be modified in various ways, for example its channels can be set to a level, turned to full or to off or wheeled up and down. A new current selection can then be made to modify other channels.

Selection Lists

Selection lists consist of elements, modifiers, and operators.

Elements can be channels, cues, groups, effect steps, or submasters. If you specify a cue, group, effect step, or submaster you are specifying all of the channels recorded in that item, and the level you specify in the command is a scaling value.

The modifiers are **[NEXT]** and **[LAST]**.

The operators are **[+]**, **[-]**, **[THRU]** and **{THRU ON}**

If you start a selection list with an element, any existing selection from the Channel Control you are using (channels with red or purple background) is cancelled and an entirely new selection list is started for the Channel Control. If you start a selection list with the **[+]** or **[-]** modifiers, the new elements are simply added or subtracted from any existing selection for the Channel Control. If there is no current selection, starting a selection list with **[+]** or **[-]** will cause an error.

The examples shown immediately below are command segments you can use to create your channel lists. You can then use combinations of these command segments to replace **chans** where it appears in full command descriptions.

Since these examples are only part of a command, they do not have a concluding **[*]** key.

[+] Adds elements to the channel list.

[1][+][3] Adds channels 1 and 3 to the channel list.

[SUB][1][+][SUB][2]
Adds channels recorded in submasters 1 and 2 to the channel list.

[SUB][1][+][2]

Adds channels recorded in submasters 1, plus channel 2, to the channel list.

[CUE][1][PART][2][+][SUB][1]

Adds channels recorded in cue 1, part 2, plus channels recorded in submaster 1, to the channel list.

[-] removes elements from the channels that are already on the channel list. Since all command processing is from left to right, you can specify a large range, then subtract a range from the currently listed channels, and then add back one or two channels in the range you subtracted.

[1][THRU][3][-][2]

Adds channels 1 and 3 to the channel list.

[SUB][1][THRU][3][-][2]

Adds channels recorded in submasters 1 through 3, minus channel 2, to the channel list.

[THRU] specifies a range of elements to the channel list. This has a higher priority than **[+]** and **[-]**.

[1][THRU][3]**[3][THRU][1]**

Adds channels 1, 2, and 3 to the channel list.

[1][THRU][LAST]

Puts all channels on the channel list.

[SUB][1][THRU][3]

Adds channels recorded in submasters 1 through 3 to the channel list.

[1][THRU][2][+][6][THRU][7]**[1][THRU][7][-][3][THRU][5]**

Adds channels 1, 2, 6, and 7 to the channel list. This shows the higher priority of **[THRU]**.

{THRU ON} only adds channels which are on (have levels above 0) to the channel list. **{THRU ON}** is a soft key on the LCD *Live* menu. It has a higher priority than **[+]** and **[-]** and the same priority as **[THRU]**. You cannot only use **{THRU ON}** to specify a range of channels, not a range of cues, groups, effect steps, or submasters.

[1]{THRU ON}[3]

Adds channels 1, 2, and 3 to the channel list if they are on

[NEXT] and **[LAST]** can be used when selecting a cue, group, effect step, or submaster to select the item after or before the current cue, group, effect step, or submaster. The current cue, group, effect step, and submaster are shown on the right LCD.

[SUB][NEXT]

Adds channels recorded in the submaster after the current submaster to the channel list.

[CUE][LAST]

Adds channels recorded in the submaster before the current submaster to the channel list.

The Current Channel Selection

The Channel Control only modifies channels in the current selection. The channels in the current selection are shown on the *Live* display with a red background (white text). To select channels you specify the selection as shown above and then press **[*]**.

chan **[*]** makes the specified channels the current selection

[1][+][2][*] Select channels 1 and 2 at their current levels.

[*] makes all channels which are on (those above 0 or on At 0) the current selection. This is the same as

[1]{THRU ON}[9][9][9][9][*]

[*] Select all on channels.

Extending the Current Channel Selection

[+]chan **[*]** or **[-]**chan **[*]** add or subtract channels from an already existing channel selection.

[+][4][THRU][9][*]

Adds channel 4 through 9 to the existing channel selection.

[-][4][5][*]

Subtracts channel 45 from the existing channel selection.

Selecting the Next or Last Channel

The CHAN field on the right LCD shows the current channel. This is the final channel listed when making a selection. The **[NEXT]** and **[LAST]** keys make the channel after or before the current channel of the same type (intensity or attribute) the current selection. When controlling channels, these buttons are most commonly used for channel checks by setting the first desired channel to Full and then using **[NEXT]** and **[LAST]** to step through the channels.

[NEXT] selects the channel after the highest numbered channel in the current selection.

[1][THRU][3][*]  **[NEXT]**

Selects channels 1, 2, 3, adjusts them to the desired level, and then selects the next intensity channel (channel 4 in this case).

[1]{THRU ON}[3][NEXT]

Selects the next intensity channel after channel 3 regardless of whether channel 3 is on.

[LAST] selects the channel before the lowest numbered channel in the current selection.

[1][THRU][3][@ATT][*][LAST]

Selects attribute channels 1, 2, 3 then selects the previous attribute channel (e.g. channel 2 if this has attributes). Another **[LAST]** selects the previous attribute channel (e.g. channel 1 if this has attributes).

Clearing the current selection

The current selection can be cleared so that no channels are selected. The Channel Control will then have no effect.

[CLR] removes all channels from the selection list. When a command is being entered, **[CLR]** instead deletes the last key entry.

Setting Levels With the Keypad

Channel levels can be set directly from the command line by using the Levels keypad to select channels and specify levels.

chans **[@]** **#** **[*]** selects the listed channels and sets their intensity levels to the specified **#** level. To set levels for the current selection, omit **chans**.

[1][@][0][1][*]

Makes channel 1 the current selection and sets its level to 1%.

[1][+][3][@][1][*]

Selects channels 1 and 3 and sets their levels to 10%.

[@][1][1][*]

Changes the levels of the current selection to 11%.

chans **[@][+]** **#** **[*]** selects the listed channels and increases their intensity levels by the specified **#** level. To set levels for the current selection, omit **chans**.

[1][@][+][1][*]

Makes channel 1 the current selection and increases its level by 10%. For example, a channel at 55% would go to 65%. Any levels over 100% are limited at 100%.

[@][+][1][1][*]

The existing current selection is unchanged but their levels are increased by 11%.

chans **[@][-]** **#** **[*]** selects the listed channels and decreases their intensity levels by the specified **#** level. To set levels for the current selection, omit **chans**.

[1][@][-][1][*]

Makes channel 1 the current selection and decreases its level by 10%. For example, a channel at 55% would go to 45%. Any levels under 0% are limited at 0.

[@][-][0][1][*]

The existing current selection is unchanged but their levels are decreased by 1%.

chans {UP%} selects the listed channels and increases their intensity levels by the percentage set in the UP|DOWN|% field in the *Setup* screen *Control Modes* window. The default is 5%, and will be used in examples. To set levels for the current selection, omit **chans**.

[1]{UP%}

Makes channel 1 the current selection and increases its level by 5%. For example, a channel at 55% would go to 60%. Any levels over 100% are limited at 100%. **{UP%}** appears on the LCD *Live* menu.

chans {DOWN%} selects the listed channels and decreases their intensity levels by the percentage set in the UP|DOWN|% field in the *Setup* screen *Control Modes* window. The default is 5%, and will be used in examples. To set levels for the current selection, omit **chans**.

[1]{DOWN%}

Makes channel 1 the current selection and decreases its level by 5%. For example, a channel at 55% would go to 50%. Any levels under 0% are limited at 0%. **{DOWN%}** appears on the LCD *Live* menu.

chan {FULL} or **chan [@] {FULL}[*]** selects the listed channels and sets their intensity levels to Full (100%). To set the current selection to Full, omit **chans**.

[1]{FULL}

[1][@]{FULL}[*]

Makes channel 1 the current selection and sets its level to Full. The **[1]{FULL}** syntax only works in the *Live* display.

{FULL}

The existing current selection is unchanged but their levels are set to Full. **{FULL}** appears on the LCD *Live* menu. This only works in the *Live* display.

chans [ON] or **chans [@][ON][*]** selects the listed channels and sets their intensity levels to the on level. The on level is set by the ON|Level|% field in the *Setup* display (initially 100%) or the ON Level group (group 993.1). The ON Level group takes precedence over the ON|Level|% field. See *Groups* starting on page 158 for more information about this group. To set levels for the current selection to the on level, omit **chans**.

[1][ON]

[1][@][ON][*]

Makes channel 1 the current selection and sets its level to the on level.

[ON]

The existing current selection is unchanged but their levels are set to the on level.

chans [@][*] or **chans [@[.][*]** or **chans [@]{OFF}[*]** selects the listed channels and sets their intensity levels to off. To set levels for the current selection to off, omit **chans**.

[1][@][*]

[1][@[.][*]

[1][@]{OFF}[*]

Makes channel 1 the current selection and sets its level off.

If you use this command in the *Live* display when Tracking is on, it sets channel levels to zero. If you record these channels, a zero level is recorded in the cue only if levels changed from previous cues. Otherwise off is recorded in the cue, and levels track through from the previous cue. If you use this command in the *Cue/Preview* display the channels appear at their levels from the previous cue since turning a channel off (rather than setting it to zero) makes it track.

chans [@[0][*] selects the listed channels and sets their intensity levels to zero. To set levels for the current selection to zero, omit **chans**.

[1][@[0][*]

Makes channel 1 the current selection and sets its level on at 0.

If you use this command in the *Live* display when Tracking is on, it sets channel levels to zero. If you record these channels, a zero level is recorded in the cue only if levels changed from previous cues. Otherwise off is recorded in the cue, and levels track through from the previous cue. If you use this command in the *Cue/Preview* display the channels are forced to zero and tracking for those channels is blocked at the cue.

chans [REM DIM] selects the listed channels and sets all other intensity channels to 0%. If the selected intensity channels are all at 0, they are set to the on level as set in the *Setup* display.

[1][REMDIM]

Makes channel 1 the current selection and sets all other channels to 0%.

[REM DIM][REM DIM]

If a current selection exists, its channels are unchanged and all others are set to 0%. If there is no current selection, all channels are set to 0% after a second press of the key. This is a very useful way to achieve a blackout.

Using Recorded Items in Channel Lists

Intensity and attribute levels for the current selection can be set from cues, groups, effect steps and submasters by using these recorded items in the channel selection lists.

element [@] # [*] selects the channels in the recorded element and sets them to the levels recorded, scaled by #. **element** can be a cue, group, effect step or submaster. For instance, if you include submaster 1 in a list that ends in **[@] [8] [*]**, all channels in the submaster will be selected along with any other channels specified in the selection, and channel levels for the submaster channels will be set to 80% of their value in the submaster.

[SUB] [1] [@] [2] [*]

Selects the channels in submaster 1 and sets their levels to 20% of their submaster 1 values.

[SUB] [1] [+] [5] [THRU] [9] [@] [2] [*]

Selects the channels in submaster 1 plus channels 5 through 8, sets channel 5 through 8 levels to 20%, and sets submaster 1 channel levels to 20% of their submaster 1 values.

element [*] [@] # [*] selects the channels in a recorded element and sets them to a fixed level regardless of the recorded levels.

[SUB] [1] [*] [@] [2] [*]

Selects the channels in submaster 1 and sets their levels to 20%.

[SUB] [1] [*] [+] [5] [THRU] [9] [@] [2] [*]

Selects the channels in submaster 1. Then adds channel 5 through 8 to the selection and sets them to 20%. Submaster 1 channels remain at their original levels.

[SUB] [1] [*] [+] [5] [THRU] [9] [*] [@] [2] [*]

Selects the channels in submaster 1. Then adds channel 5 through 8 to the selection. Then sets all selected channel levels to 20%.

If you specify a range of recorded elements with overlapping channels, the channels are set to the highest level they are in any of the elements.

[CUE] [1] [THRU] [3] [@] { FULL } [*]

Sets channels recorded in any one or more of the three cues to the highest level they are in any of the cues.

If there is an overlap between channels from a recorded element and explicit channels, the explicit channel level is used.

[SUB] [1] [+] [9] [@] [5] [*]

Sets submaster 1 channels to 50% of the levels recorded in the submaster *and then* sets channel 9 to 50% (explicit channels override submaster data).

Attribute Groups

The **[@ATT]** key can let you quickly access groups numbered in the 800 range. Although these groups can contain intensities as well as attribute levels, they were primarily intended for use in quickly setting attributes for fixtures that have multiple attributes.

chan [@ATT][@ATT]###[*] sets intensities and attributes for the selected channels to the levels set in group 8##.#. If you use fewer than three numbers for specifying the group the console assumes leading zeros.

[1][THRU][4][@ATT][@ATT][1][2][3][*]

Sets intensities and attributes for channels 1 through 4 to the levels set in group 812.3. This is equivalent to the command **[1][THRU][4][@][GROUP][8][1][2][.][3][*]**

[1][@ATT][@ATT][1][*]

Sets channel 1 intensities and attributes to the levels set in group 800.1.

[1][+][5][@ATT][@ATT][1][0][*]

Sets intensities and attributes for channels 1 and 5 to the levels set in group 801.0.

Referenced Groups

If you have the Tracker software you can use groups 1 through 250 as referenced groups (sometimes called preset focus groups). When you use a group as a referenced group, this group is linked to the cue, effect step, or submaster into which it is recorded, and changes made in the group are automatically made to the cue, effect step, or submaster. For more information about referenced groups, see the *Tracker Operator's Manual*.

Using the Level Wheel

If you are in the *Live* display, moving the Level Wheel masters the intensity levels in the current selection up or down. The way in which channels are mastered depends on the `WheelMastering` field in the *Setup* display.



Its value can be `SHAFT` or `PROPORTIONAL` (default).

SHAFT When you move the Level Wheel, the selected levels move up or down by the same amount. For example, with two channels at 10% and 40%, wheeling by 10% will increase these to 20% and 50% respectively.

PROPORTION Each channel with a level moves up or down by an amount proportional to its level. For example, with two channels at 10% and 40%, wheeling by 50% will increase these to 15% and 60%; that is, each level is increased by half as much again. Channels in the selection that are set to zero move up 2% with a 50% increase in other channel levels.

Levels cannot be wheeled over 100% (or below 0%) but they will retain their relative proportions until you clear the selection, so that if you wheel them down again the original proportions will reappear. For example, with two channels at 10% and 40%, these can both be wheeled up to 100% and then back down to 10% and 40%.

Setting Attribute Levels

chans [@]  selects the listed channels and lets you master them up or down by the Level Wheel. To master the current selection, omit **chans**. The [@] is optional. This is the same as **chans [*]** followed by .

[1] [+] [2] 

Makes channels 1 and 2 the current selection and wheels their levels from their current values.



The existing current selection is unchanged but their levels are wheeled.

Channels can have 2 attributes (intensity and colour) in the standard operating software for GeniusPro. You can set intensities using the [@] key, and colours using the [@ ATT] key. By following [@ ATT] with one of the soft keys that appear in the right LCD, you can set attribute levels for other fixture attributes if you have the Tracker software installed in the console.

You can also access an attribute directly by appending a decimal point and the attribute number to the channel number. Channel intensity is attribute 1 and colour is attribute 2, so these can be accessed by specifying channel 1 or 1.1 for intensity, and channel 1.2 for colour.

This manual assumes that the Tracker software is not installed, so “attribute” generally means “colour.” For details on other fixture attributes, please see the *Tracker Operator’s Manual*.

The following comments apply to setting attribute levels in general.

- The only attribute available without Tracker software is scroller colour (attribute 2).
- The grandmasters (if fitted) only control intensity levels.
- The Level Wheel and the [ON] and [REM DIM] keys only affect intensity channels unless you use a decimal number to address an attribute. When you do this the specified attribute is assigned to the Level Wheel.
- The maximum value for an attribute is set in the patch and is generally less than 100. If you set a value that exceeds the maximum, the maximum value is used. The default maximum value for attributes is 10 but can be changed in the *Setup* display.
- Use the rotaries and the Trackball to control attributes unless you addressed the attribute using its decimal channel number. Colour (attribute 2) is on the top rotary.
- If you have the Tracker software you can use the left and right hand unlabelled keys above the Trackball to page through fixture attributes so that you can control the desired attribute.
- If you have the Tracker software you can use the centre unlabelled key above the Trackball to show the attribute page names in the Right LCD and go directly to the desired attribute page.

chans [@ ATT] # [*] makes the specified channels the current selection and sets their colour. To set colour on the current selection, omit **chans**

DE₁[1][THRU][5][@ATT][2]

DE₂[1][THRU][5][@ATT][0][2]

CL₁[1][THRU][5][@ATT][2]*

Makes channels 1 through 5 the current selection and sets them to colour frame 2. Channels without colour attributes are selected but not changed.

DE₁[SUB][1][@ATT][2]

DE₂[SUB][1][@ATT][0][2]

CL₁[SUB][1][@ATT][2]*

Makes the channels in submaster 1 the current selection and sets them to colour frame 2. Channels without colour attributes are selected but not changed.

chan [.] att [@] # [*] makes the specified channels the current selection and sets the specified attribute.

DE₁[1].[.]2[THRU][5].[.]2[@ATT][2]

DE₂[1].[.]2[THRU][5].[.]2[@ATT][0][2]

CL₁[1].[.]2[THRU][5].[.]2[@ATT][2]*

Makes channels 1 through 5 the current selection and sets them to colour frame 2. Channels without colour attributes are selected but not changed.

When using **[THRU]** for a list specifying a single attribute you only need to specify the attribute once. Thus, **[1].[.]2[THRU][5].[.]2** and **[1].[.]2[THRU][5]** and **[1][THRU][5].[.]2** all access the colour attribute in channels 1 through 5.

DE₁[1].[.]2[+][5].[.]2[@ATT][4]

DE₂[1].[.]2[+][5].[.]2[@ATT][0][4]

CL₁[1].[.]2[+][5].[.]2[@ATT][4]*

Makes channels 1 and 5 the current selection and sets them to colour frame 4. Channels without colour attributes are selected but not changed.

When using **+** for a list specifying attributes you need to explicitly enter the decimal point and an attribute number for each channel.

DE₁[1].[.]2[THRU][5].[.]4[@ATT][4]

DE₂[1].[.]2[THRU][5].[.]4[@ATT][0][4]

CL₁[1].[.]2[THRU][5].[.]4[@ATT][4]*

Makes attributes 2, 3, and 4 in channels 1 through 5 the current selection and sets them to 4.

chans [**@ATT**] **type #** [*] makes the specified channels the current selection and sets the selected attribute levels. To set attribute levels on the current selection, omit **chans**.

When you press [**@ATT**] the Right LCD shows attribute names. To select attributes other than colour, press the appropriate key after you press [**@ATT**].

[1][THRU][5][@ATT]{IRIS}[2][*]

Makes channels 1 through 5 the current selection and sets their iris attribute levels to 20%. Channels with out iris attributes are selected but not changed.

[SUB][1][@ATT]{IRIS}[2][*]

Makes the channels in submaster 1 the current selection and sets their iris attribute levels to 20%. Channels without iris attributes are selected but not changed.

Setting DMX Levels

Normally channel levels are set from 0% to 100%. However, the actual DMX level is an 8 bit number ranging from 0 to 255. The **{DMX}** soft key lets you set channel levels and attributes to exact DMX levels if necessary. For attributes you must use the **chan** [.] **att** format to specify the attributes you want to change. The [**@ATT**] key does not let you set channels to DMX levels.

Setting actual DMX levels gives you more precise control over the levels you set. The display will show the nearest standard (00 to FL) level rather than the exact DMX level you set.

chan [.] **att** [**@**]{ENABLE}{DMX} # [*] makes the selected channels or attributes the current selection and sets their levels to the specified DMX level. To set the current selection, omit **chans**.

[1][THRU][3][@]{DMX}[1][2][8][*]

Sets the intensity for channels 1, 2, and 3 to DMX level 128 (50%). The display will show 50.

[1][.][2][+][2][.][2][@]{DMX}[5][6][*]

Sets the colour attribute for channels 1 and 3 to DMX level 56. The display will show the frame number, which is 12 if the maximum number of frames for the attribute is 10.

Copying Channel Levels


The intensity and attribute levels can be copied from one channel to one or more other channels. This is most useful with the Tracker software where each channel can have multiple attributes.

chans [**@**]{COPY FROM} # [*] makes the selected channels the current selection and sets their attribute levels from the channel given by #. To set the current selection, omit **chans**.

☞ [1][THRU][3][@]{COPY FROM}[5][*]

Sets the intensity and attributes in channels 1, 2, and 3 to the same level as in channel 5.

Undoing Level Changes

You can undo the last command that used **[@][@ATT]{FULL}[REM DIM][ON]** or . This also clears the current selection.

 **[UNDO][*]**

Undoes the last intensity or attribute set command.

 **[UNDO][@]**

Undoes the last intensity set command.

 **[UNDO][@ATT]**

Undoes the last attribute set command.

Holding Channels on the Channel Control

You can hold channels on the Channel Control so that they cannot be stolen by cues, effects, or submasters. Held channels are not necessarily being actively controlled by the Channel Control. While channels are being held, you can select and change other channels, record cues, etc., but the held channels are not recorded.

chan [HOLD][*] assigns the selected channels to the channel control exclusively. The channels are assigned to the channel control until you release them using **[SHIFT][HOLD][*]**. Channels on hold are shown with a grey background.

[1][+][5][HOLD][*]

Selects channels 1 and 5, and puts them on hold. Until you make another channel selection these channels are active on the Channel Control. If you make other channel selections, these channels are no longer actively controlled, but are still held by the Channel Control.

chan [SHIFT][HOLD][*] releases the selected channels from the Channel Control hold. The channels are considered changed, and appear with red levels.

[1][SHIFT][HOLD][*]

Releases channels 1 from Channel Control hold. If there are any other channels on hold, they are not released.

[SHIFT][HOLD][*]

Releases all channels from Channel Control hold.

Restoring Playback Levels

You can restore channels that have been changed by the Channel Control to their current X playback, effect playback, or submaster fader levels (or zero if no cue, submaster, or effect is controlling them). This affects both intensities and attributes.

[UNDO][*] deselects and restores all currently selected channels which have been changed by the Channel Control (red background). The fade time for this change is set in the *Setup* display *UndoTime* field.

chans [UNDO] deselects and restores the specified channels which have been changed by the Channel Control (red background). This is a two second fade.

Flashing Channel Levels

[2][THRU][5][UNDO]

Restores all channels from 2 through 5 which have been changed by the Channel Control, whether or not they are selected. This is a two second fade.

The current selection can be temporarily set to the Flash level or off (0%) without affecting other channels.

The Flash Level is set by the Flash Supermaster which is above the **FLASH SUPER** label in the centre LCD (consoles with 3 LCD displays) or on submaster 20 (consoles with 2 LCD displays) when you first turn the console on. You can change the Flash Supermaster to another fader or eliminate it altogether by changing the Function properties of the submaster faders involved. If there is no Flash Supermaster, the Flash level is always 100%. To learn about the submaster Function property turn to *Submaster Function* starting on page 90.

chans {FLASH } makes the selected channels the current selection and sets their levels to the Flash level while you hold **{FLASH↑}**. To flash the current selection, omit **chans. {FLASH↑}** is a soft key on the LCD *Live* menu.

[1][+][2]{FLASH↑}

Makes channels 1 and 2 the current selection and sets their levels to the Flash level while you hold **{FLASH↑}**.

{FLASH↑}

Sets the levels of the current selection to the Flash level while you hold **{FLASH↑}**.

chans [SHIFT]{FLASH ↑} is the same as **{FLASH ↑}** except that the levels are temporarily set off.

[1][+][2][SHIFT]

Makes channels 1 and 2 the current selection and sets their levels to 0 while you hold **{FLASH↑}**

[SHIFT]{FLASH ↑}

Sets the levels of the current selection to 0 while you hold **[SHIFT]{FLASH↑}**

Bumping Channel Levels

You can use the **{BUMP}** soft key to bump the current channel selection in the mode set by the **[BUMP MODE]** key. This is different from the bump modes set for each submaster. To learn how to set up separate bump modes for each submaster see *Submaster Bump Mode* on page 109.

Press **[BUMP MODE]** to see the current setting. These appear in the centre LCD (consoles with 3 LCD displays) or left LCD (consoles with 2 LCD displays) as labels above the soft keys. Press **[BUMP MODE]** again to return to normal operation.

The right three soft keys (**{KEYS ON}**, **{KEYS OFF}**, **{KEYS LATCH}**) determine how the submaster bump buttons and the **{BUMP}** soft key work. A bar above the label shows the current mode. Pressing one of these three soft keys changes the mode.

{KEYS ON}

While the bump button or **{BUMP}** soft key is pressed, the channel levels are bumped. Releasing the bump button releases the bump.

{KEYS OFF}

The bump buttons and **{BUMP}** soft key are disabled.

{KEYS LATCH}

Pressing and releasing the bump button bumps the levels until the bump button is pressed again.

The left three soft keys (**{FLASH}**, **{SOLO}**, **{FLASH + SOLO}**) determine what happens when you press the **{BUMP}** soft key. A bar above the label shows the current mode. Pressing one of these three soft keys changes the mode.

{FLASH}

Pressing **{BUMP}** sets the selected channels to the level set by the Flash Supermaster, which is normally above the **FLASH SUPER** label in the centre LCD (consoles with 3 LCD displays) or on submaster 20 (consoles with 2 LCD displays). You can change the Flash Supermaster to another fader or eliminate it altogether by changing the Function properties of the submaster faders involved (see *Submaster Function* on page 105). If there is no Flash Supermaster, the bump level is always 100%.

{SOLO}

Pressing **{BUMP}** does not effect the selected channels. All other (non-bumped) channels, as well as effects, cues, and submasters are set to zero. The Flash Supermaster is ignored. If you selected **{KEYS LATCH}** above, selecting this option sets the Keys mode to **{KEYS ON}**.

{FLASH + SOLO}

Pressing **{BUMP}** sets the selected channels to the level set by the Flash Supermaster. All other (non-bumped) channels, as well as effects, cues, and submasters, are set to zero. If you selected **{KEYS LATCH}** above, selecting this option sets the Keys mode to **{KEYS ON}**.

chan {BUMP} selects the listed channels and bumps their levels to the level of the Flash Supermaster while you hold **{BUMP}**. Releasing **{BUMP}** restores the previous levels. To bump the current selection, omit **chan.** **{BUMP}** is a soft key on the LCD *Live* menu.

[1][+][2]{BUMP}

Selects channels 1 and 2 and bumps their levels.

{BUMP}

Leaves the existing selection unchanged but bumps its levels.

chans [SHIFT][+] selects the listed channels and toggles their levels to the Flash Supermaster level (if they are not already on) or back to their normal levels (if they were toggled on using **[SHIFT][+]**). Levels stay on when you release **[+]**, and until you press **[SHIFT][+]** again. Channels that were on before using **[SHIFT][+]** are not affected. To toggle the current selection, omit **chans**

[1][+][SHIFT][+]

Selects channels 1 and 2 and toggles their bump status if you release **[+]** immediately. If you hold **[SHIFT][+]**, levels are switched between bumped and not bumped about twice per second until you release the keys.

[SHIFT][+]

Leaves the existing selection unchanged but toggles its bump status if you release **[+]** immediately. If you hold **[SHIFT][+]**, levels are switched between bumped and not bumped about twice per second until you release the keys.

Channel Check

Using **[NEXT]** and **[LAST]** you can easily run through all of your channels to make sure that fixtures controlled by them are working.

1. Press **[GOTO][0][*]** to go to a blackout.
2. Move all submasters to 0 (zero) and stop all effect playbacks.
3. Make sure that the supermasters and grandmasters are at full.
4. Press **[1]{FULL}** to turn channel 1 on at full, or set the channel to any other convenient level for testing fixtures.
5. Press **[NEXT]** to go to the next channel or **[LAST]** to go to the previous channel until you have completed your channel check.. Each channel in turn will be set to full, then returned to its original level when you go to the next channel.

Changing Levels in Blind Displays

When you are in a blind display (the *Cue/Preview*, *Submaster*, *Effect*, and *Group* displays), changing a level automatically records it into the currently displayed item.

You can use Channel Control commands (for example **[1][@][1][*]**, **[CUE][1][@][5][*]**) to set and record channel levels. Some of the soft keys and the Level Wheel are not available in preview displays. Otherwise the syntax for changing recorded levels is the same from all locations

Basic Recording

Cues, groups, effects, and submasters are the four item types in which you can store intensity and attribute levels. In addition, each item type has properties that you can set.

This chapter discusses recording channel levels and text for cues, groups, effects, and submasters, and recording up and down fade times for cues, effects and submasters. Other properties are discussed in detail later in this manual.

This chapter contains the following topics:

Recording Levels and Properties

Changing Properties Without Recording Levels

Editing In a Blind Display

Copying From a Blind Display

Recording Levels and Properties

You can record levels and properties into cues, groups, effects, and submasters from the *Live*, *Cue/Preview*, *Group*, *Effect*, or *Submaster* displays. Levels are always taken from the current display and recorded into the item type specified by one of the selection keys (**[SUB]**, **[CUE]**, **[GROUP]**, or **[FX]**). In this chapter, **type** is used to mean one of the selection keys.

The general format for recording levels and properties is:

type # properties

Properties that are not listed in the command are recorded at default values for new items, and remain unchanged when you are re-recording. If the specified item has already been recorded, an overrecord message gives you the chance to cancel the recording. Press again to rerecord, or **[CLR]** or **[UNDO]** to cancel the command.

If you do not enter an item type, cue is assumed. The **[CUE]** key in all of the examples below is optional.

Recording clears the current selection from the Channel Control

Recording Levels

type # records the intensity and attribute levels on the current display into the specified cue, group, effect step, or submaster. For submasters, levels are recorded into the current page.

[RECORD][SUB][1][*]

Records current display levels into submaster 1.

[RECORD][3][4][*]

Records current display levels into cue 34.

[RECORD][FX][1].[2][*]

Records current display levels into effect 1 step 2.

Recording Only Intensities or Attributes

You can record only the intensities or only the attributes to a cue, group, or submaster by adding **{INTS ONLY}** or **{ATTS ONLY}** to the command line.

When you record with **{INTS ONLY}** all attribute information is erased. When you record with **{ATTS ONLY}** all intensity information is erased.

[RECORD][GROUP]{INTS ONLY}[*]

Records the current group with intensity levels and erases attribute levels.

[RECORD][SUB][1]{ATTS ONLY}[*]

Records the current submaster with attribute levels and erases intensity levels.

[RECORD][CUE][1]{INTS ONLY}[*]

[RECORD][CUE][1][REC MODE]{INTS ONLY}[*]
(520 Consoles only)

Records cue 1 with intensity levels and erases attribute levels.

[RECORD][GROUP][1]{ATTS ONLY}[*]

Records group 1 with attribute levels and erases intensity levels.

Recording Without Submasters and Effects

If you are in the *Live* display, you can use **type #** to record the console output levels minus any levels being provided by submasters and effects. This command does not work from any of the preview displays.

[REC SUB][SUB][1][*]

Records submaster 1 without submasters and effects.

Recording Specific Channels

You can specify the channels you want to record in a cue, group, effect step, or submaster. This is done by prefixing any of the commands above with the channel selection to record. The **[+]**, **[-]**, **[THRU]**, and **{THRU ON}** are used to select the channels to record.

chan [SUB][2] records the currently selected channels into the submaster without changing any other recorded levels.

[1][RECORD][SUB][2][*]

Records channel 1 levels into submaster 2 without changing any other recorded levels.

[1][+][3][THRU][5][REC SUB][SUB][2][*]

Records channels 1, 3, 4, and 5 levels into submaster 2 without effects and submasters, and without changing any other recorded levels.

Recording Levels with Properties

You can use the Record command to record levels and properties to a new or existing cue. You can record more than one property at a time when recording cues, groups, effects, or submasters. The order of the properties in the command does not matter, but you can use each property only once per command.

type # [TEXT] text records levels on the current display into a cue, group, or submaster and assigns a text string (caption) to it. For effects, the levels are recorded into the specified step, and the text is assigned to the effect as a whole. For submasters the text applies to all pages.

To delete an assigned text string, omit the text.

[RECORD][CUE][1][TEXT][H][E][L][L][O][*]

Records levels and the text string "HELLO" into cue 1.

[RECORD][SUB][1][TEXT][*]

Records levels into submaster 1 and deletes any assigned text string.

type # [TIME] # records levels on the current display into the specified cue, effect step, or submaster and assigns a fade time to the item. You cannot record fade times in groups.

For effects, the times you record are for the effect fade up and fade down times, not for step times. For submasters, fade times are recorded into the current page.

If you only enter one number for time, it is used for both the up and down fade times. To enter separate up and down fade times, use **[/]** to separate the two numbers. The first number becomes the up fade time and the second number becomes the down fade time. To delete an assigned time, omit the time value. Times can be from 0 to 59 minutes, 59 seconds. Times less than one minute can be specified in tenths of a second.

For cues, you can also record a manual fade time using the **{OFF/MAN}** key. Cues recorded with a manual fade time are loaded to the X Playback when you press **[GO]**, but must be faded using the X Playback faders. Manual fade times apply to both the up and down fade times.

[RECORD][SUB][1][TIME][4][*]

Records levels and up and down fade times of 4 seconds into submaster 1.

[RECORD][CUE][1][TIME][4][1][2][*]

Records levels, an up fade time of 4 seconds, and a down fade time of 2 seconds into cue 1.

[RECORD][FX][1].[2][TIME][1][2][*]

Records levels into effect 1 step 2. Assigns a 2 second down fade time to effect 1. Sets the up fade time to the default if the effect is cleared or has never been recorded, or leaves it as it is, if over-recorded.

[RECORD][CUE][1][TIME][4][1][*]

Records levels and a 4 second up fade time into cue 1. Sets the down fade time to the default if the cue has never been recorded, or leaves it as is if over-recording.

[RECORD][CUE][1][TIME]{OFF/MAN}[*]

Records levels and a manual fade time into cue 1. The manual fade time applies to both the up and down fade times.

type # A\ # records levels on the current display into the specified cue, effect step, or submaster and assigns a fade time to the item. You cannot record fade times in groups.

[RECORD][SUB][4][@ATT][TIME][5][*]

Records levels and a 5 second attribute fade time to submaster 4.

[RECORD][CUE][1][@ATT][TIME][4][*]

Records levels and a 4 second attribute fade time into cue 1.

[RECORD][FX][1].[2][@ATT][TIME][2][*]

Records levels into effect 1 step 2. Assigns a 2 second attribute fade time to effect 1.

Undoing Record

The last record command can be undone. This restores the last recorded cue, group, effect, or submaster to its previous state.

[UNDO][RECORD], **[UNDO][REC SUB]** and **[UNDO][REC TIME]** all undo the last record command regardless of how it was recorded.

Changing Properties Without Recording Levels

You can change item properties from the command line without changing any levels. The general command format for doing this is:

type # properties

Properties that are not listed in the command remain unchanged. You do not get an overrecord warning with this command if the item exists.

You can use these commands to change the properties of existing items, and to create new items without recording any intensities or attributes. Confirmation is required when cues are created.

You can use these commands to change properties for existing items in another blind display, but you cannot use this syntax to create an item in another blind display. From anywhere, **[CUE][1][2][TIME][4][*]** will change the cue 12 up and down fade times if cue 12 exists, but will result in an error message if cue 12 does not exist.

If you do not enter an item type, cue is assumed. The [CUE] key in all of the following examples is optional.

Changing properties clears the current selection from the Channel Control.

Changing Text

type # [TEXT] # [*] changes the text string (caption) assigned to a submaster, cue, group, or effect without changing recorded levels.

[SUB][1][TEXT][*]

Deletes the text string assigned to submaster 1 without changing any levels.

[SUB][1][TEXT][Y][O][O][H][O][O][*]

Changes the text string assigned to submaster 1 to "YOOHOO" without changing any levels.

In the text label for a macro, any text after an exclamation point will be sent to the GO button output if you have the *CommuniquéPro* software and it is properly set up. See the *CommuniquéPro Operator's Manual* for more details

Changing Fade Times

type # [TIME] # [*] changes the fade time of a submaster, cue, group, or effect without changing recorded levels.

[CUE][1][TIME][*]

Resets cue 1 fade time to the non-split default fade time in the *Setup* display Cue! Fade! Up/Down field.

[CUE][1][TIME][4][*]

Changes cue 1 up and down fade times to 4 seconds without changing any levels.

[SUB][1][TIME][4][/][2][*]

Changes submaster 1 up fade time to 4 seconds and its down fade time to 2 seconds without changing any levels.

[FX][1][TIME][/][2][*]

Changes the effect 1 down fade time to 2 seconds without recording new levels. Does not change the up fade time.

[CUE][TIME][4][/][*]

Changes the current cue up fade time to 4 seconds without recording new levels. Does not change the down fade.

Editing In a Blind Display

When you are in a blind display (the *Submaster*, *Cue/Preview*, *Group*, and *Effect* displays), changing a level or property automatically records it into the currently displayed item *Preview*, *Group*, and *Effect* displays), changing a level or property automatically records it into the currently displayed item.

Changing Channel Levels

You can use Channel Control commands (for example **[1][@[1]**, **[CUE][1][@[5]**) to set and record channel levels. Some of the soft keys and the Level Wheel are not available in blind displays. Otherwise the syntax for recording is the same from all locations

Changing Properties

Properties for setup, cues, submasters, effects, and groups can be changed by editing property fields in the *State* screen of the appropriate display.



To select a field, use the Trackball to move the highlight to the field.

If there no more numbers or characters in the field, press **[CLR]** to restore the previous value.

{DEFLT}

To reset a field to its default value, press **{DEFLT}**. This soft key only appears in the *Setup*, *Patch*, and *Effect* displays.

[*]

To select the first field in the *Setup* display press **[*]**. This works only in the *Setup* display.

Copying From a Blind Display

You can record submasters, cues, groups, and effect steps while you are in the *Submaster*, *Cue/Preview*, *Group*, or *Effect* displays. This takes the currently displayed levels and records them into another item. The destination item can be of any type.

Using recording commands while you are in a blind display copies the display levels to the target submaster, cue, group, or effect step. For example, if you are in the *Submaster* display and the current submaster is 1, then **[CUE] [2] [RECORD] [CUE] [2][*]** will copy the levels from submaster 1 into cue 2.

To learn how to copy a submaster to another submaster page, turn to *Copying Levels from a Submaster* starting on page 105.

Recording clears the current selection from the Channel Control.

Submasters

Submaster faders let you manually fade in a lighting state, called a submaster, which can have both intensity and attribute levels with an associated fade time.

Although the terms are often used interchangeably, a submaster is different from a submaster fader. A submaster fader is the physical device on which you play a submaster. Since there are 6 pages of submasters, there are actually 6 submasters for each fader.

This chapter contains the following topics:

Submaster Pages

The Current Submaster

Recording Submaster Levels

Recording Submaster Properties

Recording Submaster Fader Properties

Using Submaster Faders

Viewing and Editing Submasters

Submaster Pages

There are 6 submaster pages, each with its own separate set of 24, 30 or 54 recorded submasters. The *Live* display and *Submaster* display keep track of the current submaster page separately, and the submaster faders take their data from the *Live* display. By changing to a different page when you go to the *Submaster* display, you can edit submasters without changing the data loaded on the faders.

Changing the current *Live* display submaster page reloads the submaster faders with new levels and fade times, and changes the *Submaster* display submaster page to match.

Changing the current *Live* display submaster page does not change the submaster output until it is reloaded by moving the fader to 0 (or 10 for inhibitive submasters).

When you record to or from a submaster while in the *Submaster* display you are recording to or from the current page of the *Submaster* display. When you record to or from a submaster while in any other display you are recording to or from the current page of the *Live* display. The current page number is shown at the top of the *Submasters* window on the *State* screen.

[SUB][+]

Changes the current page to the next page. For example, if at page 3, this will change to page 4. At the end page, this changes to the first page.

[SUB][-]

Changes the current page to the previous page. For example, if at page 3, this will change to page 2. At the first page, this changes to the end page.

[SUB PAGE][2]

Changes the current page directly to page 2.

The Current Submaster

The last referenced submaster is known as the current submaster. It can be used in submaster selection.

All submaster recording commands act on a single submaster which is shown by # in the command description. If you do not enter a submaster number, the current submaster is used. You can also use **[NEXT]** and **[LAST]** to select a submaster relative to the current submaster.

[SUB] Specifies the current submaster.

[SUB][1] Specifies submaster 1.

[SUB][NEXT] If the current submaster is submaster 3, then this specifies submaster 4. If the current submaster is the highest submaster number, this specifies submaster 1.

[SUB][LAST] If the current submaster is submaster 3, then this specifies submaster 2. If the current submaster is submaster 1, this specifies the highest submaster number.

Recording Submaster Levels

[RECORD][SUB] # [RECORD][*] records the levels on the current display (the *Live*, *Cue/Preview*, *Group*, *Effect*, or *Submaster* display) into the currently specified submaster page. See *Working With Channel Levels* starting on page 71 to learn how to set intensity and attribute levels, and *Basic Recording* starting on page 94 for examples of recording.

You can record just the intensities or just the attributes to a submaster by adding **{INTS ONLY}** or **{ATTS ONLY}** to the command line.

Before recording a submaster, make sure that you are in the correct submaster page. Recording is always done to the current page.

Recording a submaster immediately reloads it, so if the submaster

Recording Submaster Properties

The only properties that can be specified for submasters separately on each submaster page are the text, the up and down fade times, and the attribute fade time.

Fade Times

Each submaster has intensity up and down fade times and a single attribute fade time which is used for attribute changes. When you move the fader from 0 to 10, the levels fade in over a period given by the up fade time. Conversely, moving the fader from 10 to 0 will fade the levels out over a period given by the down fade time.

