Logic Pro 7.2.1
Dedicated Control Surface Support

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Contents

Introduction

This manual covers the control surface support of Logic Pro. Please read it thoroughly to make the most of your new controller(s).

All of the functions in Logic Pro that are normally associated with the use of an analog style mixer can be performed using just a mouse and a computer keyboard. The addition of many commercially available control surfaces can greatly enhance your creative experience by providing you with hands-on control of most realtime parameters in Logic. Move a fader and the on-screen fader in Logic will move with it. Similarly, when you make a fader move on-screen, the control surface fader moves (this only applies to control surfaces equipped with motorized faders). Adjust EQ parameters by turning one of your control surface's knobs and Logic will update instantly.

What Are Control Surfaces?

Control surfaces are hardware units that enable the operation of Logic Pro using faders, rotary knobs, switches, and displays.

There are a number of simple control surfaces that feature conventional faders and no displays. More progressive units are equipped with motorized faders, rotary encoders, LED rings, and programmable displays. The more feedback a control surface provides, the easier it is to use, as you don't need to watch the computer screen in order to determine what mode the unit is currently in.

Control surfaces—dependent on the options (buttons, knobs, switches, displays, and so on) available—have the potential to:

- control all Logic transport functions
- adjust instrument, input, bus, aux, master, and audio channel volume and pan levels
- control Channel EQ and Linear Phase EQ parameters
- select and control all effect and Instrument parameters
- select, solo, mute, and arm tracks
- set and adjust send parameters

- remotely switch between Screensets
- scrub MIDI and audio
- zoom in on individual tracks
- create, delete, and move between markers, and much more

For live use, control surfaces are ideal. The performing musician only needs to take a laptop, equipped with suitable audio and/or MIDI interfaces, a keyboard, and a control surface to a live event. Some units available nowadays incorporate a keyboard, audio interface, control surface, and MIDI interface into a single package.

Given that Logic Pro's track automation facilities can be active, even when not in record mode, you can capture your "live" real time changes for later recall. This ensures that you'll never again lose that "once-in-a-lifetime" performance—on stage or in the studio.

How Control Surface Integration Works

Logic Pro features dedicated support for a number of control surface models. This is achieved through several plug-ins that are directly integrated into Logic. Some plug-ins support multiple, similarly-featured control surface models.

Note: Although many other control surfaces are supported, the Logic/Mackie Control, C4, and XT control surface units are recommended for use with Logic.

Logic also allows you to reprogram existing assignments for supported control surfaces and to program new assignments for unsupported control surfaces. This facility allows you to extend the use of faders, knobs, and switches, either directly or through the use of modifier commands.

You can use any combination of control surfaces with Logic Pro. You will get most out of them, however, when used in a Control Surface Group (provided all devices are supported by the same plug-in).

Universal information, that applies to all control surfaces, is covered in the following chapter. Please read this before taking a look at the dedicated section on your control surface(s).

A detailed overview of group, installation, and other control surface setup parameters is found in Chapter 1, "Control Surface Setup," on page 13. Please read this, as it contains a lot of useful information that will help you to customize and/or make the most of your control surface(s).

Important: Specific information on device setup is found at the beginning of the relevant chapter for your control surface (see the table below).

It is assumed that you are familiar with the basic use and terminology of Logic Pro. As such, the functionality and uses of individual Logic parameters are not covered in this documentation. Please consult your *Logic Pro 7 Reference* manual or the Online Help, if you require further information.

You are strongly encouraged to press buttons, move sliders and turn the knobs of your control surface while reading through the following chapters. This will help you to get a "feel" for how your control surface works, and how the various parts of the control surface interact with one another, and Logic.

A listing of control surfaces that are directly supported by Logic (via a control surface plug-in included in the Logic package), how they differ from similar devices, and cross references to the relevant sections are shown below.

Note: It is possible that your device may be directly supported in Logic via a suitable control surface plug-in, supplied by the manufacturer. Please check the website of your control surface manufacturer. Follow any written instructions supplied with the plug-in, if available.

Supported Devices	Manufacturer	Notes
01V96	Yamaha	The Yamaha 01V96 emulates two HUI units, using two virtual MIDI in and out connections over its USB cable. See "Yamaha 01V96" on page 203.
01X	Yamaha	The Yamaha 01X emulates a Logic Control. It does not feature all controls available to the Logic (and Mackie) units, however. Please refer to the 01X documentation for details. Logic recognizes the 01X as such and displays a custom icon, but communication is as with a Logic Control. See "Logic Control" on page 47.
02R96	Yamaha	The Yamaha 02R96 emulates three HUI units, using three virtual MIDI in and out connections over its USB cable. See "Yamaha 02R96" on page 211.
Baby HUI	Mackie	The Baby HUI is a stripped-down version of the HUI. See "Mackie Baby HUI" on page 147.
C4	Mackie	The Logic Control plug-in has been extended to support the Mackie C4. See "Mackie C4" on page 151.
CM408T	Euphonix	See "EuCon Support of Euphonix MC and System 5-MC" on page 111.
CS-32 MiniDesk	JLCooper	See "JLCooper CS-32 MiniDesk" on page 135.

Supported Devices	Manufacturer	Notes
DM1000	Yamaha	The Yamaha DM1000 emulates two HUI units, using two virtual MIDI in and out connections over its USB cable. See "Yamaha DM1000" on page 217.
DM2000	Yamaha	The Yamaha DM2000 emulates three HUI units, using three virtual MIDI in and out connections over its USB cable. See "Yamaha DM2000" on page 225.
FaderMaster 4/100	JLCooper	See "JLCooper FaderMaster 4/100" on page 141.
FE-8	Tascam	Extension unit for FW-1884. See "Tascam FW-1884" on page 185.
FW-1082	Tascam	A stripped-down version of the FW-1884, with dedicated support in the FW-1884 plug-in. See "Tascam FW-1884" on page 185.
FW-1884	Tascam	See "Tascam FW-1884" on page 185.
HUI	Mackie	Important: The HUI plug-in has been tested with the original Mackie HUI. There are a number of control surfaces not mentioned here which can emulate the HUI. We have not tested all devices capable of HUI emulation, and don't provide any support for them, nor do we guarantee that they will work with Logic in HUI emulation mode. See "Mackie HUI" on page 163.
iControl	M-Audio	See "M-Audio iControl" on page 101.
KONTROL 49	Korg	A larger version of the microKONTROL, with dedicated support in the microKONTROL plug-in. See "Korg microKONTROL and KONTROL49" on page 143.
Logic Control XT	Mackie/Emagic	This is the extension unit for the Logic Control. It only offers the channel strip section, making it less useful without a Logic Control. See "Logic Control" on page 47. Also see the Appendix for more details.
Logic/Mackie Control	Mackie/Emagic	See "Logic Control" on page 47. Also see the Appendix for more details.
Mackie Control	Mackie	The original Mackie Control hardware is similar to the Logic Control. The front panel legend is different, however. You should request a Logic Control Lexan Overlay from Mackie. As Logic also recognizes the Mackie Control protocol, you may use any firmware version. If you have firmware version 1.02 or higher, you can freely use either the Logic Control or Mackie Control mode. See "Logic Control" on page 47.

Supported Devices	Manufacturer	Notes
Mackie Control Extender	Mackie	Mackie Control version of the Logic Control XT. As Logic also recognizes the Mackie Control protocol, you may use any firmware version. If you have firmware version 1.02 or higher, you can freely use either the Logic Control or Mackie Control mode. See "Logic Control" on page 47.
Mackie Control Universal	Mackie	A Mackie Control with Logic Control silk screening (legend) and firmware version 2.0 or higher (including HUI emulation). As Logic also recognizes the Mackie Control protocol, you may use any firmware version. If you have firmware version 1.02 or higher, you can freely use either the Logic Control or Mackie Control mode. See "Logic Control" on page 47.
MC	Euphonix	See "EuCon Support of Euphonix MC and System 5-MC" on page 111.
microKONTROL	Korg	See "Korg microKONTROL and KONTROL49" on page 143.
Motormix	CM Labs	See "CM Labs Motormix" on page 123.
Radikal Technologies	SAC-2.2	There is a dedicated plug-in for the SAC-2.2/2k's native mode. The Logic Control plug-in detects an SAC-2.2 (in Logic Control emulation mode) and ignores it, avoid two installations of the SAC-2.2. See "Radikal Technologies SAC-2K" on page 173.
Radikal Technologies	SAC-2k	See "Radikal Technologies SAC-2K" on page 173.
SI-24	Roland	See "Roland SI-24" on page 179.
TranzPort	Frontier Design Group	See "Frontier Design TranzPort" on page 131.
US-224	Tascam	A stripped-down version of the US-428, with dedicated support in the US-428 plug-in. See "Tascam US-428 and US-224" on page 199.
US-2400	Tascam	Logic has support for the US-2400's native mode. In contrast to its Logic Control mode, all controls, including the joystick, are supported. See section "Tascam US-2400" on page 193.
US-428	Tascam	See "Tascam US-428 and US-224" on page 199.

Control Surface Setup

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Logic offers dedicated support for a number of control surfaces, plus the option to program unsupported devices.

The following chapter describes functions applicable to all control surface models. Specific documentation for various models is available in the following chapters.

Control Surface Plug-ins

Dedicated control surface support is achieved through the use of special plug-in files. These files are automatically added when Logic is installed.

They are located in the /Contents/MIDI Device Plug-ins sub-folder of the Logic application bundle (to view the bundle contents, Control or right-click on the Logic application icon, and choose Show Package Contents from the menu). Logic also checks for control surface plug-ins in the (optional) "/Library/Application Support/Logic/MIDI Device Plug-ins" and "~/Library/Application Support/Logic/MIDI Device Plug-ins" (the "~" denotes your user home directory) folders.

When new control surface plug-ins are released independently from a Logic update, please place them in the folders described above (or as advised in the documentation supplied with the plug-in).

About Software and Firmware

Most control surfaces have no "intelligence" of their own. Their functionality is host software-based, making them reliant on Logic to tell them what to do/how to behave. What this means is that control surfaces cannot perform any function that Logic itself isn't capable of. It also means that if Logic is not booted, most control surface units will do nothing at all.

This reliance on the host application makes your control surface the ultimate upgradable hardware. As new functions are added to Logic, or you create new assignments (see "Control Surface Setup" on page 13), your control surface will be able to access and control them.

Most control surface units do, however, have a form of software called "firmware." This firmware is much like the BIOS found in your computer. New behaviors—at a hardware level—such as improved control of fader servo motors and changes to the display can be made via firmware updates.

The firmware is usually stored on an EEPROM (Electronically Erasable Programmable Read Only Memory) chip. It can often be updated via a simple MIDI dump procedure, in the form of a MIDI file.

Should new firmware become available, you can simply download the appropriate MIDI file and play it to your control surface(s), which will be updated accordingly. The steps required to perform a firmware update will be outlined in the documentation that accompanies the MIDI file. Please read this *before* attempting any update.

Note: Some control surfaces may require a physical chip replacement for firmware updates. Please contact the manufacturer of your device for details.

Getting Started

To make use of your control surface, you will require:

- An installed, authorized copy of Logic Pro.
- If a USB or FireWire equipped device (such as a Yamaha 01X)—a free USB or FireWire port. This should preferably be a direct USB/FireWire connection with the computer, rather than via a USB/FireWire hub. Please refer to the documentation provided by the manufacturer of your control surface.
- If a MIDI-only device (such as a Logic Control)—a free MIDI in and out port for each unit, on any suitable MIDI interface. As an example; if using a Unitor 8 or AMT 8, which feature 8 MIDI in and 8 MIDI out ports, with one Logic Control and one Logic Control XT, you will need to use two of the Unitor8/AMT8's MIDI ins and two of its MIDI outs.
- An installed driver (if required by your control surface) that is supported by the operating system version being used.

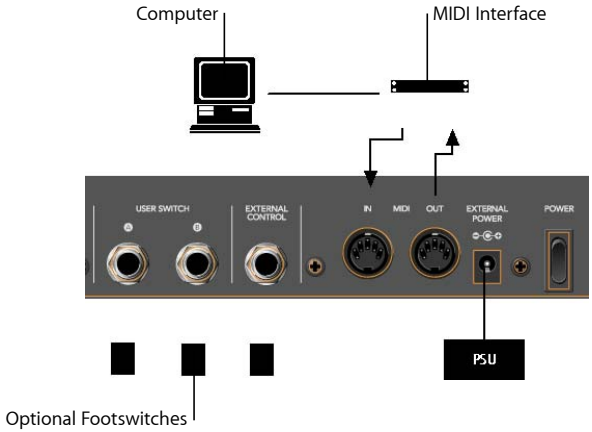
Important: Your MIDI interface must feature driver software that supports SysEx communication. Please consult the documentation that shipped with your MIDI interface.

The number of units that can be run simultaneously is dependent on the availability of free MIDI in and out, FireWire or USB ports on your system. In a standard setup, a single control surface will be used alone, or accompanied by one or more units. It is also possible to make use of several units to create *Control Surface Groups*, as discussed in "Control Surface Groups" on page 17.