If the fader is only partly moved, the fade period depends on the amount the fader is moved. For example, with a fade time of 8 seconds, moving the fader from 2 to 7 (half of its travel) will give a fade period of 4 seconds and then moving it to 9 (quarter of its travel) will give a fade period of 2 seconds.

Intensity fade times can range from 0 to 59 minutes, 59 seconds. These times are also used by the bump buttons. Attribute fade times can range from 0 to 59.9 seconds.

The fade times can be different for each submaster page. Changing the page changes the submaster fader times.

[SUB] # [TIME] # records levels on the current display and a fade time into the specified submaster.

[SUB] # [TIME] # [*] changes the submaster fade time without changing recorded levels.

[SUB] # [@ATT][TIME] # records levels on the current display and an attribute fade time into the specified submaster.

[SUB] # [@ATT][TIME] # [*] changes the submaster attribute fade time without changing recorded levels.

For specific examples, please see *Recording Levels with Properties* starting on page 86

Recording Submaster Fader Properties

Submaster faders have the following properties that can be specified when recording, or edited later:

Submaster Function

Assigning Effects and Macros

External Faders

Submaster Bump Mode

Text

These properties are associated with the fader and not the submaster, so they are common across all submaster pages.

Submaster Function

Each submaster fader can have one of several functions. The submaster function is initially set to Normal for all except the last 6 submasters. The last 6 faders are set as various supermasters. You can eliminate or move any supermaster, and change submaster functions for other submaster faders as needed.

Submaster functions are one of the following values:

- NORMAL** (Pileon submaster) Submaster intensities are combined with effects, playbacks, and other submasters on a highest takes precedence basis. Attributes are combined on a latest takes precedence basis. Selecting a channel with the Channel Control steals it from the submaster.
- INDEP** (Independent submaster) Submaster intensities are combined with effects, playbacks, and other submasters on a highest takes precedence basis. Attributes are combined on a latest takes precedence basis. Submaster channels can *not* be stolen by the Channel Control, but the Channel Control can increase the channel intensity over the submaster level. Once you decrease the channel level to below the submaster level, the submaster level will take over again.
- EXCLUSIVE** (Exclusive submaster) Submaster intensities are as recorded in the submaster and modified by the submaster fader, the Submaster Supermaster, and the grand master. They are *not* changed when cues or effects run, when other submasters are changed, or when channel control is used on the same channels. If the same channel is used in two exclusive submasters, the last submaster to move off zero steals that channel.
- INHIBIT** (Inhibitive submaster) Acting like a grandmaster fader, the submaster fader masters all output channels that have any intensity recorded in the submaster. Channels with only attributes recorded in the submaster are ignored. Channels under control of an inhibitive submaster appear on the *Levels* screen with yellow text on a red background if they have a level, or as a red block with no text when they are at zero. You can use the Channel Control to bring channel levels up to the current level of the submaster. Multiple inhibitive submasters which control the same output channels are combined on a lowest takes precedence basis.

S/LIGHT	(Sound To Light Submaster) Submaster intensities are combined with effects, playbacks, and other submasters on a highest takes precedence basis. Attributes are combined on a latest takes precedence basis. The local submaster controls the maximum level of sound to light, and the external Audio Input controls the level of the submaster up to that maximum. Submaster channels can be stolen by the Channel Control. This facility is only available with the <i>CommuniquéPro</i> software. For more information see the <i>CommuniquéPro Operator's Manual</i> . Only one submaster can be a Sound To Light Submaster.
DMX CHAN	(DMX Channel Submaster) The DMX input signals become levels for channels 1-512 in the submaster, and are combined with effects, playbacks, and other submasters on a highest takes precedence basis. The local submaster controls the level of the DMX input. Recorded submaster levels are ignored. Submaster channels can be stolen by the Channel Control. This facility is only available with the <i>CommuniquéPro</i> software. For more information see the <i>CommuniquéPro Operator's Manual</i> . Only one submaster can be a DMX Channel Submaster.
DMX DIMR	(DMX Dimmer Submaster) The local submaster controls the level of the DMX input, and thus the levels of any dimmers patched to DMX inputs. Recorded submaster levels are ignored. Only one submaster can be a DMX Dimmer Submaster. This facility is only available with the <i>CommuniquéPro</i> software. For more information see the <i>CommuniquéPro Operator's Manual</i> . Only one submaster can be a DMX Dimmer Submaster.
SUB SUPER	(Submaster Supermaster) The submaster fader controls the level of all submasters. Channels are controlled by individual submasters, which are in turn controlled by the Submaster Supermaster. Only one submaster can be the Submaster Supermaster. If no submasters are assigned as the Submaster Supermaster, all submasters can be controlled between 0 and 10.
FX SUPER	(Effect Supermaster) The submaster fader controls the overall level of all effects. Channels are controlled by the effects, which are in turn mastered by the Effect Supermaster. Recorded submaster levels are ignored. Only one submaster can be the Effect Supermaster. If no submasters are assigned as the Effect Supermaster, all effects run at their recorded levels.

FLASH SPR	(Flash Supermaster) The submaster fader controls the level for bumps and flashes. Only one submaster can be the Flash Supermaster. If no submaster is assigned as the Flash Supermaster, channels and submasters always flash to Full.
AUDIO THR	(Audio Threshold Supermaster) The submaster fader controls the sensitivity of the Audio Input. The Audio Input can be used to control the stepping of an effect. Recorded submaster levels are ignored. This facility is only available with the <i>CommuniquéPro</i> software. For more information see the <i>CommuniquéPro Operator's Manual</i> . Only one submaster can be the Audio Threshold Supermaster.
MIDI RATIO	(Midi Ratio Supermaster) The submaster fader sets the number of MIDI sync pulses which the effect must count before it will move to the next step. Recorded submaster levels are ignored. This facility is only available with the <i>CommuniquéPro</i> software. For more information see the <i>CommuniquéPro Operator's Manual</i> . Only one submaster can be the Midi Ratio Supermaster.

To set the submaster function in the *Submaster* display, press **[SUB]** to see the *Submaster* display and then change the *Function* field for the appropriate submaster.

[SUB] # function records levels on the current display into the specified submaster and changes the submaster function.

[SUB] # function **[*]** changes the function of the specified submaster without changing recorded levels.

The key sequences represented by function are:

Pileon submaster	{SUB FUNC}{NORMAL}
Independent submaster	{SUB FUNC}{INDEP}
Exclusive submaster	{SUB FUNC}{EXCLUS}
Inhibitive submaster	{SUB FUNC}{INHIB}
Sound To Light Submaster	{SUB FUNC}{SUPER} {SOUND LIGHT}
DMX Channel Submaster	{SUB FUNC}{SUPER DMX} {DMX IN CHAN}
DMX Dimmer Submaster	{SUB FUNC}{SUPER DMX} {DMX IN DIMMER}
Submaster Supermaster	{SUB FUNC}{SUPER} {SUB SUPER}
Effect Supermaster	{SUB FUNC}{SUPER} {FX SUPER}
Flash Supermaster	{SUB FUNC}{SUPER} {FLASH SUPER}
Audio Threshold Supermaster	{SUB FUNC}{SUPER} {AUDIO THRESH}
Midi Ratio Supermaster	{SUB FUNC}{SUPER} {MIDI RATIO}

Assigning Effects and Macros

Both a macro and an effect can be associated with a submaster fader, so that when the fader is reloaded it automatically runs the macro and/or effect. The macro and effect are the same for all submaster pages.

[SUB] # [FX] # records levels on the current display into the specified submaster and assigns an effect to it. If the submaster has already been recorded, an overrecord message gives you the chance to cancel the recording. To rerecord the submaster, press **[RECORD][*]** again. To cancel the recording, press **[CLR]** or **[UNDO]**.

When the submaster is moved up from zero the effect is automatically started. To delete an assigned macro, omit the effect number.

[RECORD][SUB][1][FX][2][*]

Records levels into submaster 1 and assigns effect 2 to it.

[RECORD][SUB][1][FX][*]

Records levels into submaster 1 and deletes any assigned effect

[SUB] # [FX] # [*] changes the effect assigned to the specified submaster without changing recorded levels. You do not get an overrecord warning with this command if the submaster exists.

[SUB][1][FX][*]

Deletes the effect assigned to submaster 1 without changing any levels.

[SUB][1][FX][2][*]

Changes the effect assigned to submaster 1 to effect 2 without changing any levels.

[SUB] # [MACRO] # records levels on the current display into the specified submaster and assigns a macro to it. If the submaster has already been recorded, an overrecord message gives you the chance to cancel the recording. To rerecord the submaster, press **[RECORD] [*]** again. To cancel the recording, press **[CLR]** or **[UNDO]**.

When the submaster is moved up from zero the macro is automatically started. To delete an assigned macro, omit the macro number.

[RECORD][SUB][1][MACRO][3][*]

Records levels into submaster 1 and assigns Macro 3 to it.

[RECORD][SUB][1][MACRO][*]

Records levels into submaster 1 and deletes any assigned macro.

[SUB] # [MACRO] # [*] changes the macro assigned to the specified submaster without changing recorded levels. You do not get an overrecord warning with this command if the submaster exists.

[SUB][1][MACRO][*]

Deletes the macro assigned to submaster 1 without changing any levels.

[SUB][1][MACRO][2][*]

Changes the macro assigned to submaster 1 to macro 2 without changing any levels.

External Faders

The numbered submaster fader normally controls the submaster or supermaster directly. However, each submaster can be set to use one of the 12 analog inputs from the REMOTE ANL connector, in which case the fader level is combined with the analog input level on a highest takes precedence basis. Each analog input can only be used once.

This facility is only available with the *CommuniquéPro* software. For more information see the *CommuniquéPro Operator's Manual*.

Submaster Bump Mode

You can record a bump mode for each individual submaster. To record a bump mode you must be in the *Submaster* display. To change the bump mode, press **[SUB]** to see the submaster display, and then change the *Bump* field for the appropriate submaster. All submasters are initially set to Flash mode.

- | | |
|-------|---|
| Off | Pressing the bump button does nothing. |
| Flash | (Flash) Pressing the bump button is same as moving the submaster fader to 10. The output is set to the level of the Flash Supermaster. |
| Solo | (Solo) Pressing the bump button leaves the output of the submaster the same. All other (non-bumped) submasters, as well as effects, cues, and the Channel Control, are set to zero. The Flash Supermaster is ignored. |
| F+S | (Flash plus Solo) Pressing the bump button is same as moving the submaster fader to 10. The output is set to the level of the Flash Supermaster. All other (non-bumped) submasters, as well as effects, cues, and the Channel Control, are set to zero. |

The bump buttons are also controlled by the **{KEYS LATCH}** soft key accessed using the **[BUMP MODE]** key. Press this key to view the current setting. These appear in the centre LCD (consoles with 3 LCD displays) or right LCD (consoles with 2 LCD displays) as labels above the soft keys. Press **[BUMP MODE]** again to return to normal operation.

The **{KEYS ON}** and **{KEYS OFF}** soft keys determine how the **{BUMP}** soft key work. The **{KEYS LATCH}** soft key also determines how the submaster bump buttons work. A bar above the label shows the current mode. Pressing one of the soft keys changes the mode.

{KEYS LATCH} Pressing and releasing the bump button bumps the levels until the bump button is pressed again.

The **{FLASH}**, **{SOLO}** and **{FLASH + SOLO}** soft keys determine what happens when you press the **{BUMP}** soft key. These soft keys do not affect the submaster bump buttons.

Text

You can record a text label (caption) with each submaster to help identify the submaster.

[SUB] # [TEXT] text records levels on the current display into the specified submaster and assigns a text string (caption) to it.

[SUB] # [TEXT] text [*] changes the text string (caption) assigned to a submaster without changing recorded levels.

For examples, please see *Basic Recording* on page 86.

Updating and Adding to Submasters

[UPDATE][SUB] # [*] changes levels in the specified submaster as necessary based on channels that have been modified live (red or purple channels on the *Live* display). Ignores channels that are not already in the submaster, and channels that have been removed from the “modified” list by using **[SHIFT][CLR]**. Channels that are off in the selection will be removed from the submaster. The submaster fader must be set above zero. This command works only from the *Live* display.

[UPDATE][SUB][1][*]

Records levels that have been modified live into submaster 1, ignoring levels of channels that are not already in the submaster.

[SUB][1][*][UPDATE][SUB][1][*]

First selects all of the channels in submaster 1, then updates their levels in submaster 1, ignoring levels of channels that are not already in the submaster.

[UPDATE]{ADD ALL}[SUB] # [*] changes levels in the specified submaster as necessary based on channels that have been modified live (red or purple channels on the *Live* display). Adds modified channels (red or purple) that are not already in the submaster, ignoring channels that have been removed from the “modified” list by using **[SHIFT][CLR]**. Channels that are off in the selection will be removed from the submaster. The submaster fader must be set above zero. This command works only from the *Live* display.

[UPDATE]{ADD ALL}[SUB][1][*]

Records all channels that have been modified live into submaster 1, adding red or purple channels that are not already in the submaster.

[SUB][7][*][UPDATE]{ADD ALL}[SUB][1][*]

First selects all of the channels in submaster 7, then records their levels in submaster 1, adding red or purple channels that are not already in the submaster.

chan [UPDATE][SUB] # [*] changes levels of the specified channels in the specified submasters to match the current *Levels* screen for the selected channels, regardless of whether or not they have been modified. Adds channels that are not already in the submaster, regardless of whether or not they have been modified. Channels that are off in the selection will be removed from the submaster. The submaster fader must be set above zero. You can use this command to record a selection of channels (rather than all channels) into a new submaster. This command works from all displays with level control.

[1][THRU][5][UPDATE][SUB][*]

Changes channel 1 through 5 levels in submaster 1, adding channels that are not already in the submaster.

If the submaster fader is not at 0 then the updated/added levels are adjusted to avoid output bumps. For example, if the submaster fader is at 50% and a channel level of 10% (from the output) is updated/added to it, the level recorded into the submaster is actually 20% so that the submaster output is 10%. The maximum level that can be recorded into the submaster is 100% so output bumps can still occur with a low fader and high levels.

To clear the "changed" indicator and set red channel levels back to cyan, press **[SHIFT][CLR]**.

Quick Recording

Pressing the bump button for a submaster (this is below the submaster fader) is a quick way of recording a submaster. This does not actually bump the submaster.

[SUB] [1] Records submaster 1. This is the same as **[SUB][1]**

chan [SUB] [1][1] adds the specified channels to the submaster and sets their levels to match the current *Levels* screen.

[1][THRU][5][SUB][1][1]

Adds channels 1 through 5 to submaster 1 and sets their levels to the levels on the current *Levels* screen. If the channels are already in the submaster the levels are changed to match the current *Levels* screen.

chan [SUB][-] [1][1] deletes the specified channels from the submaster (sets their levels off).

[4][+][5][SUB][-] [1][1]

Deletes channels 4 and 5 from submaster 1 and returns the current *Levels* screen to it's levels without the submaster

Using Submaster Faders

Each submaster is controlled by a submaster fader and the bump button below the fader. These are numbered 1 to 24 for 520 series consoles, 1 to 30 for 430 and 530 series consoles or 1 to 54 for 550 series consoles.

The last 6 submasters are initially set as supermasters. This arrangement can be changed if needed, since any submaster fader can be set to be a submaster or a supermaster. You can eliminate all supermasters if necessary to create the maximum number of submasters.

If you move shows between different size consoles, the last 6 submasters in the recorded show transfer to the last 6 submasters on the new console. For instance, you move from a 54 submaster console to a 24 submaster console, submasters 19 through 48 in the larger console will not transfer, but submasters 49 through 54 will appear in the smaller console as submasters 19 through 24.

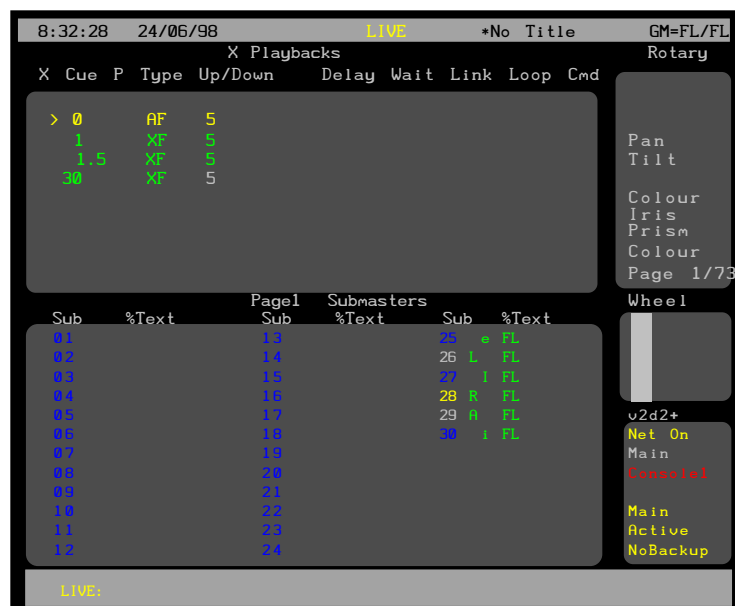
Each submaster fader has two lights to show submaster status. A Submaster Supermaster controls the levels of all submasters.

The submaster faders and bump buttons can be used from any display. They have no effect on the output if the submaster has no recorded levels (intensities or attributes).

The *Submasters* window at the bottom of the *Live* display *State* screen shows the current state of the submasters.

The Submasters Window

The *Submasters* window in the *Live* display shows the current state of the submasters and is used to show submaster fader status. If the *State* screen does not show the *Submasters* window, go to the *Setup* display and change the *Live|Screen|Layout* value to *PB+SUBS* or *SUBS*. Then press **[LIVE]** to show the *Live* display.



Current Page The current submaster page is shown on the title bar of the *Submasters* window

Submaster Number Each submaster is identified by its number (1 to 24, 1 to 30, or 1 to 54, depending on the console). The colour of this number shows the state of the submaster:

blue The submaster has no recorded channels and so has no effect on the console output.

white The submaster has recorded channels but is not contributing to the output.

yellow The submaster has recorded channels and is contributing to the output.

green background The submaster fader is adding channels from a submaster on a different page than the current page. This happens if the fader is set higher than 0 when the current page is changed (or less than 10 for an inhibitive submaster). The green background disappears when the submaster reloads.

Submaster Function The submaster function is shown beside each submaster number. This reflects the `Function` field in the *Submaster* display.

(blank) Pileon mode.
i Independent mode.
e Exclusive mode.
I Inhibitive mode.
S Sound To Light mode.
C DMX Channel Supermaster.
M Submaster Supermaster.
L Flash Supermaster.
F Effect Supermaster.
D DMX Dimmer Supermaster.
A Audio Threshold Supermaster.
R MIDI Ratio Supermaster.

Submaster Fader Level The current fader level of each submaster is shown beside the submaster number after the mode. This ranges from 0 to 99 or FL for 100%, and shows the level as it fades, not just the fader position.

Live Channel Colours

Channels which are being inhibited by a submaster are shown on the *Live* display with a dark red background. When the fader is at 10, this colour disappears since they are no longer being inhibited.

Channels controlled by an Exclusive submaster are shown on the *Live* display with a yellow background.

Channels controlled by any other submaster are shown on the *Live* display in yellow.

The Current Page

A submaster fader uses the levels in the current page, which is shown at the top of the *Submasters* window in the *Live display State* screen.

To change the current submaster page, use the **[SUB][+]**, **[SUB][-]**, or **[SUB PAGE] #** commands. To learn more about submaster pages turn to *Submaster Pages* on page 92.

Changing the current page does not change the submaster output until it is reloaded by moving the fader to 0 (or 10 for inhibitive submasters).

The Fader

The action of the submaster fader is determined by its Function setting. The fader can be set to be one of several types of submasters or supermasters. To learn more about supermasters and other submaster functions turn to *Submaster Function* on page 90.

If intensity fade times are recorded in the submaster, the fade does not complete instantly. For example, if the fader was moved from 0 to 5 and the fade time was 8 seconds, the levels would fade in over a time of 4 seconds. Moving it from 5 to 10 would take another 4 seconds giving a total fade time of 8 seconds.

Recorded attributes in the submaster use the submaster attribute fade time (shown in the *Submaster* display *Att t* field) to fade to their recorded levels.

The Bump Button

For most submaster modes, the bump button below the fader works as described in the *Submaster Bump Mode* section of this chapter (see page 92). For Inhibitive submasters, the bump buttons are not functional.

The Fader LEDs

The top LED is on if the submaster is loaded. If there is a fade time associated with the submaster then it flashes while the submaster is fading.

Supermasters

All submaster output levels, except for inhibitive submasters, are mastered by the submaster Supermaster fader. This supermaster is normally above the **SUB SUPER** label in the centre LCD (consoles with 3 LCD displays) or on submaster 19 (consoles with 2 LCD displays). One of the other submasters can however be configured to operate as this supermaster or there may be no supermaster in which case its level is set to 100%.

There are other supermasters defined in the system which you can use. To learn more about supermasters and other submaster functions turn to *Submaster Function* on page 105.

Viewing and Editing Submasters

You can view and edit submasters and supermasters in the *Submaster* display.

Changing levels while in this display changes the recorded levels in the current submaster without a record command and without warning you.

The Submaster Display

To show the *Submaster* display press **[SUB]** in the Display keypad (not [SUB] in the Levels keypad).

```

8:32:28 24/06/98 SUBMASTER 1 *No Title GM=FL/FL
0001 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 0025
0026 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 0050
0051 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 0075
0076 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 0100
0101 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 0125
0126 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 0150
0151 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 0175
0176 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 0200
0210 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 0225
0226 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 0250

SUBMASTER 1:
Select submaster, then edit an item or set channels
  
```

```

8:32:28 24/06/98 SUBMASTER 1 *No Title GM=FL/FL
Sub Text [Page 1] Bump Up/Down Att FX Ext Mac Function Rotary
1 Flash 0/0 0 OFF OFF OFF NORMAL
2 Flash 0/0 0 OFF OFF OFF NORMAL
3 Flash 0/0 0 OFF OFF OFF NORMAL
4 Flash 0/0 0 OFF OFF OFF NORMAL
5 Flash 0/0 0 OFF OFF OFF NORMAL
6 Flash 0/0 0 OFF OFF OFF NORMAL
7 Flash 0/0 0 OFF OFF OFF NORMAL
8 Flash 0/0 0 OFF OFF OFF NORMAL
9 Flash 0/0 0 OFF OFF OFF NORMAL
10 Flash 0/0 0 OFF OFF OFF NORMAL
11 Flash 0/0 0 OFF OFF OFF NORMAL
12 Flash 0/0 0 OFF OFF OFF NORMAL
13 Flash 0/0 0 OFF OFF OFF NORMAL
14 Flash 0/0 0 OFF OFF OFF NORMAL
15 Flash 0/0 0 OFF OFF OFF NORMAL
16 Flash 0/0 0 OFF OFF OFF NORMAL
17 Flash 0/0 0 OFF OFF OFF NORMAL
18 Flash 0/0 0 OFF OFF OFF NORMAL
19 Flash 0/0 0 OFF OFF OFF NORMAL
20 Flash 0/0 0 OFF OFF OFF NORMAL
21 Flash 0/0 0 OFF OFF OFF NORMAL
22 Flash 0/0 0 OFF OFF OFF NORMAL
23 Flash 0/0 0 OFF OFF OFF NORMAL
24 Flash 0/0 0 OFF OFF OFF NORMAL
25 Flash 0/0 0 OFF OFF OFF EXCLUSIVE
26 Flash 0/0 0 OFF OFF OFF FLASH SPR
27 Flash 0/0 0 OFF OFF OFF INHIBIT
28 Flash 0/98.24 0 OFF OFF OFF MIDI RATT

SUBMASTER 1:
Select submaster, then edit an item or set channels
  
```

The *Submaster* display *State* screen shows a page of submasters and their associated fields. The current submaster number is highlighted with a red background. The current page is shown at the top of this window.

The title bar shows the date and time, display name, show name, and grandmaster status. The date and time format can be set in the *Console Time* window of the second *Setup* display *State* screen. The show name is preceded by an asterisk (*) when changes have been made to the show since you last saved it.

The *Wheel* window at the right shows the position within the submasters, with the current submaster number next to it.

Before viewing or editing submasters, make sure that you are in the correct page. When you first open the *Submaster* display, you get the current *Live* display *Submaster* page.

The page number is shown at the top of the *Submasters* window, and can be changed while you are in the *Submaster* display without changing the current page in the *Live* display. Once you go back to the *Live* display the current page in the *Submaster* display is set to match.

To change the current submaster page, use **[SUB][+]**, **[SUB][-]**, or **[SUB PAGE] #**. The highlight must be on the submaster number (the SUB field).

To go directly to a submaster, press **[SUB] # [*]** where # is the submaster number.

To move between submasters, move the Trackball to any field in the submaster you want to edit. Levels for the highlighted submaster will be displayed on the *Levels* screen, but to edit these levels you will need to highlight the submaster number. You can also use **[NEXT]** and **[LAST]** to change submasters if the highlight is on the submaster number.

State Screen Fields

Fields on the *Submaster* display *State* screen show the current values for submaster properties. To learn more about these properties turn to *Recording Submaster Properties* and *Recording Submaster Fader Properties* starting on page 105. The fields are shown below.

SUB!	The number of the submaster (1 to 24, 1 to 30, or 1 to 54, depending on the console). These are fixed and cannot be changed.
TEXT!	The text label (caption) attached to this submaster.
Up/Down!	The intensity up and down fade times. Can be 0 to 59 minutes, 59 seconds.
Att!	Attribute fade times. The same time is used for both up and down fades. Can be 0 to 59.9 seconds.
Fx!	OFF if no effect is associated with this submaster. Otherwise the effect number to start when the submaster is moved off zero.
Ext!	OFF if no external fader is used. Otherwise the analog input number which is combined with this fader on a highest takes precedence basis.
Mac!	OFF if no macro is associated with this submaster. Otherwise the macro number of the macro to run when the submaster is moved off zero.
Function!	Controls how the submaster is used. To learn more about supermasters and other submaster functions turn to <i>Submaster Function</i> on page 105.
Bump!	Controls the submaster bump mode. To learn more about submaster bump modes turn to <i>Submaster Bump Mode</i> on page 90.

Viewing Submaster Channel Levels

To view the recorded levels in a submaster, select the required submaster. The levels are then shown on the *Levels* screen.

Only submasters set to Normal, Independent, Exclusive, Inhibitive, or Sound To Light functions use the channel levels. Channel levels are ignored in other submaster modes.

Channels which are off are shown with a blank level. Channels which are on at 0 are shown with a level of 0. For Inhibitive mode, intensity channels with levels (including on At 0) are inhibited and attribute channels or channels which are off are ignored. For Normal, Independent, and Exclusive modes, on At 0 and off are treated as a level of 0.

Editing Submaster Channel Levels

Once you have selected the required submaster and put the highlight on the submaster number (the **SUB** field), you can select channels and modify them using the same commands as for channel control, for example **[1][@][1]**, **[CUE][1][@][5]** and so on. The Level Wheel cannot be used to change levels.

If a submaster is referenced in a channel command (for example **[SUB][1][@]**) then the submaster from the current page in the *Submaster* display is used. This lets you copy submaster levels on the same page.

Clearing Submasters

To clear a submaster, set all intensity levels and attribute levels for the submaster off, or highlight the submaster number (the **SUB** field) in the *State* screen and use **{CLEAR}**. To learn how to clear all submasters or a range of submasters from the *Archive* display turn to *Clear Operations* starting on page 213.

{CLEAR}

This soft key appears on the right LCD *Submaster* menu. When you press **{CLEAR}** the first time, a message appears to let you cancel. To clear the submaster, press **{CLEAR}** again. To cancel, press **[CLR]** or **[UNDO]**.

Using **{CLEAR}** sets all intensity levels and attribute levels in the selected submaster to 0, clears any macro or external fader, and sets the submaster mode to Normal.

{CLEAR} can be used with a single submaster or with a THRU range.

{CLEAR}[*][*]

Clears the current submaster.

[SUB][1]{CLEAR}[*][*]

Clears submaster 1.

[SUB][1][THRU][3]{CLEAR}[*][*]

Clears submasters 1, 2, and 3.

Copying Levels from a Submaster

You can record submasters, cues, groups, and effect steps while you are in the *Submaster* display. The highlight must be on the submaster number (the SUB field).

Using record commands while you are in the *Submaster* display copies the *Submaster* display levels to the target submaster, cue, group, or effect step. For example, if the current submaster is 1, then **[CUE][2]** will copy the levels from submaster 1 into cue 2.

Submasters are recorded into the current submaster page of the *Submaster* display. You can not copy submasters between pages.

Since submasters are recorded into the current submaster page of the *Submaster* display, this copies the submaster to a different submaster in the same submaster page. There is no direct way to copy a submaster to another page. You can copy submasters to another page indirectly by following the steps below, which use the *Live* display to record the contents of page 1 submaster 1 into page 3 submaster 4.

1. Go to the *Live* display and make sure all channels are off.
2. Press **[SUB PAGE][1][*]** to set the initial submaster page.
3. Press **[SUB][1][@]{FULL}[*]** to set the submaster levels in the current display.
4. Press **[SUB PAGE][3][*]** to change the submaster page.
5. Press **[SUB][4][RECORD][RECORD][SUB][4][*]** to record the new submaster.

Cues and X Playbacks

The X playbacks let you automatically or manually fade between recorded lighting states, called cues, which contain intensity and/or attribute levels with associated fade, delay and wait times, profiles, and other attributes. The cue sheet is an ordered list of all recorded cues.

This chapter contains the following topics:

The Current Cue

Recording Cue Levels

Recording Cue Properties

Using the X Playbacks

Viewing and Editing Cues

The Current Cue

The **CUE** field in the right LCD shows the current cue. This is the last cue which has been referenced. It can be used in a cue selection.

All cue recording commands act on a single cue part. When you press **[CUE]**, the soft keys change to include **{PART}** which lets you select one of the cue parts. If you do not include a cue part, part 1 is assumed for a new cue and the current part is assumed for an existing cue.

The examples shown immediately below are command segments you can use to select a cue number. You can then use combinations of these command segments to replace **cue** where it appears in full command descriptions.

Since these examples are only part of a command, they do not have a concluding [*] key.

[CUE]{PART} # specifies the current cue with a specific part number.

[CUE] Specifies the current cue part 1.

[CUE]{PART}[2] Specifies the current cue part 2.

[CUE][CUE] # Specifies the current cue with a specific part number.

[CUE][CUE][2] Specifies the current cue part 2.

[CUE] # {PART} # Specifies a specific cue.

[CUE][1] Specifies cue 1 part 1.

[CUE][1]{PART}[2] Specifies cue 1 part 2.

[CUE][1].[2]{PART}[3] Specifies cue 1.2 part 3.

[CUE][NEXT]{PART} # specifies the next cue after the current cue. If the current cue is the highest cue number, this specifies the lowest cue number.

[CUE][NEXT]	Specifies the cue part 1 after the current cue.
[CUE][NEXT]{PART}[2]	Specifies the cue part 2 after the current cue.
[CUE][LAST]{PART}#	Specifies the previous cue before the current cue. If the current cue is the lowest cue number, this specifies the highest cue number.
[CUE][LAST]	Specifies the cue part 1 before the current cue.
[CUE][LAST]{PART}[3]	Specifies the cue part 1 before the current cue.

Recording Cue Levels

You can record up to 2000 cues per show, numbered from 0.1 to 999.9. If you initially record whole number cues only, you can use a decimal cue number (for instance 3.5) to insert extra cues between whole numbers. You can insert decimal cues .1 through .9 between any two consecutively numbered cues. A .0 is optional in a cue number and is the same as if omitted (cue 1 is the same as cue 1.0). Examples of cues (in cue sheet order) are:

0.1
 1 (first full numbered cue - same as 1.0).
 1.1
 1.3
 2
 100
 999.9 (last possible cue).

Cues can have up to 12 parts numbered from 1 to 12. Each cue part counts as one of the available 2000 cues.

When a cue is run, all of its parts are run together. If you record a channel in a cue part that has already been recorded in another part of the same cue, the new level (latest recorded level) is used for the channel. Cue wait times, macros, links/loops and commands apply only to the cue as a whole, but separate delay times and profiles can be used on each part. If a cue is referenced without specifying a part, part 1 is assumed.

[RECORD] records the levels (intensity levels and attribute levels) on the current display into the current cue.

[CUE] # records the levels on the current display (the *Live*, *Cue/Preview*, *Group*, *Effect*, or *Submaster* display) into the into the specified cue. See *Working With Channel Levels* starting on page 66 to learn how to set intensity and attribute levels, and *Basic Recording* starting on page 86 for examples of recording.

When you record from the *Live* display, channels at zero are set to zero level in the cue only if they change from the previous cue. Otherwise they are recorded off and channel levels can track through from the previous cue in later editing.

When you set channel levels in the *Cue/Preview* display you can set them off (**chans [@]{OFF}**) or set them to zero (**chans [@][0]**). When set off, levels track through from previous cues. When set to 0, levels are forced to zero in the cue. Thus you can set levels off in a Blocking Cue to make individual channels track through the cue, or at zero in a Tracking Cue to block individual channels

All new cues are Tracking Cues unless you explicitly specify that they should be Block Cues. Recording over an existing cue does not change the cue type unless you explicitly change it.

Recording a cue blind (in the *Cue/Preview* display) does not affect the console output. The cue needs to be loaded and run for the new levels to appear on stage.

The default wait, fade and delay times are assigned to new cues unless you specify values for them in the record command. Recording over an existing cue leaves these values alone unless you explicitly change them. The defaults for these values are given by the *Cue|Fade*, *Cue|Delay*, and *Cue|Wait* fields in the *Default Times* window of the *User Setup* display.

Recording a new cue sets it with no links, loops, macro, or effect. Recording over an existing cue leaves these values alone unless you explicitly change them.

The last recorded cue appears at the bottom of the *X Playback* window if the *Show|Last|Recorded|Cue* field in the *Setup* display is ON.

You can record just the intensities or just the attributes to a cue by adding **{INTS ONLY}** or **{ATTS ONLY}** to the command line

Recording Cue Properties

Cues have the following properties that can be specified when recording, or edited later:

Assign Cues to Playbacks

Fade Times

Delay Times

Wait Time

Assigning Fade Profiles

Assigning Fade Times to Attributes

Assigning Fade Profiles to Attributes

Assigning an Effect

Assigning a Macro

Links, Subroutines, and Loops

Fade Types

Assign Cues to Playbacks

Normally, cues can be run on either playback. They can however be assigned to a particular one. The other playback will then treat the cue as if it does not exist.

cue [PB] # records the levels on the current display into the specified cue and assigns the cue to the specified playback. If the cue already exists, an overrecord message gives you the chance to cancel the recording. To rerecord the cue, press [RECORD][*] again. To cancel the recording, press [CLR] or [UNDO].

In multi-part cues, only the playback set in part 1 is used. If the console is set for two playbacks, cues will only run on their assigned playback. If the console is set for a single playback this assignment has no effect. To delete a playback assignment, omit the playback number.

[RECORD][CUE][1][PB][2][*]

Records levels into cue 1 and assigns it to Playback 2.

[RECORD][CUE][1][PB][*]

Records levels into cue 1 and deletes any assignment.

cue [PB] # [*] changes the playback that the specified cue is assigned to without changing recorded levels. If the cue doesn't exist and the command is confirmed, creates a new cue with no levels but with the specified playback assignment. You do not get an overrecord warning with this command if the cue exists.

[CUE][1][PB][*]

Deletes the cue 1 playback assignment without changing any levels.

[CUE][1][PB][2][*]

Changes the cue 1 playback assignment to playback 2 without changing any levels.

Fade Times

Each cue has up and down fade times that are used when the cue is run. These can be set to values between 0 and 59 minutes, 59 seconds. Times below one minute can be specified in tenths of a second.

The fade times control the time for the cue to fade to 100% of its recorded levels. You can split fade times into the time it takes increasing levels to reach their new settings (the up fade time), and the time it takes decreasing levels to reach their new settings (the down fade time).

In cues with parts, each part can have its own fade and delay times, but the wait time applies to the whole cue and is taken from part 1.

cue [TIME] # records the levels on the current display into the specified cue, and assigns a fade time. If the cue already exists, an overrecord message gives you the chance to cancel the recording. Press **[RECORD][*]** again to record over the cue or **[CLR]** or **[UNDO]** to cancel the operation.

cue [TIME] {OFF/MAN} records the levels on the current display into the specified cue, and makes the cue into a manual fade. If the cue already exists, an overrecord message gives you the chance to cancel the recording, Press **[RECORD][*]** again to record over the cue or **[CLR]** or **[UNDO]** to cancel the operation.

For examples of setting fade time, please see *Basic Recording* starting on page 86.

Delay Times

Each cue has up and down delay times and a wait time which are used when the cue is run. These can be set to values between 0 and 59 minutes, 59 seconds. Times below one minute can be specified in tenths of a second.

Delay times are used to delay the start of a fade from when you press **[GO]**. You can split delay times into the time until the channels whose levels are increasing start to fade (the up delay time), and the time until the channels whose levels are decreasing start to fade (the down delay time).

In cues with parts, each part can have its own fade and delay times, but the wait time applies to the whole cue and is taken from part 1.

cue [DELAY] # records the levels on the current display into the specified cue, and records a delay time. If the cue already exists, an overrecord message gives you the chance to cancel the recording. Press **[RECORD][*]** again to record over the cue or **[CLR]** or **[UNDO]** to cancel the operation.

If you only enter one number for time, it is used for both the up and down delay times. To enter separate up and down delay times, use **[/]** to separate the two numbers. The first number becomes the up delay time and the second number becomes the down delay time.

Separate delay times can be assigned to each cue part. To delete an assigned delay time, omit the time value.

[RECORD][CU][1][DELAY][4][*]

Records levels into cue 1 and assigns up and down delay times of 4 seconds.

[RECORD][CUE][1][DELAY][4][/][2][*]

Records levels into cue 1 and assigns a up delay time of 4 seconds and a down delay time of 2 seconds.

[RECORD][CUE][1][DELAY][/][2][*]

Records levels into cue 1 and assigns a 2 second delay for down fades. Sets the delay time for the up fade to the default time, or leaves it as is if over-recording.

[RECORD][CUE][1][DELAY][4][/][*]

Records levels into cue 1 and assigns a 4 second delay for up fades. Sets the delay time for the down fade to the default time, or leaves it as is if over-recording.

cue [DELAY] # [*] changes the delay time of the specified cue without changing recorded levels. If the cue doesn't exist, creates a new cue with no levels but with the specified delay times. You do not get an overrecord warning with this command if the cue exists.

If the specified cue doesn't exist, creates a new cue with no levels but with the specified delay times. If you only enter one number for time, it is used for both the up and down delay times. To enter separate up and down delay times, use **[/]** to separate the two numbers. The first number becomes the up delay time and the second number becomes the down delay time.

[CUE][1][DELAY][*]

Resets cue 1 delay time to the non-split default delay time in the *User Setup* display CueIDelay fields.

[CUE][1][DELAY][4][*]

Changes cue 1 up and down delay times to 4 seconds without changing any levels.

[CUE][1][DELAY][4][/][2][*]

Changes cue 1 up delay time to 4 seconds and its down delay time to 2 seconds without changing any levels.

[CUE][1][DELAY][1][2][*]

Changes cue 1 down delay time to 2 seconds without changing any levels. The up delay time is set to the time in the *Setup* display **CueDelayUp/** field if this is a new cue or left as it is if over-recording.

[CUE][1][DELAY][4][1][*]

Changes cue 1 up delay time to 4 seconds without changing any levels. The down delay time is set to the time in the *Setup* display **CueDelayDown/** field if this is a new cue or left as it is if over-recording.

Wait Time

Each cue has a wait time which is used when the cue is run. This can be set to values between 0 and 59 minutes, 59 seconds. Times below one minute can be specified in tenths of a second.

When a cue's wait time is set, the next cue in sequence will start automatically the set time after the start of the cue. If the wait time is zero, the next cue starts, at the same time as the cue with the wait time. If the wait time is off the next cue will not run automatically.

In cues with parts, each part can have its own fade and delay times, but the wait time applies to the whole cue and is taken from part 1.

cue [WAIT] # records the levels on the *Live* display into the specified cue, and assigns a wait time to it. If the cue already exists, an overrecord message gives you the chance to cancel the recording. Press **[RECORD][*]** again to record over the cue or **[CLR]** or **[UNDO]** to cancel the operation.

The wait time cannot be split. In multi-part cues, only the wait time in part 1 is used. To delete an assigned wait time, omit the time value.

[RECORD][CUE][1][WAIT][4][*]

Records cue 1 with levels and a wait time of 4 seconds.

cue [WAIT] # [*] changes the wait time of the specified cue without changing recorded levels. If the cue doesn't exist, creates a new cue with no levels but with the specified wait time. You do not get an overrecord warning with this command if the cue exists.

[CUE][1][WAIT][*]

Resets cue 1 wait time to zero.

[CUE][1][WAIT][4][*]

Changes the cue 1 wait time to 4 seconds without changing any levels.

Assigning Fade Profiles

You can assign a profile to the cue, or assign separate profiles to the up fade and down fade.

cue [PROFILE] # records the levels on the current display into the specified cue and assigns a fade profile to it. If the cue already exists, an overrecord message gives you the chance to cancel the recording. Press **[RECORD][*]** again to record over the cue or **[CLR]** or **[UNDO]** to cancel the operation. To learn how to create and edit profiles, turn to Profiles starting on page 220.