The use of multiple control surfaces expands on the number of tracks, parameters, and so on that can be controlled with individual faders, knobs, and switches. As an example, the Logic/Mackie Control XT units are basically identical to the channel strip section (fader, V-Pot, and LCD) of the main Logic/Mackie Control unit. The Mackie C4 features a number of V-Pots, but no faders. You may add as many XT, C4, or other control surface units as you wish to your Logic system, provided enough MIDI in and out ports are available.

Connecting the Unit(s)

Connect your (MIDI) control surfaces as shown in the diagram below.



As mentioned earlier, *each* MIDI control surface must have a discrete MIDI in *and* MIDI out connection. Do *not* "daisy-chain" other MIDI devices via MIDI thru to the MIDI in or out ports used by control surfaces, as this may result in data errors.

FireWire and USB units are connected via a single cable to the computer. It is generally recommended that this is a direct connection with the Macintosh, rather than via a FireWire/USB hub. Daisy-chaining or the use of hubs can result in data errors.

Optional Footswitches and Pedals

If your control surface features suitable connectors, you may use optional foot switches to remotely control start/stop and other functions. This may be useful when using guitars or other instruments that require two-handed playing.

Power Up

Once everything is connected, press the power switch on your control surface. Once powered, the displays and/or LEDs will illuminate and the LCD (if applicable) will generally display a welcome message (often including the firmware version number). Each fader will slide to the top, and back to the bottom of its travel on most motorized control surfaces. This self-diagnostic power-on procedure indicates that your units are functioning correctly.

Your computer and MIDI interface can be powered up before or after initialization of your control surface units. Logic can be started either before or after the units have completed initialization.

Installing and Setting Up Control Surfaces

Some control surface units (Logic/Mackie Control, for example) will automatically be detected when Logic is launched. Units which are not detected automatically can be added via the Setup window. This is accessed via the Setup option in the Preferences > Control Surfaces menu.

Installation is very easy (and is covered in the Set Up section of the chapter on your specific device). Some devices may require different or additional steps, but generally, all you need to do is select the device(s) that you wish to use in Logic, as follows:

To install control surfaces using the Scan function of Logic:

1. Choose New > Install, and in the ensuing Install window, select the desired device from the list.

   Note: You may select one or more models. To select more than one model, select them with Command held down. If you select more than one model, Logic performs the desired operation for each model in turn.

2. Press the Scan button. You can also press Enter or double-click the device name.

   Logic will then analyze your MIDI system, and will automatically install the devices it finds, including the correct connection settings.

   Note: The Scan function is preferable to manual installation, as Logic is able to gather the maximum amount of information about the devices.

   If you don't want to select the models to be scanned manually, you can also click "Scan all." This will search for all supported control surface units on all MIDI ports. Please be aware that this may take a while.

   Some control surfaces don't support automatic scanning. Such devices must be added manually to your setup. In this scenario, you will need to manually set the MIDI In and Out port parameters.

To manually add the selected devices to your system:

1. Select the desired devices from the list in the Install window.
2. Click the Add button.

Note: Alternatively you can Option-double-click the desired device.

If a control surface of the selected type already exists in your setup, you will be asked whether or not you really want to add the new device. You will need to manually alter the MIDI In and Out port values in the device parameters to match those of the connected unit.

Once you have completed the scanning or installation of the devices, click *Done*. The Install window will close.

Rebuilding Defaults

The Preferences > Control Surfaces > Rebuild Defaults option re-initializes the support of all connected control surfaces.

Control Surface Groups

If you have multiple control surface units, you can define how they relate to each other, and build *Control Surface Groups*. A Control Surface Group consists of a number of control surface units (using the same plug-in) which are combined to create a single, unified (and larger) control surface.

You can build up to 20 Control Surface Groups. Each "group" can consist of any number of physical units. The only limiting factor is the number of available MIDI In/Out (or USB/FireWire—defined as MIDI) ports.

When multiple control surface units are combined, you can independently determine the default behavior for each physical device. This is discussed in the Device Parameters (p. 19) section.

To build a Control Surface Group out of several units:

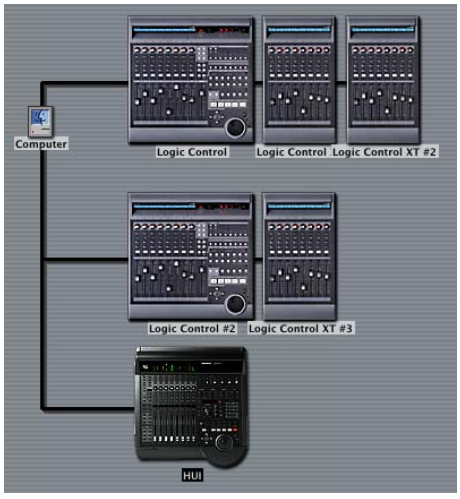
- Simply arrange their icons (in the Setup window) in a single horizontal row—by dragging each icon to the desired onscreen location.

  The order of the icons from left to right also defines how the tracks and parameters are arranged on the units.

To use two control surfaces independently:

- Simply arrange them in separate rows—that is, one above the other.

Here is an example with two Logic Control, three Logic Control XT units and a HUI: Computer icon connected to three rows, as below:



The top row, consisting of Logic Control XT #1, Logic Control XT #2 and Logic Control #1 form a single Control Surface Group with 24 channels. XT #1 controls channels 1 to 8, XT #2 controls channels 9 to 16, and Logic Control #1 handles channels 17 to 24.

Logic Control #2 and Logic Control XT #3 form a second Control Surface Group, displaying, say instruments (on channels 1 to 8) and busses (on channels 9 to 16).

The HUI forms a single unit control surface group.

Each Control Surface Group has individual settings, such as *Flip Mode*, *Fader Bank Offset*, *Plug-in Parameter Bank Offset* and others. This allows you to access, edit, and automate different sections of the Logic mixer.

In our example, the three units in the top row could be used for control over audio tracks and MIDI channels. In the middle row, Logic Control #2 could be used for Audio Instrument channels 1 to 8, and XT #3 could be used for busses. The HUI might edit group definitions. The physical placement of units, and the way you use them, is entirely up to you.

Note: The placement of your control surface units in relation to each other should be the same onscreen as in the real-world. Simply drag 'n drop the desired icon horizontally in your Control Surface Group to do so.

Setup Window Parameters

The three Parameter boxes along the left edge of the Setup window allow you to configure your control surface setup to meet your needs.

Device Parameters

Each control surface unit must be connected to an independent MIDI in and out port (or corresponding USB/FireWire port, designated as a MIDI port by the device driver). The automatic setup or *Scan* procedure should have found, and set, the correct MIDI in/out port settings for each unit.

In the event that the MIDI in or out port identification is incorrect, you can manually select the appropriate one for the unit. To do so, click-hold on the MIDI *Input* and *Output* pull-down menus, and select the appropriate port(s) of your MIDI interface/device.

Some devices allow you to define a device ID (or global/basic channel). This can be set in this area. Module name, model name and firmware version are also displayed in the device parameters.

The Color parameter defines the color of the Track Control Bar—a bar displayed in the Arrange window, indicating the tracks that are currently being accessed by your control surface. The Track Control Bar of each control surface can be assigned a different color.

Special Parameters

Some control surfaces may allow the definition of "special" parameters. An example of this is fader touch sensitivity. Such parameters can be found in the *Special Parameters* area. A detailed description can be found in the documentation of the particular control surface plug-in.

Control Surface Group Parameters

The following parameters are shown in the Setup window. They apply to the Control Surface Group associated with the selected device, and allow you to set each group up to meet your needs. This facility is of great benefit when multiple Control Surface Groups have been created.

Many (if not all) Control Surface Group parameters can also be changed directly from the control surface. The parameter display in the Setup window is for information purposes only.

Any changes to settings (made here, or on the control surface) are saved in a preferences file, which is independent of the Logic program preferences: it's named "com.apple.logic.pro.cs", and is located in *~/Library/Preferences/Logic*.

Display Parameters

The following section describes the display parameters of a Control Surface Group.

Flip Mode

Many control surfaces offer both a fader and a rotary encoder for each channel strip. *Flip Mode* allows you to swap the encoder assignment with that of the fader for each channel. Alternately, you can assign both controls to the same parameter.

There are four "flip" or "swap" modes.

- *Off*—disables *Flip Mode*, making the fader act as a volume control.
- *Duplicate*—makes both the fader and encoder active for the currently selected encoder parameter.
- *Swap*—swaps the fader and encoder, making the fader a pan control and the encoder a channel volume control, for example.
- *Mute*—disables the faders. This is useful for situations where recording is taking place in the same room as the control surface, and you wish to avoid the mechanical noise of the faders. Any existing automation data will still function as per normal.

Display Mode

If there is insufficient space available for the display of both the parameter name and value (on the control surface LCD), you can specify what is displayed here:

- *Value*—displays the parameter value.
- *Name*—displays the parameter name.

Clock Display

If your control surface features a song position display, the Clock Display parameter allows you to set the display mode:

- *Beats*—the song position display shows Bars/Beats/(optional) Sub Division/Ticks.
- *SMPTE*—as above, but in Hours/Minutes/Seconds/Frames.

Note: The exact elements displayed, and thus their positions, depend on the selected SMPTE or bar/beat display option defined in the Logic Preferences.

Track View Mode

This parameter determines which tracks or channels are displayed:

- *Mixer*—displays channels in their order of appearance in the Track Mixer window (while Global mode is disabled). Channel Strip 1 in the Track Mixer is equivalent to channel 1 on the control surface, Channel Strip 2 in the Track Mixer is equivalent to channel 2 and so on. Instruments/channels used by multiple tracks are merged into one channel. Mixer View is the default mode of most devices, including the Logic/Mackie Control.

- *Global*—displays all Objects of certain type(s)—MIDI or Bus channels, for example—independent of their usage by tracks. They merely need to be defined as Environment Objects to be visible. The Object types to be displayed are defined by another parameter which is not shown in the parameter list. If a control surface supports switching to Global View, it will also allow you to define which Objects to display. The Track Mixer window contents automatically follow the state of the Global View buttons. It also sets Object filters in accordance with the Object classes activated in *Global View*.
- *Arrange*— *Arrange View* is similar to *Mixer View*, with one exception: Namely, if multiple tracks play back via the same Environment Object, all of these tracks will be displayed on separate channel strips. This is helpful when used in conjunction with the nudge commands, for example. The Hide button status is taken into account, with tracks hidden in the Arrange window also being hidden on the control surface.

These modes are mutually exclusive, so if you're in one *View* mode, you cannot be in the other.

It is important to note that the *Mixer* vs. *Global View* modes is a property of the *Control Surface Group*, not a global setting. So one group can display busses, while the other shows tracks, for example.

Mixer View Fader Bank
This parameter affects the *Track View* mode by shifting channels by the defined amount. Imagine that your control surface has eight channel strips, and you were looking at audio tracks 1 to 8 in the Arrange window. These would appear as channels 1 to 8 on the control surface. Using the *Mixer View Fader Bank* parameter, you could offset this view by a defined number of channels, to see audio tracks 3 to 11, for example.

Global View Fader Bank
The *Global View Fader Bank* parameter performs much like the *Mixer View Fader Bank*, but only applies if multiple Object types are enabled. When single Object types are enabled, there are separate fader bank parameters (these aren't displayed in the parameter list).

Track/Channel Parameters

The track or channel parameters define the behavior of a control surface's channel/track controls.

Track Parameter
Defines the current track assignment behavior for the encoders. Options are:

- *Volume*—encoders adjust channel volume.
- *Pan*—encoders adjust channel panorama position.
- *Mode*—encoders adjust/select channel mode (mono/stereo).

- *Input*—encoders adjust/select channel input source.
- *Output*—encoders adjust/select channel output (main outs/busses/surround).
- *Automation*—encoders adjust/select channel automation mode.
- *Group*—encoders adjust group membership of the track. Editing the parameter allows you to set either no group or a single group. Enabling membership of multiple groups is not possible here.
- *Displayed parameter*—encoders adjust the automation parameter displayed in the Arrange window. This is especially useful if you set the control surface to Arrange View mode, and your Arrange window shows multiple sub-tracks with various parameters.

Surround Parameter

Defines the default pan/surround assignment behavior for the encoders. Options are:

- *Angle*— encoders adjust surround angle.
- *Diversity*—encoders adjust surround diversity (direction).
- *LFE*—encoders alter LFE level.
- *Mode*—encoders switch between the various surround formats.
- *X*—encoders adjust surround x position.
- *Y*—encoders adjust surround y position.
- *Center*—encoders adjust the Center Level values of a surround output channel.

Note: The X and Y parameters are a different representation of the Angle and Diversity parameters, and thus are independent from them. The X and Y parameters support the use of surround joysticks.

EQ Band

The EQ Band parameter allows you to select the current EQ band, if you wish to edit a particular Channel EQ or Linear Phase EQ parameter for all tracks in the *EQ Multi Channel View*.

EQ Parameter

This parameter determines which parameter of the selected EQ Band is edited by the encoders in *EQ Multi Channel View*:

- *Frequency*—encoders determine the frequency of the selected band.
- *Gain*—encoders change the gain of the selected EQ band. For the Low Cut (band 1) and High Cut (band 8) bands of the Channel and Linear Phase EQ, this parameter controls the slope.
- *Q*—encoders change the Q factor of the selected band.
- *On/Off*—encoders bypass the selected EQ band.