If you only enter one fade profile number, it is used for both the up and down fades. To enter separate up and down fade profiles, use **[/]** to separate the two numbers. The first number becomes the up fade profile and the second number becomes the down fade profile.

Separate fade profiles can be assigned to each cue part. To delete an assigned fade profile, omit the fade profile number. Separate fade profiles can be assigned to each cue part. To delete an assigned fade profile, omit the fade profile number.

[RECORD][CUE][1][PROFILE][3][*]

Records levels into cue 1 and assigns fade profile 3 to both the up and down fades.

[RECORD][CUE][1][PROFILE][3][/][1][*]

Records levels into cue 1 and assigns fade profile 3 to the up fade and fade profile 1 to the down fade.

[RECORD][CUE][1][PROFILE][/][1][*]

Records levels into cue 1 and assigns fade profile 1 to the down fade. The up fade profile is set to 0 if this is a new cue, or left as it is if over-recording.

[RECORD][CUE][1][PROFILE][3][/][*]

Records levels into cue 1 and assigns fade profile 3 to the up fade. The down fade profile is set to 0 if this is a new cue, or left as it is if over-recording.

[RECORD][CUE][1][PROFILE][*]

Records levels in cue 1 and deletes any assigned fade profiles.

cue [PROFILE] # [*] changes the fade profile assigned to the specified cue without changing recorded levels. If the cue doesn't exist, this command creates a new cue with no levels but with the specified fade profile assignment. You do not get an overrecord warning with this command if the cue exists.

[CUE][1][PROFILE][*]

Deletes the fade profile assigned to cue 1 without changing recorded levels.

[CUE][1][PROFILE][2][*]

Changes the up and down fade profiles assigned to cue 1 to fade profile 2 without changing recorded levels.

[CUE][1][PROFILE][4][1][2][*]

Changes the up fade profile assigned to cue 1 to fade profile 4 and the down fade profile to fade profile 2 without changing recorded levels.

[CUE][1][PROFILE][1][2][*]

Changes the down fade profile assigned to cue 1 to fade profile 2 without changing recorded levels. Does not change the up fade profile.

[CUE][1][PROFILE][2][1][*]

Changes the up fade profile assigned to cue 1 to fade profile 2 without changing recorded levels. Does not change the down fade profile.

Assigning Fade Times to Attributes

You can assign a fade time to the attribute change for the cue. The time can be set to values between 0 and 59 minutes, 59 seconds. Times below one minute can be specified in tenths of a second.

cue [@ATT][TIME] # records the levels on the current display into the specified cue, and assigns an attribute fade time. If the cue already exists, an overrecord message gives you the chance to cancel the recording. Press **[RECORD][*]** again to record over the cue or **[CLR]** or **[UNDO]** to cancel the operation.

[RECORD][CUE][1][@ATT][TIME][4][*]

Records levels into cue 1 and assigns an attribute fade time of 4 seconds.

cue [@ATT][TIME] # [*] changes the fade time assigned to the specified cue's attributes without changing recorded levels. If the cue doesn't exist, this command creates a new cue with no levels but with the specified attribute fade time assigned. You do not get an overrecord warning with this command if the cue exists.

[CUE][1][@ATT][TIME][5][*]

Changes the attribute fade time for cue 1 to 5 seconds without changing any levels or other cue properties.

Assigning Fade Profiles to Attributes

You can assign a profile to the attribute change for the cue.

cue **[@ATT][PROFILE] #** records the levels on the current display into the specified cue and assigns a fade profile for attribute changes in the cue. If the cue already exists, an overrecord message gives you the chance to cancel the recording. To rerecord the cue, press **[RECORD][*]** again. To cancel the recording, press **[CLR]** or **[UNDO]**. To learn how to create and edit profiles, turn to *Profiles* starting on page 220.

Separate fade profiles can be assigned to each cue part for attributes. To delete an assigned fade profile, omit the fade profile number.

[RECORD][CUE][1][@ATT][PROFILE][3][*]

Records levels into cue 1 and assigns fade profile 3 to the attributes.

[RECORD][CUE][1][@ATT][PROFILE][*]

Records levels into cue 1 and deletes any fade profile assigned to attributes.

cue **[@ATT][PROFILE] # [*]** changes the fade profile assigned to the specified cue's attributes without changing recorded levels. If the cue doesn't exist, this command creates a new cue with no levels but with the specified fade profile assignment. You do not get an overrecord warning with this command if the cue exists.

[CUE][1][@ATT][PROFILE][*]

Deletes the fade profile assigned to cue 1 attributes without changing recorded levels.

Assigning an Effect

cue **[FX] #** records the levels on the *Live* display into the specified cue and assigns an effect to it. If the effect number is positive the cue starts the effect. If the effect number is negative the cue stops the effect. If the cue exists, an overrecord message gives you the chance to cancel the recording. To rerecord the cue, press **[RECORD][*]** again. To cancel the recording, press **[CLR]** or **[UNDO]**.

Effects run by cues are stopped if you use [GOTO][CUE] # [*] . To go to a new cue without stopping these effects, use [LOAD][CUE] # [*][GO]

The effect starts (positive effect number) or stops (negative effect number) when you run the cue. The up fade time of the cue overrides the fade up time of a starting effect. The down fade time of the cue overrides the fade down time of a stopping effect. To delete an assigned effect, omit the effect number.

[RECORD][CUE][1][FX][2][*]

Records levels into cue 1 and assigns effect 2 start to it.

[RECORD][CUE][2][FX][-][2][*]

Records levels into cue 2 and assigns effect 2 stop to it.

[RECORD][CUE][1][FX][*]

Records levels into cue 1 and deletes any assigned effect.

cue [FX] # [*] changes the effect start or stop assigned to the specified cue without changing recorded levels. If the cue doesn't exist, creates a new cue with no levels but with the specified effect assignment. You do not get an overrecord warning with this command if the cue exists.

[CUE][1][FX][*]

Deletes the effect assigned to cue 1 without changing recorded levels.

[CUE][1][FX][3][*]

Changes the effect assigned to cue 1 to effect 3 start without changing recorded levels.

[CUE][2][FX][-][3][*]

Changes the effect assigned to cue 1 to effect 3 stop without changing recorded levels.

Assigning a Macro

cue [MACRO] # records the levels on the *Live* display into the specified cue and assigns a macro to it. If the cue already exists, an overrecord message gives you the chance to cancel the recording. To rerecord the cue, press **[RECORD][*]** again. To cancel the recording, press **[CLR]** or **[UNDO]**.

When the cue is run the macro is automatically started. To delete an assigned macro, omit the macro number.

[RECORD][CUE][1][MACRO][3][*]

Records levels into cue 1 and assigns Macro 3 to it.

[RECORD][CUE][1][MACRO][*]

Records levels into cue 1 and deletes any assigned macro.

cue [MACRO] # [*] changes the macro assigned to the specified cue without changing recorded levels. If the cue doesn't exist, creates a new cue with no levels but with the specified macro assignment. You do not get an overrecord warning with this command if the cue exists.

[CUE][1][MACRO][*]

Deletes the macro assigned to cue 1 without changing recorded levels.

[CUE][1][MACRO][2][*]

Changes the macro assigned to cue 1 to macro 2 without changing recorded levels.

Links, Subroutines, and Loops

Normally, cues are run sequentially from the beginning of the cue sheet to the end. Links, loops, and subroutines can be used to run cues non sequentially. These can only be applied to the first part of a cue.

Links Links are used to jump to non sequential cues in the cue sheet. Cues then run sequentially from that cue. Their most common usage is as part of a loop (discussed later) or to rearrange cues without having to rerecord all of the cues.

For example, assume that we have already recorded cues 1 through 20. The director changes the order of some characters entering, making it so that you need to run cue 7, 8, and 9 before you run cues 5 and 6. Of course, you can simply rerecord all of the cues to put them in the correct order. However, depending on the complexity of the cues, this could be a lot of work. The alternative is to set the Link property in cue 4 to **7**, the Link property of cue 9 to **5**, and the Link property of cue 6 to **10**. The cues will now run as 3, 4, 7, 8, 9, 5, 6, 10, 11... One of the links in this sequence actually goes backwards in the cue sheet. This is OK, as long as you create a way to get yourself out of an infinite loop, which we did in this case by linking cue 6 to cue 10.

If you link to a non-existent cue, the playback has no "next" cue, and will not proceed past this invalid link. This is handy for forcing an end to the cue sheet. For example, if you have a cue sequence linked so that cues run as 1, 2, 3, 21, 22, 23, 4, 5, 6... 15, you need some way to make sure that cue 21 doesn't appear after cue 15. If you link cue 15 to cue 999 (or any other non-existent cue), then once the playback gets to cue 15 it will not start any more cues until you explicitly reload it.

cue {LINK} # records the levels from the current display into the specified cue and assigns a link to it. If the cue already exists, an overrecord message gives you the chance to cancel the recording. To rerecord the cue, press **[RECORD][*]** again. To cancel the recording, press **[CLR]** or **[UNDO]**.

[RECORD][CUE][1]{LINK}[1][0][5][*]

Records levels into cue 1 and sets the cue to link to cue 105. If you run cues in normal order, cue 105 will now be the next cue after cue 1.

cue {LINK} # [*] changes the link assigned to the specified cue without changing recorded levels. If the cue does not exist, this command creates a new cue with no levels but with the specified link assignment. You do not get an overrecord warning with this command. To delete an existing link, omit the linked cue number.

[CUE][1]{LINK}[1][0][6][*]

Changes cue 1 so it links to cue 106.

[CUE][1]{LINK}[*]

Deletes the link assigned to cue 1 without changing recorded levels.

Subroutines Subroutines let you link to a series of cues in another part of the cue sheet. They consist of a forward link from a “calling” cue to the first cue in the series, and a value of `Rtrn` for the Link property in the last cue in the series. You must set the Loop property of the calling cue to at least 1 if you want the subroutine to return. If you set it to zero, the playback will stop once it reaches the last cue in the subroutine (the one with the Link property set to `Rtrn`). Once called, when the subroutine returns it starts the cue after the calling cue. You can call subroutines from more than one place in the cue sheet.

For example, suppose that you have a series of 4 cues that need to run each of 12 times that a certain character appears. You could copy the series of cues 12 times. This is time consuming and takes up 48 cues worth of memory in the console. Or you could record the 4 cues in series with high cue numbers (for instance, 800, 801, 802, and 803) to keep them out of the way of your normal cue sheet numbers, and turn this series into a subroutine by setting the Link property of the last cue (803 in this case) to `Rtrn`. Now you can call these cues from as many places as you want. If you set the Link property of cue 2 to `800` (the start of the subroutine) and the Link property of cue 15 to `800`, and the Loop properties of both of these cues to 1, then your cues will proceed as follows: 1, 2, 800, 801, 802, 803, 3... 14, 15, 800, 801, 802, 803, 16... Wherever you want these four cues, you just link the cue before them to cue 800 with a Loop property of 1.

cue {LINK}[.][*] changes the link assigned to the specified cue to a `Rtrn` value without changing recorded levels. If the cue does not exist, this command creates a new cue with no levels but with a `Rtrn` link value. You do not get an overrecord warning with this command. To delete an existing link, omit the `[.]`.

[CUE][1]{LINK}[.][*]

Changes cue 1 link value to `Rtrn`.

[CUE][1]{LINK}[*]

Deletes the link assigned to cue 1 without changing recorded levels.

Loops Loops are special cases of links and subroutines that let you go through a series of cues a fixed number of times. For instance, suppose you need to go through cues 6, 7, 8, and 9 three times and then proceed with the rest of the cue sheet. You can set the Link property in cue 9 to 6, then set the Loop property in cue 9 to 3. In this example the loop will pass through cue 9 three times. If you start at cue 5 you get 5, 6, 7, 8, 9, 5, 6, 7, 8, 9, 5, 6, 7, 8, 9, 5, 6, 7, 8, 9, 10. You actually go through all of the cues 4 times. If you use **[GOTO][CUE][9]** to get to cue 9 and then start, you are already in cue 9 the first time so the sequence goes 6, 7, 8, 9, 6, 7, 8, 9, 6, 7, 8, 9, 10. In this case you only go through the cue sequence 3 times.

If you link back to a cue with its Loop property set to 0 (the default) the loop will continue forever.

Now assume that you have a series of cues that you need to call from many places in the show, but the series needs to run more than once. In this case, you want to set up a subroutine loop. Set up a subroutine as described above but set the Loop property of the calling cue to the number of times you need the sequence to repeat. If necessary, you can have a different number of repetitions each time you call the subroutine.

In general, if you want to create a loop with a series of cues only once, use a linked loop, but if you want to use the loop multiple times during the show, create a subroutine loop.

Loops can be nested up to 4 levels, which means you can have loops within loops.

If you explicitly load a playback, all loop counts are cleared so that when you run the sequence again it will run the loops the correct number of times.

cue {LOOP} # records the levels from the current display into the specified cue and assigns a loop count to it. If the cue already exists, an overrecord message gives you the chance to cancel the recording. To rerecord the cue, press **[RECORD][*]** again. To cancel the recording, press **[CLR]** or **[UNDO]**.

[RECORD][CUE][9]{LOOP}[5][*]

Records levels into cue 9 and sets the cue loop count to 5. For looping subroutines, put the loop count in the calling cue. For standard loops, put the loop count in the last cue of the loop.

cue {LOOP} # [*] changes the loop count assigned to the specified cue without changing recorded levels. If the cue does not exist, this command creates a new cue with no levels but with the specified loop count. You do not get an overrecord warning with this command. To delete an existing loop count, omit the loop count.

[CUE][9]{LOOP}[6][*]

Changes the cue 9 loop count to 6.

[CUE][9]{LOOP}[*]

Deletes the loop count assigned to cue 9 without changing recorded levels.

With dual playbacks, each playback keeps track of loops separately.

There are a number of error conditions with Loops. If any of these occur, the playback will not run any more cues until explicitly reloaded.

- A cue is linked to a non-existent cue.
- A loop is nested more than 4 levels. This can happen if loops call themselves, since this will nest infinitely.
- A subroutine return is linked to another cue.
- A cue is looped to a cue assigned to the other playback in one of the dual playback modes.

Within the above restrictions, links and loops can be intermixed and used in any way.

Remember that you can also record cues as effect steps. You may be able to implement some of your loops as effects, thus effectively increasing the number of looping levels in a cue sequence.

Cue Types

When you are initially setting up cues, you simply change the levels as necessary for each lighting state and then record the cue. When you start running cues, or go back to make changes or add new cues, you need to know how the console treats unchanging levels

Unless explicitly overridden, the GeniusPro console records all cues as Tracking Cues.

Tracking Cues

When cues are recorded, only the levels that changed in the cue are remembered. If you change a level in a cue, and that cue level wasn't changed for the rest of the show, the new level will now "track" through the entire show. By default, the GeniusPro console records all cues as Tracking Cues.

To avoid surprises resulting from tracking (particularly in black-outs) you can record a Soft Block Cue or a Hard Block cue, or change a tracking cue into a Soft Block Cue or Hard Block Cue.

You can use the **{TRACK THRU}** soft key to change a Soft Block Cue or Hard Block Cue back into a Tracking cue.

Soft Block Cues

Soft Block Cues record explicit levels for every channel in the system, so that any changes made to cues before the cue will track only up to the cue. You can set individual channels to tracking by explicitly setting them off (use **# [@][*]** or **# [@]{OFF}[*]** in the *Cue/Preview* display). Once set to off, channels in a Soft Block Cue will continue to track changes in previous cues.

Soft Block Cues show all zero levels with an explicit zero in the *Cue/Preview* display. Channel levels are white because they are set in the cue, not tracking from the previous cue.

Hard Block Cues Hard Block Cues record explicit levels for every channel in the system, so that any changes made to cues before the cue will track only up to the cue. You can force individual channels to track changes in previous cues by explicitly setting them off (use # **[@][*]** or # **[@]{OFF}[*]** in the *Cue/Preview* display). However, unlike Soft Block Cues, once the selected channels are matched to the previous cue they are once again blocked. The next time you change a channel in a previous cue, it will again be blocked by the cue. To allow tracking through a Hard Block Cue you need to change it into a Soft Block Cue or a Tracking cue.

Hard Block Cues show all zero levels with an explicit zero in the *Cue/Preview* display. Channel levels are white because they are set in the cue, not tracking from the previous cue.

Recording Tracking Cues and Block Cues

New cues are always recorded as Tracking Cues unless specifically overridden. You can override tracking in a cue by recording it as a Soft Block Cue or a Hard Block Cue. This records explicit levels in the cue so that the end state of the cue is guaranteed even if you go back into previous cues to edit levels.

[RECORD][CUE] # {SOFT BLOCK} [*] records a Soft Block Cue, and can be used to stop all tracking at the cue. Soft Block Cues cannot have parts.

[RECORD][CUE][1]{SOFT BLOCK}[*]

Records cue 1 as a Soft Block Cue.

[CUE] # {HARD BLOCK}[*] changes an existing cue into a Hard Block Cue, and can be used to stop all tracking at the cue. Hard Block Cues cannot have parts.

[RECORD][CUE][1]{HARD BLOCK}[*]

Changes cue 1 into a Hard Block Cue.

[CUE] # {TRACK THRU} [*] changes an existing cue to a Tracking Cue, and can be used to stop all tracking at the cue. Soft Block Cues cannot have parts.

[RECORD][CUE][1]{TRACK THRU}[*]

Changes cue 1 into a Tracking Cue.

You can expose the record mode soft keys at any time by using the **[REC MODE]** key. This key is a toggle, and switches the centre LCD (consoles with 3 LCD displays) or the left LCD (consoles with 2 LCD displays) between its normal display and the record mode soft keys.

Level Tracking

Since Block Cues record all channels, whether they change or not, to change levels in a series of Block Cues you must re-record each one of the cues.

Tracking Cues, on the other hand, are easy to modify. When the `CueTracking` field in the *Show Setup* display is set ON (the default) all level changes track through subsequent cues to wherever the channel level is next changed. Also when `CueTracking` is set to ON all cue are automatically recorded as Tracking Cues unless another type is explicitly selected. If you want to avoid level tracking when you subsequently modify cues you can set the `CueTracking` field to `THISCUEONLY`. In this mode level changes are recorded into one cue and do not track through to subsequent cues.

The **[FX PAUSE]** key changes the state of the `CueTracking` field from ON to `THISCUEONLY` or from `THISCUEONLY` to ON for a single cue.

[RECORD][CUE][1][FX PAUSE][*]

Records cue 1 with altered tracking state as described above.

Text

You can record a text label (caption) with each cue to help identify the cue.

[CUE] # [TEXT] text records levels on the current display into the specified cue and assigns a text string (caption) to it.

[CUE] # [TEXT] text [*] changes the text string (caption) assigned to a cue without changing recorded levels.

For examples, please see *Basic Recording* on page 88.

Using the X Playbacks

There are 2 X playbacks, labelled X1 and X2, each with its own keys and sliders. The console can be configured to use one or both of these. Each X playback runs cues in order from the cue sheet by fading from one cue to the next unless you explicitly load a cue out of order. By default, cue ordering is by cue number, but you can change the cue ordering by using links, subroutines, and loops.

In this chapter, playback is used to mean one of the X playbacks

Each playback has its own keys and soft keys and two sliders which are used to load, run and control cues. When the `Playbacks` field in the *Setup* display is set to `SINGLE`, only the left hand set of controls (Playback X1) can be used. When it is set to `SPLITISINGLE`, either set of controls can be used. When it is set to `DUALIHTP` or `DUALILTP`, the left set is Playback X1 and the right set is Playback X2. There is also a Rate Wheel which can be used by either playback to control fade times.

The playbacks can be used from any display.

The *X Playbacks* window in the *Live* display *State* screen and the left LCD show the current state of each of the playbacks.

Playback Mode

The `XIPlaybacks` field in the *Show Details* window on the second page of the *Setup* display configures the number of playbacks and the playback mode.

`SINGLE` There is only one position in the cue sheet. Playback assignments in the cue sheet are ignored, and all cues are run on the X1 Playback.

`SPLIT | SINGLE` There is only one position in the cue sheet, which is advanced by running cues on either Playback. Playback assignments in the cue sheet are ignored.

`DUAL | LTP` There are two independent positions (one for each playback) in the cue sheet. Outputs of the two playbacks are combined on a latest takes precedence basis. For example, with cues numbered 1, 2, 3 etc., running three cues on Playback 1 would run cues 1, 2 and 3. Then running two cues on Playback 2 would also run cues 1 and 2, stealing the channels in common with Playback 1, since latest takes precedence.

`DUAL | HTP` There are two independent positions (one for each playback) within the cue sheet. The outputs of the playbacks are combined on a highest takes precedence basis.

The X Playback Window

The *X Playback* window on the *Live display State* screen shows the position within the cue sheet for each of the playbacks. To show the *Live* display, press **[LIVE]**. If the default *Live* display does not show the *X Playback* window, hold down **[SHIFT]** and press **[LIVE]** repeatedly until it appears.

This window is mainly used when running the playback. Each playback has a title line followed by a list of all recorded cues. A yellow bar across the screen shows the last cue completed. Cues in progress are shown with a red bar across the screen. You can disable the yellow and red bars across the screen in the *User Setup* display by changing the `XIPlayback | Colours` field to something besides `LIGHT | PALETTE | INVERT`.



The Blackout Cue The first cue in the cue sheet is called the blackout cue and is numbered cue 0. This is an All Fade cue with all intensity levels and times of 0; it does not affect attributes. It cannot be modified or deleted.

The Current Cue A cursor (>) shows the current cue. This is the cue that will be recorded if you use recording commands and do not specify a cue number. It is also the cue that will appear when you press **[CUE]** to see the *Cue/Preview* display and LCD menu.

- When you record a new cue the cursor moves to the newly recorded cue.
- When you load a cue onto a playback, the cursor moves to the loaded cue.
- When you shift into the live display the cursor moves to the last completed cue or, if a cue is in progress, to the cue in progress.
- When you press **[GO]** or **[STOP BACK]** the cursor moves to the cue in progress.
- When you press **[NEXT]** or **[LAST]** with no channels selected, or **[▲]** or **[▼]** on the playbacks, the cursor moves to the next or last existing cue. The cursor (>) on screen next to the cue number shows the current cue.

With dual playbacks, each playback has its own current cue.

Cue Colours Cues fields are dark cyan, and become bright cyan when the cue is loaded. The last recorded cue is shown at the bottom in all green if Show|Last|Recorded|Cue is ON in the *Setup* display.

When no cues are running, cue fields in the current cue are yellow if X|Playback|Colours is set to LIGHT|PALETTE in the *Setup* display, or black on a yellow bar if X|Playback|Colours is set to LIGHT|PALETTE|INVERT

The cue is red (LIGHT|PALETTE) or on a red bar (LIGHT|PALETTE|INVERT) while a cue is running, and the wait, delay and fade times and fade progress of the cue are white.

Profile The assigned Up/Down profile. You can assign separate profiles for the up and down fades.

AttProf The profile assigned to attributes.

The text label (caption) assigned to the cue is shown at the far right end of the first line of cue information, without a field label.

LCD The X Playback (left hand) LCD shows the current cue being run and the wait, delay or fade time for each playback. This information is duplicated from the *Live* display.

In addition, the LCD shows the current playback mode as selected by the soft keys below this LCD. If the cue is fading it shows **AUTO FADING**, **MAN TIMING**, or **MAN FADING**. If the cue has completed it shows **AUTO**, **MAN TIME**, or **MAN FADING**. If the cue is stopped it shows **STOPPED**, **MAN TIME STOP**, or **MAN FADE STOP**.

Running Timed Cues

On power-up, each playback is positioned on the cue which was the current cue when you shut down the console.

Press **[GO]** to run the next cue and automatically load the cue after that, once fading is complete. The **[GO]** button light flashes while the cue is fading, but not during any delay or wait time. The light is on if a cue is loaded for playback, otherwise the light is off.

If there are any stopped or reversing cues, pressing **[GO]** restarts those cues running forwards. Continuously pressing **[GO]** will step sequentially through the cue sheet.

Running timed cues will sequence through the cue sheet, taking account of link and loop cues. When the end of the cue sheet is reached, the playback is cleared and no more cues can be run until the playback is reloaded.

A link to a non-existent cue (or any other link/loop error) will also clear the playback.

Cues do not have to complete before another cue is run. However a maximum of 128 fades can be run where each cue part counts as a fade and split cues and parts count as 2 fades.

Running a Block Cue immediately steals channels from all previous Move Fades.

Running Manual Cues

Manual cues are sequenced and loaded by the X playbacks the same as timed cues, except that the playback will not actually run the cue.

1. Press **[GO]** to load the manual cue.
2. Make sure that the fader is not in Rate mode by pressing **{UNRATE}** if required.
3. Move the playback faders all the way to the bottom (0).
4. Move the playback faders up to fade the cue in. You can start the two faders at different times and move them at different rates if required.

Loading a Cue

If you need to run cues out of their normal cue sheet order, you can load a cue onto the X Playback. When loading a cue,

Individual cue parts cannot be loaded. If the cue does not exist, a warning is given and the command is ignored.

Loading a cue resets any loops to their initial loop count.

Loads a cue into the playback. This does not affect the output until you press **[GO]** to run the cue. To load the current cue, omit the cue number. The **CUE** field in the right LCD shows the current cue.

[LOAD][CUE] # [LOAD][*]

[LOAD][CUE][*]

Loads the current cue into the playback.

[LOAD][CUE][1].[2][*]

Loads cue 1.2 into the playback.

[LOAD][1].[2][*]

Loads cue 1.2 into the playback (the **[CUE]** key is assumed).

Loading a Cue With Overrides

The cue times, links, and profiles can be temporarily overridden when loading the cue using the same syntax as when recording the cue. In addition, you can load any cue as a Move Fade regardless of how it was recorded. This does not permanently change the properties of the cue.

**[LOAD][CUE][TIME][2][/][3]{DELAY}
[/][4][WAIT][5][*]**

Loads the current cue into the playback with up and down fade times of 2 and 3 seconds, down delay time of 4 seconds and wait time of 5 seconds.

[LOAD][CUE][2][PB][2][*][GO]

Loads cue 2 into playback 2 irrespective of load type.

Changing Cue Direction

Running cues can be stopped and then cut backwards. The backwards cut time is given by the **XIBack** field in the *Setup* display, or by the playback faders if you are in Manual Time mode. When cutting backwards, the previous cue in the cue sheet is always cut to, rather than the previously run cue.

To stop any forward running cues, press **[STOP/BACK]**. A second press cuts stopped cues backwards to the previous cue.

If there are no running or stopped cues, the first press cuts backwards to the previous cue.

While there are cue fades which are stopped or cutting, the **[GO]** light flashes.

Jumping Directly to a Cue

Normally a cue waits and then delays and finally fades to completion. When going to or cutting to a cue, wait and delay times are ignored and the fade time is taken from the `XICut` field in the *Default Times* window on page 1 of the *Setup* display.

[CUT] has the same effect as **[GO]** if there are stopped or reversing cues. The stopped or reversing cues are restarted forwards. Otherwise it cuts to the next unrun cue. Unlike **[GO]**, if you are on the last cue in the cue sheet and you press **[CUT]**, it cuts to the first cue in the cue sheet.

[CUT]

Cuts to the next unrun cue.

[CUE] # {CUT} or [GOTO][CUE] # [*] cuts to the specified cue. If the cue does not exist, a warning is given and the command is ignored. To cut to the current cue (shown in the right LCD **CUE** field), omit the cue number. These commands force the cue to its correct final state for intensity levels and attribute levels regardless of the current Tracking setting.

Delay times and assigned effects and macros are ignored.
--

[GOTO][*] **[GOTO][CUE][*]**

Cuts to the current cue.

[GOTO][1].[2][*] **[GOTO][CUE][1].[2][*]**

Cuts to cue 1.2.

[GOTO][CUE] # [PB] # [*] cuts to the specified cue and runs it on the specified playback.

[GOTO][CUE][5][PB][2][*]

Cuts to cue 5 on playback 2.

Effects run by cues are stopped if you use [GOTO][CUE] # [*] . To go to a new cue without stopping these effects, use [LOAD][CUE] # [*][GO]

Using the Rate Wheel

Normally cue fades progress automatically. However, you can use the Rate Wheel to change the fade progress of all currently running cues or parts on the playback, or change the rate of a single running cue or cue part. You cannot change the rate for more than one, but not all, of the currently running cues or parts. On consoles with two wheels, the Rate Wheel is next to the X playbacks. Do not confuse it with the Level Wheel. On consoles with only one wheel, the single wheel is the Level Wheel normally, and the Rate Wheel while rate functions are active.

To put all fades on a playback under Rate Wheel control, press **{RATE}** above the playback. The left LCD changes to **{UNRATE}**, **{UPRATE}** and **{DOWNRATE}**. **{UPRATE}** and **{DOWNRATE}** are toggle keys, so that you can control the up fade rate, the down fade rate, or both. When you first press **{RATE}**, both are highlighted.

Changing the current fade rate does not change the recorded fade time for any cues or parts. Rather, it changes the time remaining for cues that are running when you press **{RATE}**. If there is more than one cue or cue part running when you press **{RATE}**, the Rate Wheel changes their fade rates proportionally.

The Rate Wheel loses control of fades when all fades are completed, or when a new fade is started.

To move the cursor (>) up or down and select a single cue or part for Rate Wheel control, press **▲** or **▼**. When you are controlling only one cue, to return to controlling all of the running cues or parts, press **{UNRATE}{RATE}**.

To toggle the up fade rate control between on and off, press **{UPRATE}**. When there is a bar above this soft key, the Rate Wheel changes the fade time of channels which are fading up.

To toggle the down fade rate control between on and off, press **{DOWN RATE}**. When there is a bar above this soft key, the Rate Wheel changes the fade time of channels which are fading down.

To return the fader to normal functioning, press **{UNRATE}**. Changes you made with the Rate Wheel still apply to running cues or parts, but the Rate Wheel no longer controls any fades.

Manual Time

Normally cue fades progress automatically. Manual Time takes the fade times of all currently running cues and the next cue on the Playback from the time fader. The next cue is adjusted to the exact value of the time fader, and the currently running cues are adjusted proportionally to their current percent of completion. The up and down times can be controlled separately.

Any new cues automatically come under control of the fader and take their time from the time controls.

To change the playback faders into time controls, press **{MAN TIME}** over the playback. The LCD changes to **{AUTO}**, **{INST}** and **{MAN FADE}** in this mode. The time for the fade will now be taken from the playback faders acting as time controls. The scales for time are on the outside of the two faders and are marked from 0 to ∞ (infinity).

To instantly complete a fade, press **{INST}**.

To return to normal mode where the fades continue automatically, press **{AUTO}**. Changes made while you were in Manual Time mode remain on the fader but all new cues will be run using their recorded times.

Manual Fade

To change the playback to Manual Fade mode, press **{MAN FADE}**.

Normally cue fades progress automatically. Manual Fade takes the current fade progress from the progress faders for the last fade on the playback. The scale for fade progress is between the two playback faders, and is marked from 0% to 100%. The left fader controls up fades and the right fader controls down fades.

Going to Manual Fade mode stops the fades. The fader must be moved to 0, then moved to pick up the current position of the cue after which it moves the progress between 0% and 100%.

When the fade reaches 100% the fader loses control of it. Moving both faders to 0% then starts the next cue running. Any cue wait or delay times are ignored. This automatic sequencing can be turned off.

To change to Manual Fade mode, press **{MAN FADE}** above the playback. The up and down fade progresses are controlled by the faders. The LCD changes to **{AUTO}**, **MAN TIME}** and **{SEQ}**.

To toggle automatic sequencing of manually faded cues, press **{SEQ}**. When automatic sequencing is enabled, a bar appears over the soft key.

To return the faders to automatic fade mode, press **{AUTO}**. New cues will use their recorded fade times and will be automatically sequenced

Updating and Adding To Cues

[UPDATE] cue [*] changes levels in the specified cues as necessary based on channels that have been modified live (red channel levels on the *Live* display), ignoring channels that are not already in the cues. Channels that are off in the selection are removed from the cues. The cues must already exist. This command works only from the *Live* display.

[UPDATE][CUE][1][*]

Records all channels that have been modified live into cue 1, ignoring channels that are not already in the cue.

[SUB][7][UPDATE][CUE][1][*]

First selects all of the channels in submaster 7, then records their levels in cue 1, ignoring channels that are not already in the cue.

[UPDATE] {ADD ALL} cue [*] changes levels in the specified cues as necessary based on channels that have been modified live (red channel levels on the *Live* display), adding channels that are not already in the cues. Channels that are off in the selection are removed from the cues. The cues must already exist. This command works only from the *Live* display.

[UPDATE]{ADD ALL}[CUE][1][*]

Records all channels that have been modified live into cue 1, adding channels that are not already in the cue.

[SUB][7][*][UPDATE]{ADD ALL}[CUE][1][*]

First selects all of the channels in submaster 7, then records their levels in cue 1, adding channels that are not already in the cue.

chan [UPDATE] cue [*] changes levels of the specified channels in the specified cues to match the current *Levels* screen. Adds channels that are not already in the cues. Channels that are off in the selection are removed from the cues. The cues must already exist. This command works from all displays with level control.

[1][THRU][5][UPDATE][CUE][1][*]

Changes channel 1 through 5 levels in cue 1, adding channels that are not already in the cue.

[1][THRU][5][UPDATE][CUE][1][THRU][4][*]

Changes channel 1 through 5 levels in cues 1 through 4, adding channels that are not already in the cues.

You can only use **[THRU]** to specify multiple cues with these commands.

To clear the “changed” indicator and set red channel levels back to cyan, press **[SHIFT][CLEAR]**.

Changing Cues Temporarily

You can change levels and properties for the next cue temporarily by using the *Playback* display. These changes are not recorded in the cue, so the next time you run it the recorded properties and levels will be used. This does not modify the current cue (the cue with > next to it). It modifies the cue currently loaded and ready for playback when you press **[GO]**.


[PB] # [*] opens the *Playback* display for the specified playback so that you can modify the next cue. Press **[LIVE]** to return to the *Live* display.


[PB][1][*]

Opens the *Playback* display for X Playback 1. You can now change properties or levels for the next cue that will be run on the playback. Changes you make in this display are temporary, and are not recorded into the cue.

Fading Cues With the Level Wheel

You can use the Level Wheel to fade individual cues in and out without putting them on and X playback and disrupting the remainder of the cue flow.

[CUE][+] cue  fades the specified cue on. Levels are combined on a highest takes precedence basis with cue and effects playbacks and submasters. Channel levels increase as you move the Level Wheel up (away from you).

[CUE][-] cue  fades all channels from the specified cue off. Channel levels decrease as you move the Level Wheel up (away from you).

Viewing and Editing Cues

Once you have recorded cues, you can view and edit them in the *Cue/Preview* display. You can also use the *Cue/Preview* display to create new cues.

Changing levels while in this display changes the recorded levels in the current cue without a record command and without warning you.

The *Cue/Preview* Display

To show the *Cue/Preview* display press **[CUE]** in the Display keypad.

The *Cue/Preview* display *State* screen shows the recorded cues. The current cue is shown in the **CUE** field on the right LCD, and also has a cursor (>) next to it in the *Cue/Preview* display *State* screen.

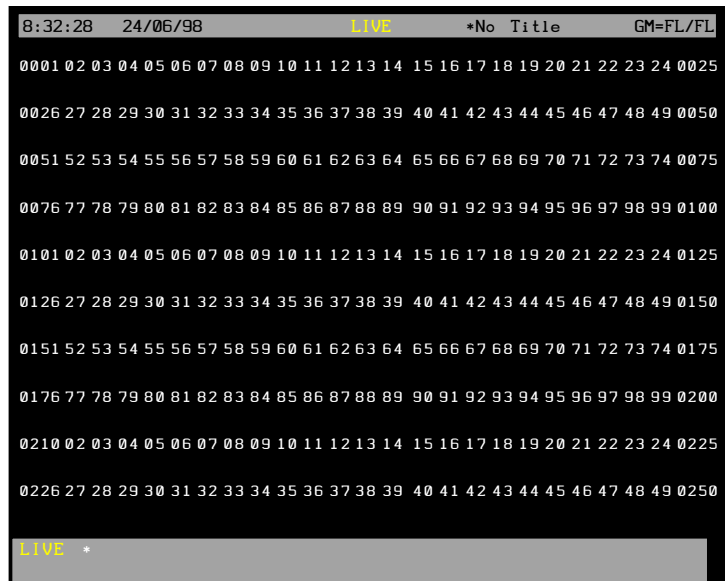
To move between cues, use **[NEXT]** and **[LAST]** or **▲** and **▼** over the X playback. The cursor (>) follows the current cue

To go directly to a cue, press **[CUE] # [*]** where # is the cue. You will be warned if you are creating a new cue. Press [*] again to create the new cue, or **[CLR]** or **[UNDO]** to cancel the command.

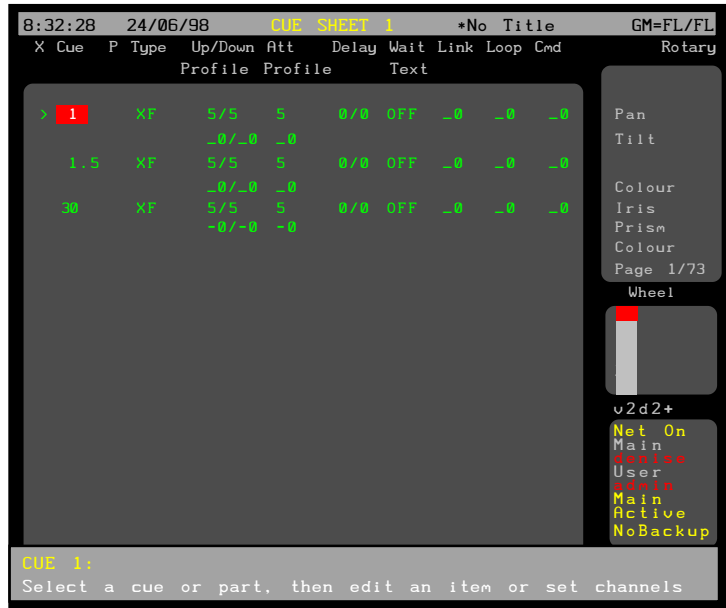
To show the main cue editing screen, press **{SPREAD SHEET}** to switch to Spread Sheet mode.

The *Cue/Preview* display *State* screen shows a page of cues and their associated fields. The current cue is highlighted with a red background.

The title bar shows the date and time, display name, show name, and grandmaster status. The date and time format can be set in the *Console Time* window of the second *Setup* display *State* screen. The show name is preceded by an asterisk (*) when changes have been made to the show since you last saved it.



```
8:32:28 24/06/98 LIVE *No Title GM=FL/FL
0001 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 0025
0026 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 0050
0051 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 0075
0076 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 0100
0101 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 0125
0126 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 0150
0151 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 0175
0176 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 0200
0210 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 0225
0226 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 0250
LIVE *
```



The *Wheel* window at the right shows the position within the cue sheet. The number shows the index of the current cue. For example the first, second, and third cues have index 1, 2, and 3. The index is independent of the cue number.

If no cues have been recorded, the cue sheet automatically records cue 1 with no levels and default fade and delay times.

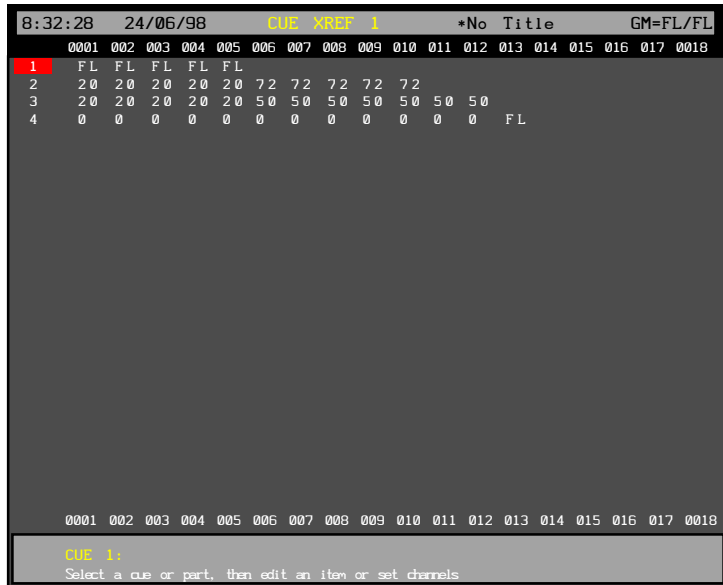
To go directly to a cue, press **[CUE] # [*]** where # is the cue number. If the cue does not exist, you will be warned that you are creating a new item. Press **[*]** again to create the new cue, or **[CLR]** or **[UNDO]** to cancel the command.

To move between existing cues, move the Trackball to any field in the cue you want to edit. Levels for the highlighted cue will be displayed on the *Levels* screen, but to edit these levels you will need to highlight the cue number. You can also use **[NEXT]**, **[LAST]**, **[▲]**, or **[▼]** to change cues if the highlight is on the cue number.

The Cue XRef display

When you are in the *Cue/Preview* display you can choose to have channel levels displayed in the cross reference format rather than the standard *Levels* screen format.

To show the *Cue XRef* display press **[CUE]** in the Display keypad and then the **{X REF}** soft key. This automatically puts the *State* screen into Spread Sheet mode.



The *Cue XRef* display *Levels* screen shows 18 channels at a time of up to 28 cues. Although this display only shows a few channels at a time, it lets you easily see how channels are being used in successive cues.

You can make changes to cues while in this display just like you would in the standard *Cue/Preview* display.