EQ Parameter Page

The EQ Parameter Page parameter defines the EQ parameter displayed in the *EQ Channel Strip View*.

To explain: The Channel and Linear Phase EQs feature 8 bands per audio channel, with each band offering four parameters. All of these parameters can be accessed with your control surface.

If you use a control surface that does not display all EQ parameters at once, you need to step through the parameter "pages." As an example: Imagine you are using an eight channel control surface. You can directly affect parameters 1 to 8 with knobs/sliders 1 to 8—once you've switched to EQ Channel Strip Edit View. You then need to switch by a "page" to access parameters 9 to 16.

Send/Plug-in Parameters

These parameters define how your control surface controls send and plug-in parameters.

Send Slot

The Send Slot parameter determines the currently selected *Send* slot. Normally, a value of 1 would be used, as this accesses the first (top) Send on each channel. A value of 2 accesses the second Send, and so on, to Send 8. The Send slots are accessed by pressing the *Up/Down* buttons on your control surface—if applicable.

Send Parameter

Defines the Send parameter (to be edited with the encoders) when in the *Send Multi Channel view*:

- *Destination*:—encoder is used to determine the bus channel number for the Send slot.
- *Level*—encoder is used to adjust the Send level.
- *Position*—encoders set Pre or Post fader modes.
- *Mute*—encoders mute/unmute the selected Send slot.

Send Parameter Page

Much like the EQ parameters, up to 32 parameters are available in *Send Channel Strip View* for a given channel (Eight Send slots multiplied by the four parameters listed above). *Send Parameter Page* determines the current page for these parameters.

Split: no. of upper parameters

Control surfaces that support split mode allow the display of two separate parameter sections within one plug-in (or even different plug-ins). They are called Split Upper and Split Lower.

This parameter defines how many encoders belong to Split Upper, leaving the remaining encoders to Split Lower. A value of 0 means that Split Mode is off—with all encoders assigned to the Split Upper area.

Instrument Parameter Page
The *Instrument Parameter Page* option determines the parameter (counted from 1) which is assigned to the left-most encoder when editing an Audio Instrument. The next Instrument parameter is assigned to encoder 2, and so on.

This applies to Split Upper when Split Mode is enabled.

Inst Parameter Page (Split Lower)
As above, but for Split Lower.

Insert Slot
Determines the current Insert slot number for both selecting a plug-in (in *Plug-in Channel Strip View)* and editing its parameters. A value of 1 accesses the first (top) plug-in slot on each channel. A value of 2 accesses the second plug-in slot, and so on.

With Split Mode enabled, this applies to Split Upper.

Insert Slot (Split Lower)
As with Insert Slot, but for Split Lower.

Plug-In Parameter Page
As with Instrument Parameter Page, but for editing plug-ins. Having these parameters separate allows you to quickly switch between editing an instrument and an effect on a track, without the need to adjust the parameter page every time.

With Split Mode enabled, this applies to Split Upper.

Plug-In Parameter Page (Split Lower)
As with Plug-In Parameter Page, but for Split Lower.

Track
Specifies the currently displayed track for Channel Strip Views. With Split Mode enabled, this applies to Split Upper.

Track (Split Lower)
As with Track, but for Split Lower.

Track Lock
When this parameter is set to "on," selecting a track in Logic does not change the Track and Track (Split Lower) parameters. In other words, the control surface group continues to display the same track, independent from the currently *selected* track.

When Track Lock is disabled, the control surface group automatically switches to the selected track, whenever a track is selected.

Other Parameters

The following section describes the Track Name Format, Parameter Page Shift Mode, Relative Change Mode, Mix Group and Group Parameter Page parameters.

Track Name Format

Changes the track name display to show the track name alone, or the track name, and its track number. As an example, a track named "Audio1" may actually be placed on track 12 in the Arrange window. When a value of *#:Name* is toggled, "Audio1" would be displayed as "12:Au1".

Parameter Page Shift Mode

Defines whether the parameter is shifted by an entire "page" or by one parameter.

Relative Change Mode

This determines the behavior of controller assignments that features a relative value change mode (for example rotary encoders).

- *Coarse:* the parameter can be adjusted in coarse steps.
- *Full:* In this mode, a turn to the right sets the encoder to its maximum value. A turn to the left sets the encoder to its minimum value. The encoder also stops at its default value. As an example: When the Pan knob is somewhere left of center, turning the encoder to the right will initially set the Pan parameter to its center (default value) position, with a further right-turn setting the full right (maximum value) position.
- *Fine:* the value is incremented/decremented in fine steps—by one tick or "unit," for example. In this mode, the standard adjustable resolution is ignored, and the highest possible resolution is used. As an example, using the Sample Delay parameter: every encoder rotation tick in/decreases the value by 1 ms, regardless of the resolution value.

Note: *Coarse* is the default mode.

Mix Group

When in Group Edit mode, this parameter defines the edited group.

Group Parameter Page

As with the *Instrument Parameter Page*, but for the parameters of the edited group.

Control Surface Preferences

The Control Surface preferences window is accessible via the Logic > Preferences > Control Surfaces > Preferences menu.

Note: You can also use the global Control Surfaces Preferences key command.

General

The following section outlines the General control surface preferences.

Resolution of Relative Controls
This defines the default resolution of controls that change values in a relative manner. The default is 128 steps.

As an example: adjusting the Sample Delay (value range 0 to 4000 ms) in/decreases the value by 40 ms with every encoder rotation "tick," if resolution is set to 100.

Maximum MIDI Band Width
This slider determines the maximum amount of MIDI bandwidth that can be used by your control surface. By default, this is set to 50%, which should be suitable for most situations. You can adjust the value if you find that your MIDI or automation playback is being affected.

Touching fader selects track
Activation of this parameter will automatically select the track that corresponds to the selected fader. You require a device that features touch-sensitive faders for this functionality to work.

Jog resolution depends on horizontal zoom
If your control surface features a jog/shuttle wheel (or similar), the precision of any scrubbing is affected by the horizontal zoom level of Logic. To retain a consistent resolution, regardless of Logic window zoom levels, disable this checkbox.

Pickup Mode
If your control surface does not feature motorized faders and knobs, parameter changes—caused by playing back existing automation—are not reflected on its surface.

Such control surfaces usually offer a Pickup mode. In Pickup mode, the current value must be reached ("picked up") by the control surface before a value change can occur. This prevents sudden "jumps" of parameter values after parameter changes caused by playing back automation. A display (usually a pair of LED's) will indicate the direction/distance you need to move the controller to match (also known as "NULL") the settings shown in Logic. Once you have matched the onscreen values, deactivate Pickup mode, and start automating.

When the Pickup mode option is disabled, adjusting a fader modifies the parameter immediately.

Multiple Controls per Parameter
These parameters determine whether one, or multiple, encoders are used per parameter when editing plug-ins or audio instruments.

When multiple encoders are used per parameter, the encoders are subdivided into groups (for example 1/2, 3/4, 5/6, 7/8). The first encoder of each sub-division controls the parameter shown in the display. The remaining encoder(s) are inactive.

Using more than one encoder per parameter shows fewer parameters at any given time, but you gain space on the LCD to cater for longer parameter names and values. The more control surfaces you have within a Control Surface Group, the more you benefit from this feature.

The *Multiple controls per parameter* pull-down menu defines the maximum number of encoders which will be used for a single parameter.

- *1:* Parameters are always displayed using one encoder per parameter, with the least space available for parameter name and value in the LCD.
- *2:* On each unit, encoders 1 and 2 are used for the first parameter, encoders 3 and 4 for the second, and so on.
- *4:* On each unit, encoders 1 to 4 are used for the first parameter, encoders 5 to 8 for the second, and so on.

Only when all Parameters fit in one Page
When this option is checked, the defined number of encoders are only used when there are sufficient encoders available to show all parameters without changing pages. As an example:

- You have a Logic Control and two Logic Control XTs, providing you with 24 encoders.
- A plug-in with 13 parameters will be shown with one encoder per parameter. Eleven encoders will remain unused.
- A plug-in with 11 parameters will be shown with two encoders per parameter. Two encoders will remain unused (as will the inactive encoders of the abovementioned sub-divisions).

When the option is unchecked, multiple encoders are used for each parameter, which may require scrolling. This would not be the case if only one encoder was used for each parameter.

Show Value Units For:
Allows you to adjust whether parameter values will be appended by the measurement "unit," where applicable—"Hz" or "%", for example. You can set this option separately for *Instrument / Plug-in parameters* and *Volume and other parameters*. If you can do without the value units, the display is less cluttered.

Controller Assignments
The *Controller Assignments* button launches the Controller Assignments Editor.

Setup
The Setup button launches the Control Surfaces Setup window.

Help Tags

Control Surfaces that offer freely programmable displays with more than six characters per line/segment of the display, can use Control Surfaces Help Tags. These Help Tags are similar to Logic Help Tags, showing additional information during use. You can determine the type of information displayed in the Help Tags pane of the Control Surfaces preferences.

While Editing Show Long Names For:

- *Parameter Name*—While editing a parameter, the upper LCD line displays the full parameter name, rather than an abbreviated form of it.
- *Parameter Value*—While editing a parameter, the lower LCD line displays the full parameter value. If the *Show value unit for* parameter box (see below) is checked, it will be appended by the measurement unit, where applicable—"dB", "Hz" or "%".

Note: The following options only have an effect if at least one of the two parameters above is active.

Display duration (s)
Use the mouse to adjust the time that parameter names and values remain on the LCD display, following selection/adjustments.

Allow multiple info
This determines the behavior when you edit multiple parameters simultaneously. When enabled: the long name info remains in the display, until the most recently edited parameter's display times out. This may cause overlapping text. When disabled: the long name display is only shown for the most recently edited parameter. This can cause flicker.

Show info when selecting tracks
When this option is checked, and you select a track, you will see "Selected" in the upper row, and the selected track's name in the lower row of the LCD. You can disable this feature, if you find it disconcerting.

Show info when editing volume
When this option is checked, and you edit a track's volume, you will see "Volume" in the upper row and the new volume value in the lower row. You can disable this feature, if you find it disconcerting.

Show Value Units For:
Allows you to adjust whether parameter values will be appended by the measurement "unit," where applicable—"Hz" or "%", for example. You can set this option separately for *Instrument / Plug-in parameters* and *Volume and other parameters*. If you can do without the value units, the display is less cluttered.

Note: This parameter only applies while editing.

Customizing Control Surfaces

Logic allows you to reprogram existing assignments for supported control surfaces and to program new assignments for unsupported control surfaces. This facility allows you to extend the use of faders, knobs, and switches, either directly or through the use of modifier commands. As an example, The buttons F1 to F8 of the Logic Control are assigned to screensets 1 to 8 by default. When reassigned directly, or combined with the Shift, Option, Control, and Command modifiers (used in any combination), you can freely assign any command to these function keys (F1 to F8).

To assign a MIDI control to a parameter:

1. Click the destination parameter that you want to "teach" Logic.
2. Activate Learn by pressing Command-L (default), or via the *Logic* > *Preferences* > *Control Surfaces* > *Learn Assignment for "xxx"* menu option (the parameter name is appended to the menu item text).
3. The (small) assignment editor window is launched, with the *Learn Mode* button enabled.
   - If you continue to hold down the computer's Command key (or whatever modifier key is assigned to the key command), a Help Tag will indicate what needs to be done next (move control, for example).
   - If MIDI messages are received while the Command key is held down, releasing the key closes the Help Tag window, and the learn procedure is completed.

Note: If no MIDI messages are received, releasing the Command (modifier) key(s) leaves the *Learn Mode* button enabled, allowing you to immediately retry the generation of the intended control message. You will need to disable the *Learn Mode* button manually, once the procedure is completed.

To abort the learn procedure:

- Either press Command-L a second time, or click the *Learn Mode* button.

This will, however, result in a new, unfinished assignment. You can re-enable the *Learn Mode* button to assign a message.

To delete a MIDI control assignment:

1. Click the destination parameter that you would like to delete.
2. Select the *Logic* > *Preferences* > *Control Surfaces* > *Delete Assignment for "xxx"* menu option (the parameter name is appended to the menu item text), press the backspace key—or you may use the Edit > Clear menu option.

To assign a control surface button to a key command:

1. Select the desired key command in the Key Commands window.
2. Click the *Learn New Assignment* button.
3. Press a control surface button that sends a MIDI message.

Note: After about 5 ms, the *Learn New Assignment* button is automatically deactivated. This is designed to prevent recording of a button release message.

It is also possible to assign a key command to a button/key release message:

1. Simply press and hold the desired button/key before you enable the *Learn New Assignment* button.
2. When you release the button/key, the selected key command is assigned to the button release message.