To move to different channels in the same page of cues, use the **{LEFT}** and **{RIGHT}** soft keys or assign the channels you want to modify to the Channel Control. If you assign channels to the Channel Control, the display will automatically page to show the selected channels.

To move to new cues if there is more than one page of cues, use the Trackball or **[PAGE UP]** and **[PAGE DOWN]**.

To go directly to a cue, press **[CUE] # [*]** where # is the cue number. If the cue does not exist, you will be warned that you are creating a new item. Press **[*]** again to create the new cue, or **[CLR]** or **[UNDO]** to cancel the command.

Levels Screen Colours

Channel levels in the *Levels* Screen have different colours depending on the cue type and the level itself.

- green The intensity level is lower than the previous cue.
- magenta The intensity level is higher than the previous cue.
- blue The attribute level is changed from the previous cue.
- white The intensity levels is fixed. (Tracking On). The intensity or attribute level is fixed. (Tracking Off).
- cyan The intensity or attribute level is the same as the previous cue. (Tracking On)
- grey The intensity or attribute level is the same as the previous cue. (Tracking Off)
- white on grey The attribute level is fixed. (Tracking Off)

State Screen Fields

Fields on the *Cue/Preview* display *State* screen show the current values for cue properties. The fields in this display are the same as in the *X Playback* window of the *Live* display (see *Cue Properties* starting on page 109) with the following addition.

The fields in the Cue Sheet version of the *State* screen are identical to the fields in the *Live*. You cannot see the attribute time from the Cue Sheet version, though you can modify it.

A t t

P r o f i l e The assigned attribute time and profile (one on each cue line).

Creating a New Cue

To switch to the *Cue/Preview* display and create a new cue, press **[CUE][CUE] # [*]** where # is the new cue number.

To create a new cue while you are in the *Cue/Preview* display, press **[CUE] # [*]** where # is the new cue number.

You will be warned that you are creating a new item. Press **[*]** again to create and display the new cue or **[CLR]** or **[UNDO]** to cancel the command.

Viewing Cue Channel

To show the recorded levels of a cue in the *Levels* display, select the required cue.

For a Tracking Cue, channels which are off are shown with a blank level; channels which are on at 0 are shown with a level of 0. For a cross fade, both of these are shown as blank and treated as a level of 0 since all channels are used in the fade.

Editing Cue Channel

First select the cue and ensure that the highlight is on the cue number. Use the Channel Control commands (for example **[1][@][1]**, **[CUE][1][@][5]**) to set channel levels. Once you set channel levels in this display, they are automatically recorded. The Level Wheel and some soft keys cannot be used to change levels in the *Cue/Preview* display.

When you set channel levels in the *Cue/Preview* display you can set them off (**chans [@]**) or set them to zero (**chans [@][0]**). When set off, levels track through from previous cues. When set to 0, levels are forced to zero in the cue. You can set levels off in a Blocking Cue to make individual channels track through the cue, or at zero in a Tracking Cue to block individual channels.

When you record from the *Live* display channels at zero are set to zero level in the cue only if they change from the previous cue. Otherwise they are recorded off and channel levels track through from the previous cue.

Setting Channel Tracking Status

Normally any channels you record into a cue take on the channel tracking status currently set in the *Cue Tracking* field of the *Show Details* window on page 2 of the *Setup* display. You can change the tracking status of channels as you set their levels by using the **[FX PAUSE]** key.

If *Cue Tracking* is set to ON the selected channel levels will be changed only in the current cue. If *Cue Tracking* is set to OFF or THISCUEONLY, the selected channel levels will be changed in the current cue and track through subsequent cues to where the channel levels are next set.

[1][+][5][@][FX PAUSE][5][*]

Sets channels 1 and 5 to 50% and changes the set tracking state for those channels only.

Deleting Cues

Cues can be deleted from the *Cue/Preview* display. This is a good way to delete cues if you are only going to delete a few. To learn how to delete all cues or a range of cues from the *Archive* display turn to *Clear Operations* starting on page 213.

{DELETE}

This softkey appears on the LCD *Cue/Preview* menu and deletes the cue parts. Either a single part or a single THRU range can be specified. If you do not specify a part number, part 1 is deleted. This can be used with **[+]**, **[-]**, and **[THRU]** keys.

{DELETE}[*][*]

Deletes the current cue part 1.

{DELETE}[1][*][*]

Deletes cue 1 part 1.

{DELETE}[1][PART][2][*][*]

Deletes cue 1 part 2.

{DELETE}[1][THRU][3][*][*]

Deletes cues 1 part 1 to cue 3 part 1.

Renumbering Cues

Renumbering changes the cue numbers so that they start at 1 and increase in increments of 1; that is 1, 2, 3... cue parts are also renumbered similarly. Decimal point cues are changed to whole number cues but the order of cues remains the same. You can renumber the whole cue sheet or specify a start cue for renumbering. Link properties in the cues are updated to reflect the new cue numbers.

{RENUM} renumbers all cues starting at cue 1. This soft key appears on the LCD *Cue/Preview* menu.

{RENUM}{RENUM}

Renumbers all cues (two key presses).

[CUE] # {FROM} # {RENUM}{RENUM} rennumbers all cues starting with the cue specified, to new numbers starting with the From number specified.

[CUE][5]{FROM}[4][0]{RENUM}{RENUM}

Rennumbers all cues starting at cue 5. Cue 5 will now be numbered cue 40, and subsequent cues will be numbered accordingly.

Copying from a Cue

You can record submasters, cues, groups, and effect steps while you are in the *Cue/Preview* display. The syntax is the same as for recording from the *Live* display. The highlight must be on the cue number (the CUE field).

Using recording commands while you are in the *Cue/Preview* display copies the *Cue/Preview* display levels to the target submaster, cue, group, or effect step. For example, if the current cue is 1, then **[SUB][2][RECORD][RECORD][SUB][2][*]** will copy the levels from cue 1 into submaster 2. This also lets you copy cues. For example, **[CUE][2][RECORD][RECORD][CUE][2][*]** copies the levels from cue 1 into cue 2.

Effects

Effect playbacks are used to run repeated sets of lighting states, called effects. Each lighting state in an effect has a set of intensity and attribute levels and is called an effect step. The 30 effect playbacks (12 for 430 series consoles with 486 processors) let you run effects in a variety of ways to give different chase, build, flicker and random output levels.

This chapter contains the following topics:

The Current Effect Step

Recording Effect Step Levels

Recording Effect Properties

Recording Effect Step Properties

Using Effect Playbacks

Using Effects in Cues and Subs

Viewing and Editing Effects

The Current Effect Step

The current effect step is shown in the **FX** field on the right LCD. This is the last step which has been referenced and can be used in a step selection.

All step recording commands act on a single step which is shown by **step** in the command descriptions below.

The **[+]**, **[-]**, **[THRU]**, and **{THRU ON}** keys cannot be used in a step selection.

The examples shown immediately below are effect step selections that you can use to replace **step** where it appears in full command descriptions.

Since these examples are only part of a command, they do not have a concluding [*] key.
--

[FX] # [.] # selects the specified effect and step. If the effect number is missing, the current effect is used. The step number must always be present.

[FX][1][.][2]

Selects effect 1 step 2.

[FX][.][9]

Selects current effect step 9. For example, if the current effect step is 1.2 then this will select 1.9.

[FX][SHIFT][NEXT] selects the next step after the current step. This cannot be used if the current step is 99.

[FX][NEXT]

When recording effects, selects the next step after the current step. For example, if the current effect step is 1.2 then this will select 1.3.

[FX][SHIFT][LAST] selects the previous step to the current step. This cannot be used if the current step is 1.

[FX][LAST]

When recording effects, selects the previous step to the current step. For example, if the current effect step is 1.2 then this will select 1.1.

Recording Effect Step Levels

[RECORD][FX] # [RECORD][*] records the levels on the current display (the *Live*, *Cue/Preview*, *Group*, *Effect*, or *Submaster* display) into the current effect step. See *Working With Channel Levels* starting on page 66 to learn how to set intensity and attribute levels, and *Basic Recording* starting on page 86 for examples of recording.

You can record up to 600 effects, each with up to 99 steps. Effects are numbered from 1 to 600 with steps numbered from .1 to .99.

Recording an effect does not change the output until the playback is reloaded.

When you record a new step in an existing effect its values are set using the Step Defaults values for the effect. If this is the first step of a new effect, the Step Default values for the effect are first set from the *FXStep*, *FXStepIn/Dwell/Out*, and *FXUp/Down* fields in the *Setup* display, and then the step values are set from these Step Default values.

The **{APPEND FXSTEP}** soft key, which appears when you switch to the *Effect* display, appends a new step to the current effect and switches you to the new step in the *Effect* display. The new step has default values for step time, in, dwell, and out times, attribute fade time, low and high settings, and scaling. It has no assigned levels. You cannot create a new effect using this command.

Recording Effect Properties

Effects have the following properties that can be specified when recording, or edited later:

- Text
- Effect Type
- Direction
- Fade Times
- Mode
- Level
- Next Fx
- Profile
- Stop After
- Step Control
- Step Default Values

These properties apply to the whole effect, not to individual steps. Effect step properties are discussed later in this chapter.

Text

You can record a text label (caption) with each effect to help identify the effect.

[FX] # [TEXT] text [*] changes the text string (caption) assigned to an effect without changing recorded levels.

For examples, please see *Basic Recording* on page 86.

Effect Type

Effects can be either chases or builds. You can control this property from the *Effects* display or by pressing **[FX TYPE]** and selecting the appropriate option from the centre LCD (consoles with 3 LCD displays only).

Chase Only one step is high at a time and steps are played sequentially according to direction property. As each step runs, its levels go high and all other levels in the effect go low.

Build One step at a time goes high, but previous steps are not sent low. Once all of the steps are high, they are all sent low and the build starts again.

Direction

The effect can be set to run in one of four directions, as listed below. You can control this property from the *Effects* display or by pressing **[FX DIR]** and selecting the appropriate option from the centre LCD (consoles with 3 LCD displays only).

Forward The effect steps are played sequentially from the lowest step number to the highest step number and are then repeated from the first step number.

Reverse The effect steps are played sequentially from the highest step number to the lowest step number and are then repeated from the highest step number.

Bounce The effect steps are played sequentially from the lowest step number to the highest step number, and then from the highest step number back to the lowest step number. Steps are then repeated in the same sequence.

Random Steps are played randomly. All steps are played once before a new random sequence is started.

Fade Times

Each effect has an up and down fade time from 0 to 59 minutes 59 seconds. When the effect is run or stopped on the playback (instead of by a cue or submaster), the effect levels are faded up and down over this period of time. The default fade times are 0.5 seconds. When you run the effect the console output fades to its full level over the time in the *FadeUp* field. When you stop an effect the console output fades out over the time in the *FadeDn* field. Once the down fade is complete the effect stops and is unloaded from the playback.

If you run an effect from a cue or submaster the effect fade in and fade out times are those assigned to the cue or submaster, the FadeUp and FadeDn fields in the effect are ignored.

This does not control the fade time of individual steps. It applies to the effect as a whole. The In/Dwell/Out fields control the time required to fade steps in and out.

You can control this property from the *Effects* display or by pressing [FX TIME], selecting {FADE RATE} from the centre LCD (consoles with 3 LCD displays) or right LCD (consoles with 2 LCD displays), and using the Rate Wheel to increase or decrease the fade time.

Mode

The Mode property controls how the effect combines with other effects and with the other playbacks and faders. This property can only be changed from the *Effects* display, and is initially set to indHTP.

- | | |
|--------|---|
| indHTP | Independent Highest Takes Precedence mode combines the effect with all other output sources on a highest takes precedence basis. If you use any other output source to set a channel level higher than the low effect setting for the channel, but lower than the high effect setting for the channel, the channel will switch between the other output source level and the high effect setting. |
| LTP | Latest Takes Precedence mode lets other effects, cues, and the Channel Control steal channels from the effect. When you select a channel, its current state (high or low) is frozen and the channel is assigned to the Channel Control. Its level then follows the Channel Control (not the effect) until you reload and restart the effect. |

Level

The Level property determines how the effect channel levels are interpreted. This property can only be changed from the *Effects* display, and is initially set to NORMAL.

- | | |
|-----------|---|
| NORMAL | Channels in active steps are set high and channels in inactive steps are set low. |
| NEGATIVE | Channels in active steps are set low and channels in inactive steps are set high. |
| NRM NEG | (Normal Negative) Levels start as Normal and then alternate between Negative and Normal for each successive effect cycle. |
| NEG NRM | (Negative Normal) Levels start as Negative and then alternate between Normal and Negative for each successive effect cycle. |
| RANDOM | Steps are randomly set to any level between the high and low levels. |

Next Fx

You can have a new effect automatically start at the end of any effects for which the Stop After property is set to `Time` or `Cycles`. The Next Fx property determines whether a new effect is started, and what the new effect number is. This property can only be changed from the *Effects* display, and is initially set to `OFF`.

You can set the Next Fx to be any other effect number or `OFF`.

Profile

The Profile property lets you assign a profile to the fade up and fade down times. The profile applies to both the fade up and the fade down. To learn how to create a profile, turn to *Profiles* starting on page 220.

Stop After

The Stop After property determines what happens when you press **[FX STOP]**. This property can only be changed from the *Effects* display, and is initially set to `FXI STOP`.

- `FXI STOP` The effect stops and is unloaded when you press **[FX STOP]** for its effect playback.
- `FXI LOAD` The effect is not unloaded until another effect is loaded onto the same effect playback. The effect is only paused when you press **[FX STOP]**. You can then press **[FX GO]** to restart the effect.
- `LASTI STEP` When you press **[FX STOP]**, the effect continues to run normally until it reaches the last effect step. It then fades out and stops in the time specified by the `FadeIDn` field (or cue or submaster time).
- `CYCLES` The effect stops after the number of cycles specified in the `Cycles` field.
- `TIME` The effect stops after the amount of time specified in the `Time` field.

Step Control

The Step Control determines how the console knows when to take the next effect step. This property can only be changed from the *Effects* display, and is initially set to `TIMED`.

- `TIMED` The effect playback takes stepping cues from the timer, which uses the Step Time settings for each step.
- `MANUAL` The effect playback takes stepping cues from the **[FX STEP]** button.
- `MIDI` The effect playback takes stepping cues from the MIDI input. This option requires the *CommuniquéPro* software. See the *CommuniquéPro Operator's Manual* for more information.
- `AUDIO` The effect playback takes stepping cues from the base track of the Audio input. This option requires the *CommuniquéPro* software. See the *CommuniquéPro Operator's Manual* for more information.

Step Default Values

Step Default Values are the values initially set for the effect step properties. When you create a new step, these values are applied. You can change values for any individual step if required. Changing the default value changes the value for the property in all steps where it has not been specifically overridden. Step properties at their default values are shown in black text. Step properties that have been overridden are shown in green text. You can set default values for all of the step properties, which are discussed in more detail below.

Recording Effect Step Properties

Individual effect steps have the following properties that can be specified when recording, or edited later:

Step Time

In, Dwell, and Out Times

Attribute Fade Time

Low and High Scaling

These properties apply to each effect step individually. Effects as a whole also have properties, including the default values for steps.

When you create a step, all step properties take on the values set in the Step Defaults for the effect. These defaults are set from the *Default Times* window on the first page of the *Setup* display when you create the effect. All step values that you don't change will automatically track the Step Defaults values. Step properties that you have modified in the step will not change when you change the Step Defaults, even if you reset them to the current Step Defaults value.

To set a property back to its "default" (black text), use the Trackball to highlight it and then press **{DEFLT}** (a soft key under the right LCD).

Step Time

The step time controls the time from the start of a step until the next step is activated. Step time can be "default" (black text) or any value between 0 and 5 minutes 0 seconds, and is initially set to the value of the `StepTime` field of the Step Defaults. Times below one minute can be specified in tenths of a second.

In, Dwell, and Out Times

The in, dwell, and out times determine the actual length of each step (time from when the step is activated until it is deactivated) rather than the time until the next step. The total length of a step is the sum of these three values. The sum of these values does not need to equal the step time, making it possible to have steps that overlap with the next step, or have a distinct gap between them and the next step.

The `In` property is the time from when the step starts until the channel levels are at the high level. In time can be “default” (black text) or any value between 0 and 5 minutes 0 seconds, and is initially set to the value of the `In` field of the Step Defaults. Times below one minute can be specified in tenths of a second.

The `Dwell` property is the time that an activated step will remain in its high state. Dwell time can be “default” (black text), `OFF` (Dwell time = Step time), or any value between 0 and 5 minutes 0 seconds, and is initially set to the value of the `In` field of the Step Defaults. Times below one minute can be specified in tenths of a second.

The `Out` property is the time from when the dwell time ends until the channel levels are at the low level. Out time can be “default” (black text) or any value between 0 and 5 minutes 0 seconds, and is initially set to the value of the `Out` field of the Step Defaults. Times below one minute can be specified in tenths of a second.

Attribute Fade Time

The attribute fade time controls the time it takes to change fixture attributes if there is a change on the same fixture between two steps of an effect. Attribute fade time can be “default” (black text) or any value between 0 and 5 minutes 0 seconds, and is initially set to the value of the `Att` field of the Step Defaults. Times below one minute can be specified in tenths of a second.

Low and High Scaling

Effect steps are either high or low. The actual levels represented by high and low states are controlled by the `Level` and `Low/HighScaling` fields and by the channel levels set in the effect.

The Low and High Scaling properties for steps scale the channel levels set in each step. These numbers can be “default” (black text) or a percentage (0-100), and modify all channel levels in the specified step.

High Scaling sets the percentage of channel level to use for the “on” part of the effect step. Low Scaling sets the percentage of channel level to use for the “off” part of the effect step.

To set the low level at 10% of the recorded channel levels, set it to 10. If you have a channel at FL, the actual output level for the channel when it is “off” will be 10%. If you have a channel at 80%, the actual output level for the channel when it is off will be 8%.

The Low Scaling property is initially set to the value you set in the `Low` field of the Step Defaults for the effect. The High scaling property is initially set to the value you set in the `High` field of the Step Defaults for the effect.

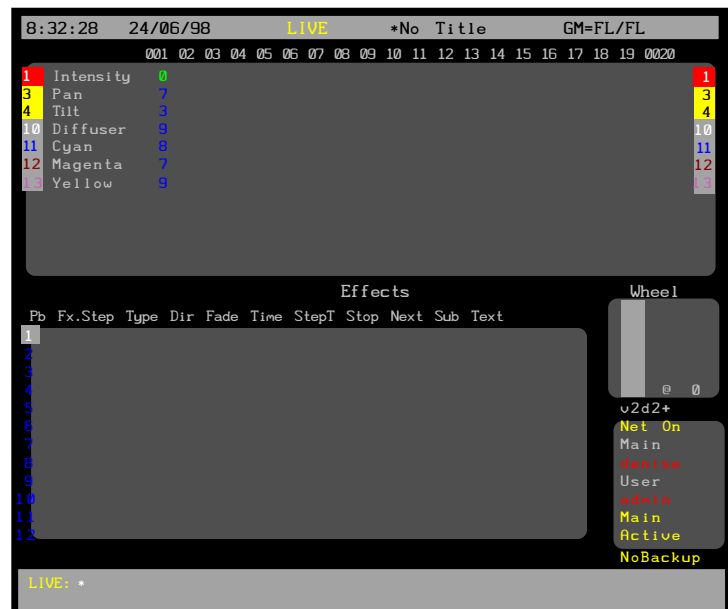
Using Effect Playbacks

There are 30 effect playbacks (12 for 430 series consoles with 486 processors). The Effect Keypad provides keys for controlling the effect playbacks. The Effect Supermaster (if one is assigned) masters the levels of all effects regardless of whether they are being played on an effect playback or played from a cue or submaster.

The effect playbacks are controlled by the keys below the centre LCD (consoles with 3 LCD displays) or next to the submasters (consoles with 2 LCD displays). These can be used from any display.

The Effects Window

The *Effects* window in the *Live* display *State* screen shows the current state of the effects and is used when running effects playbacks. To show the *Live* display press **[LIVE]**. If the *Live* display *State* screen does not show the *Effects* window shown below, go to the *Setup* display and change the *Live|Screen|Layout* field to FX, PB+FX, or PB+SUBS+FX. Then press **[LIVE]** to show the *Live* display.



Fields in the *Effects* window of the *Live* display *State* screen show the current values for effect and step properties. The property associated with each display field is indicated by the title line. The values for these fields are described in more detail above, and are set to the recorded effect values when you load the effect into an effect playback. You cannot edit any of these fields, though some can be modified by using keys in the Effect keypad. If you modify an effect while it is running and wish to save the changes, press **[UPDATE][FX] # [*]** where # is the effect number (without the step number).

P b	Shows each Playback from 1 to 30 (or 12 for 430 series consoles). Its colour shows the state of the Playback:
white on grey	This is the current playback.
blue	The playback is unloaded (empty).
green	The playback is loaded and is not the current playback.
yellow	The playback is running or paused and is not the current playback.
F x	Shows the effect loaded onto the playback. Its colour shows the state of the playback:
(blank)	The playback is unloaded (empty).
green	The playback is loaded.
yellow	The playback is running.
flashing yellow	The playback is paused.
S t e p	Shows the effect step which is currently running. The colour is the same as for the effect number above.
T y p e	Shows the effect type, which can be CHASE or BUILD . You can change this property while the effect is running by pressing [FX TYPE] and then selecting the appropriate soft key.
D i r	Shows the effect direction, which can be FWD (Forward), REV (Reverse), BNC (Bounce), or RND (Random). You can change this property while the effect is running by pressing [FX DIR] and then selecting the appropriate soft key.
F a d e T i m e	The up and down fade time for starting and stopping the effect. You can change these properties while the effect is running by pressing [FX TIM E] , pressing {FADE RATE}, and then increasing or decreasing the times using the Rate Wheel.
S t e p T	The step time for the current step.
S t o p	Shows how the effect is to be stopped. This can be ATI0 (on Fx stop), blank (on Fx load), LAST (on last step), XXXs (after XXX seconds), or XXXX (after XXX cycles). You cannot change this property while the effect is running.
N e x t	Shows the effect to be started when this effect is stopped (if any). This property only takes effect if you set the Stop After property to TIMER or CYCLES in the <i>Effect</i> display. You cannot change this property while the effect is running.
S u b	Shows the submaster to which the effect is attached (if any). You cannot change this property while the effect is running.
T e x t	Shows the text label (caption) associated with the effect (if any). You cannot change this property while the effect is running.

The Effect Supermaster

All effect output levels are mastered by the Effect Supermaster if one is assigned. Moving the Effect Supermaster to 0 stops any effects from contributing to the output. Moving it to 10 puts the full effect levels onto the output.

The Effect Supermaster is normally one of the last 6 submasters. You can change it to another fader or eliminate it altogether by changing the Function properties of the submaster faders involved. If there is no Effect Supermaster, its level is set to 100%. To learn about the submaster Function property see *Submaster Function* starting on page 92.

Effect Playback Selection

All effect playback commands act on a single playback. The selection can be the current playback, an effect number, a playback number or a combined effect and playback number, in the following format:

[FX] fx# [PB] pb#

If you leave out **fx#**, the current effect is assumed.

If you leave out **pb#** and the specified effect is not loaded, the next available playback is used. If you don't include **pb#** and the specified effect is loaded, the effect playback on which it is loaded is assumed. If you don't include **pb#** and multiple copies of the effect are loaded, the lowest numbered effect playback on which the effect is running is assumed.

The examples shown immediately below are effect playback selections that you can use to replace **fx** where it appears in full command descriptions.

Since these examples are only part of a command, they do not have a concluding [*] key.

The **[+]**, **[-]**, **[THRU]**, **{THRU ON}**, **[LAST]**, and **[NEXT]** keys cannot be used in an effect playback selection.

specifies the effect number to load on the next available effect playback. If the effect is already loaded, it reloads it onto the same playback. If the effect is loaded on multiple playbacks, it reloads it onto the lowest numbered of these playbacks. If the effect does not exist or all playbacks are loaded, the command is ignored.

[1]

If effect 1 is already loaded, selects that Playback. Otherwise, selects the first unloaded playback (if any) and loads it with effect 1 (if recorded).

[PB] # specifies an effect and a playback to load. If the effect does not exist, the command is ignored.

[1][PB][2]

If effect 1 is already loaded on Playback 2, selects it. Otherwise selects Playback 2 and loads it with effect 1 (if recorded).

[[PB] # selects the specified playback. If there is no effect loaded in it, the command is ignored.

[PB][2]

Selects Playback 2.

The Current Playback

All commands can apply to the current playback. Only one Playback can be the current playback. This playback is shown in white on grey in the *Effects* window. The current playback is different from the current effect which is shown in the LCD. The current effect is not changed or used when you run effect playbacks.

All other commands also select the playback as the current playback.

[FX SEL] selects the next higher numbered playback as the current playback.

[FX SEL]

Selects the next higher numbered playback as the current playback. For example, if the current playback is 3, pressing **[FX SEL]** selects playback 4. Another press selects playback 5. At the highest numbered playback, pressing **[FX SEL]** selects playback 1.

[SHIFT][FX SEL]

Selects the next lower numbered playback as the current playback.

[SHIFT][FX SEL]

Selects the next lower numbered playback as the current playback. For example, if the current playback is 5, pressing **[SHIFT][FX SEL]** selects playback 4. Another press selects playback 3. At playback 1, pressing **[SHIFT][FX SEL]** selects the highest numbered playback.

Loading the Effect

An effect can be loaded onto one or more of the effect playbacks. After loading, the playback is stopped and set to step 0 where it does not contribute to the output. Any previous effect on this playback is unloaded.

Other commands will also load the effect if it is not already loaded.

loads an effect onto a playback. This command is ignored if the specified effect does not exist.

[1]

If effect 1 is already loaded, selects that playback then re-loads it. Otherwise selects the first unloaded playback and loads it with effect 1 (if recorded).

][PB][2]

Loads playback 2 with the current effect.

[1][PB][2]

Loads playback 2 with the effect 1.

Running the Effect

Once an effect is loaded on a playback, it can be started, then paused and started again. When the effect is started, the levels fade in over the time recorded into the effect. Stopping an effect fades the levels out over the recorded time and then unloads the effect. The effect continues to run until it is unloaded. The *Effects* window shows the current effect (whether or not it is running) with a white on grey playback number. Loaded but not started effects are shown with green text for the step number, step time, and stop setting. Running effects are shown by yellow text for the step number, step time, and stop setting. Paused effects are shown by flashing yellow text for the step number.

[FX GO] starts the current playback if there is an effect loaded on it.

Effects can also be run from cues (see *Assigning an Effect* on page 118) or from submasters (see *Assigning Effects and Macros* on page 96).

Pausing the Effect

An effect can be paused; this stops any more steps running but it does not stop any fade in or fade out caused by **[FX GO]**, and does not unload the effect. The step number in the *Effects* window will remain fixed while the effect is paused. This command is ignored if the playback has not been started or has nothing loaded on it.

Paused effects are shown by flashing yellow text for the FX|Step field.

Press **[FX PAUSE]** to pause a running effect. Press **[FX PAUSE]** again to resume running the effect.

Stepping the Effect

You can step through an effect manually by setting the Step|Control field in the *Effects* display to MANUAL and then loading the effect.

To step the effect to the next step, make sure the desired playback is the current playback and press **[FX STEP]** each time you want to move to the next step

The fade and step times are recorded in the effect, but can be changed while the effect is running.

Changing Effect Times

To change the fade time of an effect, press **[FX TIME]**, then press **{FADE RATE}** and use the Rate Wheel on consoles with two wheels or the Level Wheel on consoles with one wheel to increase or decrease the fade time. Both the up and down fade time will be changed.

To change the step time of an effect press **[FX TIME]** and then use the Rate Wheel to increase or decrease the step time. This changes the step time for all steps proportionally.

Changing Effect Type

The effect type is recorded in the effect, but you can change it while the effect is running. The bottom line in the *Effects* window shows the effect type for the current playback.

To change the effect type, press **[FX TYPE]** and then press the desired type (**{CHASE}** or **{BUILD}**).

Changing Effect Direction

The effect direction is recorded in the effect, but you can change it while the effect is running. The bottom line in the *Effects* window shows the effect type for the current playback.

To change the effect direction, press **[FX DIR]** and then press the desired direction (**{FWD}**, **{REV}**, **{BOUNCE}**, or **{RANDOM}**).

Updating Effects

The effect default step time, direction, and type can be updated from a currently running effect once you have made changes using the effect playback buttons. Updating an effect does not update channel levels in steps, or other properties that you cannot access through the effect playback buttons. The effect must be loaded and running with the changes when you do the update.

[UPDATE][FX] # [*] updates the effect default step, in, dwell, and out times as scaled by the Rate Wheel, and the step ndirection and type from the playback currently running this effect. The effect levels and other effect properties are not changed.

[UPDATE][FX][1][*] Updates times from the Playback in effect 1.

You cannot update individual steps of an effect. If the default step time was overridden in a step, the step time for that step will not be updated.
--

Unloading

An effect can be unloaded from a playback by loading a different effect into the playback. To unload an effects from a playback without loading a new effect, load it with effect 0.

[FX LOAD][0][PB][2][*]

Selects playback 2 and unloads the effect from it (if any).

[FX LOAD][0][*]

Selects unloads all effects from all playbacks.

[FX LOAD][0][FXGO]

Unloads all effects from all playbacks.

Using Effects in Cues and Subs

You can control effects with cues by assigning the effect to one cue for starting and a different cue for stopping. To learn how to assign effects to cues, turn to *Assigning an Effect* on page 118.

You can control effects with submasters by assigning the effect to a submaster. Moving the submaster away from zero starts the effect and moving it back to zero stops the effect. To learn how to assign effects to submasters, turn to *Assigning Effects and Macros* on page 96.

Viewing and Editing Effects

Once you have recorded effects, you can view and edit them in the *Effect* display. You can also use the *Effect* display to create new effects.

The *Effect* Display

To show the *Effect* display press **[FX]** in the display keypad (not **[FX]** in the Levels keypad).

Changing levels while in this display records the changes into the current effect step without requiring a record command.



The *Effect* display *Levels* screen shows the recorded channel levels (intensity levels and attribute levels) of the current effect step. The *Levels* screen background is grey rather than black to show that levels changed in this display are not being changed live. To change output levels using an effect you must load and play back the effect on an effect playback.

In the *Effect* display *State* screen, the *Effect Settings* window shows the effect properties for the current effect and the *FX Step* window shows a page of steps and their associated properties. Use **{EDIT STEPS}** and **{EDIT FX}** to switch between these windows.

The title bar shows the date and time, display name, show name, and grandmaster status. The date and time format can be set in the *Console Time* window of the second *Setup* display *State* screen. The show name is preceded by an asterisk (*) when changes have been made to the show since you last saved it.

The *Wheel* window at the right of the *State* screen indicates the position within the effect sheet. The number shows the index of the current effect step, for example the first, second, third steps etc. have index 1, 2, 3 etc.; the index is independent of the step number.

To move between effects, highlight the **FX** field and use **[NEXT]** or **[LAST]**.

To go directly to an effect step, press **[FX] # [*]** where **#** is the effect step. If you don't specify a step number, step 1 will be highlighted. If the step does not exist, you will be warned that you are creating a new item. Press **[*]** again to create the new step, or **[CLR]** or **[UNDO]** to cancel the command.

To change values in effect fields, use the Trackball to move the highlight between fields and then use **[+]** and **[-]** to change field values.

To move between effect steps, move the Trackball to any field in the effect step you want to edit. Levels for the highlighted step will be displayed on the *Levels* screen, but to edit these levels you will need to highlight the effect step number.

Effect Fields

Fields in the *Effect* display *Effect Settings* window show the current values for effect properties, and the Step Defaults. These properties are discussed in detail on page 154.

To change any of the effect properties:

1. Make sure that the highlight is in the upper part of the *State* display (press **{EDIT FX}** if it isn't).
2. Use the Trackball to move the highlight to the field you want to change.
3. Type a new value or use **[+]** and **[-]** to increment or decrement the value.

The new value is recorded when you move the highlighting out of the field.

To move between effects, use the Trackball to move the highlight to the **FX** field and then use **[NEXT]** and **[LAST]** to move between effects.

FX	The number of the effect. Cannot be changed, but if you highlight it you can use [NEXT] and [LAST] to move between effects.
Text	The text label (caption) associated with the effect.
Type	The type of effect. Can be one of CHASE or BUILD.

<code>Dir</code>	The direction of the effect. Can be one of FWD (forward), REV (reverse), BOUNCE, or RANDOM.
<code>Mode</code>	The way in which the effect interacts with other output sources such as the X playbacks and submasters. Can be one of <code>indHTP</code> (Independent Highest Takes Precedence) or <code>LTP</code> (Latest Takes Precedence).
<code>Level</code>	The way in which the high and low effect settings are interpreted. Can be one of <code>NORMAL</code> , <code>NEGATIV</code> , <code>NEGINRM</code> , <code>NRMINEG</code> , or <code>RANDOM</code> .
<code>NextIFx</code>	The next effect to be started when this effect stops. Only applies to effects where the <code>StopAfter</code> field is set to <code>TIMED</code> or <code>CYCLES</code> . Can be <code>OFF</code> or an effect number.
<code>FadeUp</code>	The time it takes the effect to fade in after you press [FX GO] . Can be from 0 to 59 minutes, 59 seconds.
<code>FadeDn</code>	The time it takes the effect (not an effect step) to fade out after you press [FX STOP] . Can be from 0 to 59 minutes, 59 seconds.
<code>Profile</code>	The profile assigned to the effect fade times. Applies to both the fade up and fade down times.
<code>StopAfter</code>	How the effect will stopped. Can be one of <code>FXSTOP</code> (on Fx stop), <code>FXLOAD</code> (on Fx load), <code>LASTSTEP</code> (on last step), <code>TIME</code> (after XXX seconds), or <code>CYCLES</code> (after XXX cycles). For <code>CYCLES</code> set the number of cycles in the <code>Cycles</code> field. For <code>TIME</code> set the time in the <code>Time</code> field.
<code>StepControl</code>	The way steps are started. Can be one of <code>TIMED</code> , <code>MANUAL</code> , <code>MIDI</code> , or <code>AUDIO</code> .
<code>StepDefaults</code>	The values that will be assigned to step properties when you create a step. These values can be changed if necessary after the step is created. Included fields for step time (<code>StepTIME</code>), step in, dwell, and out times (<code>In/Dwell/Out</code>), attribute fade time (<code>Att</code>), step low and high values (<code>Low/High</code>), and scaling (<code>Scaling</code>). Scaling is not implemented at this time.

Step Fields

Fields in the *Effect* display *FX Step* window show the current values for effect step properties. The property associated with each display field is indicated by the title line.

To change any of the effect step properties:

1. Make sure that the highlight is in the lower part of the *State* display (press **[EDIT STEPS]** if it isn't).
2. Use the Trackball to move the highlight to the field you want to change.

3. Type a new value or use **[+]** and **[-]** to increment or decrement the value.

The new value is recorded when you move the highlighting out of the field.

To move between steps, use the Trackball to move the highlight to the **FXIStep** field and then use **[NEXT]** and **[LAST]** to move between steps.

FXIStep	The number of the effect step. These are fixed and cannot be changed.
StepTime	Step time for the step.
In/Dwell/Out	The in, dwell, and out times for the step. The in time is the time from step start until the step is at its high setting. The dwell time is the time the step stays at its high setting. The out time is the time from the end of the dwell time until the step is back at its low setting.
Att	The time it takes to change attribute levels once the step has started.
Low/High	The low and high settings for the step. The high setting is the level that channels go to when a step is active with the Level field set to NORMAL .
Scaling	Not implemented at this time.

Creating a New Effect

To switch to the *Effect* display and create a new effect or step, press **[FX][FX] # [*]** where **#** is an unused effect or step number.

To create a new effect or step while you are in the *Effect* display, press **[FX] # [*]** where **#** is an unused effect or step number.

You will be warned that you are creating a new item. Press **[*]** again to create the new effect or step, or **[CLR]** or **[UNDO]** to cancel the command. If this is a new effect and you did not specify a step, step 1 is created automatically. The cursor is on the newly created step.

The **[FX]** display key is at the top of the console. Do not confuse it with the lower **[FX]** key.

Assigning Fade Times to Effects

fx# [TIME] # [*] changes the fade time of the specified effect without changing recorded levels. If the effect doesn't exist, this command creates a new effect with no levels but with the specified fade times. You do not get an overrecord warning with this command if the effect exists.

If you only enter one number for time, it is used for both the up and down fade times. To enter separate up and down fade times, use **[/]** to separate the two numbers. The first number becomes the up fade time and the second number becomes the down fade time.

[FX][1][TIME][*]

Resets effect 1 fade time to the non-split default effect time in the *Setup* display FXIUp/Down field.

[FX][1][TIME][4][*]

Changes effect 1 up and down fade times to 4 seconds without changing any levels.

[FX][1][TIME][4][1][2][*]

Changes effect 1 up fade time to 4 seconds and its down fade time to 2 seconds without changing any levels.

[FX][1][TIME][1][2][*]

Changes effect 1 down fade time to 2 seconds without changing any levels. Sets the up fade time to the time in the *Setup* display FXIUp/ field if this is a new effect or leaves it as is if over-recording.

[FX][1][TIME][4][1][*]

Changes effect 1 up fade time to 4 seconds without changing any levels. Sets the down fade time to the time in the *Setup* display FXI/Down field if this is a new effect or leaves it as is if over-recording.

Assigning Profiles to Effects

fx# [PROFILE] # [*] assigns a fade profile to the effect. Since no levels are changed, you get no rerecord warning with this command. To learn how to create and edit profiles turn to *Profiles* starting on page 220.

To delete an assigned fade profile, omit the fade profile number.

[FX][1][PROFILE][3][*]

Assigns fade profile 3 to effect 1.

[FX][1][PROFILE][*]

Deletes any fade profile assigned to effect 1.

Creating Effect Steps

To add a new effect step to the current effect, press {APPEND FXSTEP} when in the *Effect* display. This adds a new step to the current effect and puts the cursor on the newly created step.

The new step has default values for step time, in, dwell, and out times, attribute fade time, low and high settings, and scaling. It has no assigned levels.

Viewing Step Channel Levels

To view the recorded levels in a step:

1. If the cursor is in the *Effect Settings* window, press **{EDIT STEPS}** to put it on the first effect step number in the *FX Step* window.
2. If the cursor is in the *FX Step* window but not on the effect step number, use the Trackball to highlight the step number rather than timing or level data.
3. Once the cursor is on the effect step number, use **[NEXT]** and **[LAST]** to move between steps and view channel levels.

Editing Step Channel Levels

First select the step and ensure that the highlight is on the step number (the **FX|STEP** field). The channels can then be selected and modified using the same commands as for Channel Control, for example **[1][@][1]**, **[SUB][1][@][5]** and so on. The Level Wheel and some of the soft keys in the Channel Control cannot be used to change levels.

Deleting Effect Steps

Steps can be deleted from the *Effect* display. This is a good way to delete effects if you are only going to delete a few. To learn how to delete all effects or a range of effects from the *Archive* display turn to *Clear Operations* starting on page 213.

{DELETE} appears on the LCD *Effect* menu when you are in the *Effect* display and deletes steps. Either a single step or a single THRU range can be specified. The highlight must be on the step number. This can be used with **[+]**, **[-]**, and **[THRU]** keys.

[DELETE]{DELETE}{DELETE}

{DELETE}[*][*]

Deletes the current step.

[FX][1][.][2]{DELETE}{DELETE}

Deletes effect 1 step 2.

[FX][1][.][2][THRU][3][.][4]{DELETE}{DELETE}

Deletes effect 1 step 2 through effect 3 step 4.

Copying Levels From an Effect Step

You can record submasters, cues, groups, and effect steps while you are in the *Effect* display. The highlight must be on the step number (the **FX|STEP** field).

Using recording commands while you are in the *Effect* display copies the *Effect* display levels to the target submaster, cue, group, or effect step. For example, if the current effect step is 1.1, then **[CUE][2][RECORD][RECORD][CUE][2][*]** will copy the levels from effect 1 step 1 into cue 2. This also allows steps to be copied. For example

[FX][3][.][4][RECORD][RECORD][FX][3][.][4][*]

Will copy the levels from effect 1 step 1 into effect 3 step 4.

Groups

Groups are used to store sets of levels which can be used later as building blocks, but which do not show up on the cue sheet. The only way to get group information to the console output is to call up group levels as part of a channel command and show them in the *Live* display, or to record them in a submaster, cue, or effect step.

This chapter contains the following topics:

Predefined Groups

The Current Group

Recording Group Levels

Recording Group Properties

Using Referenced Groups

Viewing and Editing Groups

Predefined Groups

There are several predefined groups that provide levels for console components. You can also call them up and use them like any other group if necessary. These are:

- Group 993.1 - *ON console
- Group 993.2 - *ON 2
- Group 993.3 - *ON 3
- Group 993.6 - *ON Handheld
- Group 994.1 - *Display console
- Group 994.1 - *Display 2
- Group 994.1 - *Display 3
- Group 998.1 - *Partition console
- Group 998.2 - *Partition 2
- Group 998.3 - *Partition 3
- Group 999.1 - *Grand Master 1
- Group 999.2 - *Grand Master 2
- Group 999.3 - *X Playback 1
- Group 999.4 - *X Playback 2
- Group 999.5 - *Preheat

ON console Controls the ON level for channels controlled from the main console. All channels are initially off (blank level). If a channel has a level in this group, the ON level is taken from the group. If not, the ON level is taken from the ON|Level|% field in the *Setup* display.

ON 2 & ON 3 Controls the ON level for channels controlled from the remote consoles. All channels are initially off (blank level). If a channel has a level in this group, the ON level is taken from the group. If not, the ON level is taken from the ON|Level|% field in the *Setup* display.