To delete a key command assignment:

1. Select the desired key command in the Key Commands window.
2. Press the Backspace key.

Changing an Existing Assignment

The Learn procedure opens the Assignment Editor in Easy View, which offers an overview of the most important parameters, allowing you to tweak the newly-created assignment in the following ways:

- Control Name (*Learned* for unsupported devices; name of control for supported devices).
- Class (Track, for example).
- Object (Fader Bank, for example).
- Parameter (Volume or Plug-in parameter 5—relative to the parameter bank, for example).
- Value Change message (Display only).
- Mode (Direct, Toggle, Scaled, Relative, Rotate, X-OR).
- For On/Off parameters, the mode is set to Toggle by default. Otherwise it is set to Scaled if an absolute control (fader, pot) has been recognized, or to Relative if an encoder has been recognized.

- Multiply, with shortcuts for +1 and –1 (–1 for decrementing).

Note: For details on the abovementioned Assignment parameters read "Assignment Parameters" on page 35. For a full view of all parameters, enable the Expert View option.

Shortcuts for Defining Multiple Assignments

If you want to define multiple assignments in the Controller Assignment Editor, you can use the following shortcuts:

Scenario 1: assign faders 1 to 16 to volume of tracks 1 to 16

1. Learn volume track 1 for fader 1.
2. Learn volume track 16 for fader 16.
3. As the track "distance" (15) is the same as the controller number distance for the two most recently learned assignments, a "Do you want to fill up in between?" message appears. Select OK to automatically fill the faders with corresponding Volume assignments for each track.

Note: This feature also works for any other track parameter (Pan, Solo, Mute, and so on).

Scenario 2: assign knobs 1 to 16 to plug-in parameters 1 to 16

1. Learn parameter 1 for knob 1.
2. Learn parameter 16 for knob 16.

Note: The parameter enumeration is shown in the Plug-in window's Control View.

3. As the gap between parameter numbers (15) is the same as the gap between controller numbers for the two most recently learned assignments, a "Do you want to fill up in between?" message appears. Select OK to automatically fill the knobs with corresponding Parameter assignments for each.

Note: This feature also works for instrument parameters. Currently, this only works for knobs that send a single channel message, where the first data byte is the controller number and the second data byte is the value. Alternatively, the controller number can be encoded in the MIDI channel, with a fixed first data byte.

Zones, Modes, and Assignments

You can define "groups" of controls on a control surface that can be switched between different operating modes. As an example, the Logic Control rotary encoders can be used to control Pan, Send Level or plug-in parameters.

Such "groups" are called *Zones*. The different operations that can be performed within a Zone are called *Modes*.

A Zone contains one or more Modes, one of which is the active Mode. A Zone may also contain modeless assignments—assignments which are always active.

The reason for this structure is that you can place modeless assignments nearer to the modal assignments they are associated with. As an example, where pressing and releasing the Option button switches between two modes for the Function keys of an assignment.

A Mode contains any number of assignments. Only the active Mode's assignments are processed for incoming MIDI and feedback. Assignments of inactive Modes are ignored.

A Zone's active Mode can be switched by special Assignments (see below).

There can be multiple Zones. As examples, one for the encoders and a second one that switches the F1 to F8 keys to different functions.

Zones and Modes can be defined across multiple control surfaces, to create Control Surface Groups.

You can visualize the Control Surface System as a hierarchical list. As an example:

Zone 1

- Modeless Assignment
- Modeless Assignment
- *Mode 1*
  - Modal Assignment
  - Modal Assignment
- *Mode 2 (active)*
  - Modal Assignment
  - Modal Assignment
  - Modal Assignment
  - Modal Assignment
- Mode 3
  - Modal Assignment

Zone 2

- Mode 4 (active)
  - Modal Assignment
- Mode 5
  - Modal Assignment
  - Modal Assignment

Reassigning a Control

If you want to reassign a control, the procedure depends on the current state of the control.

Case 1: Control is currently active (an assignment for this control is part of an active Mode).

If you attempt to learn an assignment for an "active" controller, the following message is displayed: "This control is currently assigned to xxx. Do you want to reassign the control?"

- *Cancel*—Deletes the learned assignment.
- *Parallel assignment*—Retains the new assignment. Typical usage: one knob controls multiple parameters as a macro.
- *Reassign*—Deletes all existing active assignments for this parameter. Typical usage: reassigning an F1 to F8 key to a new key command.
- *Create new mode*—Creates a new mode and places the assignment into the new mode. In this scenario, you will need to learn an assignment to switch between the old and new modes.

Should you choose the latter option, the Controller Assignment Editor opens in Expert view, with the new mode selected, and a warning icon. If you move the mouse cursor over the icon, a Help Tag indicates that: "There is no mode change assignment yet to switch to this mode. Please click "Learn Mode Change" to create one."

Case 2: Control is currently inactive (an assignment for this control is part of an inactive mode).

The learned assignment is moved to the active mode of the zone where the inactive assignment was found.

Typical usage of this facility: Supported control surfaces have empty user pages available, allowing for new encoder assignments. You would select user mode, and then learn an assignment for the encoder.

You can define multiple pages for a control surface.

Cases 1 and 2 can occur simultaneously.

Reassigning a Parameter

Logic allows you to reassign a parameter that is already assigned to a MIDI control. The procedure depends on the current state of the assignment.

Case 1: Assignment to a parameter that is currently active (as it is part of an active mode)

If you attempt to change an existing "active" parameter assignment, the following message is displayed: "This destination parameter is currently assigned for control xxx. Do you want to reassign the parameter?"

- *Cancel*—Deletes the learned assignment.
- *Parallel assignment*—Retains the new assignment. Typical usage: One knob controls multiple parameters as a macro.
- *Reassign*—Deletes all existing active assignments for this parameter. Typical usage: Reassigning an F1 to F8 key to a new key command.

Case 2: Assignment to a parameter is currently inactive
If an assignment to a parameter is currently inactive (as it is part of an inactive mode), no special action is required.

The Controller Assignments Editor

The Controller Assignments Editor is opened via the Logic > Preferences > Control Surfaces > Controller Assignments menu item.

It allows you to edit all assignments of the Controller Assignments table. This table is a part of the Control Surfaces Preferences and is stored (along with all other control surface support settings) in the *~/Library/Preferences/com.apple.Logic.pro.cs* file.

The Controller Assignments Editor offers two view modes: *Easy* and *Expert*. The view modes can be switched via the Expert View option at the top of the window.

Easy mode is designed to make learning Track parameter assignments as fast and efficient as possible. Therefore, this window only shows Track parameters—when first opened. After switching to Expert view and manually choosing another parameter class, the corresponding parameters are also shown in Easy view. It is generally recommended that Easy view is only used for Track parameter assignments.

Easy mode offers an overview of the following parameters:

- Parameter: Displays clear text of the addressed parameter.
- Track (default): This field can be used to specify the track parameter you would like to assign. You can choose between the Selected option (which is the default, if creating assignments on the selected track) or a fixed track number (if you want to set up your controls as a mixer surface).
- Input message: Displays the incoming message data.