ON Handheld	Controls the ON level for channels controlled from the handheld remote. All channels are initially off (blank level). If a channel has a level in this submaster, the ON level for the handheld remote is taken from the submaster. If not, the ON level is taken from the ONLevel% field in the <i>User Setup</i> display.
Display console	Controls what channels will be shown on the main console level displays if the ChannelFormatting field in the <i>User Setup</i> display is set to DISPLAYIGROUP. All channels are initially set to FL, and can only be set to off and FL. If a channel has no level in this group, it will not show on any of the <i>Levels</i> screens (including the <i>Group</i> display). If channel formatting is set to AUTO, channels are added to the display groups as they are used. This is an easy way to automatically create a display group based on channels actually used in the show.
Display 2 & Display 3	Controls what channels will be shown on the remote console level displays if the ChannelFormatting field in the <i>User Setup</i> display is set to DISPLAYIGROUP. All channels are initially set to FL, and can only be set to off and FL. If a channel has no level in this group, it will not show on any of the <i>Levels</i> screens (including the <i>Group</i> display). If channel formatting is set to AUTO, channels are added to the display groups as they are used. This is an easy way to automatically create a display group based on channels actually used in the show.
Partition console, Partition 2, Partition 3	Determines what channels will be controlled by each console if the ChannelPartitioning field in the <i>Show Setup</i> display <i>Show Details</i> window is set to ON. All channels are initially set to their maximum setting in the Console Channels group and off in the other groups. Channels can only be set to their minimum or maximum levels. Setting a channel to a non-zero value in one group sets it to its maximum level and removes it from its previous group. Regardless of which console is generating level data, all information is recorded in the main console.
Grand Master 1	Channels with levels in this group are controlled by Grand Master 1. All channels are initially set to FL, and can only be set to off and FL. For channels that overlap with Grand Master 2, the lower of the two output levels is used.
Grand Master 2	Channels with levels in this group are controlled by Grand Master 2. All channels are initially set to FL, and can only be set to off and FL. For channels that overlap with Grand Master 1, the lower of the two output levels is used.
X Playback 1	Channels with levels in this group are controlled by X Playback 1. All channels are initially set to FL, and can only be set to off and FL. For channels that overlap with X Playback 2, the higher of the two output levels will be used.
X Playback 2	Channels with levels in this group are controlled by X Playback 1. All channels are initially set to FL, and can only be set to off and FL. For channels that overlap with X Playback 1, the higher of the two output levels will be used.
Preheat	Controls the preheat level for channels if the AutoPreheat field in the <i>Setup</i> display is set to ON. All channels are initially off (blank level). Preheat levels for all channels are taken from this group.

The Current Group

The current group is the last group which has been referenced in the *Group* display or recorded from another display. It is shown in the right LCD, and can be used in a group selection or in group recording.

All group recording commands act on a single group which is shown by # in the command description. If you do not enter a group number, the current group is used. You can use **[NEXT]** and **[LAST]** instead of # to select a group relative to the current group.

[GROUP] Specifies the current group.

[GROUP][1] Specifies group 1.

[GROUP][NEXT] If the current group is group 3, this specifies group 4. If the current group is the highest group number, this specifies the lowest group number.

[GROUP][LAST] If the current group is group 3, then this specifies group 2. If the current group is the lowest group number, this specifies the highest group number.

Recording Group Levels

[GROUP] records the levels (intensity levels and attribute levels) on the current display into the current group.

[GROUP] # records the levels on the current display (the *Live, Cue/Preview, Group, Effect, or Submaster* display) into the specified group. See *Working With Channel Levels* starting on page 66 to learn how to set intensity and attribute levels, and *Basic Recording* starting on page 86 for examples of recording.

Groups can be numbered from 1 to 999.9, and you can have up to 1000 groups in a show.

You can record just intensities or just attributes to a group by adding {INTS ONLY} or {ATTS ONLY} to the command line

In preset focus terms, Attributes are only active if their levels are shown as bright white on the Group display. To record a group from a selection with no Intensities you must include a channel list before the Group Record command (e.g.

[1][THRU][3][@][GROUP][5]

Recording Group Properties

Groups have only one property which can be specified when recording or edited later. You can record a text label (caption) with each group to help identify the group (see *Recording Levels with Properties* on page 86).

Using Referenced Groups

You can record intensities and attributes in groups 1 through 250 and then use these groups in cues, effect steps, and submasters as reference groups (sometimes called preset focus groups). Channels inserted into cues, effect steps, and submasters using reference groups are automatically updated in the recorded item when you update the group. This lets you reference the group in multiple locations and then change the referenced values only in one place to update the entire show.

chans [@[GROUP # [*] sets intensities and attributes for the selected channels to the levels set in the specified group. The cue, effect step, or submaster then takes levels for the selected channels from the group, so if you change the group the recorded item will also change.

[1][THRU][4][@[GROUP][1][2][3][*]

Sets channels 1 through 4 intensities and attributes to the levels set in group 123.

chans [@[GROUP # {INTS ONLY}][*] sets intensities only for the selected channels to the levels set in the specified group. The cue, effect step, or submaster then takes levels for the selected channels from the group, so if you change the group the recorded item will also change.

[1][THRU][4][@[GROUP][3]{INTS ONLY}][*]

Sets channels 1 through 4 intensities only to the levels set in group 3.

chan [@[GROUP # {ATTS ONLY}][*] sets attributes only for the selected channels to the levels set in the specified group. The cue, effect step, or submaster then takes levels for the selected channels from the group, so if you change the group the recorded item will also change.

[1][THRU][3][@[GROUP][5]{INTS ONLY}][*]

Sets channels 1 through 3 attributes only to the levels set in group 5.

This command requires a Pentium processor (or better) and the Tracker software. For additional information, see the *Tracker Operator's Manual*.

Viewing and Editing Groups

Once you have recorded groups, you can view and edit them in the *Group* display. You can also use the *Group* display to create new groups.

Changing levels while in this display changes the recorded levels in the current group without a record command and without warning you.
--

The Group Display

To show the *Group* display press **[GROUP]** in the Display keypad (not **[GROUP]** in the Levels keypad).



The *Group* display *Levels* screen shows the recorded channel levels (intensity levels and attribute levels) of the current group. The *Levels* screen background is grey rather than black to show that levels changed in this display are not being changed live.

The *Group* display *State* screen shows a page of groups and their associated fields. The current group is highlighted with a red background.

The *Wheel* window at the right indicates the position within the current submasters. The number shows the index of the current group. For example the first, second, and third groups have index 1, 2, and 3. The index is independent of the group number.

The only editable group property is Text, which is shown in the Text field of the *Group* display *State* screen. This property lets you attach a text label (caption) to the group for easy recognition.

To go directly to a group, press **[GROUP] # [*]** where # is the group. If the group does not exist, you will be warned that you are creating a new item. Press [*] again to create the new group, or **[CLR]** or **[UNDO]** to cancel the command.

To move between existing groups, move the Trackball to any field in the group you want to edit. Levels for the highlighted group will be displayed on the *Levels* screen, but to edit these levels you will need to highlight the group number. You can also use **[NEXT]** or **[LAST]** to change groups if the highlight is on the group number.

You can also page through the group list by using the Level Wheel.

Creating a New Group

To switch to the *Group* display and create a new group, press **[GROUP][GROUP] # [*]** where # is the new group number.

To create a new group while you are in the *Group* display, press **[GROUP] # [*]** where # is the new group number.

You will be warned that you are creating a new item. Press [*] again to create and display the new group or **[CLR]** or **[UNDO]** to cancel the command.

The **[GROUP]** display key is at the top of the console. Do not confuse it with the lower **[GROUP]** key.

Viewing Group Channel Levels

To view the recorded levels in a group, select the required group. The levels are then shown in the *Levels* screen.

Channels which are off are shown with a blank level. Channels which are on At 0 are shown with a level of 0.

Editing Group Levels

Once you have selected the required group and put the highlight on the group number (the **Group** field), you can select channels and modify them using the same commands as for channel control, for example **[1][@][1]**, **[CUE][1][@][5]** and so on. The Level Wheel cannot be used to change levels while you are in the *Group* display.

Deleting Groups

Groups can be deleted from the *Group* display. This is a good way to delete groups if you are only going to delete a few. To learn how to delete all groups or a range of groups from the *Archive* display turn to *Clear Operations* starting on page 213.

To delete a group, press **{DELETE} # [*]**.

{DELETE}[*][*]

Deletes the current group.

[GROUP][6]{DELETE}{DELETE}

{DELETE}[6][*][*]

Deletes group 6

Copying Levels From a Group

You can record submasters, cues, groups, and effect steps while you are in the *Group* display by copying the group levels. The highlight must be on the group number (the *Group* field).

Using recording commands while you are in the *Group* display copies the *Group* display levels to the target submaster, cue, group, or effect step. For example, if the current group is 1, then **[CUE][2][RECORD][RECORD][CUE][2][*]** will copy the levels from group 1 into cue 2. This also allows groups to be copied. For example **[GROUP][4][RECORD][RECORD][GROUP][4][*]** will copy the levels from group 1 into group 4.

Patches

This chapter describes the patch system, which lets you set which channels control which console outputs.

Patching sets up the channel that controls each console output. For intensity channels, these outputs usually control dimmers or non-dims, which in turn control fixture intensity. For attribute channels, these outputs usually control scrollers, which in turn control fixture colour.

Each channel can have an intensity, an attribute or both, so a dimmer and a scroller can both be patched to the same channel. The *Live* display shows both the intensity and the attribute levels for each channel. The Tracker software allows multiple attributes per channel. For more information on how to use this software see the *Tracker Operator's Manual*.

An output can control any device capable of taking an AMX192, D54 or DMX512 signal and translating it into a command, including scrollers and other moving light fixtures. The outputs from the patch system can be further manipulated within this console by DMX signal assignment (see *The Output Connections Window* on page 197.), and again at the input of many dimmer racks.

There are 2 Patches available, called patch 1 and patch 2. The patch that is currently being used by the output is called the live patch. The patch currently being edited is called the edit patch. You can set either patch to be the live patch and either patch to be the edit patch. If you set the same patch as the live and edit patches, changes you make will show immediately on stage. If you set the live and edit patches to be different, changes you make in the patch will not show on stage.

This chapter contains the following topics:

Output Properties

The Patch Display

Selecting Outputs

Changing Live and Edit Patches

Copying the Current Patch

Swapping Patch Information

Changing the Output Numbering Style

Customising the Display

Deleting Channels

Renumbering Channels

Default Patching

Patching Channel Intensities

Patching Double Width Outputs

Assigning Output Profiles

Patching Channel Attributes

Patching Non-Dims

Patching DMX In

Unpatching

Output Properties

Outputs have the following editable properties, which can be specified when patching or edited later.

Type

Profile

Scaling Value

Type

Each output can be set to one of several types.

Unpatched No channel number. The output is not patched to any channel and so its output is always 0.

Intensity The channel number is white (or yellow if it is not a one-to-one patch). The intensity output is patched to a channel intensity. The output has a Scaling factor (in white below the channel number) which modifies the basic channel level and can range from 0% to 200%. A value of 100% has no effect, a value of 0% disables the output (its value is always 0). For example with a level of 80% on the *Live* display, scaling of 50% would cause an output of 40%. Scaling values over 100% cause the output to reach its full intensity faster than other outputs. For instance, if the scaling is 150% the output will be at 75% when the channel it is patched to is still at 50%. When the channel is at 67% the output reaches full intensity. Its intensity will not increase as the channel intensity increases above 67%.

NonDim The channel number is white (or yellow if it is not a one-to-one patch). The non-dim output is patched to a channel intensity or attribute. It has a threshold (in red below the channel number) which is the level at which the output turns on or off. For example, if a non-dim has a threshold of 60%, channel levels from 0% to 60% will give an output of 0% and levels from 61% to 100% have an output of 100%.

Basic	
Attribute	The channel number is yellow. The output is patched to the basic attribute (colour) of a channel. It has a maximum frame number (in green below the channel number) which is the full value for the attribute, and can range from 1 to 100.
Tracker	
Attribute	The channel number is blue. The output is patched to an attribute controlled by the Tracker software. It has a maximum frame number (in green below the channel number) which is the full value for the attribute, and can range from 1 to 100.
DMX In	The channel number is Magenta. The output is patched directly to a DMX input channel. This is only used when the CommuniquéPro software is installed. For additional information see the <i>CommuniquéPro Operator's Manual</i> .

Profile

Each output can have a profile assigned to it. This lets you change the fade characteristics of individual outputs if necessary. You may need to do this because you are using several different types of dimmers whose dimming characteristics don't match, because the output is actually controlling a fixture attribute that needs a non-linear "fade," because you need an output for a particular special effect, etc. To learn how to create profiles, turn to *Profiles* starting on page 220.

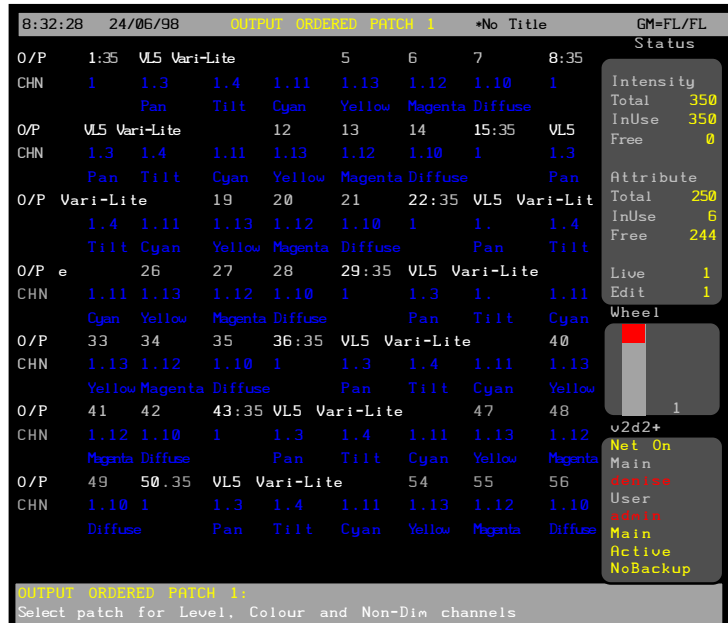
Scaling Value

Each output has a scaling value assigned. The meaning of the scaling value depends on the type of output.

Unpatched	There is no scaling value.
Intensity	Scales the intensity as provided by the channel that the output is patched to.
Non-dim	The scaling value is the threshold for the non-dim. Any channel level above the threshold forces the output to Full. Any value below the threshold forces the output to 0 (zero).
Attribute	The scaling value is the maximum frame number.

The Patch Display

To show the *Patch* display, press **[PATCH]**. This display lets you view and edit the show patch (output to channel assignments), and is also used when controlling outputs directly. This chapter shows how to set up the show patch. To learn how to configure the outputs on the rear of the console, turn to *The Output Connections Window* starting on page 197. To learn how to directly control outputs from other displays, turn to *Direct Output Control* starting on page 180.



The *Levels* screen is not used for patching and is disabled.

The *State* screen shows each output. You can use the Level Wheel to scroll the display and show outputs that are on other pages. The current page number is shown at the bottom of the *Wheel* window.

There are three fields shown for each output:

O/P The output number. Double width outputs have a grey background.

CHN The channel or DMX input channel that the output is patched to. A colour indicates that it is not a 1 to 1 patch (the output number is not the same as the channel number).

(blank) The output is unpatched.

(grey or yellow) The intensity channel that the output is patched to. This is the channel number that appears in all of the *Levels* displays. Shown in grey to indicate a one-to-one patch or yellow if it is not a one-to-one patch.

#.2 (yellow) The output is patched to attribute 2 (colour) and is shown in yellow to indicate it is not a 1 to 1 patch. The standard attribute (colour) is shown with a .2 after the channel number. Other attributes use other numbers following the channel number. To use any attributes except colour you need the Tracker software.

#D (magenta) Indicates that the output is patched to a DMX input channel. This can only be used when the *CommuniquéPro* software is installed. For additional information see the *CommuniquéPro Operator's Manual*.

(3rd row)	The scaling, threshold, or maximum frame number followed by the profile assigned to the output, if any. The profile is magenta unless it is for an attribute controlled by the CommuniquéPro software, in which case it is cyan. To reduce screen clutter, scaling values of 100% (default) are not shown on the display.
(blank)	The item is unpatched.
#% (grey)	The intensity scaling (intensity outputs)
# (green)	The maximum frame number (attribute outputs).
# (cyan)	Attributes controlled by the CommuniquéPro software.
#N (magenta)	The non-dim threshold (non-dims).
#% (red)	The output level of an output under direct control. To learn how to control outputs directly from other displays turn to <i>Direct Output Control</i> starting on page 180.

The *Status* window at the top right gives information on the intensity and attribute channels:

Intensity Channels

T o t a l!	The total number of intensity channels available. This depends on the number of installed channels.
I n U s e!	The number of intensity channels currently created. Patching to a previously unused intensity channel increases this value.
F r e e!	The number of unused intensity channels. Deleting an attribute channel increases this value.

Attribute Channels

T o t a l!	The total number of attribute channels available. This depends on the number of installed channels.
I n U s e!	The number of attribute channels currently created. Patching to a previously unused intensity channel increases this value.
F r e e!	The number of unused attribute channels. Deleting an intensity channel increases this value.

Output Numbers

A standard console can control 2048 outputs, in four banks of 512, through the four DMX ports. In addition, if the Networker Software is installed, the outputs can be sent via the network. The network has 4096 virtual outputs. The 2048 console outputs can be assigned to different ranges of the 4096 virtual outputs. This could, for example, allow two consoles to each control half of the network system (e.g. one console for moving lights, the other for conventional ones) without interfering with each other.

Outputs can be specified and/or displayed as output numbers (0 to 4096) or in Universe.Dmx format. In Universe.Dmx format, each output connector has its own number from 1 to 8 and each signal from the connector has its own number from 1 to 512. The two numbers are used together, so that the 123rd output from the 3rd DMX connector is addressed as 3.123. DMX connectors 1 through 4 are output from the console. The remainder of the DMX connectors must be on the network.

The patch does not directly configure the mapping of output numbers to the output multiplex signals. To learn how to set up console output to patch output mapping within the console turn to *The Output Connections Window* starting on page 197.

Channel Numbers

Depending on the software purchased and the hardware performance, you can have up to 2000 intensity only channels and 2000 attribute only channels which can be numbered from 1 to 9999. However, intensities and attributes for a single fixture are usually patched to and controlled by a single channel, so you can have up to 2000 channels with intensities, and assign up to 2000 attributes to these channels.

You can increase the number of attribute channels beyond the purchased maximum by deleting intensity channels and assigning them as attribute channels. Since you must always have at least one intensity channel, a system with maximum channel capacity can have up to 3999 attribute channels. You cannot increase intensity channels beyond the purchased maximum. In a system with maximum capacity the maximum number of intensity channels is still 2000.

Channel attributes are specified by a decimal point as follows using channel 10 as an example:

10 channel 10 intensity
10.1 channel 10 intensity (displayed as 10).
10.2 channel 10 attribute.

The standard software allows one attribute (colour) per channel. The Tracker software lets you specify multiple attributes per channel (attribute numbers .2 to .99).

The default patch numbers channels from 1 to the number of channels purchased and assigns them only intensities. To use a new channel number and assign it an intensity you must first delete a channel with intensity. This will delete the levels of that channel in all cues, submasters, effects and patches. Patching to the new channel number will then create a new channel. To learn how to delete channels turn to *Deleting Channels* starting on page 212.

Deleting a channel is different from unpatching. Deleting removes the channel from all channel displays and removes all its recorded levels. Unpatching only removes the association between the channel and the output. Channel levels are preserved so that if it is repatched to the same or another output, the previous levels reappear.

The number of free and used channels is shown in the *Patch* display *State* screen.

Selecting Outputs

Most patch commands act on a selection of 1 or more outputs. Outputs can be specified in standard output number format, where outputs are numbered from 1 to the maximum number available, or in Universe.Dmx format. The two formats can be used interchangeably, and can be used in the same command.

The examples shown immediately below are commands you can use to create the output list before patching them to a channel. You can use these commands to replace **out** where it appears in full command descriptions. Outputs are not actually selected until you press **[@]** to end the selection list.

Since these examples are only part of a command, they do not have a concluding **[*]** key.

These selections will only work in the *Patch* display.

puts the specified output on the output list.

[1] Puts output 1 on the output list.

[1].[6] Puts output 6 on the output list.

[+] # adds the specified output to the output list.

[1][+][3] Puts outputs 1 and 3 on the output list.

[3].[4][6][+][3].[5][6]

Puts outputs 1070 and 1080 on the output list.

[THRU] adds a range of outputs to the output list.

[1][THRU][3] or **[3][THRU][1]**

Puts outputs 1, 2, and 3 on the output list.

[2].[4][THRU][5][1][8] or **[5][1][6][THRU][2].[6]**

Puts outputs 516 through 518 on the output list.

[-] # removes an output from the output list. It only removes outputs that are already in the list.

[1][THRU][3][-][2]

Puts outputs 1 and 3 on the output list.

[1][THRU][3][-][2][+][4]

Puts outputs 1, 3, and 4 on the output list.

Changing Live and Edit Patches

There are 2 separate show patches. The *Patch* display always shows the Edit Patch. You can edit one patch while the other is live. The current Live Patch and Edit Patch numbers are shown in the top left corner of the LCD *Patch* menu.

To change the Live Patch:

1. Press **{SET}** on the LCD *Patch* menu to show the LCD *Set Patch* menu.
2. Press **{LIVE}**. You will be asked to confirm this action.
3. Press **{LIVE}**. It can take several seconds for the Live Patch to change.
4. Press **{BACK}** to return to the LCD *Patch* menu.

To change the Edit Patch:

1. Press **{SET}** on the LCD *Patch* menu to show the LCD *Set Patch* menu.
2. Press **{EDIT}**.

Press **{BACK}** to return to the LCD *Patch* menu.

Copying the Current Patch

You can copy the current patch into the other patch.

1. Press **{SET}** on the LCD *Patch* menu to show the LCD *Set Patch* menu.
2. Press **{COPY SWAP}**. You will be asked to confirm this action.
3. Press **{COPY SWAP}** to copy the current patch to the other patch. All patch information in the other patch is overwritten.
4. Press **{BACK}** to return to the LCD *Patch* menu.

Swapping Patch Information

You can swap information between the Edit Patch and the other patch by first specifying the output numbers to swap and then using the **{COPY SWAP}** soft key. This can be used to do a temporary patch update, which you can later reverse by repeating the same swap.

1. Press **{SET}** on the LCD *Patch* menu to show the LCD *Set Patch* menu.
2. Press **[3][THRU][4]{COPY SWAP}**. You will be asked to confirm this action.
3. Press **{COPY SWAP}** to swap the selected channels.
4. Press **{BACK}** to return to the LCD *Patch* menu.

Changing the Output Numbering Style

To change the *Patch* display between showing standard output numbers and showing output numbers in Universe.Dmx format, press **{DMX OUTPUT}**

1. Press **{SET}** on the LCD *Patch* menu to show the LCD *Set Patch* menu.
2. Press **{DMX OUTPUT}**. If the patch previously showed standard output numbers, these change to Universe.Dmx format. If output numbers were shown in Universe.Dmx format, they will now be shown as standard output numbers.
3. Press **{BACK}** to return to the LCD *Patch* menu.

Regardless of how the output numbers are displayed on the *Patch* display, you can mix and match formats in your output selection commands.

Customising the Patch Display

You can customise the Patch Display to show threshold data or load data in Output order or Channel order

1. Press **{SET}** on the LCD *Patch* menu to show the LCD *Set Patch* menu.
2. Press **{SET DISP}{ORDER}** to show the Set Patch Display menu.
3. Press **{OUTPUT ORDER}** to show the Patch display in output order.
4. Press **{CHAN ORDER}** to show the Patch display in channel order.
5. Press **{LOADS ON}** to display Learned Loads for outputs or channels.
6. Press **{LOADS OFF}** to display Threshold values for outputs or channels.
7. Press **{BACK}** to return to the LCD *Patch* menu.

Only outputs patched to an intensity channel with a learned load will display load values. Refer to *Console Reporter* starting on page [222](#)

Deleting Channels

Deleting an intensity or attribute channel increases the number of free channels of that type. This is necessary if you want to create a new channel number but there are no free channels.

You can delete channels from the LCD *Channel* menu which is a submenu on the LCD *Patch* menu. Press **{CHAN}** to show this menu. The **{BACK}** soft key returns you to the LCD *Patch* menu.

chan {DELETE CHAN}

This deletes the channel(s), including levels from all cues, submasters and effects. If this is currently used in a cue or patch you will be prompted to press the **{DELETE CHAN}** key a second time to confirm the deletion.

Submasters and effects are not checked for channel usage.

Deleting can sometimes take a considerable time (over a minute). The command prompt shows a message while the delete is being processed.

[1]{DELETE CHAN}{DELETE CHAN}

Deletes channel 1 completely (intensity and attributes)

[1].[1]{DELETE CHAN}{DELETE CHAN}

Deletes channel 1 intensity.

[1].[2]{DELETE CHAN}{DELETE CHAN}

Deletes channel 1 attribute.

[3][THRU][5]{DELETE CHAN}{DELETE CHAN}

Deletes channels 3, 4, and 5 completely (intensity and attributes).

After you are finished deleting channels, press {BACK} to return to the LCD *Patch* menu.

Renumbering Channels

After you have deleted channels you may wish to renumber all of the channels so that you don't have any gaps in channel numbers.

1. If you are not already in the LCD *Channel* menu, press {CHAN} to show the menu.
2. Select the channel to renumber and press {RENUM CHAN}.
3. Enter the new channel number.
4. Press [*] to renumber the channels or [CLR] or [UNDO] to cancel the operation.
5. Repeat as necessary.

Default Patching

You can set any output, list of outputs, or all outputs back to the default patch with default scaling.

out {DEFLT} sets the default patch {DEFLT} is a soft key on the LCD *Patch* menu.

[1][THRU][3]{DEFLT}

Sets output 1, 2, and 3 to the default patch. If any of these default channels have been deleted they will be re-created. If there are no free channels, the command will fail.

{DEFLT}{DEFLT}

Defaults the whole patch. This re-creates all the default channels and deletes all other channels. This may take considerable time if many channels need to be deleted.

Patching Channel Intensities

Outputs can be patched to a channel intensity. If the channel's intensity does not exist, it is first created. The scaling for the intensity is also set. If you do not specify scaling, the default (from the `DefaultScale%` field in the *Show Setup* display) is used.

An intensity channel is identified by the channel number by itself or followed by 1.

Each output can have its own scaling, even if more than one output is patched to the same channel.
--

out [@] chan [*] patches the output to the channel's intensity. If the channel is not patched, the default scaling is used. Otherwise scaling is left unchanged.

[1][@][5][*]

[1][@][5].[1][*]

Patches output 1 to channel 5 intensity.

out [@] chan [@] [*] patches the output with default scaling to the channel intensity.

[1] [THRU] [1] [0] [@] [5] [@] [*]

[1] [THRU] [1] [0] [@] [5] . [1] [@] [*]

Patches outputs 1 through 10 with default scaling to channel 5 intensity .

out [@] chan [@] # [*] patches the output to the channel's intensity with the specified scaling.

[1] [@] [5] [@] [7] [5] [*]

[1] [@] [5] . [@] [7] [5] [*]

Patches output 1 with 75% scaling to channel 5 intensity .

out [@] [@] [*] changes the output to use the default scaling without changing any other aspect of the patch.

[1] [THRU] [5] [@] [@] [*]

Changes output 1 through 5 scaling to the default.

out [@] [@] # [*] changes the output to use the specified scaling without changing any other aspect of the patch.

[1] [THRU] [5] [@] [1] [5] [0] [*]

Sets output 1 through 5 scaling to 150%.

Patching Double Width Outputs

Some analog multiplexed dimmer systems have double width dimmer modules which take two consecutive output signals (for example, Strand's CD80 dimmers, which take single width 2.4K or 6K dimmers or double width 12K dimmers). These can be handled by unpatching the unused output or patching both outputs to the same channel. For example if outputs 3 and 4 control a double width dimmer then we might patch as follows (the output addresses are also shown, assuming the default AMX mapping in the *Setup* display):

Output	1	2	3	4	5	6	...
Channel	1	2	3		4	5	...
DMX output	1	2	3		5	6	...

Outputs 5 onwards need to be changed from their default 1 to 1 patch. The alternative is to define output 3 as a double width output in which case it will automatically take two output addresses. The same patch would then appear as a default 1 to 1 patch as follows:

Output	1	2	3	4	5	6	...
Channel	1	2	3	4	5	6	...
DMX output	1	2	3	5	6	7	...

You must be very careful using this facility since outputs 4... are really outputs 5... (since they are actually mapped to output address 5...). In addition, the last output is now ignored since its number is now one larger.

out {@6k12k}[*] changes a normal output to a double width output or a double width output to a normal output. Double width outputs are shown on the *Patch display State* screen as a grey bar.

[1]{@6k12k}[*]

Toggles output 1 between normal and double width.

Assigning Output Profiles

Any output can have a profile assigned to it. Profiles let you change the fade characteristics of the output. You cannot assign a profile to a non-dim output.

Since profiles set here are assigned to outputs rather than channels, you can use them to compensate for dimmers with different output curves, fixtures with different specifications for colour frame start and stop location, gel strings that have stretched, and other output related differences.

out [PROFILE] # [*] assigns the profile # to the selected outputs. All other output information is left as is. The profile number appears in red next to the scaling or maximum frame value.

[1][PROFILE][5][*]

Assigns profile 5 to output 1.

out [@] # [*] out [PROFILE] # [*] assigns outputs to a channel and then assigns a profile to the outputs. You cannot patch an output and assign a profile in a single command. You can assign one profile to many outputs in a single command. The profile number appears in magenta next to the scaling or maximum frame value.

[2][1][THRU][2][5][@][3][*][2][1][THRU][2][5]

[PROFILE][5][*]

Patches outputs 21 through 25 to channel 3 and then assigns profile 5 to the outputs.

Patching Channel Attributes

The output can be patched to a channel attribute. If the attribute does not exist, it is first created. The maximum frame for the attribute is also set. If the maximum frame is not specified, the default from the `DefaultFrame` field in the *Show Setup* display is used.

The maximum frame number cannot be changed if more than one output is patched to the same channel attribute. All except one output must be unpatched before changing the maximum frame number.

Frame numbers start at 0 (zero). This means that a scroller with 16 frames has frames numbered from 0 to 15, and should have a maximum frame number of 15.

A channel can have both attribute and intensity non-dim parts. This is done by setting two separate outputs to the same channel; one as an intensity (.1) non-dim and another as an attribute (.2) non-dim.

An attribute part of a channel is identified by the channel number followed by .2 (the Tracker software controls up to .99 attributes per channel).

For advanced attribute patching, see the *Tracker Operator's Manual*.

out [@] # [.]2] or out [@ATT] # patches the output to the channel attribute. If the output is not patched, the default maximum frame is used. Otherwise the maximum frame is left unchanged.

[1][@][5][.]2][*]

[1][@CHAN][5][*]

Patches output 1 to channel 5 attribute.

out [@] # [.]2][@] or out [@ATT] # [@] patches the output with the default maximum frame to the channel attribute.

[1][@][5][.]2][@][*]

[1][@ATT][5][@ATT][*]

Patches output 1 with the default maximum frame to channel 5 colour attribute.

out [@] # [.]2][@] # or out [@ATT] # [@ATT] patches the output with the specified maximum frame to the channel attribute.

[1][@][5][.]2][@][2][0][*]

[1][@ATT][5][@ATT][2][0][*]

Patches output 1 with a maximum frame of 20 to the channel 5 colour attribute.

out [@ATT][@ATT] sets the default maximum frame for the output without changing the existing patch.

[1][THRU][5][@ATT][@ATT][*]

Changes outputs 1 to 5 to use the default maximum frame.

out [@ATT][@ATT] # sets the channel attribute to the specified maximum frame without changing the existing patch.

[1][@ATT][@ATT][2][0][*]

Sets channel 1 attribute to a maximum frame of 20.

Patching Non-Dims

You can patch an output to a channel, set the output as a non-dim, and set its threshold. If you omit the threshold, the default threshold from the `DefaultIN-DimI%` field in the *Setup* display is used. You can patch outputs as non-dims to intensity channels with a single command, but it requires two commands to patch an output as a non-dim to an attribute channel. `[@NON]` is a soft key on the LCD *Patch* menu.

out {@NON} # [*] patches the output as a non-dim to the selected channel. It sets the threshold to the default if the output not a non-dim, or leaves the threshold alone if the output is already a non-dim.

[1]{@NON}[5][*]

Patches output 1 as a non-dim to channel 5 intensity.

out {@NON} # {@NON} patches the output as a non-dim to the selected channel intensity and sets the threshold to the default threshold.

[1]{@NON}[5]{@NON}[*]

Patches output 1 as a non-dim with the default threshold to channel 5 intensity.

out {@NON} # {@NON} thold [*] patches the output as a non-dim to the selected channel intensity and sets the threshold to the specified value.

[1]{@NON}[5]{@NON}[4][0][*]

Patches output 1 as a non-dim with a threshold of 40% to channel 5 intensity.

out {@NON}{@NON}[*] changes the output to a non-dim with the default threshold without changing the channel it is patched to.

[1][THRU][5]{@NON}{@NON}[*]

Changes outputs 1 to 5 to non-dims with the default threshold.

out {@NON}{@NON} thold [*] sets the outputs to non-dim with the specified threshold without changing the channels they are patched to.

[1]{@NON}{@NON}[8][0][*]

Sets output 1 to non-dim with an 80% threshold.

out [@] # [.] [2][*] or **out [@ATT] # [*]** patches the output(s) to the channel attribute. **out {@NON}{@NON} thold [*]** can then set the output(s) to non-dim with the specified threshold without changing the channels they are patched to.

[2][0][0][1][@ATT][6][*]

[2][0][0][1]{@NON}{@NON}[9][0][*]

Assigns output 2001 to the channel 6 colour attribute and then makes output 2001 into a non-dim with an 90% threshold.

[2][0][0][2][@][6][.][4][*] [2][0][0][1]{@NON}{@NON}[*]

Assigns output 2002 to attribute #4 of channel 6 and then makes the output into a non-dim with the default threshold.

[2][0][0][1]{@NON}{@NON}[5][0][*]

Changes non-dim threshold for output 2001 to 50% without changing the channel it is patched to.

Patching DMX In

If you have the *CommuniquéPro* software, you can patch outputs to a DMX input channel and set their scaling. If you omit the scaling, the console uses the default (from the `DefaultScaling%` field in the *Setup* display).

Each output can have its own scaling, even if more than one output is patched to the same DMX input channel

out [@[+] # [*] patches the outputs to the DMX input channel. If the output is not patched to a DMX input channel the default scaling is used. Otherwise the scaling is left unchanged.

[1][@][+][5][*]

Patches output 1 to DMX input channel 5.

out [@[+] # [@[*] patches the outputs to the DMX input channel using the default scaling.

[1][@][+][5][@][*]

Patches output 1 to DMX input channel 5 with default scaling.

out [@[+] # [@[# [*] patches the outputs to the DMX input channel with the specified scaling.

[1][@][+][5][@][7][5][*]

Patches output 1 to DMX input channel 5 with 75% scaling.

out [@[@] # [*] changes the scaling for the DMX input channel without changing the existing patch.

[1][@][@][1][5][0][*]

Patch is unchanged but is set to DMX input with 150% scaling.

Unpatching

An output can be unpatched, in which case it has a level of 0 (zero).

out [@[*], **out [@ATT][*]**, and **out { @NON}[*]** unpatch the selected output(s) regardless of whether they are currently an intensity or attribute etc.

[1][@][*]

[1][@ATT][*]

[1]{ @NON}[*]

Unpatches output 1

An output is automatically unpatched if you use the **[DIMMER]** key to directly set a level on it from either the *Live* display or from a blind display.

To set an output level directly, press **[DIMMER] # [@] level [*]**.
To repatch all outputs controlled this way, press **[DIMMER] {RE-PATCH}**.

Direct Output Control

This chapter describes how to directly control outputs (dimmers). An output can control any device capable of taking an AMX192, D54 or DMX512 signal and translating it into a command, including scrollers and other moving light fixtures. The outputs from the patch system can be further manipulated within this console by DMX signal assignment (see *The Output Connections Window* on page 197.), and again at the input of many dimmer racks.

Each output is normally patched to a channel so that the output follows the channel level. You can use the **[DIMMER]** key to unpatch the output from the channel and set its output to a fixed level. While any output(s) are unpatched, the command prompt includes `OUTPUTSIUNPATCHED`. You can easily repatch the outputs so that they follow their channel settings.

You can use the **[DIMMER]** key in any display except *Setup*, *Archive*, *Notes*, *Report*, and *Help*.

This chapter contains the following topics:

The Current Output Selection

Setting Levels

Setting DMX Levels

Repatching

The Current Output Selection

Most output commands act on a selection of 1 or more outputs.

The examples shown immediately below are output selections that you can use to replace **out** where it appears in full command descriptions. Outputs are not actually selected until you press **[@]** to end the output list.

Outputs can be specified as output numbers (0 to 4096) or in Universe.Dmx format. In Universe.Dmx format, each output connector has its own number from 1 to 8 and each signal from the connector has its own number from 1 to 512. The two numbers are used together, so that the 123rd output from the 3rd DMX connector is addressed as 3.123. DMX connectors 1 through 4 are output from the console. The remainder of the DMX connectors are output from network nodes.

Since these examples are only part of a command, they do not have a concluding **[*]** key.

puts the specified output on the output list.

[DIMMER][1] Puts output 1 on the output list.

[DIMMER][1][.][6]

Puts output 6 on the output list.

[+] # puts the listed outputs to the output list.

[DIMMER][1][+][3]

Puts outputs 1 and 3 on the output list.

[DIMMER][3][.][4][6][+][3][.][5][6]

Puts outputs 1070 and 1080 on the output list.

THRU # puts a range of outputs to the output list.

[DIMMER][1][THRU][3] or **[DIMMER][3][THRU][1]**

Puts outputs 1, 2, and 3 on the output list.

[DIMMER][2][.][4][THRU][5][1][8] or

[DIMMER][5][1][6][THRU][2][.][6]

Puts outputs 516 through 518 on the output list.

[-] # removes the listed outputs from the output list. It only removes outputs that are listed before it in the command.

[DIMMER][1][THRU][3][-][2]

Puts outputs 1 and 3 on the output list.

[DIMMER][1][THRU][3][-][2][+][4]

Puts outputs 1, 3, and 4 on the output list.

Setting Levels

Output levels can be set directly from the command line. The level format depends on the Entry Mode. You cannot enter fractions of 10% (e.g. 5.1) in Direct 1 Digit entry mode. If you are in the *Live* or *Patch* display you can use the Level Wheel to change the selected dimmer levels until a new command or the [CLR] key deselects them.

[DIMMER] out [*] or **out {UNPATCH}** selects the outputs. If already unpatched (i.e. set by the Output Control) they remain at their unpatched level. Otherwise (if patched) they are unpatched and initially set to the level of the channel they are being unpatched from.

[DIMMER][1][+][2][*]

[DIMMER][1][THRU][2]{UNPATCH}

Outputs 1 and 2 become the current selection and are unpatched.

[DIMMER] out [@] # selects the listed outputs and sets their levels to #. To set all outputs, omit **out**.

[DIMMER][1][@][0][*]

Makes output 1 the current selection and sets its level to 1%. This cannot be done in Direct 1 Digit entry mode.

[DIMMER][1][+][3][@][1]*

Makes outputs 1 and 3 the current selection and sets their levels to 10%.

[DIMMER] out [@]{FULL} selects the listed outputs and sets their levels to Full (100%). **{FULL}** is a soft key on the LCD *Patch* menu. It appears after you press **[@]**.

[DIMMER][1][@]{FULL}*

Makes channel 1 the current selection and sets its level to Full.

[DIMMER] out [@]. selects the listed outputs and sets their levels to off. This is the same as setting them to 0.

[DIMMER][1][+][3][@]*

Makes channels 1 and 3 the current selection and sets their levels to off.

Setting DMX Levels

Normally, output levels are set from 0% to 100%. However, the actual DMX level is an 8 bit number ranging from 0 to 255. The **{DMX}** soft key lets you set output levels to exact DMX levels if necessary.

Setting actual DMX levels gives you more precise control over the levels you set. The display will show the nearest standard (00 to FL) level rather than the exact DMX level you set.

[DIMMER] out [@]{DMX}# selects the specified channels and sets their levels to the specified output where **#** is 0 to 255.

[DIMMER][1][@]{DMX}[1][2]*

Makes Output 1 the current selection and sets its level to 12 (about 4%, i.e. 12/255).

Repatching

An output can be patched back so that it uses the channel level again.

[DIMMER] out [ON], **[DIMMER] out {REPATCH}**, or **[DIMMER] out [DIMMER]** repatches the selected outputs to use the channel level. To repatch all previously patched outputs, omit **out**. **{REPATCH}** is a soft key on the LCD *Patch* menu.

[DIMMER][1][ON]

[DIMMER][1][DIMMER]

[DIMMER][1]{REPATCH}

Repatches Output 1.

[DIMMER][ON]

[DIMMER][DIMMER]

[DIMMER]{REPATCH}

Repatches all outputs

Setup

This chapter describes the *Setup* displays, which you use to configure the operation of the console and installed software. There are three *Setup* displays available through the **[SETUP]** key: *User Setup*, *Show Setup*, and *Console Setup*.

This chapter contains the following topics:

The *User Setup* Display

The *Show Setup* Display

The *Console Setup* Display

Setting Access Rights

Locking the Console

Locking Memory

Each *Setup* display is divided into several windows, each with several fields. You can change all of the fields in the *Setup* displays except the fields displayed in yellow.

Use the Trackball to move between fields. Change values by using **[+]** and **[-]** or the Level Wheel, or by typing in numbers where appropriate.

Choices available for the currently selected field appear at the bottom of the display, with the currently selected choice highlighted.

Only items shown in green text can be modified. Yellow text indicates items that are not available with the current system configuration.

Some fields, on the *Console Setup* display, cannot be changed while the main and backup consoles are in sync. These will be yellow while in sync and green when not in sync.

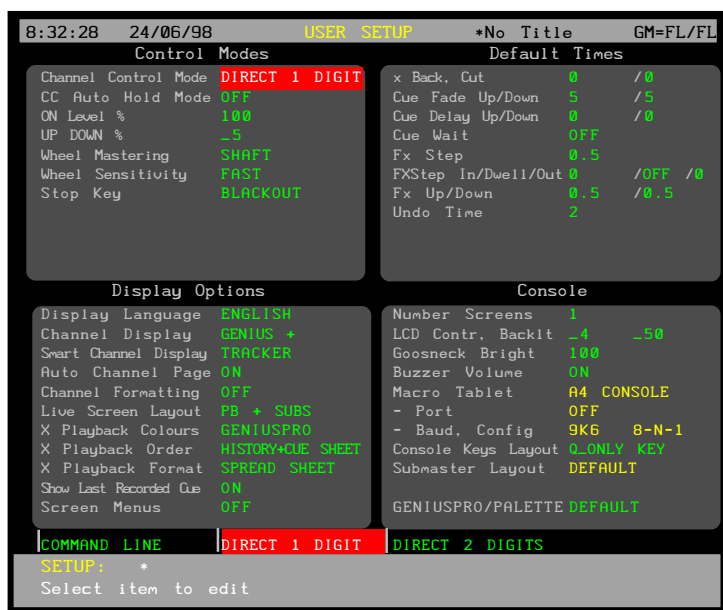
To see the *User Setup* display, press **[SETUP]**

To see the *Show Setup* display, press **[SETUP]{MORE}**.

To see the *Console Setup* display, press **[SETUP]{MORE}{MORE}**.

The *User Setup* Display

To see the *User Setup* display, press **[SETUP]**. This display lets you control how the console operates and displays information.



The Control Modes Window

Channel|Control|Mode

The *Control Modes* window is in the *User Setup* display, and lets you configure how channels are controlled.

Controls the channel command syntax accepted by the console.

Its value is `COMMANDLINE` (the default), `DIRECT1|DIGIT`, or `.DIRECT2|DIGIT`.

`COMMANDLINE` Commands are generally only carried out after you press `[*]`, although it is sometimes not required. In general, the syntax is action first, then object (for instance, `[RECORD][CUE][1][*]`).

Channel levels are entered as a single digit number which represents a multiple of 10% or a double digit number which lets you enter fractions of 10%.

`[1][@][0][2][*]` sets channel 1 to 2%.

`[1][@][3][*]` sets channel 1 to 30%.

`[1][@][4][5][*]` sets channel 1 to 45%.

`DIRECT1|DIGIT` Commands are carried out as soon as they are fully entered although the `[*]` key is required for some commands. In general, the syntax is object first, then action (for instance, `[CUE][1][RECORD]`).

Channel levels are entered as a single digit number which represents a multiple of 10%. This can be followed by `.` and a second digit for fractions of 10%.

`[1][@][0][.][2]` sets channel 1 to 2%.

`[1][@][3]` sets channel 1 to 30%.

`[1][@][4][.][5]` sets channel 1 to 45%.

DIRECT|2|DIGIT Commands are carried out as soon as they are fully entered although the **[*]** key is required for some commands. In general, the syntax is object first, then action (for instance, **[CUE][1][RECORD]**).

Channel levels are entered as a two digit number.

[1][@][0][2] sets channel 1 to 2%.

[1][@][3][0] sets channel 1 to 30%.

[1][@][4][5] sets channel 1 to 45%.

CC|Auto|Hold|Mode When ON (the default), channels cannot be “stolen” from the Channel Control by cues, subs, and effects. When OFF, running a cue or effect, or changing a submaster level, will steal channels from the Channel Control.

ON|Level|% Sets the ultimate default on level for use by the Channel Control **{ON}** command. Levels set in the *On group (993.1) or the *On Handheld group (993.2) are used if they exist. This number is used for any channel that is not set in these groups. To learn how to set group levels turn to *Groups* starting on page 158.

A number from 0 to 100 (default 100) giving the on level.

UP|DOWN|% Sets the percent level change that the **{UP%}** and **{DOWN%}** keys represent.

A number from 0 to 100 (default 5) giving the percent level change when the **{UP%}** or **{DOWN%}** keys are used.

Wheel|Mastering Controls the way that the Level Wheel masters channels. Its value can be SHAFT or PROPORTIONAL (default) .

SHAFT When you move the Level Wheel, the selected levels move up or down by the same amount. For example, with two channels at 10% and 40%, wheeling by 10% will increase these to 20% and 50% respectively.

PROPORTION Each channel with a level moves up or down by an amount proportional to its level. For example, with two channels at 10% and 40%, wheeling by 50% will increase these to 15% and 60%; that is, each level is increased by half as much again. Channels in the selection that are set to zero move up 2% with a 50% increase in other channel levels.

WheelSensitivity	Controls the sensitivity of the Level Wheel The value can be SLOW, MEDIUM (default), or FAST.
StopKey	Controls the function of the [STOP] key at the top of the console. <ul style="list-style-type: none"> OFF (default) The key is disabled. BLACKOUT Sets all intensities to 0% at the first press and restores them at the second press. Attributes are unaffected. STOP ATTS Stops all attribute fades while intensity fades continue. Pressing it again re-enables attribute fades when the next cue or effect is run or Channel Control action is taken. STOP ATTS+B0 Stops all attribute fades and sets all intensities to 0%. Pressing it again restores intensities and re-enables attribute fades when the next cue or effect is run or Channel Control action is taken.

The Display Options Window

The *Display Options* window is in the *User Setup* display, and lets you set how level and state information appear in the various displays.

DisplayLanguage	Sets the language used for the display and LCD displays. Its value is ENGLISH (default), FRENCH, GERMAN, ITALIAN, SPANISH , SWEDISH, DUTCH, SWISS, or RUSSIAN
ChannelDisplay	Controls the way that levels are shown on the <i>Levels</i> display. The ChannelDisplay field can be set to CONTROL, GENIUS, GEMINI, GALAXY, LP+, LP100+(the default), GENIUS+ , GALAXY+, or PRESET. For more details on these settings, see page 187. This layout is modified by the ChannelFormatting field and the SmartChannelDisplay field (discussed below) depending on how you are using channels in cues and what channels are currently selected. The TRACKERx options are only used when the Tracker software is loaded, see the <i>Tracker Operator's Manual</i> for more details. CONTROL Shows which parts of the system (e.g. Cues, Subs, Channel Control) controls each channel on the display.

- GENIUS Row order, 25 channels per row, 250 channels per page. Channels are shown in order from left to right down the display. Each row consists of 3 lines; the channel number below which is the level and then a blank line. Attribute levels are not shown. Where the channel numbers are not sequential, two consecutive columns will be used to show a single channel number (for example 4000 4100 4200 4300).
- GEMINI Row order, 10 channels per row, 300 channels per page. Channels are shown in order from left to right down the display. Each row consists of 1 line; the channel number is shown before each level. Attribute levels are not shown.
- GALAXY Column order, 30 channels per column, 300 channels per page. channels are shown in order from top to bottom across the display. Each row consists of the channel number followed by the level. Attribute levels are not shown.
- LP+ Row order, 20 channels per row, 200 channels per page. The same as LP100+ except that more channels are shown. If the channel has both an intensity and an attribute then both are shown.
- LP100+ Row order, 20 channels per row, 100 channels per page. The same as LP+ except that fewer channels are shown. If the channel has both an intensity and an attribute then both are shown.
- GENIUS+ Row order, 25 channels per row, 250 channels per page. Same as GENIUS except that attribute levels are shown in the blank line below intensity levels. If the channel has both an intensity and an attribute then both are shown.
- GALAXY+ Column order, 30 channels per column, 210 channels per page. The same as GALAXY except that if the channel has both an intensity and an attribute then both are shown.
- PRESET Shows the name of the preset focus group, rather than the level, on completed fades.

SmartChannelDisplay

Controls what display is shown when you have only a single channel selected, and that channel has attributes. This field is initially set to OFF and can be set to TRACKER or TRACKER|PRESET.

If the selected channel has no attributes, or if you have selected multiple channels, the display layout is the one shown in the ChannelDisplay field.

Smart Channel Display can only be used if you have the optional Tracker software. See the *Tracker Operator's Manual* for more information.

Auto | Channel | Page When ON (the default), setting a channel level automatically pages the display to show the channel, or in the case of the *Patch* display in output order, to show the output. When OFF, there is no automatic paging.

Its value is OFF or ON.

Channel | Formatting Controls whether or not all channels will be shown on screen. When all channels are not show, discontinuities in the channel listing are shown with “[]”.

Its value is OFF (default), COMPACT, DISPLAY | GROUP, or AUTO.

OFF All defined channels (whether or not they are patched) are shown on screen.

COMPACT Shows channels that are on or moved to zero at the last Channel Control or X playback action. Channels that moved to zero at the last action disappear at the next action.

DISPLAY | GROUP Only channels defined in the special Display group (group 994.1) are shown on screen. This lets you pick just the channels you want displayed.

AUTO Only channels that are actually being used in a show are shown on screen. This lets you show a lot more channels on screen, but the channels shown change as you add or subtract channels from submasters, cues, groups, and effects. When this feature is on, the Display group is automatically updated to include channels as they are used in the current show.

Live | Screen | Layout Configures what is shown in the default *Live* display *State* screen.

The default value for GeniusPro is **PB**

PB The *State* screen includes the *X Playbacks* windows only (default).

SUBS The *State* screen includes the *Submasters* window only.

FX The *State* screen includes the *Effects* window only.

PB+SUBS The *State* screen includes the *X Playback* windows and the *Submasters* window.

PB+FX The *State* screen includes the *X Playback* windows and the *Effects* window.

PB+SUBS+FX The *State* screen includes the *X Playback* windows, the *Submasters* window, and the *Effects* window.

The Live display can also be changed to the other formats by pressing [SHIFT]/[LIVE] . Repeatedly pressing [LIVE] while holding down [SHIFT] cycles through the Live display formats.

<code>XIPlaybackColours</code>	<p>Sets the colours used in the <i>X Playback</i> window of the <i>State</i> display.</p> <p>Its value is <code>GENIUS+</code> (based on GeniusPro displays), <code>LIGHTPALETTE</code> (based on the original Lightpalette displays), or <code>LIGHTPALETTE INVERT</code> (Lightpalette displays with a yellow bar across the <i>X Playback</i> window for the current cue).</p>
<code>XIPlaybackOrder</code>	<p>Sets how cues will be displayed in the <i>X Playback</i> window of the <i>State</i> display. It can be set to <code>HISTORY + CUE SHEET</code> or <code>CUE SHEET</code> (the default)</p> <p>The cue sheet section shows the cues as they are recorded. The history section (when shown) shows the cues in the order they were executed, and shows the executed times rather than the recorded times.</p>
<code>XIPlaybackFormat</code>	<p>Sets how cues will be displayed in the <i>X Playback</i> window of the <i>State</i> display. It can be set to <code>SPREAD SHEET</code>, <code>EXPANDED</code>, (the default) or <code>EXPANDED - FADE TIME</code>.</p> <p>The <code>SPREAD SHEET</code> setting displays a heading bar in the <i>X</i> playback windows of the <i>Live</i> display, and shows all values below the appropriate heading. During a fade, the recorded fade time is replaced by the number of seconds left in the fade, and the percentage complete is shown to the left of this.</p> <p>The <code>EXPANDED</code> setting displays no heading bar in the <i>X</i> playback windows of the <i>Live</i> display, but puts the type of value (for instance Time) next to the value. During a fade the recorded fade time remains and the number of seconds remaining in the fade is shown to the left of this.</p> <p>The <code>EXPANDED - FADE TIME</code> setting displays no heading bar in the <i>X</i> playback windows of the <i>Live</i> display, but puts the type of value (for instance Time) next to the value. During a fade, the recorded fade time is replaced by the number of seconds left in the fade, and the percentage complete is shown to the left of this.</p>
<code>Show Last Recorded Cue</code>	<p>When <code>ON</code>, the last recorded cue is shown at the bottom of the <i>X Playback</i> window of the <i>State</i> display. When <code>OFF</code> (the default), the last recorded cue is not shown.</p>
<code>Screen Menus</code>	<p>When <code>ON</code> (the default), the centre LCD menu and the right LCD menu are shown at the bottom of the <i>State</i> screen and <i>Levels</i> screen respectively. When <code>OFF</code> they are not shown.</p>

The Default Times Window

The *Default* window is in the *User Setup* display, and lets you set the default times for recording or running cues and effects.

X Back	The default times when going back to a cue in the X Playback using [STOP/BACK] , and cutting to a cue in an X playback using [CUT] (two separate values). They can be any value between 0 and 59 minutes 59 seconds, and are initially set to 0/0. Times below one minute can be specified in tenths of a second.
Cue Fade Up/Down	The default up and down fade times recorded in a newly created cue. The up and down times are separate fields. They can be any value between 0 and 59 minutes 59 seconds, and are initially set to 5/5. Times below one minute can be specified in tenths of a second.
Cue Delay Up/Down	The default up and down delay times recorded in a newly created cue. The up and down times are separate fields. They can be any value between 0 and 59 minutes 59 seconds, and are initially set to 5/5. Times below one minute can be specified in tenths of a second.
Cue Wait	The default wait time recorded in a newly created cue. It can be OFF or any value between 0 and 59 minutes 59 seconds, and is initially set to OFF. Times below one minute can be specified in tenths of a second.
FX Step	The default step time recorded in a newly created effect step. It can be any value between 0 and 5 minutes 0 seconds, and is initially set to 0.50.1. Times below one minute can be specified in tenths of a second.
FXStep In/Dwell/Out	The default In, Dwell, and Out times for a newly created effect step (three separate values). They can be any value between 0 and 5 minutes 0 seconds, and are initially set to 0/OFF/0. Times below one minute can be specified in tenths of a second.
FX Up/Down	The default up and down fade times for a newly created effect. The up and down times are separate fields. They can be any value between 0 and 5 minutes 0 seconds, and are initially set to 0.5/0.5. Times below one minute can be specified in tenths of a second.
Undo Time	The time for an undo action to complete. It can be any value between 0 and 59 minutes 59 seconds, and is initially set to 2. Times below one minute can be specified in tenths of a second.

The Console Window

The *Console* window is in the *User Setup* display, and lets you configure the displays, LCD, buzzer and other miscellaneous functions.

Number Screens	Sets the number of console screens. Can be 1, 2 (default), 3, or 4.
LCD Contr, Backlit	<p>The first field changes the contrast on all three LCD's. Use the Level Wheel to adjust this for the best display contrast.</p> <p># A number from 1 to 100 (default 4) giving maximum to minimum contrast.</p> <p>The second field changes the backlight brightness on all three LCD's. Use the Level Wheel to adjust this for the best visibility.</p> <p># A number from 1 to 100 (default 50) giving minimum to maximum brightness.</p>
Gooseneck Bright	<p>Sets the brightness of the console gooseneck lights.</p> <p># A number from 1 to 100 (default 100) giving maximum to minimum brightness.</p>
Buzzer Volume	<p>Enables or disables the buzzer which is used to signal errors.</p> <p>Its value is OFF or ON (default).</p>
Console Keys Layout	<p>Sets the keyboard layout for the console. Some keys have been moved, and the Q-Only key added to the Record Keypad since the original version of the console.</p> <p>Its value is Q_ONLY KEY (default) or NO Q_ONLY KEY.</p>
Submaster Layout	
GENIUSPRO/PALETTE	<p>Determines whether default settings in the <i>Setup</i> display will be determined by your password, or will be default GeniusPro or Lightpalette settings. Changing this setting changes the settings immediately.</p> <p>DEFAULT The defaults in the <i>Setup</i> display are determined by your password (whether you bought GeniusPro or Lightpalette operating software).</p> <p>GENIUSPRO The defaults in the <i>Setup</i> display are changed to GeniusPro settings.</p> <p>LIGHT PALETTE The defaults in the <i>Setup</i> display are changed to Lightpalette settings.</p>

The Show Setup Display

To see the *Show Setup* display, press **[SETUP][MORE]**. This display lets you control how values relating to show control (such as cue tracking and channel partitioning) are handled.



The Show Details Window

The *Show Details* window is in the *Show Setup* display, and lets you configure how shows are recorded and run.

Cue Tracking

Controls tracking when recording cues. To learn more about what Tracking does turn to *Fade Types* starting on page 138.

Its value is ON (default) or THIS CUE ONLY.

Playbacks

Controls the number of X Playbacks and their mode.

SINGLE (default) Single cue sheet position for the X1 Playback. Only the X1 Playback is enabled.

SPLIT | SINGLE Single cue sheet position. Both the X1 Playback and the X1 Playback are enabled. Intensity and attribute levels from playbacks are combined on a latest takes precedence basis.

DUAL | LTP Separate cue sheet positions. Both the X1 Playback and the X1 Playback are enabled. Intensity and attribute levels from playbacks are combined on a latest action takes precedence basis.

DUAL | HTP Separate cue sheet positions. Both the X1 Playback and the X1 Playback are enabled. Intensity levels from playbacks are combined on a highest takes precedence basis. Attribute levels are combined on a latest takes precedence basis.

Auto Move While Dark	<p>When ON, scrollers and other moving fixtures move to new positions at the end of a cue while the fixtures are dark.</p> <p>Its value is OFF (default) or ON.</p> <p>The console looks ahead to the next cue to see which fixtures (if any) have attribute changes, and makes the attribute change while those fixtures are still dark. You can set the speed for the change in the <code>Fade</code> field and the delay in the <code>Delay</code> field to the right of this field.</p>
Fade / Delay	<p>Sets the speed for the auto move (<code>Fade</code>) and the delay between the end of the last cue and when the auto move will start.</p> <p>The default values are 1 1</p>
Auto Preheat	<p>When ON, channels with intensities higher in the next cue than in the *Preheat group (999.5) are faded to the levels in the *Preheat group when a cue is loaded. This lets you “preheat” large wattage fixtures so that they fade up smoothly.</p> <p>Its value is OFF (default) or ON.</p>
Fade / Delay	<p>Sets the speed for the fade to the preheat level and the delay between the end of the last cue and when the preheat fade starts. You can set the speed for the fade in the <code>Fade</code> field and the delay in the <code>Delay</code> field to the right of this field.</p> <p>The default values are 1 1.</p>
PowerUp Restore	<p>At power up, this restores the output channels to the levels that were present in the <i>Live</i> display when the console was powered off. Otherwise, the console output levels are all set to 0% at power up.</p> <p>Its value is OFF or ON (default).</p>
PowerUp Macro	<p>Sets the macro which is run when the console is switched on. If the macro does not exist, this is ignored.</p> <p>OFF (default) There is no macro.</p> <p># The macro number from 0 to 999 to run.</p>
GM 1 Fade Up / Down	<p>The fade time for Grandmaster 1. The up and down times are separate fields. They can be any value between 0 and 59 minutes 59 seconds, and are initially set to 0/0. Times below one minute can be specified in tenths of a second.</p>
GM 2 Fade Up / Down	<p>The fade time for Grandmaster 2. The up and down times are separate fields. They can be any value between 0 and 59 minutes 59 seconds, and are initially set to 0/0. Times below one minute can be specified in tenths of a second.</p>

ChannelPartitioning Determine whether or not channel partitioning is active. When channel partitioning is on, only one of the three main consoles can control each channel in the system. Channels controlled by each console are determined by groups 998.1 (console 1 channels), 998.2 (console 2 channels), and 998.3 (console 3 channels). These three groups are mutually exclusive. Setting a channel in one group removes it from its previous group.

Its value is OFF (the default) or ON.

HandheldRemote These four fields determine what each of the handheld remotes are allowed to do.

MemLock The handheld remote can control channels and play back cues but cannot record anything.

PBILock The handheld remote can control channels and record cues and other memory items, but cannot play back cues or effects.

Mem+PBILock The handheld remote can control channels but cannot record or playback cues.

MemLock < 900 The handheld remote can control channels and play back cues and effects, but can only record cues with numbers 900 and higher.

FullEnabled The handheld remote is fully functional (the default).

The MIDI Window

The *MIDI* window is in the *Show Setup* display, and lets you configure the external MIDI communications ports. These settings are only used when the *Communiq Pro* software is loaded. For more information see the *Communiq Pro Operator's Manual*

The Timecode Options Window

The *Timecode Options* window is in the *Show Setup* display, and lets you configure the way the console reads SMPTE and MIDI time codes. These settings are only used when the *Communiq Pro* software is loaded. For more information see the *Communiq Pro Operator's Manual*.

The Patch Window

The *Patch* window is in the *Show Setup* display, and lets you set defaults used during patching. To learn how to set up the show patches turn to *Patches* starting on page 164.

DefaultScale% The default scaling (from 1 to 200) when patching an intensity or DMX input channel. Initially set to 100.

DefaultFrame The default maximum number of frames (from 2 to 100) when patching an attribute channel. Initially set to 10.

DefaultIN-DIMI% The default threshold (from 0 to 100) when patching a non-dim channel. Initially set to 80.

The Console Time Window

The *Console Time* window is in the *Show Setup* display, and lets you set the time and date and configure how it is displayed at the top of all displays.

TimeDisplay Sets the way that the time is displayed.
The default value for GeniusPro is 24|HOUR|AM/PM.
24|HOUR Time is displayed in 24 hour format.
AM/PM Time is displayed in 12 hour format with trailing AM or PM.

DateDisplay Sets the way that the date is displayed.
The default value for GeniusPro is DD/MM/YY|MM/DD/YY.
DD/MM/YY Date is displayed in day/month/year format.
MM/DD/YY Date is displayed in month/day/year format

SetTime Changes the time. It must always be entered in 24 hour format where 0 is midnight, 12: 00 is midday and 23: 59 is 1 minute before midnight. The {DEFLT} key has no effect here. You cannot enter seconds or tenths of seconds in this field.
The hours and minutes as a 1 to 4 digit number where 0 is 00: 00 and 2359 is 23: 59.

SetDate Changes the date. This is split into 2 separate fields. The first must always be entered in day/month format, the second is the year. The {DEFLT} key has no effect here.
The day and month as a 4 digit number from 0101 (1st January) to 3112 (31st December). The first digit can be omitted if it is 0 (101 is the same as 0101).
The year as a 4 digit number from 1980 to 2099.

The At Time Macros Window

The *At Time Macros* window is at the bottom of the *Show Setup* display, and lets you configure up to 4 macros to automatically run at predetermined times. Each of these can be configured to start at a particular time and date or day of the week. Optionally, they can also run periodically until a stop time.

Macros are run on the weekdays specified, from the start time and date to the stop time and date.

- To run a macro once, enter a start time and start date, set a stop time and stop date for after the macro will be complete, and set the interval to OFF.
- To run a macro every day at specific times forever set the start time. Leave start date, interval, stop time, and stop date set to OFF.

- To run a macro every day at specific times for a specific length of time, enter a start time and date, and set the stop time and stop date to when you want the macro stopped. Leave interval set to OFF.
- To run a macro at specific intervals forever, enter a start time and date, set the interval to the time you want between repeats, and set the stop time and stop date to OFF.
- To run a macro at specific intervals for a specific length of time, enter a start time and date, set the interval to the time you want between repeats, and set the stop time and stop date to when you want the macro stopped.
- To run a macro only on specific days of the week during the times you have set above, uncheck the days of the week on which you don't want it to run.

MTWTFSS The day of the week (or days) on which the macro will run. The value is ✓ (default) if enabled or _ if disabled.

The macro will be run each enabled weekday at the start time.

StartTime/ The time of day to start the macro in 24 hour format. Can be OFF (the default) or any four digit time value (0 is midnight, 1200 is midday and 2359 is 1 minute before midnight). If this is set to OFF the macro is started at midnight on the date specified in the Start/DATE field.

Start/DATE The date and month to start the macro. Can be OFF (the default) or any four digit date/month number from 0101 (1st January) to 3112 (31st December). The first digit can be omitted if it is 0 (101 is the same as 0101). If this is set to OFF the macro is started today at the time specified in the StartTime/ field.

Interval The time between repetitions of the macro. Can be OFF (the default) or any four digit time value between 0 and 23 hours, 59 minutes (2400). To run the macro once, set this to OFF. To run the macro repeatedly between the StartTime/Date and the StopTime/Date, enter the time desired between repeats. To run the macro repeatedly forever, set a number in this field and set the StopTime/ and Stop/Date fields to OFF.

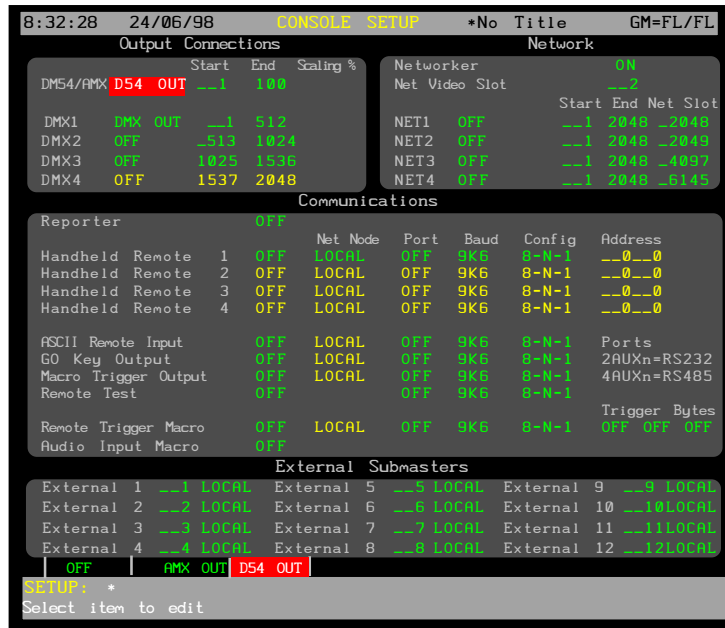
StopTime/ The time of day to stop the macro in 24 hour format. Can be OFF (the default) or any four digit time value (0 is midnight, 1200 is midday and 2359 is 1 minute before midnight). If this is set to OFF the macro is stopped at midnight on the date specified in the Start/Date field.

Stop/Date The date and month to stop the macro. Can be OFF (the default) or any four digit date/month number from 0101 (1st January) to 3112 (31st December). The first digit can be omitted if it is 0 (101 is the same as 0101). If this is set to OFF the macro is stopped today at the time specified in the StartTime/ field.

Macro The macro to run at the specified times. Can be OFF or any existing macro number from 0 to 999.

The Console Setup Display

To see the *Console Setup* display, press **[SETUP]{MORE}**. This display lets you control how the console communicates with other devices to which it is connected.



The Output Connections Window

The *Output Connections* window is in the *Console Setup* display, and lets you configure the output connectors on the rear panel of the console. The DMX connectors are output-only in the standard software. However, the last available DMX connector (DMX3 or DMX4, depending on the console) can be configured for input or output if the *CommuniquéPro* software is loaded. For more information see the *CommuniquéPro Operator's Manual*. The AMX and D54 connectors are output only and can be configured as AMX192 or D54 outputs.

D54/AMX

This enables the AMX (192 channels) or D54 (384 channels) output connector on the rear panel. The AMX192 and D54 outputs cannot be assigned output numbers higher than the number of console outputs (2048). Since AMX192 always transmits 192 channels, it cannot have a Start value higher than 1857. Since D54 can transmit a "short" frame, it can have start values as high as 2048.

D54/AMX Sets the output protocol for the analog multiplex output. Can be OFF (default), AMX|OUT, or D54|OUT.

Start The starting output number from the patch that is mapped to the analog multiplex connector (default 1). Can be 1 to 2048 if the output type is D54|OUT or 1 to 1152 if the output type is AMX|OUT.

Scaling Scaling factor for all levels sent to the AMX or D54 output. Adjusts the levels up or down and can be set from 80 to 120 (default 100).

DMX This configures the DMX outputs (DMX1, DMX2, DMX3 and DMX4 connectors on the rear panel). Each connector can be set for up to 512 outputs. The last available DMX connector (DMX3 or DMX4, depending on the console) can optionally input 512 signals if it is not outputting signals.

DMX1 through DMX4 (default is DMX|OUT for DMX1 and OFF for the others). This sets the output to OFF or DMX|OUT. (DMX3 can also be set to DMX|IN with the CommuniquéPro software.)

Start and End (default is 1, 512 / 513, 1024 / 1025, 1536). The range of output numbers from the Patch that is mapped to the to the connector from 1 to 4096. The maximum between each Start and End is 512 outputs.

The Network Window

The *Network* window is in the *Console Setup* display, and lets you configure the outputs that the console is sending to the network. The ShowNet system uses SN1xx series network adapters to convert the network output signals to DMX. These outputs require a network adapter and the Networker software. Although newer consoles come with the network adapter installed, older consoles need to have one installed to take advantage of ShowNet features. For more information see the *Networker Operator's Manual*.

Networker Controls whether the Networker software features are enabled. This is only used when the Networker software is loaded. For more information see the *Networker Operator's Manual*.

Its value is OFF (default) or ON.

Do not turn this on without first consulting the *Networker Operator's Manual*. Turning on an improperly connected system may significantly slow console operations.

Network|Video|Slot Controls whether the network video slot is enabled, and its slot number (from 1 to 8). This is only used when the Networker software is loaded. For more information see the *Networker Operator's Manual*.

Its value is OFF (default) or ON.

Do not turn this on without first consulting the *Networker Operator's Manual*. Turning on an improperly connected system may significantly slow console operations.

NET1 through NET4 This configures the network DMX outputs. Since the console has only 4 active DMX connectors but up to 4096 outputs, the most common use of these is to use the network for the additional outputs.

NET1 through NET4 (default is DMX|OUT for NET1 and OFF for the rest).

Start and End (default is 1, 512 / 513, 1024 / 1025, 1536). The range of output numbers from the Patch that is mapped to the connector from 1 to 4096. The maximum between each Start and End is 512 outputs.

The Communications Window

The *Communications* window is in the *Console Setup* display, and lets you configure the external communications ports.

For information on the network features of these options, and before attempting to select any non LOCAL net node, please refer to the *Networker Operator's Manual*.

Reporter Sets the status and the serial port that the Reporter is connected to and is only used when the *Communiq Pro* software is loaded. It cannot be set to the same port as the Handheld Remote. For more information refer to *Console Reporter* page 60

Handheld Remote Sets the type of handheld remote. The handheld remote is connected to the AUX 3 port. This can be set to OFF, DESIGNERS REMOTE, R120 WIRED, R130 WIRED, R120 RADIO, or R130 RADIO. The fields next to (=AUX3) are for entering network data and/or the address of the radio handheld, if applicable. For more information on connecting a handheld remote turn to *Handheld Remotes* starting on page 239.

ASCII Remote Input Sets the status and the serial port that the ASCII Remote is connected to and is only used when the *Communiq Pro* software is loaded. It cannot be set to the same port as the Handheld Remote. For more information see the *Communiq Pro Operator's Manual*.

GO Key Output Sets the status and the serial port that the GO Key output is connected to and is only used when the *Communiq Pro* software is loaded. It cannot be set to the same port as the Handheld Remote. For more information see the *Communiq Pro Operator's Manual*.

Macro Trigger Sets the status of the serial port that the macro trigger output is connected to and is only used when the *Communiq Pro* software is loaded. For more information see the *Communiq Pro Operator's Manual*.

Remote Test This is only used for factory testing and should always be set OFF.

Audio Input Macro Sets the macro that will be run from the audio bass beat and is only used when the *Communiq Pro* software is loaded. For more information see the *Communiq Pro Operator's Manual*.

`RemoteTriggerMacro` The macro that will be run from the Remote Control Input and is only used when the *CommuniquéPro* software is loaded. For more information see the *CommuniquéPro Operator's Manual*.

`TriggerBytes` These three fields are only used when the *CommuniquéPro* software is loaded. See the *CommuniquéPro Operator's Manual* for more detail.

The *External Submasters* Window

The *External Submasters* window is in the *Console Setup* display, and lets you configure which internal submasters are run by the external submasters. This functionality is only available with the *CommuniquéPro* software loaded. See the *CommuniquéPro Operator's Manual* for more detail.

For information on the network features of this option please refer to the *Networker Operator's Manual*.

Setting Access Rights

The *Access Rights* window lets you set the access rights for the current console and user and is only used when the *Server* software is loaded.

To show the *Access Rights* window, press **[SETUP]{MORE}{ACCESS RIGHTS}**. For more information see the *Server Operator's Manual*.

This display is only available to the Admin User.

Locking the Console

In order to avoid accidental changes to a show, you can lock the console faders and keys.

The right LCD shows **LOCKED** in the upper right corner when the console keys and faders are locked, or when memory is locked. The display also shows **CONSOLE | LOCKED** with a red background at the top of the screen when the console keys and faders are locked or when the console and memory are locked.

[SHIFT][HELP] toggles the console keyboard and fader state between locked and unlocked.

Locking Memory

When the memory is locked, you cannot record anything, or change anything that is already recorded. You can, however, run all cues, and make changes to playbacks and other non-recorded items as required. This is generally used after a show has been plotted to ensure that accidental changes are not made.

[SETUP]{MEMORY LOCK}[3][1][7][1][*] toggles the memory state between locked and unlocked. This code is the same for all consoles.

Archive

You can access all software, disk, printing and clearing operations from one of the *Archive* displays.

Pressing **[ARCHIVE]** brings up the LCD *Archive* menu. This shows the soft keys **{LOAD SHOW}**, **{SAVE SHOW}**, **{BROWSE FILES}**, **{PRINT}**, **{CLR}** and **{SOFT}**. Pressing these brings up the display and menu for different sub-functions. Until one of these soft keys is pressed, the *Levels* screen and *State* screen change to the *Live* display.

The chapter contains the following topics:

The Archive Display

Software Operations

Disk Operations

Print Operations

Clear Operations

The Archive Display

Each of the archive displays have an *Archive Selection* window, which controls the parts of the show that are loaded, printed or cleared. Saving a show always saves all show information.



To select a field, use the Trackball to move the red cursor to the field and use the Level Wheel, **[+]**, or **[-]** to enable it (put a check mark next to it) or disable it (clear the check mark). Type the desired numbers in the FIRST, LAST, and NUMBER|FROM fields.

Whole Show This includes the patch, cues, submasters, effects, fixtures, and macros. It does not include the Report Log or Setup.

Patch The two patches as configured in the *Patch* display.

Cues	The recorded cues from the <i>Cue/Preview</i> display. A cue range can be specified so that you can load a partial show. Initially this is from 0.1 to 999.9 and selects all cues with their parts.
FIRST	The first cue in the range from 0.1 to 999.9. Initially set to 0.1.
LAST	The last cue in the range from 0.1 to 999.9. Initially set to 999.9.
NUMBERIFROM	Renumbers the specified range of cues starting with this number. This lets you load cues from other shows without erasing the same numbered cues in the current show.
Groups	The recorded groups from the <i>Group</i> display. A group range can be specified. Initially this is from 1 to 999.9 and selects all groups.
FIRST	The first group in the range from 1 to 999.9. Initially set to 1.
LAST	The last group in the range from 1 to 999.9. Initially set to 999.9.
NUMBERIFROM	Renumbers the specified range of groups starting with this number. This lets you load groups from other shows without erasing the same numbered groups in the current show.
Effects	The recorded effects from the <i>Effect</i> display. An effect range can be specified. Initially this is from 1 to 600 and selects all effects. Individual effect steps cannot be specified, only whole effects with all their steps.
FIRST	The first effect in the range from 1 to 600. Initially set to 1.
LAST	The last effect in the range from 1 to 600. Initially set to 600.
NUMBERIFROM	Renumbers the specified range of effects starting with this number. This lets you load effects from other shows without erasing the same numbered effects in the current show.
Submasters	All pages of the recorded submasters from the <i>Submaster</i> display. A submaster range can be specified. Initially this is from 1 to the highest submaster number for the console, and selects all submasters. Individual submaster pages cannot be specified. If you select all submasters, the last 6 submasters in the recorded show will appear as the last 6 submasters on your console, regardless of how many submasters there were on the console that saved the show.
FIRST	The first submaster in the range from 1 to the highest submaster number for the console. Initially set to 1.
LAST	The last submaster in the range from 1 to the highest submaster number for the console. Initially set to the highest submaster number for the console

Profiles	The recorded profiles from the <i>Profile</i> display. A profile range can be specified. Initially this is from 1 to 99 and selects all profiles.
FIRST	The first profile in the range from 1 to 99. Initially set to 1.
LAST	The last profile in the range from 1 to 99. Initially set to 99.
NUMBER FROM	Renumbers the specified range of profiles starting with this number. This lets you load profiles from other shows without erasing the same numbered profiles in the current show.
Macros	The recorded macros from the <i>Macros</i> display. A macro range can be specified. Initially this is from 0 to 999 and selects all macros.
FIRST	The first macro in the range from 0 to 999. Initially set to 0.
LAST	The last macro in the range from 0 to 999. Initially set to 999.
NUMBER FROM	Renumbers the specified range of macros starting with this number. This lets you load macros from other shows without erasing the same numbered macros in the current show.
Fixtures	The fixtures from the <i>Patch</i> display. A fixture range can be specified. Initially this is from 1 to 99 and selects all fixtures.
FIRST	The first fixture in the range from 1 to 99. Initially set to 1.
LAST	The last fixture in the range from 1 to 99. Initially set to 99.
Setup	The configuration from the <i>Setup</i> display.

Software Operations

Press **[ARCHIVE]{SOFT}** to show the LCD *Software* menu.

This is used to load new operating and application software and to password enable the application software.

In this display the LCD changes to the *Software* menu with a number of soft keys. **{PASSW}**, **{APPL}**, **{OPER}** and **{BACK}**.

{BACK} sends you back to the LCD *Archive* menu.

Operating Software

The operating software is pre-loaded at manufacture. You will need to update this software if new versions are released. To learn how to load the operating software using **{OPER}** turn to *Loading Operating Software* starting on page 10.

The OS field in the *Diagnostics* display *Configuration* window shows the operating software that is currently loaded on the console. To show this field, press **[REPORT]**.

Application Software

You will need to load application software if there is no application software loaded, or you need to load additional application software during the 21 day initial period. To learn how to load application software using **{APPL}** turn to *Enabling Software Options* starting on page 15.

After you enter a password, or if the 21 day period ends, this method of loading application software will not work. See the next section for details of how to enable application software by entering a password.

The APPL field in the *Diagnostics* display *Configuration* window shows the application software currently loaded on the console. To show this field, press **[REPORT]**.

Application Password

This enables application software. A registration form is included with the application software. Complete this including your console serial number and fax it to the Software Registration Centre at Strand Lighting UK, who will verify it and issue your password.

To find the console serial number, press **[REPORT]** and look at the CONS field in the *Configuration* window.

This password is unique to your console with its application software and is not transferable.

Keep a record of your password. If you change the password for additional application software, entering the old password will revert to the previous configuration.

{PASSW} lets you enter the password. If you are not already in the *Software* menu, press **[ARCHIVE]{SOFT}**.

Press **{PASSW}** to start the password entry. Type in the supplied password number with no spaces or other keys then press **[*]**. If the password is entered incorrectly a Password | Please | Re-enter message appears. To cancel the operation, press **{BACK}**.

Once entered, the password cannot be displayed again.

Disk Operations

Each time you make changes to your show they are stored in an internal hard disk drive (drive C:, or the local disk), so that when you turn your console on the data is still there.

You can also save copies of a show to the local disk or to a floppy disk for later retrieval. You can store up to 200 shows in any one local disk directory, and can store one show per floppy disk. If the Server application software is installed you will also be able to save shows to a file server. For more information see the *Server Operators Manual*.

When you save to the local disk, the console automatically saves any existing version of the show as a backup copy on the local disk. It will save the last 10 versions of the show as backup copies so that you can easily go back to previous versions if necessary.

When you save a show, all data including Setup information is saved, regardless of what you check in the <i>Archive</i> display.
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Why Save the Show?

It's important to save your show frequently, both to restore a show if it is lost due to disaster or equipment failure, and to retrieve information from previous versions of a show if necessary.

- Save the show to the local disk several times during a recording session. This automatically saves up to 10 backup copies of the show, and it's as simple as pressing **[ARCHIVE]{SAVE SHOW}{SAVE SHOW}**.
- Save each different show in your current repertory with a different name.
- Save the show you are working on to a floppy disk at the end of each recording session. Rotate floppy disks each day so that you have a record of several days sessions.
- Save archive copies at the end of a show so that you can reproduce it at some later date if necessary.

Storing Floppy Disks

Floppy disks are your ultimate backup and archiving medium. A few precautions will ensure that the backup is there when and if you need it.

- Store floppy disks away from the console, even in a different building if possible, so that they are not damaged if the console is damaged by some external cause (fire, pipes bursting, etc.).
- Don't store floppy disks near large magnetic sources, such as the outputs and power transformers.
- Don't store floppy disks where there will be extreme fluctuations in temperature and/or humidity.
- Don't leave floppy disks where they may be exposed to direct sunlight.
- If you archive the show for future use, make at least two copies and store them in different locations.
- Floppy disks are not rated as an archival medium, which means that they have a lifetime rating of less than 10 years. For important shows, make new copies of the show after each season of use, even if no changes were made to the show.

The Show List

The show list appears at the bottom of the *Archive* display when you press **[ARCHIVE]**.



To move the highlight to the show list, press **{BROWSE FILES}**. To move the highlight back to the *Archive Selection* window, press **{BACK}**.

The following show list data is displayed:

- Local Disk** The current drive and directory when it is on the internal hard disk drive. This is the drive and directory to which the currently loaded show will be saved
- Server Disk** The current drive and directory when it is on the server hard disk drive. Only available if the Server application software is installed and properly configured.
- Floppy Disk** The current drive and directory when it is the floppy disk.
- Loaded Show** Show currently loaded in console.
- Show to Load** Currently highlighted show. The show which will be loaded, copied, deleted, or restored.

The following data is displayed for each show.

- Show** The show name.
- Cues** The number of cues in the show.
- Date** The date the show was last saved.
- Time** The time of day the show was last saved
- Filename** The file name of the show on the disk. All shows are saved with a .ssf extension.
- Backups** Shows whether any backup copies are stored on the disk.

To select a directory, press **{BROWSE FILES}**, use the Trackball to highlight the desired directory, and press **[*]**. To select a show once you are in the correct directory, use the Trackball to highlight the show.

Naming the Show

Before you store your show, you should name it so that you can easily identify it when you need to load it back into the console.

1. Press **[ARCHIVE]** to see the *Archive* display.
2. Type **[TEXT][M][Y][S][H][O][W][*]** to name the show. To clear a name type **[TEXT][*]**.

The name you set here appears at the very top of each screen, to the right of the display name.

Now that you have set up the show name, you can use **[ARCHIVE]{SAVE SHOW}** to save the show periodically to the default drive. The default drive appears in the centre of the *Archive State* screen when you press **[ARCHIVE]**.

Changing the Current Drive and Directory

Shows are always saved to the current drive and directory. The first time you turn on the console the current drive is set to Floppy Disk (drive A:) if there is a disk in the floppy disk drive. Otherwise it is set to Local Disk. The console saves the current drive and directory setting when you shut down and tries to use the same drive or directory when you turn the console on again. If the current drive was set to Floppy Disk when you shut down, and there is no disk in the floppy disk drive when you turn the console on again and open the *Archive* display, the current drive is reset to the last local disk directory you used.

1. Press **[ARCHIVE]{BROWSE FILES}** to get to the LCD *Browse* menu. This menu lets you select where you want the console to save shows to and load, copy, delete, and restore shows from.
2. Use the Trackball to highlight a drive or directory. To change to the parent directory of the current directory, highlight **[. .]**.
3. Press **[*]** to select the drive or directory. The new drive and directory appear in the `LocalDisk/FloppyDisk` field above the show list.

Saving a Show

When you save a show, the current show is saved in the current drive and directory. All data, including the setup, is saved. The disk and directory that the show will be saved into is shown in the `LocalDisk/FloppyDisk` field above the show list.

To save a show to the current drive and directory, press **[ARCHIVE]{SAVE SHOW}{SAVE SHOW}**.

To save a show to a different drive and directory, do the following:

1. Press **[ARCHIVE]{BROWSE FILES}** to see the LCD *Browse* menu.
2. Switch to the drive and directory that you want to save to.
3. Press **{BACK}** to return to the LCD *Archive* menu.
4. Press **{SAVE SHOW}** to request the save. You will be asked to confirm this action.
5. Press **{SAVE SHOW}** to save the show or **[CLR]** or **[UNDO]** to cancel the operation.

Now that you have set up the show name and the destination, you can use **[ARCHIVE]{SAVE SHOW}** to save the show periodically to the default drive.

When you save a show, all data including Setup information is saved, regardless of what you check in the *Archive* display.

Loading a Show

You can store and load shows from floppy disk or local disk. Storing a show on floppy disk is a good way to transfer shows between consoles or store a copy in another location. If you move shows between different size consoles, the last 6 submasters in the recorded show transfer to the last 6 submasters on your console when you load the show.

Storing a show on the local disk is also a convenient and quick way to save and retrieve shows that you use often. If you are running shows in repertory you can easily retrieve the correct show for the day.

To load a show, select which parts of the show you want loaded, then select a show, and then load it.

1. Press **[ARCHIVE]** to get to the LCD *Archive* menu.
2. If you don't want to load the whole show, use **[-]** to turn the **WHOLE|SHOW** field off. Then use the Trackball to highlight each item you want to load and use **[+]** to turn its **SELECT** field on. Type the desired numbers in the **FIRST**, **LAST**, and **NUMBER|FROM** fields.
3. Press **{BROWSE FILES}** to get to the LCD *Browse* menu.
4. Switch to the drive and directory containing the show you want to load.
5. Use the Trackball to highlight the show.
6. Press **[*]** to request the load. You will be asked to confirm this action.
7. Press **[*]** again to load the show or **[CLR]** or **[UNDO]** to cancel the operation.

Once you load a show, if you don't change the current drive and directory you can use **[ARCHIVE]{SAVE SHOW}** to save the show periodically to the same drive and directory.

Restoring a Backup Copy of the Show

Each time you save the show to the local disk it makes a backup copy of the show. The console automatically saves the last 10 copies of the show, which you can reload if necessary.

1. Press **[ARCHIVE]** to get to the LCD *Archive* menu.
2. If you don't want to load the whole show, use **[-]** to turn the **WHOLE|SHOW** field off. Then use the Trackball to highlight each item you want to load and use **[+]** to turn its **SELECT** field on. Type the desired numbers in the **FIRST**, **LAST**, and **NUMBER|FROM** fields.
3. Press **{BROWSE FILES}** to get to the LCD *Browse* menu.
4. Switch to the drive and directory containing the show you want to restore.
5. Use the Trackball to highlight the show.
6. Press **{BACKUP VIEW}** to see a list of backup copies for the selected show.
7. Use the Trackball to highlight the backup version you want to load.

8. Press **{LOAD BACKUP}** to request the load. You will be asked to confirm this action.
9. Press **{LOAD BACKUP}** to load the backup or **[CLR]** or **[UNDO]** to cancel the operation.

Once you load a show, if you don't change the current drive and directory you can use **[ARCHIVE]{SAVE SHOW}** to save the show periodically to the same drive and directory

Local Disk Functions

Although shows are saved by default to the "shows" directory on the local disk, you can add directories, change to them for saving shows, and delete directories and shows as needed to help you organize your shows. You can have up to 200 directories on your local disk, and can save up to 200 shows per directory, depending on the capacity of the local disk, the size of your shows. Remember that each backup copy of a show counts as one copy of the show.

The console already has a directory on the local disk called "Shows," where the shows are most commonly stored.

Create a Local Disk Directory

You can create a subdirectory within the current directory by using the **{MAKE DIR}** key. You may want to do this to help organize your show database and save similar shows in separate directories.

1. Press **[ARCHIVE]{BROWSE FILES}** to get to the LCD *Browse* menu.
2. If you want to create a subdirectory in a directory other than the current directory, change to the desired directory.
3. Press **{MAKE DIR}**.
4. Type the new directory name. It must follow standard MS/PC-DOS 8.3 file name rules.
5. Press **[Enter]**. You will be asked to confirm this action. Press **[Enter]** to create the new directory or **[CLR]** or **[UNDO]** to cancel the operation.

Copy a Show

You can copy a show from any drive or directory to any other drive or directory. This feature lets you copy files directly between two locations without the need to load them as the current show.

1. Press **[ARCHIVE]{BROWSE FILES}** to get to the LCD *Browse* menu.
2. Switch to the drive and directory containing the show you want to copy.
3. Use the Trackball to highlight the show.
4. Press **{COPY SHOW}** to request the copy. You will be asked to select a destination directory.
5. Select the destination drive and directory.
6. Press **{COPY SHOW}** to copy the show or **[CLR]** or **[UNDO]** to cancel the operation.

Delete a Show from the Local Disk

You can delete a show from the local disk by using the **{DELETE}** key. This deletes the show and all of its backups. You may wish to copy the show to a floppy disk before you delete it from the local disk.

1. Press **[ARCHIVE]{BROWSE FILES}** to get to the LCD *Browse* menu.
2. Switch to the drive and directory containing the show you want to delete .
3. Use the Trackball to highlight the show.
4. Press **{DELETE}** to request the delete. You will be asked to confirm this action.
5. Press **{DELETE}** to delete the show or **[CLR]** or **[UNDO]** to cancel the operation.

Delete a Local Disk Directory

You can delete a directory on the local disk by using the **{DELETE}** key. The directory must be empty before you can delete it.

1. Press **[ARCHIVE]{BROWSE}** to get to the LCD *Browse* menu.
2. Switch to the directory you want to delete and make sure all shows in it are deleted. You may wish to copy the shows to floppy disk before deleting them.
3. Switch to the parent directory of the directory you want to delete.
4. Use the Trackball to highlight the directory you want to delete.
5. Press **{DELETE}** to request the delete. You will be asked to confirm this action.
6. Press **{DELETE}** to delete the directory or **[CLR]** or **[UNDO]** to cancel the operation. You cannot delete an directory unless it is empty.

Formatting a Floppy Disk

Before using a floppy disk, it must be formatted. To save time you can use preformatted floppy disks compatible with MS/PC-DOS (either 720Kb or 1.44Mb disks). If you need to format your own floppy disks, follow the procedure below, which formats a 1.44Mb disk. You cannot format a 720Kb disk with on this console, though you can use pre-formatted 720Kb disks.

This procedure will erase any data already on the floppy disk.

1. Press **[ARCHIVE]{BROWSE FILES}** to get to the LCD *Browse* menu.
2. Insert the floppy disk.
3. Press **{FORMAT FLOPPY}** to request formatting. You will be asked to confirm this action.
4. Press **{FORMAT FLOPPY}** to start the format operation or **[CLR]** or **[UNDO]** to cancel the operation.

A progress indicator appears while the console is formatting the disk.

Write Protecting the Floppy Disk

After saving, the floppy disk can be write protected by moving the write protect tab so that the hole is open. This stops it being accidentally formatted or overwritten by another save.

Print Operations

The *Print* display lets you configure your printer and print show information. Although you can use the Print Screen macro **[SHIFT][P1]** to print the current contents of all screens (1 screen per page), the archive print functions are provided for printing whole cues and shows.

Pressing **[ARCHIVE][PRINT]** shows the *Print* display and the LCD *Print* menu.



To select a field, use the Trackball to move the red cursor to the field and use the Level Wheel, or **[+]**, or **[-]** to change the field value.

Printer Setup

Sets the type of printer.

EPSON | FX | | An Epson FX or compatible printer.

IBM | PRO | | An IBM Proprinter or compatible printer.

HP | DESKJET | A Hewlett-Packard DeskJet or LaserJet printer or compatible.

HP | COLR | DJ | A Hewlett-Packard Colour DeskJet printer or compatible. Prints colours as they appear on screen.

ASCII | | OUT | (default) Text only. This can be selected if the printer is none of the above.

Paper | Size | Sets the paper size.

A4 | | | | | | | | | 210mm x 297mm

8.5" | x | 11" (default) 210mm x 297mm

8.5" | x | 12" German

A3 | | | | | | | | | 297mm x 420mm

8.5" | x | 14" U.S. legal size

14.5" x 11" Computer fanfold paper (132 column)

11" | x | 12" | U.S. tabloid (B) size

Port	Sets the parallel port that the printer is connected to.
LPT1	(default) Printer connected to the first parallel port. This is marked PRINTER on the rear of the console.
FILE	Will print to a file on the local disk. The file is put in the SHOW subdirectory, and its name is based on the current show name with a .txt extension.

Printing

From the *Print* display you can print all or part of the show. In addition, by using **{PRINT LIST}**, **{PRINT LOG}** or **{PRINT NOTES}** you can print the cue sheets, the contents of the status log, or the Notes pages. If you use these soft keys, the items you select in the *Archive Selection* window are ignored.

Since the default printer is ASCII, you should be able to print without selecting a specific printer. However, for the best possible printouts with your printer, you can set the printer type first.

1. Press **[ARCHIVE]{PRINT}** to show the *Print* display.
2. Use the Trackball to highlight the *Type* field in the *Printer Setup* window.
3. Use the Wheel to select a printer type compatible with the printer connected to your system. If you aren't sure which printer type will work best, try printing few cues with each printer setting.
4. If you are going to use **{PRINT LEVELS}**, select the parts of the show to print from the *Archive Selection* window, or select *Whole Show*. Use the Trackball to move the red highlight and **[+]** or **[-]** to select or clear the parts to load. Type the desired numbers in the *FIRST*, *LAST*, and *NUMBER FROM* fields.
5. Select the channels you want to print. You can select a range of channels in use and a range of channels not in use that you want to print. Channels in use are channels that are used in any cue, group, effect, or submaster, not just channels in cues, and includes intensity and attribute channels.
6. Select the printing options you want.
7. Press **{PRINT LEVELS}**, **{PRINT LIST}**, **{PRINT LOG}** or **{PRINT NOTES}** to start printing. To cancel printing while it is in progress, press **{STOP}**. To go back to the LCD *Archive* menu press **{BACK}**.

While the console is printing, a `Print|Operation|%|Complete` message shows printing progress from 0% to 100%.

{PRINT LEVELS} prints all of the items you checked in the *Archive Selection* window. Printing options available for this print mode are:

`Print|Cue/Group/Fx/Sub|with|Changes|only` prints only items with changes in them. It is normally not checked.

`Print|Channel|Attributes` lets you print channel attributes as well as intensities. It is normally checked.

`Start|a|New|Page|for|each|Cue/Group/Sub/Fx/Profile` makes sure that each new item printed starts at the top of a page. Leaving this off conserves paper if you are printing the whole show. However, if you want to print the whole show once and then only insert cues that change, you should turn this on.

`Start|New|Channel|Ranges|on|New|Line|(otherwise|)|` puts the start of each new channel range (after some channels were skipped) on a new line. This is normally off, and an upright bar is used to indicate skipped channels.

`Landscape|Orientation|(otherwise|Portrait)` lets you change the direction of printing on the page. It is normally off, in which case all printing is in portrait orientation.

`Print|Patch|By|Channel|(otherwise|by|O/P)` lets you print the patch information in channel order rather than output order. It is normally off.

{PRINT LIST} prints the cue sheet. All selected items and printing options are ignored.

{PRINT LOG} prints the contents of the *Reports* display. All selected items and printing options are ignored.

{PRINT NOTES} prints the contents of the *Notes* display. All selected items and printing options are ignored.

Clear Operations

Pressing **[ARCHIVE]{CLR}** displays the *Archive Selection* window in the *State* screen and the LCD *Clear* menu. This lets you clear all or part of the show.

You cannot undo a clear operation. If the show needs to be used again, make sure that it is saved onto local disk or floppy disk before clearing it. To learn how to save a show turn to *Disk Operations* starting on page 214.

1. If you are not already in the *Clear* menu, press **[ARCHIVE]{CLR}**.
2. From the *Archive Selection* window in the *State* screen, select the parts of the show to clear, or select **Whole|Show**. Use the Trackball to move the red highlight and **[+]** or **[-]** to select or clear the parts to clear.
3. Press **{CLEAR}**. A message appears that the clear is about to be done.
4. Press **{CLEAR}** to clear the selected items or **{BACK}** to cancel the operation.

Macros

Macros let you record and then play back a regularly used sequence of commands. For example, you could record a macro with the commands to load and then run a particular cue. Running this macro will then replay all of these commands.

Macros can be recorded from any display (see page 216) and then played back using a macro playback key or a macro playback command (see page 216), or by assigning the macro to a cue or submaster (see page 217). Once recorded, they can be viewed and edited in the *Macro* display (see page 217).

There are up to 1000 macros numbered 0 to 999. Each macro can contain up to 120 keys.

Most keys can be recorded into a macro. Trackball movements can also be recorded, but you cannot use the wheels, faders and rotaries within a macro. You must use the numeric keypad to enter numbers.

A macro cannot call another macro.

This chapter contains the following topics:

Macro Properties

Macro Numbering

Learning a Macro

Deleting a Macro

Running a Macro Manually

Running a Macro Automatically

Viewing and Editing Macros

Macro Properties

Macros have only one property which can be specified when recording or edited later. You can record a text label (caption) with each macro to help identify the macro.

In the text label for a macro, any text after an exclamation point will be sent to the GO button output if you have the *CommuniquéPro* software and it is properly set up. See the *CommuniquéPro Operator's Manual* for more details.

Macro Numbering

There are up to 1000 macros numbered 0 to 999.

Macros 951 to 964 are reserved as macros P1 to P14. You can access these macros directly using **[P1]** through **[P14]**, or through the numeric keypad as macros 951 to 964.

Macros 971 to 984 are reserved as macros SP1 to SP14. You can access these macros directly using **[SHIFT][P1]** through **[SHIFT][P14]**, or through the numeric keypad as macros 971 to 984.

[P8] through **[P14]** and **[SHIFT][P8]** through **[SHIFT][P14]**, and therefore the associated macros, are available only on 520 series consoles

Macros 991 to 996 are reserved as macros LCD1 to LCD6. You can access these macros directly through the centre LCD buttons (or the first four through the four centre unlabelled keys in consoles with only 2 LCD displays), or through the numeric keypad as macros 991 to 996.

Macro 998 is reserved for the USER macro. You can access this macro directly using **[USER]**, or through the numeric keypad as macro 998.

Learning a Macro

Before a Macro can be used it must first be recorded. You can record a macro from any display by using the Learn command, or you can record or edit a macro from the Macros display. This section shows how to use the Learn command to record a macro.

Before you start recording a macro, make sure that you are in the display from which you want to play back the macro. Or make sure that the first keystroke puts you into the correct display. This is particularly important if soft keys are used in the macro since these will generally have a different effect if the macro is played in another display.

**[MACRO]# {LEARN}
{LEARN} or key {LEARN}
{LEARN}**

(**key** represents the actual LCD key, P key, or User key). This starts recording the specified macro. **[MACRO]** is at the bottom of the console. Do not confuse this with **[MACRO]** in the display keypad. **{LEARN}** is a soft key which appears when you press **[MACRO]**.

Press the keys you want to record into the macro. To finish the macro recording, press **[MACRO][MACRO]**.

While the macro is being recorded the display prompt shows **MACRO|LEARN** in flashing red as a reminder.

The macro actions will be carried out while recording is in progress. Up to 120 keys can be recorded in a macro; recording automatically finishes if this limit is reached.

[MACRO][2][4]{LEARN}[LOAD][2][0][*][GO][MACRO][MACRO]

Records Macro 24 to run cue 20.

Deleting a Macro

Macros can be deleted from any display. This is a good way to delete macros if you are only going to delete a few. To learn how to delete all macros or a range of macros from the *Archive* display turn to *Clear Operations* starting on page 213.

[MACRO]# {DELETE}

This deletes the specified macro. You will be prompted to press the **{DELETE}** key a second time to confirm the deletion. **[MACRO]** is at the bottom of the console. Do not confuse this with **[MACRO]** in the display keypad. **{DELETE}** is a soft key which appears when you press **[MACRO]**.

[MACRO][2][4]{DELETE}{DELETE}

Deletes macro 24.

Running a Macro Manually

Recorded macros can be started manually, linked to a submaster, or cue, run at console power-up or run at a preset time.

Macros cannot be run while you are in the macro display, but they can be run from any other display.

[MACRO] # [*] This runs the specified macro. **[MACRO]** is at the bottom of the console. Do not confuse this with **[MACRO]** in the display keypad.

 **[MACRO][2][4][*]**

Runs Macro 24.

If the macro does not exist you will get a warning beep. Any errors encountered while a macro is running are ignored, but the remainder of the macro will still run.

[P1] through [P14] Shortcuts for macros 951...964. Pressing these runs the macro the same as using **[MACRO] # [*]**.

 **[P1]**

Runs macro 951 (P1)

[P8] through [P14], and therefore the associated macros, are available only on 520 series consoles.

[SHIFT] [P1] through [SHIFT][P14] Shortcuts for macros 971...984. Pressing these runs the macro the same as using **[MACRO] # [*]**.

 **[SHIFT][P1]**

Runs macro 971 (macro SP1).

[SHIFT][P8] through [SHIFT][P14], and therefore the associated macros, are available only on 520 series consoles.

[MACRO 982] etc The soft keys under the centre LCD are shortcuts for macros 991...996. Pressing these runs the macro the same as using **[MACRO] # [*]**.

 **{MACRO 982}**

Runs macro 982 (macro LCD2).

[USER] Shortcut for macro 998. Pressing it runs macro 998 the same as using **[MACRO][9][9][8][*]**.

 **[USER]**

Runs Macro 998 (macro USER).

Running a Macro Automatically

You can start macros with cues by assigning the macro to a cue. To learn how to assign macros to cues, turn to *Assigning a Macro* on page 119.

You can control macros with submasters by assigning the macro to a submaster. Moving the submaster away from zero starts the macro. To learn how to assign macros to submasters, turn to *Assigning Effects and Macros* on page 96.

A macro can be configured to run automatically at power up. To learn how to run a macro at power up, turn to *PowerUp Macro* on page 193.

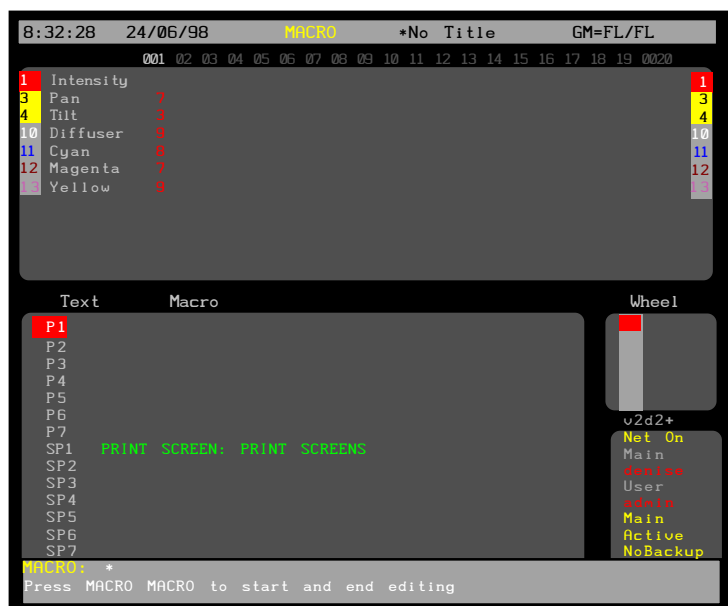
A macro can be run at a certain time of days. There can be up to 4 At Time macros, which are configured in the *At Time Macros* window of the *Setup* display. To learn how to run a macro at certain times of the day, turn to *The At Time Macros Window* on page 195.

Viewing and Editing Macros

You can view and edit macros in the *Macro* display.

The Macro Display

To show the *Macro* display press **[MACRO]** in the Display keypad (not **[MACRO]** in the Levels keypad).



The *Macro* display *Levels* screen is the same as the *Live* display and is not used by macros.

The *Macro* display *State* screen shows the contents of the macros. The current macro is highlighted with a red background. There is one macro per line, and the left hand side identifies the macro.

The macro number from 0 to 990 or 999.

P1 through P14! **[P1]** through **[P14]** key macros (same as macro 951...964).

SP1 through SP14 **[SHIFT][P1]** through **[SHIFT][P14]** key macros (same as macro 971...997).

LCD1 through LCD6 Middle LCD key macros (same as macro 991...996). On 520 series consoles there are only 4 keys, associated with LCD1 through LCD4, and they are located over the Record keypad.

USER **[USER]** key macro (same as macro 998).

The title bar shows the date and time, display name, show name, and grandmaster status. The date and time format can be set in the *Console Time* window of the second *Setup* display *State* screen. The show name is preceded by an asterisk (*) when changes have been made to the show since you last saved it.

The *Wheel* window at the right shows the position within the macros. The number shows the index of the current macro, for example the first, second, and third macro (even if their numbers are 1, 971, and 982) have indexes 1, 2, and 3. The index is independent of the macro number.

When the console is first powered up or the whole show is cleared, the SP2-SP7, P1 to P7, and USER macros (macro numbers 972...977, 991...997, and 998) are present but with no contents.

To go directly to a macro, press **[MACRO] # [*]** where # is the macro number. If the macro does not exist, you will be warned that you are creating a new item. Press **[*]** again to create the new macro, or **[CLR]** or **[UNDO]** to cancel the command.

To move between existing macros, use the Trackball.

Creating a New Macro

To create a new macro while you are in the *Macro* display, press **[MACRO] # [*]** where # is the new macro number. You will be warned that you are creating a new item. Press **[*]** again to create and display the new macro or **[CLR]** or **[UNDO]** to cancel the command.

To switch to the *Macro* display and create a new macro, press **[MACRO][MACRO] # [*]** where # is the new macro number. You will be warned that you are creating a new item. Press **[*]** again to create and display the new macro or **[CLR]** or **[UNDO]** to cancel the command.

The **[MACRO]** display key is at the top of the console. Do not confuse it with the lower **[MACRO]** key.

Creating a macro automatically puts it into edit mode.

Editing a Macro

The macro contents are shown in red as the macro is being edited.

[MACRO][MACRO] puts the macro into editing mode. To start editing, select the macro with the Trackball and then press **[MACRO][MACRO]**.

[MACRO] # [*], **[P1]** or **[SHIFT][P1]** or **[USER]** elects an existing macro and starts editing (you don't have to press **[MACRO][MACRO]**). If the macro does not exist, creates the macro and starts editing.

Once the macro is in editing mode, keys, and Trackball movements, are recorded onto the end of the current contents. To stop recording, press **[MACRO][MACRO]** .

The actions will not be carried out while editing. You can record up to 120 keys in a macro. Editing automatically finishes if this limit is reached.

 **[MACRO][2][4][*][CUE][2][0][GO][*]
[MACRO][MACRO]**

This adds the keystrokes into macro 24 that will run cue 20.

[CLR] deletes the last key while editing the macro. This key cannot be recorded into the macro while editing it although it can be recorded by **[MACRO] # {LEARN}**.

Profiles

Profiles let you change the fade characteristics of cues, effects, and outputs. For cues you can assign profiles separately to the up fade, down fade, and attribute fade times. For effects the profile applies to the fade up and fade down times of the effect (not an effect step). You can modify the fade characteristics of a fixture intensity by attaching a profile to the intensity output for the fixture, and modify the movement characteristics of the fixture by attaching profiles to appropriate attribute outputs.

You can modify profiles in 1% or 5% increments graphically or through the command line, or with DMX values (0-255) through the command line. When you are editing with 256 step resolution the points are displayed as coordinates rather than as a graph.

Profiles can be recorded, viewed, and edited only from the Profile display (see page 221). Once recorded, they can be attached to cues (see page 118), effects (see page 143) or outputs (see page 166).

This chapter shows you how to create the profiles, and contains the following topics:

Profile Properties

Predefined Profiles

Viewing and Editing Profiles

Profile Properties

Profiles have only one property which can be specified when recording or edited later. You can record a text label (caption) with each profile to help identify the profile

Predefined Profiles

There are 2 predefined profiles. These are:

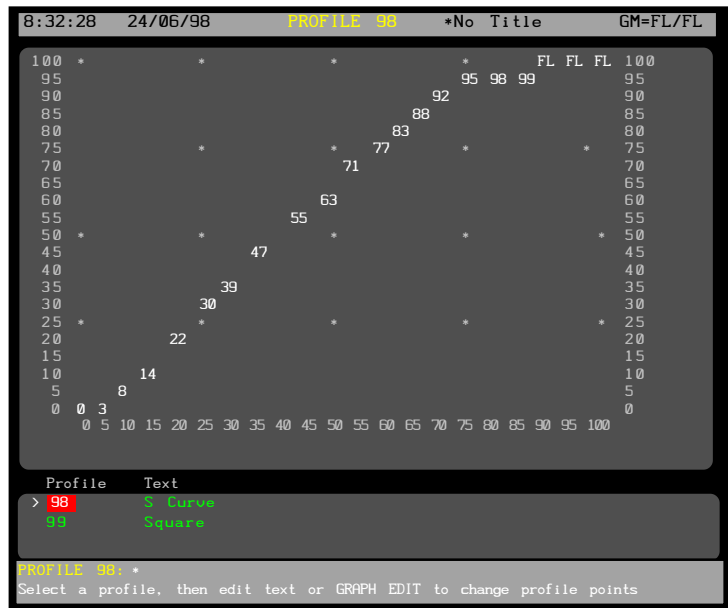
- Profile 98 - S Curve
- Profile 99 - Square

Viewing and Editing

You can view and edit profiles in the *Profile* display. Since you must be in the *Profile* display to define profiles and to change their characteristics, there is no difference between editing and recording profiles.

The Profile Display

To show the *Profile* display press **[MORE]** in the Display keypad and then press **{PROF DISP}**. To view a specific profile, use **[NEXT]**, **[LAST]**, **profile # [*]**, or the Trackball to highlight the profile number.



The *Levels* screen still shows the *Live* display when the *State* screen is in the *Profile* display. You cannot change channel levels with any of the channel control commands. However, you can use the submaster faders, X playbacks, and effect playbacks to change channels levels and record the results into submasters, cues, groups, or effect steps.

The title bar shows the date and time, display name, show name, and grandmaster status. The date and time format can be set in the *Console Time* window of the second *Setup* display *State* screen. The show name is preceded by an asterisk (*) when changes have been made to the show since you last saved it.

The profile graph is scaled in percentage and shows profile processor input levels across the bottom and output levels up the side. When you create a new profile it starts as a linear curve (0% in = 0% out, 50% in = 50% out, etc.).

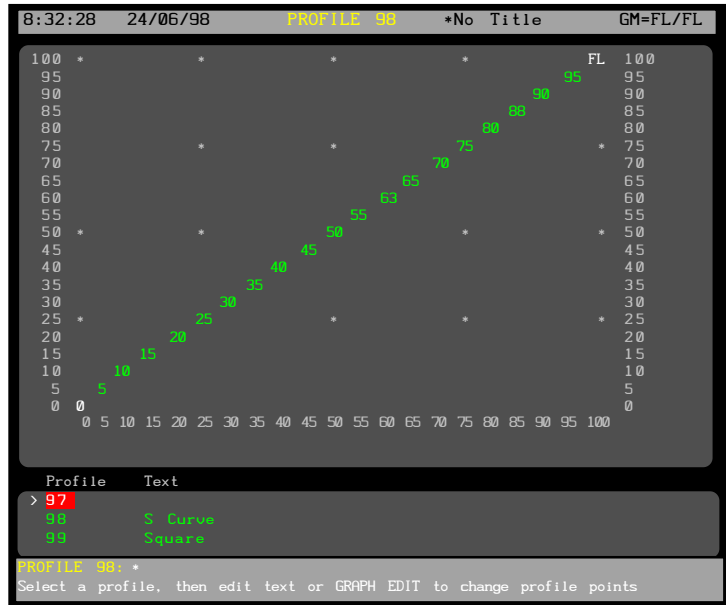
The Current Profile

The current profile is shown with a highlight on the *State* screen.

To change the current profile, use **[NEXT]**, **[LAST]**, or the Trackball to move the highlight to the appropriate profile. The highlight must be on the profile number (the *Profile* field) to change the current profile. You must be in the *Profile* display before you can use the Trackball to change the current profile.

Creating Profiles

To record a new profile, make an unrecorded profile the current profile. This creates a linear profile that you can then edit using end editing, graph editing, or a combination of the two.



[PROFILE] # [*] Makes profile # the current profile. Creates the profile if it does not exist.

[*][PROFILE][1][*]

Makes profile 1 the current profile if you are already in the *Profile* display. Creates profile 1 if it doesn't exist.

[*][MORE]{PROF DISP}[1][*]

Switches to the *Profile* display and makes profile 1 the current profile. Creates profile 1 if it does not already exist.

Using End Editing

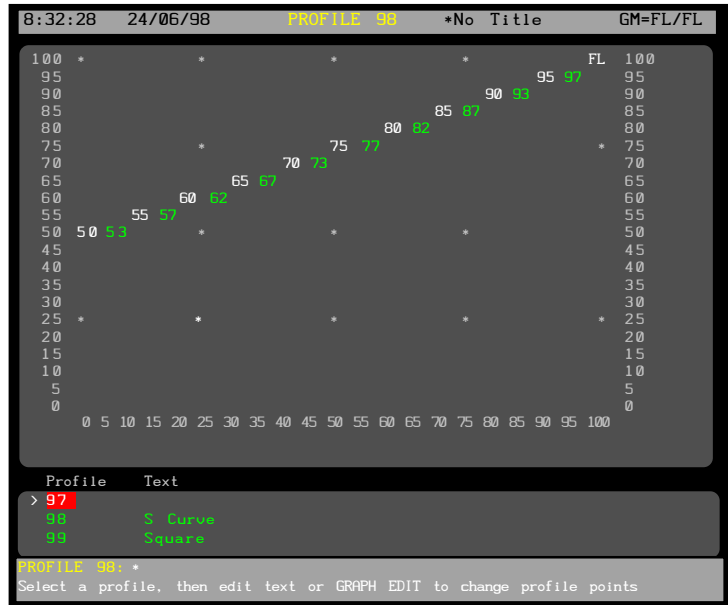
End editing is primarily designed for setting the ends of the profile curve, but you can also specify the value of any point on the curve.

Each end point, and any point you add, is an anchor point for a section of the curve and is shown in white rather than green. When you add a point, the curve is redrawn so that there is a straight line between the new point and the nearest anchor point(s).

point [@] level [*] sets an anchor point specified by **point** to the level specified by **level**. Anchor points are shown in white. All other points in the profile are calculated to create straight lines between adjacent anchor points.

[0][@][5][*]

Sets the level for the start of the fade (zero input) to 50% of the profile processor input level. This may not be 50% of maximum intensity for a fixture, since there are multiple factors that can modify the channel or output level before the profile is applied. At this time, the only anchor points in the profile are the two ends. All other points are calculated between these two points.



[5][0][@][5][*]

Sets the level for the centre of the fade (50% input) to 50% of the profile processor input level. The profile now has three anchor points. All other points in the profile are calculated to create straight lines between these anchor points.

point [0][*] clears the anchor point specified by **point**. The cleared anchor point is shown in green again, and all interim points are calculated to create straight lines between the remaining anchor points.

[5][0][@][*]

Clears the anchor point at the 50% input level. There are only two anchor points remaining (the end points), and the remaining points are calculated to create a straight line between these points.

Using DMX values for points

You can specify points and levels using DMX values rather than percent value. This lets you specify more precise curves than is possible with percent values.

point [0][DMX] level [*] sets the anchor point specified by **point** to the DMX level specified by **level**. The anchor point can be from 0 to 100 while the level can be from 0 to 255. The display will show the nearest percent level for the specified DMX level, but the system will use the DMX level.

[1][0][@][DMX][3][0][*]

Sets the 10% point to a DMX level of 30. This shows on screen as 12%.

{DMX} point # {DMX} level # [*] sets the anchor point specified by **point** to the DMX level specified by **level**. Both numbers can be any number from 0 to 255. Unlike the syntax for specifying points by percent, there is no **[@]** used in this command.

Since the graph view can only display 100 points and 100 levels, once you specify a point using this method for a profile, the graph view is replaced with a point list and the Graph Editing function is no longer available for that profile.

{DMX}[2][3]{DMX}[4][0][*]

Sets the point represented by the DMX value of 23 to a DMX level of 40. The *State* screen switches to a point list rather than the standard profile graph.

Using Graph Editing

Graph editing lets you use the Trackball to highlight where you want to place an anchor point and then insert the point. You can move the end points this way, and easily add more points.

Each end point, and any point you add, is an anchor point for a section of the curve and is shown in white rather than green. When you add a point, the curve is redrawn so that there is a straight line between the new point and the nearest anchor point(s).

○ {INSERT POINT}{INSERT POINT} sets an anchor point in the profile. Anchor points are shown in white. All other points in the profile are calculated to create straight lines between adjacent anchor points.

○ Highlights the location for the new point. The Trackball moves the highlight in 5% steps. To change point values in 1% steps, use **[+]** and **[-]**.

{INSERT POINT}{INSERT POINT} Inserts the point and recalculates all points between the end points and the new anchor point

{DELETE POINT}{DELETE POINT} deletes an anchor point in the profile. The profile is recalculated so that there is a straight line between the anchor points on either side of the deleted point. You cannot delete end points. They are always anchor points.

○ Highlights the point you wish to delete.

{DELETE POINT}{DELETE POINT} Deletes the point and recalculates all points between the two anchor points that were adjacent to it.

Deleting a Profile

Profiles can be deleted in the *Profile* display. This is a good way to delete profiles if you are only going to delete a few. To learn how to delete all profiles or a range of profiles from the *Archive* display turn to *Clear Operations* starting on page 213.

{DELETE POINT} # [*][*]

This deletes the specified profile. You will be prompted to press the **[*]** key a second time to confirm the deletion.

☞ {DELETE PROF}[2][4][*][*]

Deletes profile 24.

Report Displays

This chapter describes the *Report* displays, which contain the Dimmer Log Screen and information on the Console and Network Configurations; the Console Status and other Diagnostic Displays and Logs, some of which are only for use by a technician.

This chapter contains the following topics:

The Diagnostics Display

The Dimmer Log Display

The Status Log Display

The Network Diagnostic Display

The Internal Diagnostic Display

Running The Factory Test Software

The Diagnostics Display

To show the *Diagnostic* display, press **[REPORT]**. This display shows the *System Status* window, the *Network* window and the *Configuration* window. None of the fields in the *Diagnostics* display can be edited.

The screenshot shows a terminal window titled 'SYSTEM REPORT' with the following content:

```
3:32:28 24/06/98 SYSTEM REPORT *No Title GM=FL/FL
System Status
CPU Type 80486
Submasters detected 30
USED FREE
Intensity channels 350 0
Attribute channels 6 244
Cue parts 2 1998
Groups 12 988
Effect steps 1 14849
Macros 22 978
Profiles 3 96
Events 0 3000
Local Print Jobs NONE
Intensity Total 350
InUse 350
Free 0
Attribute Total 250
InUse 6
Free 244
Live 1
Edit 1

Network Configuration
Node Name denise
Node Address 192.168.11.214
Sub Net Mask 255.255.255.0
v2d2+
Net Off

Configuration
CONS 000 000 000 104 221 089
OS v2d2+ BETA S/W Jul 30 1998 10:07:21
APPL GENPRO 350 COMPRO TRK REP NET SVR

SYSTEM REPORT: *
System Status
```

To view the Dimmer Log Display press **{DIMMER LOG}**

To view the Status Log display press **{STATUS LOG}**.

To view the Network diagnostic display press **{NET DIAG}**.

To view the Internal Diagnostic display press **{DIAG}**.

The System Status Window

The *System Status* window in the *Diagnostics* display shows console characteristics (such as processor type and number of submasters) and to the current show status (such as number of channels, cues, etc. in use). The contents of these fields, unless otherwise listed below, are self explanatory.

Submasters | detected

The number of console submasters unless altered via the environmental variable NUMSUBS. For more information see the release.txt file distributed with the console software.

Local | Print | Jobs

If a print out is initiated, a print job will be listed until it is completed. For information about the use of this display when the Networker option is configured see the *Networker Operator's*

The Network Configuration Window

The *Network Configuration* window in the *Diagnostics* display shows the network setup information for this console. This information is only relevant when the optional Networker software is loaded. Please see the *Networker Operator's Manual* for more details.

The Configuration Window

The *Configuration* window in the *Diagnostics* display shows the loaded software and versions but cannot be edited.

CONS The console serial number. This is used when filling out the registration form for software.

OS The GeniusPro version number. The format of this is # [.] # , for example 2.1. A trailing character is used to indicate minor versions, for example 1.2c. Beta testing versions have a character instead of the period, for example 1b3.

APPL This lists the application software loaded. one or more of these are generally listed. If this is blank, no application software is loaded.

LP | # The Lightpalette software is loaded. # shows the number of channels.

COMPRO The optional CommuniquéPro software is loaded.

TRK The optional Tracker software is loaded.

NET The optional Networker software is loaded.

REP The optional Reporter software is loaded.

SVR The optional Server software is loaded.

Others may be shown as new software is developed and loaded.

The 510i Show Controller

The 510i is a 19 inch, rack-mounted unit designed to match the lighting needs of the 'themed environment' market, where the requirement is for repetitive playback of shows controlled by one of the following:

1. SMPTE Audio or Video Timecodes
2. Midi Show Controller
3. 48 Contact Closure Inputs
4. Internal Clock
5. Manual Playback

The 510i also supports playback of shows recorded on GSX and LBX. The creation of a light show based on SMPTE time-stamped events using a Series 500 lighting control console is described in the *CommuniquéPro* Operators Manual, 'Time Code Events'

In addition, since the software configuration of applications and channel capacity of the 510i is identical to the other 500 Series consoles, the 510i can serve as a compact and cost effective tracking backup unit for a main 500 series lighting control console.

The 501i runs on the same *GeniusPro* or *Lightpalette* operating software as the 500 Series consoles

This chapter describes the operating features applicable to the 510i. It contains the following topics:

Optional Software

User Interface

Macro Screen

Submaster Screen

Disk Browse Screen

Time Code Events

Cues & X Playbacks Screen

Backup Screen

Panel Setup

Video Line Error

PC Editing

Submaster Macro Inputs

Optional Software

Where the 510i is used for repetitive playback of pre-recorded shows on a timed basis, the *CommuniquéPro* software must be installed.

Where the 510i is used as a tracking backup unit for a 400 or 500 series lighting control console, it must be connected to an Ethernet network and have *Networker* software installed.

User interface

The front panel controls of the 510i provide the minimum user interface required to operate all the *GeniusPro*, *Lightpalette*, *CommuniquéPro* and *Networker* playback functions. Access to the full software functionality (in particular, show set-up, editing and saving) is only possible using an external keyboard and video display or a remote control unit.

An LCD display on the front panel, provides all the displays and associated softkeys necessary to control the playback functions of the system. The Macro display is shown at startup., however, the operator can select other menu using the [DISPLAY] key to cycle through the cycle through the various menus as follows:

MACRO, SUBS, BROWSE, EVENT, PLAYBACK, BACKUP, SETUP and back to MACRO, etc.

Entry to the displayed Macro LCD menu is achieved using the key combination [SHIFT][DISPLAY].

A [STOP SHOW] pushbutton is provided to enable the operator to stop the pre-programmed lighting show and apply a pre-defined safe lighting condition. This panel button is protected from accidental operation and flashes when selected. The operation of the button is mapped to macro 997 as well as the 500 Series console STOP key function.. The LED in the [STOP SHOW] button will flash if any Stop key mode is selected, e.g., 'BLACKOUT', 'STOP ATTS' or 'ST ATTS+BO'.

During playback, the operator can prevent any unauthorised use of the panel pushbuttons (except [STOP SHOW] and the external keyboard, if connected) by means of a keyswitch with removable key. When locked, the condition is displayed on the panel LCD, the keyswitch LEDs are illuminated and the LCD dims.

Fourteen panel buttons, when operated with or without the [SHIFT] key depressed, will apply one of 28 pre-set macro conditions, (P1-P14), or [SHIFT] (SP1-SP14). These macros can be triggered directly using the panel buttons, or from the *Macro Display* LCD. The [USER] key is mapped to macro 998.

The [CLR] key clears the last command.

Macro screen

The 510i *Macro* screen enables viewing and play back of sequences of commands previously recorded using a Series 500 console. Up to 1000 macros (0-999) may have been recorded. Up to eight macros can be displayed at one time on the LCD display, the currently selected macro identified with the marker > after the macro number.

Pressing [SHIFT][DISPLAY] will enter the *Macro* Screen.

Individual macros can be selected from the macro display and run using the softkeys, as follows:

{LAST}	Selects the previous macro in the macro list.
{NEXT}	Selects the next macro in the macro list
{MACRO-100}	Subtract 100 from the current macro number (if applicable) and display as the current macro.
[MACRO+100]	Add 100 to the current macro number (if applicable) and display as the current macro.
{FIRST MACRO}	Selects the first macro as current.
{RUN}	Runs the selected macro.

While the **[SHIFT]** key is depressed, an alternative set of LCD softkeys is displayed, as follows:

{LAST 8}	Displays the previous eight macros.
{NEXT 8}	Displays the next eight macros
{MACRO-100}	As before
[MACRO+100]	As before
{FIRST MACRO}	As before
{RUN}	As before

Macros 951 to 984 are reserved for the fourteen macro keys on the 510i panel. Pressing P1 to P14 selects and runs macros 951 to 984 respectively. Pressing **[SHIFT]** P1 to P14 selects SP1 to SP14 and runs macros 971 to 977 respectively. All 28 macros can be selected and run from the macro display as described above. Pressing the **[USER]** button on the panel, applies macro 998. Pressing the **[STOP SHOW]** button runs macro 997.

Submasters screen

The 510i *Submaster* display enables viewing and play back of up to 54 submasters previously recorded using a Series 500 console).

The LCD display shows eight subs at a time from the currently selected sub page and displays the sub number, level, text and associated macro against each sub. The currently selected sub is identified by a > marker after the sub number.

Using the LCD softkeys, the operator can scan through the six pages of subs, select a sub from the displayed page and increment, decrement, or bump the sub level as follows:

{LAST}	Moves the marker to the previous sub on the page.
{NEXT}	Moves the marker to the next sub on the page
{PAGE +}	Increments the sub pages, e.g., 1>2>3>4>5>6>1, etc.

{DOWN %} Decrements the level of the currently selected sub by 5%.

{UP %} Increments the level of the currently selected sub by 5%.

{BUMP SUB} Bumps the currently selected sub.

While the [SHIFT] key is depressed, an alternative set of softkeys is displayed as follows:

{LAST 8} Displays the previous eight subs on the selected page.

{NEXT 8} Displays the next eight subs on the selected page.

{PAGE -} Decrements the sub pages, e.g., 6.5.4.3.2.1.6, etc.

{TO 0%} Sets level of currently selected sub to 0%.

{TO 100%} Sets level of currently selected sub to 100%.

{BUMP SUB} Bumps the currently selected sub.

Disk browse screen

The *Disk Browse* screen lists all light shows stored within the 510i hard disk and enables the operator to browse through the list of shows either on the hard disk, or floppy, to load a show for playback, or to copy a show between disks and/or directories.

This display is also used in conjunction with the floppy disk drive to load new operating software.

Loading a Show

To load a show from floppy or hard drive, use the **{LAST}** and **{NEXT}** softkeys to position the > marker alongside the drive field (A:) or the hard drive field (C:) and press **{SELECT}**. Press the **{LAST}** softkey to position the marker alongside the Directory field and press the **{SELECT}** softkey until the required directory is displayed.

The drive and directory is shown on the top line of the display and the shows contained in the selected drive/directory are listed below. To run a show from the show list, use the **{LAST}** or **{NEXT}** keys to move the > marker to the required show and press **{SELECT}**. A Show Load prompt and confirm message will appear. Pressing {SELECT} again will load the show.

The show files on the disk on the disk browser are identified by their show name and date and time of recording.

Alternatively, the operator can browse long lists of shows by holding down the [SHIFT] key and using the **{LAST 4}** or **{NEXT 4}** softkeys to display shows 4 at a time.

T

Copying a Show

To copy a show, firstly move the > marker as described above using the **{NEXT}**, **{LAST}** and **{SELECT}** keys. When the marker is on the required show, press the **{COPY SHOW}** key. The menu title will change on the LCD display to 'Copy Menu'. The copy function is active when this menu title is present. In response to a prompt message, use the **{NEXT}**, **{LAST}** and **{SELECT}** keys to select destination disk and directory. The destination path is shown on the LCD display. If the path displayed is correct, press the **{COPY SHOW}** key again to confirm the copy command. Pressing the **[CLR]** key at any time during the copy process will return to the Browse menu.

Loading Operating Software

To load new operating software, insert the floppy disk in the disk drive and select the **{SOFT LOAD}** softkey. A software load prompt and confirm message is displayed. Pressing the **{SOFT LOAD}** softkey again will load the operating software from the floppy disk.

Time code events screen

The 510i is designed to operate in conjunction with an externally applied SMTE time code, however, in the absence of a SMPTE time code, the operator can enable an internal clock to control the show events. When the external SMPTE clock is selected and running, the internal SMPTE clock is automatically synchronised to it.

The *Events Screen* is displayed on the panel LCD by pressing **[DISPLAY]**. This display enables the operator to select the source of timing of show events and displays each event and programmed event time in sequence as the light show progresses. A < marker indicates the next event to trigger and a * marker indicates the last event triggered.

Select **{EXT.CLK}** to apply an external SMTE time code input via the 3-pin Audio XLR outlet.

Select **{INT.CLK}** to apply the internal time code clock.

The status of the timing source and SMPTE time is displayed on the LCD **EXTERNAL**, **OVERRIDE** (internal clock taken over), **NO CLOCK** (external clock absent), **INTERNAL** or **PAUSE**.

The time code source must be set to SMPTE at the <i>Show Setup</i> display before the internal or external clock can be used.

Time Format

The time format for the internal clock is in the same format as the SMPTE input time code and is set at *Show Setup*:

Form: HH:MM:SS:FF where

HH = Hours (0-23)

MM = Minutes (0-59)

SS = Seconds (0-59)

FF = Frames per second (0-24, 0-25, 0-30 drop or 0-30 non-drop)

Setting/resetting the internal clock

When the clock is INTERNAL or *PAUSED*, the {SET CLOCK} softkey may be used to display alternative softkeys used to increment, decrement or reset the internal clock, as follows:

{+HH}	Add one hour to the internal clock time.
{+MM}	Add one minute to the internal clock time.
{+SS}	Add one second to the internal clock time.
{+FF}	Add one frame to the internal clock time.
{+5FF}	Add 5 frames to the internal clock time.
{BACK}	Return to the Events Display and Menu.
[SHIFT] + {-HH}	Subtract one hour from the internal clock time.
[SHIFT] + {-MM}	Subtract one minute from internal clock time.
[SHIFT] + {-FF}	Subtract one frame from the internal clock time.
[SHIFT] + {-5FF}	Subtract 5 frames from the internal clock time.
[SHIFT] + {RESET TIME}	Reset internal clock to 00:00:00:00

Stepping the light show timing

Selecting {PAUSE CLOCK} stops the internal or external clock at the time of the displayed event. Pressing {STEP} will manually trigger the next event. Alternatively, with {PAUSE CLOCK} selected the operator may move the < marker to a different event using the [SHIFT] key and the softkeys displayed on the *Event List*, as follows:

{LAST}	Sets the < marker and clock time to the last event.
{NEXT}	Sets the < marker and clock time to the next event.
{BEGIN LIST}	Sets the < marker and clock time to the first event on the list.
{END LIST}	Sets the marker and clock time to the last event on the list.

The following softkeys clear any incomplete commands

{UNBUMP ALL}	Unbumps any bumped submasters.
{STOP FX}	Stops all running effects

Cues and X Playbacks Screen

The layout and content of the *Cues and X Playbacks* screen is determined by the options selected on the set-up screen and the individual cue levels and properties attributed to each cue when first recorded using the lighting control console.

The 510i panel is designed as a show playback unit and does not provide direct editing facilities for cues without the aid of an external video display and keyboard or remote control.

The *Cues and X Playback* display on the 510i panel is intended to provide the operator with the facility to view the cue list, to select and load individual cues and to run the cue, or cue sequence on demand.

The screen shows the cue list for X1 or X2. A > marker, shown to the left of the cue number identifies the current cue. The percentage completion of the last run cue is also displayed. The next cue to run is indicated with a < marker after the cue number. The last cue is identified by a '*' after the cue number.

The softkeys on the LCD display enable the operator to select and run cues as follows

Pressing the **[SHIFT]** key will toggle between X1 Playback and X2 Playback (if a dual playback mode is selected in the Show Setup). All key actions apply to the playback displayed on the LCD, i.e., X1 or X2.

{LAST} Selects the previous cue on the displayed cue sheet as the current cue

{NEXT} Selects the next cue on the displayed cue sheet as the current cue. **{LOAD}** Loads a selected cue into the X Playback and resets any loops to their original loop count. This action has no effect on the output until the **{GO}** softkey is pressed.

{STOP/BACK} Press once to stop the current cue. Press again to move to the previous cue.

{GO TO CUE 0} Selects cue 0 (Blackout)

{GO} Runs the current cue.

Backup Screen

This display is applicable when the 510i is used to provide tracking backup to a 500 Series Lighting Control Console using an Ethernet network. (Refer to *Networker Operators Manual*).

The 510I Backup LCD displays the following network information:

Networker Options: On or Off

Mode: (Backup): As specified by 220node.cfg

This Node: 'Net name', 'node number'

Main Node: 'Net name' 'node number or If 'Mode' = Main, Backup node: 'Net name'. 'node number'.

Status Options: As current network status.

For information on backup commands, refer to 'Backup Commands' in the *Networker Operator's Manual*.

Panel set-up

The *Set-up* screen shows the current software version, the unit serial number, the software applications loaded and the number of submasters detected. The display also shows the backlight and contrast settings for the panel LCD display.

The following softkeys are displayed.

- {CONTR DOWN}** Decreases the LCD contrast
- {CONTR UP}** Increases the LCD contrast
- {BACKLT DOWN}** Decreases the LCD backlight brightness
- {BACKLTUP}** Increases the LCD backlight brightness
- {SHUTDOWN}** Displays warning/confirm message. Press **{SHUTDOWN}** to shut down the system or the **[CLR]** key to cancel.

Video Line Error

Text, that would appear on the error line of a 500 Series video monitor is displayed on the 510i LCD display. Pressing the **[CLR]** button cancels the error message.

PC editing

The 510i incorporates the *GeniusPro* and *Lightpalette* Off-line Editor and PC Software, providing full emulation of the 500 Series console operating software on a standard PC.

Submaster Macro inputs

Forty-eight submaster macro inputs are provided via four 25-pin female D type sockets on the back of the 510i panel. These inputs provide simple On/Off logic switching and are designed to act functionally as individual submaster bump buttons. Each input can be used to trigger a macro or an effect.

To use these inputs to trigger macros, their corresponding submasters must either have bump mode set to macro (recommended), or have an external submaster assigned.

Each of the 48 submaster macro inputs consist of a signal/ground pair on adjacent pins of a D type connector. The required number of contact closure devices are coupled to the connector(s) using twisted pair cables. It is recommended to use 24AWG twisted pair wires for each contact. CAT5 UTP cable is suitable.

Sub 1-12 macros	Pins 1 to 12:	Submaster 1 to 12 macros
	Pins 13 to 25	Ground
Sub 13-25 macro	Pins 1 to 12	Submaster 13 to 25 macros
	Pins 13 to 25	Ground
Sub 26-36 macros	Pins 1 to 12	Submasters 25 to 36 macros
	Pins 13 to 25	Ground
Sub 37-48 macros	Pins 1 to 12	Submaster 37 to 48 macros
	Pins 13 to 25	Ground

In order to ensure safety and integrity of operation, installation of submaster macro inputs should only be undertaken by a competent and experienced electrician. Shielded cable may be required in areas of exceptional electrical noise.

Handheld Remotes

GeniusPro consoles with operating software version 1.4 or later can host several types of handheld remotes, as listed below.

- Designer's Remote
- R120 wired remote
- R120 radio remote for UK (UK license exempt)
- R120 radio remote for EU (EU license exempt, except UK)
- R130 wired remote
- R130 radio remote (US FCC license exempt)

Each handheld remote has a keypad for entering commands and an LCD display for command line feedback.

Channels under remote control will be shown in purple on console screens.

This chapter describes the hookup and basic operation of the various handheld remotes.

Always check with local licensing authorities before using either radio handheld unit in areas where it is not license exempt.
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The chapter contains the following topics:

Wired Remote Installation

R120 Radio Remote Installation

R130 Radio Remote Installation

Connections

R120 Operation

R130 Operation

Designer's Remote Operation

Wired Remote Installation

Wired remotes can be plugged directly into the rear of the console for testing if necessary, or extended up to 100ft (31m) from the console using permanent or temporary wiring terminating in 6 pin "XLR" style connectors.

1. Plug the wired remote into the AUX3 console remote port.
2. Turn the small switch under the port on.
3. Press **[SETUP]{MORE}** on the console to see the *Show Details* window on page 2 of the *Setup* display.
4. Use the Trackball to highlight the `Mode` field for the appropriate hand help remote.
5. Use **[NEXT]**, **[LAST]** and the Level Wheel to set the value of the field as required (`DisplayOnly`, `MemLock`, `PBILock`, `Mem+PBILock`, `MemLock|<Q900`, or `FullEnabled`).

6. Press **{MORE}** on the console to see the *Communications* window on page 3 of the *Setup* display.
7. Use the Trackball to highlight the *HandheldRemote* field.
8. Use **{NEXT}**, **{LAST}** and the Level Wheel to set the value of the field to the type of handheld remote you are using (DESIGNERS, R120|WIRED, R120|RADIO, R130|WIRED, or R130|RADIO).
9. If you are using a network handheld, set the network information as needed. Using a hand help remote over the network requires the *Networker* software. For more information see the *Networker Operator's Manual*.

The display will illuminate and the keys will activate. Channels under remote control will be shown in purple on console screens.

Release control from the handheld remote (press CLR) before taking control at the console.

R120 Radio Remote Installation

Installation for the UK and EU versions of this remote are the same. The R120 Radio Remote comes with a base station and a battery charger.

1. Connect the handheld unit to its power supply for at least 12 hours to make sure it is fully charged.
2. Plug the radio base station into the AUX3 console remote port. The red LED on the base will illuminate.
3. Press **{SETUP}{MORE}** on the console to see the *Show Details* window on page 2 of the *Setup* display.
4. Use the Trackball to highlight the *Mode* field for the appropriate hand help remote.
5. Use **{NEXT}**, **{LAST}** and the Level Wheel to set the value of the field as required (*DisplayOnly*, *MemLock*, *PBILock*, *Mem+PBILock*, *MemLock|<Q900*, or *FullEnabled*).
6. Press **{SETUP}{MORE}{MORE}** on the console to see the *Communications* window on page 3 of the *Setup* display.
7. Use the Trackball to highlight the *HandheldRemote* field, and use **{+}**, **{-}** and the Level Wheel to set it to R120|RADIO.
8. Set the first field following the *HandheldRemote* field to a number between 1 and 8 (inclusive). This is the unit number, and you will need to also set the handheld unit to this number.
9. Press ON to power up the handheld unit. The display should illuminate and the keys should be active.
10. The handheld unit will display "Unit Address n" for about 3 seconds. Change this unit address to match the address you set in the console by pressing a number key within the first 3 seconds.
11. Use the UPARROW and DOWNARROW keys as needed to adjust the display contrast.

Release control from the handheld remote (press CLR) before taking control at the console.

You can change the unit address and screen contrast at any time by simultaneously pressing the dot (".") and asterisk ("*") keys.

The handheld unit will power itself down after a period of inactivity, or you can power it down manually by simultaneously pressing the dot (".") and asterisk ("*") keys, and then pressing ON.

The handheld unit will beep every 3 seconds when the battery is low and needs to be recharged.

R130 Radio Remote Installation

The R130 Radio Remote comes with a base station, a battery eliminator for the base station, and a battery charger for the handheld unit.

1. Remove the rear cover from the handheld unit by loosening two Phillips screws.
2. Connect the rechargeable battery pack.
3. Replace the rear cover.
4. Connect the handheld unit to its power supply for at least 12 hours to make sure it is fully charged.
5. Find the serial number of the base station and write it down.
6. Press the ON key to power up the handheld unit.
7. To see the setup menu, hold down the CLR and asterisk ("*") keys as the unit powers up.
8. Using the setup menus, set COMS as follows:

Radio Channel	4 (default)
Radio Sub-Channel	1 (default)
Internal Radio Sn	Can't change. Write it down to enter in the console <i>Setup</i> display.
Destination Sn	Enter the serial number of the base station that you wrote down earlier.
Display Serial Errors	No (default)
Aud Serial Errors	No (default)
Support XON/XOFF	No (default)
Exit and Store Changes	Yes

9. Press the ON key (top right) twice to power down the unit.
10. Connect the battery eliminator to the base station, and to 115VAC, 60Hz power.
11. Plug the radio base station into the AUX3 console remote port. The red LED on the base will illuminate.
12. Press **[SETUP] {MORE}{MORE}** on the console to see the *Setup* display *Communications* window.
13. Use the Trackball to highlight the *Handheld Remote* field, and use **[+], [-]** + and the Level Wheel to set it to **R130|RADIO**.
14. Set the two 4 digit fields following the *Handheld Remote* field to the serial number of the handheld unit that you wrote down earlier.
15. Release control from the handheld remote (press CLR) before taking control at the console.


Connections

The connection to the rear of the console from the wired handheld units or from the radio handheld base units is through a 6-pin “XLR” style male connector.

6 pin XLR male	RS232 signal name
Pin 1	Ground & Screen
Pin 2	+10VDC Power Input
Pin 3	N/C
Pin 4	N/C
Pin 5	RX (data to base/handheld)
Pin 6	TX (data from base/handheld)

R120 Operation

Operation of the R120 Handheld Remote uses the same syntax as the command line on the main console. A few examples of commands when the console is set to Direct 1 Digit-mode are shown below.

Setting Levels	1 @ 5 [*]	Set channel 1 to 50%.	 <p>The image shows the R120 Handheld Remote, a grey device with a blue top section. It features a monochrome LCD screen at the top displaying the Strand Lighting logo. Below the screen is a keypad with various function buttons labeled F1 through F5, REC-SUB, REC, REC TIME, T ME, MACRO, GO, CUT, STOP BACK, REM DIM, UNDO, @ATT, FULL, ON, DIM, LAST, NEXT, OFF, THRU, FX, 7, 8, 9, SUB, 4, 5, 6, GRP, 1, 2, 3, @, CUE, CLR, 0, ., *.</p>
	2 + 9 @ 4.5 [*]	Set channels 2 and 9 to 45%.	
	9 THRU 12 @ 4 [*]	Set channels 9 through 12 to 40%.	
	@ 5 [*]	Set current selection to 50%.	
	ON	Set current selection to ON level.	
	FULL	Set current selection to 100%.	
	▲	Increase level(s) of the current selection.	
	▼	Decrease level(s) of the current selection.	
	NEXT	Next channel if a channel is selected, otherwise next cue.	
	LAST	Last channel if a channel is selected, otherwise last cue.	
	REM-DIM	Set current selection to On and turn all other channels Off.	
Recording & Playback	REC CUE 1 *	Record current levels into cue 1.	
	GO	Run the next cue on X Playback 1.	

R130 Operation

Operation of the R130 Handheld Remote uses the same syntax as the command line on the main console. A few examples of commands when the console is set to Direct 1 Digit mode are shown below.

Setting Levels

1 @ 5^{*}

Set channel 1 at 50%.

2 + 9 @ 4.5^{*}

Set channels 2 and 9 at 45%.

9 THRU 12 @ 4^{*}

Set channels 9 through 12 at 40%.

@ 5^{*}

Set current selection at 50%.

ON

Set current selection to ON level.

▲

Increase level(s) of the current selection.

▼

Decrease level(s) of the current selection.

NEXT

Next channel if a channel is selected, otherwise next cue.

LAST

Last channel if a channel is selected, otherwise last cue.

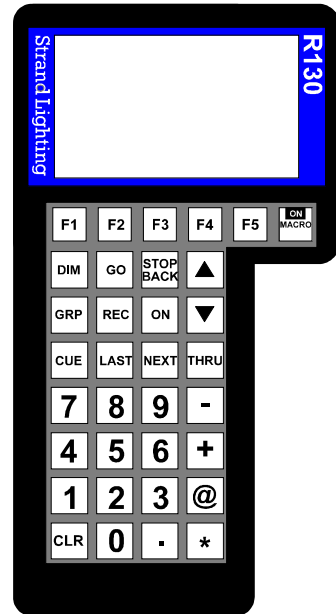
REM-DIM

Set current selection to On and turn all other channels Off.

Recording & Playback

REC CUE 1 * Record current levels into cue 1.

GO Run the next cue on X Playback 1.



Designer's Remote Operation

Operation of the Designer's Handheld Remote uses the same syntax as the command line on the main console. A few examples of commands when the console is set to Direct 1 Digit mode are shown below.

Setting Levels

1 @ 5^{*}

Set channel 1 to 50%.

2 + 9 @ 4.5^{*}

Set channels 2 and 9 to 45%.

9 THRU 12 @ 4^{*}

Set channels 9 through 12 to 40%.

@ 5^{*}

Set current selection to 50%.

ON

Set current selection to ON level.

FULL

Set current selection to 100%.

▲

Increase level(s) of the current selection.

▼

Decrease level(s) of the current selection.

NEXT

Next channel if a channel is selected, otherwise next cue.

LAST

Last channel if a channel is selected, otherwise last cue.

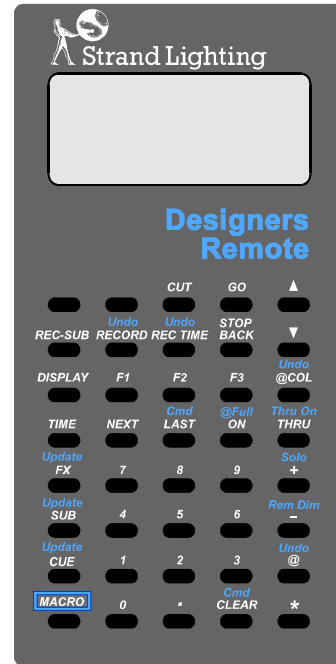
REM-DIM

Set current selection to On and turn all other channels Off.

Recording & Playback

RECORD CUE 1 * Record current levels into cue 1.

GO Run the next cue on X Playback 1.



Console Connectors

DMX

female 5 pin XLR

Pin	Description
Pin 1	Ground
Pin 2	Data -
Pin 3	Data +
Pin 4	No connection
Pin 5	No connection

DMX512, input or output, up to 512 channels.

AUX

female 6 pin XLR

Pin	Description
Pin 1	Ground
Pin 2	+10VDC, 100mA
Pin 3	Data +
Pin 4	Data -
Pin 5	RS-232 - transmit data
Pin 6	RS-232 - receive data

Auxiliary class 1, up to 19200 baud.

There are 3 AUX ports, each port having a line termination switch (ON = Terminated). AUX port 3 has pins 5 and 6 connected to Serial Port 2, for connection to a hand-held Designers Remote terminal. Consoles with newer electronics have pins 5 and 6 connected to independent RS-232 lines on all Aux ports.

AMX

male 4 pin XLR

Pin	Description
Pin 1	Ground (display)
Pin 2	Clock +
Pin 3	Data
Pin 4	Clock -

AMX192 analog 5 volt output with 192 channels.

D54

female 3 pin XLR

Pin	Description
Pin 1	Ground (display)
Pin 2	No connection
Pin 3	Data

D54 analog 5 volt output with up to 384 channels.

Audio

female 3 pin XLR

Pin	Description
Pin 1	Ground
Pin 2	Audio +
Pin 3	Audio -

Mono balanced audio input, dynamic range 10mV - 10v.

Remote Analog

female 15 pin D-type

Pin	Description
Pin 1	Remote input 1
Pin 2	Remote input 2
Pin 3	Remote input 3
Pin 4	Remote input 4
Pin 5	Remote input 5
Pin 6	Remote input 6
Pin 7	Remote input 7
Pin 8	Remote input 8
Pin 9	Remote input 9
Pin 10	Remote input 10
Pin 11	Remote input 11
Pin 12	Remote input 12
Pin 13	Ground
Pin 14	Ground
Pin 15	+10 VDC, 25mA

Analog 0-10V remote fader or switch inputs, which can be supplied from the current-limited source at pin 10, or from an external 10VDC source

MIDI

male 5 pin DIN

Pin	Description
Pin 1	Not connected
Pin 2	Ground
Pin 3	Not connected
Pin 4	Data +
Pin 5	Data -

Asynchronous serial, 1 start bit, 8 data bits, 1 stop bit, no parity, 31250 baud.

Printer Port

female 25 pin D-type

Pin	Description
Pin 1	Strobe
Pin 2	Data 0
Pin 3	Data 1
Pin 4	Data 2
Pin 5	Data 3
Pin 6	Data 4
Pin 7	Data 5
Pin 8	Data 6
Pin 9	Data 7
Pin 10	Ack
Pin 11	Busy
Pin 12	Paper end
Pin 13	Selected
Pin 14	Auto feed
Pin 15	Error
Pin 16	Init
Pin 17	Select in
Pin 18-25	Ground

Normal and extended Centronics parallel port modes (LPT1).

Serial Port 1

male 9 pin D-type

Pin	Description
Pin 1	Data carrier detect
Pin 2	Receive data
Pin 3	Transmit data
Pin 4	Data terminal ready
Pin 5	Ground
Pin 6	Data set ready
Pin 7	Request to send
Pin 8	Clear to send
Pin 9	Ring indicator

General purpose RS232, baud rates 1200 to 38400 (COM1 port).

Serial Port 2

male 25 pin D-type

Pin	Description
Pin 1	Not connected
Pin 2	Transmit data
Pin 3	Receive data
Pin 4	Request to send
Pin 5	Clear to send
Pin 6	Data set ready
Pin 7	Ground
Pin 8	Data carrier detect
Pin 9-19	Not connected
Pin 20	Data terminal ready
Pin 21	Not connected
Pin 22	Ring indicator
Pin 23-25	Not connected

General purpose RS232, baud rates 1200 to 38400 (COM2 Port).

Pins 2 and 3 of this port are wired to pins 5 and 6 of the AUX 3 port on consoles with older electronics only, to allow the hand-held Designers Remote terminal to be connected. No such restriction applies to consoles with newer electronics.

VGA

female 15 pin high density
D-type

Pin	Description
Pin 1	Analog Red 0-0.7V
Pin 2	Analog Green 0-0.7V
Pin 3	Analog Blue 0-0.7V
Pin 4	No connection
Pin 5	Self Test
Pin 6	Red ground
Pin 7	Green ground
Pin 8	Blue ground
Pin 9	No connection (key)
Pin 10	Ground
Pin 11	Ground
Pin 12	No connection
Pin 13	H sync (TTL)
Pin 14	V sync (TTL)
Pin 15	No connection

640x480 pixels, 16 colours, 60Hz refresh.

This port is compatible with both VGA and SVGA monitors.

Port 1 is the main console display output, Port 2 is the additional channels display output in Dual VGA mode.

Glossary and Abbreviations

AMX192	A type of analog multiplexed signal used for controlling dimmers and other devices. The AMX192 standard for the analog multiplex transmission of levels is defined by USITT, and supports a maximum of 192 signals per cable. There is 1 AMX192 output connector on the console, labelled AMX.
archive	Transfer of recorded data to, or from, the console to a floppy disk or printer.
attribute	A channel type as set up in the patch. This controls an attribute of a fixture rather than its intensity level, for example its colour, pan, tilt etc. See also channel
Auto Go	Automatically starts the next cue on completion of the current cue. See also wait time.
blackout	A lighting state where all intensity channel levels are off. Attributes are not affected. You can create a blackout by running cue 0 (a permanent blackout cue), by setting the grand master fader to zero, by pressing [STOP] (having set it to blackout mode), by pressing [REM DIM] twice with no channels selected, or by pressing [*][@][*] while in the <i>Live</i> display.
blind recording	The process of recording submasters, cues, effects, or groups without the results showing on stage. See also preview and live
Block Cue (BL)	A cue into which channels do not track. In a tracking system, this ensures that all channels are forced to known levels when this cue is run, regardless of any changes made in cues before it. Channels set in a block cue track to later cues. See also soft block and hard block.
bump button	A button associated with each submaster fader which flashes the submaster to a preset level. See also flash and solo.
bump mode	The current operational mode of the bump buttons, set using [BUMP MODE] and the bump mode buttons that appear in the centre LCD (consoles with 3 LCD displays) or right LCD (consoles with 2 LCD displays).
circuit	Connection device and wiring for powering a lighting fixture from a dimmer
channel	Device controlling an output or group of outputs. Historically, there was a physical controller (such as a slider) for each channel. On current control systems, channels are numbers accessed by a numeric keypad. There can be up to 2000 intensity channels and 2000 attribute channels. The actual number of channels is determined by the software you purchased, and the number of attribute channels may be limited by your hardware performance. You can increase the number of attribute channels beyond the purchased maximum by deleting intensity channels and assigning them as attribute channels, but cannot increase intensity channels beyond the purchased maximum. Channels are numbered arbitrarily from 1 to 9999.

Channel Control	A set of controls which let you select and modify the levels for a set of channels (the current selection).
channel level	The value of a channel from 0% (off or on at 0) to 100% (Full).
colour scroller	See scroller.
Command Line	A mode of entering commands. Commands generally need to be terminated by [*] before taking effect. See also Direct Action.
console	The 430/520/530/550 unit with the controls, LCD's and floppy disk aperture on its top panel. This is connected to the displays, dimmers, automated fixtures, a printer, etc. through connectors at its rear.
cue	A recorded lighting state plus fade times which can be played back on an X playback. Each cue consists of 1 to 12 parts. There can be up to 2000 cue parts numbered arbitrarily from 1.1 to 999.9 where the number after the decimal point is useful for inserting cues between integer numbered cues. All cues including decimal-numbered cues can have parts. Also called a preset. See also parts, Block Cue, and Tracking Cue
cue command	An optional action taken automatically when a cue is run.
cue sheet	A listing of the cues currently recorded.
current selection	The channels or outputs which are being controlled by the Channel Control. These are shown with a red or purple background on the display.
D54	A type of analog multiplexed signal used for controlling dimmers and other devices. The D54 standard for the analog multiplex transmission of levels is defined by Strand Lighting, and supports a maximum of 384 signals per cable. There is 1 D54 output connector on the console, labelled D54.
default	A factory programmed setting which is used at initial power up or by the user
delay time	The time between running a cue and starting its fade. Delay times can be split for the up and down fades.
dimmer	An electronic device external to the console that controls the brightness of one or more fixtures. A dimmer is normally controlled by an output from the console which in turn is controlled by an intensity channel. The console can control up to 4096 dimmers or other devices that can be controlled by DMX512, AMX192, or D54, signals (512 for each of the 4 console DMX's and each of the 4 network DMX's). See also scroller.
Direct Action	A mode of entering commands (Direct 1 Digit or Direct 2 Digit, named after the number of channel level digits which have to be entered before a Direct Action channel control command terminates automatically). The commands generally take effect as soon as the final key is pressed. See also Command Line.
display	A specific set of data that is shown on the console monitors. To identify the specific display and its parts, the display name (for instance, <i>Groups</i> display) and screen name (<i>State</i> screen or <i>Levels</i> screen) are used. See monitor and screen.

Display group	A special group containing “flag” channels (values can only be off or FL) used to determine which channels are displayed on <i>Levels</i> screens. The group is only used when the Channel Formatting field in the <i>User Setup</i> display is set to Display Group .
DMX512	A type of digital multiplexed signal used for controlling dimmers and other devices. The DMX512 standard for the digital multiplex transmission of levels is defined by USITT, and supports a maximum of 512 signals per cable. There are 4 DMX512 output connectors on the console, labelled DMX1 through DMX4.
down fade	The channels in a fade whose levels are decreasing. These may have different fade (and other) times than the Up Fade.
effect	A repetitive sequence of steps (lighting states) which can be played back on an effect playback. There are up to 600 effects numbered from 1 to 600. Each effect consists of 1 to 99 steps.
effect playback	A playback control which lets you play an effect. There are 30 effect playbacks numbered from 1 to 30.
entry mode	The mode of entering commands. See Command Line and Direct Action.
fade	A gradual change of channel levels from one lighting state to another. See also down fade and up fade.
fader	A control on the console top panel which is used to set times or levels. For example, each submaster has a dedicated fader which has a range of 1 to 10.
Flash	A facility for setting all selected channels to the same level temporarily. Channels are usually set to Full.
follow-on	A cue which runs automatically via a wait time in the previous cue. See also wait time.
Full	An intensity channel level of 100%, shown as FL. A channel at Full is always on. This does not apply to attribute channels.
Fx	See effect.
grandmaster	A fader that masters all the intensity output levels. Attribute channels are not affected by this.
Grandmaster group	A special group containing “flag” channels (values can only be off or FL) used to determine which channels are affected by each grandmaster fader. The group is always active.
hard block	A soft key that appears when you press [REC MODE] . It lets you create a cue (called a hard block cue) that will cross fade to all new levels without each channel being marked as having changed. Channels cannot be individually unblocked, although changes from individual channels in earlier cues can be made to track into a hard block cue in Preview. See also track thru.
HTP	Highest takes precedence. If more than one source of control affects a channel, the channel level is set to the one with the highest level. See also LTP.
intensity	A channel type as set up in the Patch. This controls the intensity (light) level of a fixture. Also see Full, on, off, on At 0, on level.

LCD	Liquid Crystal Display; a type of display. There are either 2 or 3 LCD displays built in to the console top panel, depending on the model number.
Levels screen	The screen (or screens in systems with more than two screens) that shows channel intensity and attribute levels. See also <i>State</i> screen.
link	A jump to a named cue in the cue sheet instead of to the next numerical cue.
live editing	The process of editing the lighting levels that appear on stage.
live recording	The process of recording submasters, cues, effects, or groups from lighting levels that appear on stage.
loop	Specifies how many times a link is executed from 1 to 255 times. A value of 0 is indefinitely. Up to 4 Loops can be nested within
LTP	Latest takes precedence. If more than one source of control affects a channel, the channel level is set to the one which is the last to take control. See also HTP.
macro	A recorded sequence of key presses which can be played back. There are up to 1000 macros numbered from 0 to 999 each with up to 120 keys.
Memory Lock	Memory Lock prevents recorded data from being altered but does not stop normal control or playback.
MIDI	Musical Instrument Digital Interface. An electrical and communications standard. See also MSC.
monitor	A computer display device. Refers to the physical device in this manual. This console can have one to four monitors, which are connected to, but separate from, the console. See also screen.
MSC	Midi Show Control. A way of controlling a show via the MIDI input.
multiplex	A means of transmitting output level data for many outputs down a single signal cable. See AMX192, D54, and DMX512.
non-dim	An output type as set up in the Patch. This controls the intensity (light) level of a fixture but the level remains off until the channel level reaches a predetermined threshold over which it goes to Full.
off	An intensity channel level which is at 0% and is not on At 0. This is displayed as a blank. The opposite to off is on. This does not apply to attribute channels.
on	An intensity channel level which is either above 0% or on At 0. This is displayed as 0 to 99 or FL (Full). The opposite to on is off. This does not apply to attribute channels.
on at 0	An intensity channel level which is at 0% but is treated as being on rather than off. This is displayed as 0. This does not apply to attribute channels.
ON group	A special group containing channel levels which, if present, are used instead of the value in the On Level field in the <i>User Setup</i> display to set intensity and attribute values when you use [ON] .

on level	A level which can be set to any value and which can then be used to set channel levels by using [ON] . This does not apply to attribute channels.
output	One of 4096 levels that can be output from the console to control external devices such as dimmers and automated fixtures.
part	A recorded lighting state used as part of a cue. All parts start when the overall cue is started. Parts 2 to 12 in a multi-part cue are always Move Fade.
Partition group	A special group containing “flag” channels (values can only be off or FL) used to determine which channels can be recorded or are controllable via channel control. This can be very useful in multi-console systems. The group is only used when the Channel Partitioning field in the <i>Show Setup</i> display is ON .
patch	Specifies the channel which controls each output. Each output can only be patched to one channel but a single channel can be patched to more than one output. The patch also sets up the type of channel (intensity, attribute etc.) and the channel scaling.
playback	One of the X playback or effect playback controls.
Preheat group	A special group containing channel levels which, if present, are used to set the preheat level when a channel is auto-preheated. The group is only used when the Auto Preheat field in the <i>Show Setup</i> display is ON .
preview	<i>To look at or change a cue using the Cue/Preview display so that the changes do not appear on the console output. See also Blind and Live.</i>
preset	See cue.
proportional	Level Wheel mastering which changes channel levels by a proportion of each level. For example, proportionally mastering up by 20 would set each channel to 1.2 times its previous value so a channel at 10% would go to 12%.
Remainder Dim	Causes the channels in the current selection to remain at their current levels while all other channels are set to zero. If any channels in the current selection are at zero, they are set to the current On Level.
screen	The display surface of a monitor. This console can display one to four screens of information, depending on how many monitors are connected to it. See also monitor.
scroller	A device that changes the colour of one or more fixtures. A scroller is normally controlled by an output from the console which in turn is controlled by a channel attribute. See also dimmer, output, and attribute.
Shaft	Level Wheel mastering which changes channel levels by a fixed amount. For example, shaft mastering up by 20 would add 20 to each channel level so a level at 10% would go to 30%.
Soft block	A soft key that appears when you press [REC MODE] . It lets you create a cue (called a soft block cue) that has all channels marked as having changed. This prevents channels from earlier cues from tracking through. Each channel can later be unblocked in the <i>Preview</i> display. See also block cue and hard block.

soft key	One of a row of keys below each LCD whose function is indicated on the bottom line of that LCD.
split delay	A delay time with different up delay and down delay times assigned to it.
split fade	A fade time with different up fade and down fade times assigned to it.
Solo	A facility for temporarily inhibiting the levels of all channels that are not currently selected, allowing the selected channels to become the current lighting state.
State screen	The screen that shows state information for the X playbacks, submaster faders, and effects playbacks. See also <i>Levels</i> screen.
step	A recorded lighting state used as part of an effect. There can be up to 99 steps in an effect.
sub	See submaster.
submaster	A playback control with an associated lighting state allowing channel levels to be manual controlled. There are 24 to 54 submasters, depending on console type. The last 6 of these are generally assigned as supermasters, but can also be used as submaster faders.
supermaster	One of 6 specialized submaster types which are normally assigned to the last 6 submaster faders. As with any other submaster type, you can assign each supermaster to any submaster on the console. But unlike other submaster types, each supermaster can only be assigned to one submaster fader. To learn how to configure supermasters turn to <i>Viewing and Editing Submasters</i> starting on page 116.
tracking	A cue recording mode where a channel level set in a cue is added automatically to later cues without having to edit each one.
track thru	A soft key that appears when you press [REC MODE] . It lets you release a cue from being a hard block.
up fade	The channels in a fade whose levels are increasing or static. These may have different fade (and other) times than the down fade.
USITT	United States Institute of Theater Technology. A standards committee.
wait time	A timer that starts counting down when a cue is run. When it expires, the next cue (or specified linked cue) is run automatically.
wheel	A control on the console top panel which is used to set times or levels.
X Playback	A playback control which lets you play back a sequence of cues. There are 2 X Playbacks numbered 1 and 2.
X Playback group	A special group containing “flag” channels (values can only be off or FL) used to determine which channels are controlled by each X playback. It is used to partition the channel range between the two X playbacks. The group is always active.

XREF (Cross Reference) A channel display format similar to a spreadsheet which shows the movement of channel levels from cue to cue.