Note: For details on the abovementioned Assignment parameters read "Assignment Parameters" on page 35. For a full view of all parameters, enable the *Expert View* option.

Only one set of assignment parameters are visible at a time. You can choose the desired assignment with the left/right arrows at the bottom of the window. If you activate the Follow option at the top of the Controller Assignments window, the window always selects the assignment that matches the most recently received incoming MIDI message.

In Expert mode, there are four re-sizable columns:

- *Zone*—Selects the Zone that contains the Modes and assignments being edited. The first entry "(No Zone)" is for zoneless assignments. Double-click a Zone name to edit it.
- *Mode*—Selects the Mode that contains the assignments being edited. The first entry "(No Mode)" is for mode-less assignments. Double-click a Mode name to edit it. Selecting a Mode in the list also makes it the Zone's active Mode. The active Mode is marked with an arrow.
- *Control/Parameter*—Selects the assignment displayed in the editor to the right. Multiple selection is possible for operations in the Edit menu. In this scenario, however, only the first selected assignment is displayed. The left column displays the control name, the right column the controlled parameter (in an abbreviated form).
- *Assignment Parameters*—Displays all parameters of an assignment. See the next section.

If you activate the Follow option at the top of the Controller Assignment Editor, the window always selects the assignment that matches the most recently received incoming MIDI message.

Assignment Parameters

The following section covers all parameters that can be edited in the Controller Assignment Editor.

Control Name

Name of the control (Fader 1, for example). This is *Learned* by default for assignments created with the Learn function (see above) from supported control surfaces. This name is for information purposes only and has no influence on functionality.

Label

Text displayed on control surfaces that feature a display (and are supported by a plug-in). A @ character starts an escape sequence which acts as a placeholder for dynamically generated text. The escape sequence consists of three characters: @ and two additional characters:

First Character:

Character	Meaning
t	Track
r	Surround
s	Send slot
S	All Sends
e	EQ band
E	all EQs
p	Plug-in Insert slot
i	Instrument

Second Character:

Character	Meaning
#	Number of above (track number, Send slot, EQ band, Plug-in slot)
n	Name of above
p	Name of parameter addressed by the assignment
P	Name of first parameter
o	Parameter offset, counted from 1
O	Maximum parameter offset, counted from 1
b	Parameter bank (= parameter offset/bank size), counted from 1
B	total number of banks (= parameter offset/bank size), counted from 1

Example: "Send@s#" shows "Send1", "Send2", and so on.

Flip Group

When set (to any value other than "none"), this number defines a counterpart for Flip Mode. By setting a fader and an encoder to the same Flip Group, for example, they are coupled. To set "none," enter *0*.

Exclusive

Only for supported control surfaces: when the Exclusive checkbox is enabled, the assignment deactivates all other assignments that have *Exclusive* disabled (for the same control). This limits the overwriting of a modeless assignment to particular modes. Example: Faders normally control volume. If you want to create a mode where faders control send level, enable *Exclusive*.

Class

This pop-up menu can be used to define the assignment class or, put another way, what type of destination parameter is controlled. The following section explains all available Class options.

Mode Change

The Mode Change option allows you to use an assignment to activate a mode in a Zone. An additional Mode pop-up menu appears below the Class menu, offering different Modes you can switch to. As an example: The *Assignment* buttons on a Logic Control choose several Modes for the encoders.

Note: The Mode that is recalled also depends on the option set in the Value section's Mode menu (See "Mode" on page 43.). The following table explains how the different Value Modes take effect.

Value Mode option	Explanation
Direct	The stated Mode is activated in the Zone it belongs to. It is not necessary for the Mode Change assignment to be located in the same Zone. Example: While Shift is held down, button X switches the encoders to EQ view. The Shift and X buttons are in Zone A, but the encoders are in Zone B. All other value modes: Only the Modes of the Zone the Mode Change assignment is located in can be recalled. The destination parameter minimum is this Zone's first Mode, and the maximum is the Zone's last Mode.
Toggle	A button might toggle between the Zone's first Mode and the stated Mode
Relative	Useful for stepping up and down through Modes of a Zone using two buttons, or for choosing a mode using an encoder.
Rotate	Useful for stepping through all modes using a single button. A jog wheel, for example: Off → Scrub → Shuttle → Off

Global

The Global option allows you to use an assignment to control global parameters. An additional Global pop-up menu appears below the Class menu, offering the parameters listed in the following table.

Global Options	Explanation
SPL	Song Position Line; Text feedback in format of foreground window (beats or time code)
SPL (Beats)	Song Position Line; Text feedback in beats format
SPL (Time Code)	Song Position Line; Text feedback in time code format
SPL (Beats, Scrubbing)	Song Position Line; Text feedback in beats format. Value change does not set SPL directly, but initiates scrubbing. The value defines the scrubbing speed
Move Locators	Moves left and right locators
Left Locator	Sets left locator
Right Locator	Sets right locator
Move Drop	Moves Drop In and Drop Out locators
Drop In Locator	Sets Drop In locator
Drop Out Locators	Sets Drop Out locator

Global Options	Explanation
Marker Position	Edits position of current marker
Marker Length	Edits length of current marker

Note: All options listed in the table above work only in relative mode. See the "Clock Part" sub-parameter.

Global Options	Explanation
Nudge selected Regions/Events	Nudges the selected Regions or events by the chosen Nudge Value (see below)
Any Solo	Feedback only, used for "Rude Solo Light". On if any Solo (track or Region) switch is enabled
Nudge Value	Nudge Value used for *Nudge selected Regions/Events*. Possible values are: *Tick, Format, Beat, Bar, Frame, 1/2 Frame*
Scrub Status	Sets the scrubbing status for parameter SPL (beats, scrubbing). Possible values are: *set clock, audio scrubbing, Shuttle*
Automation of all tracks	Sets the automation mode of all tracks. Possible values are: *Off, Read, Touch, Latch, Write, MIDI*
Alert Text, Alert Button, Alert Icon	Used by plug-ins to define special alert mode.
Dummy	No function; Used to temporarily disable a modeless assignment, using "Exclusive"
Cycle	Sets Cycle mode
Drop	Sets Drop mode
Go to Marker	Sets the SPL to marker number
Group Clutch	Sets the Automation Group Clutch; Automation Groups are disabled when the Clutch is enabled. For buttons, set the Group Clutch to 1 when the button is pressed, and set it to 0 when the button is released
Active Sense	Used by the HUI to process incoming "Active Sensing" messages
Shuttle Speed	Sets Shuttle Speed directly; Use for shuttle rings that send an absolute value
Waveform Zoom	Sets Waveform zoom in active Arrange window, if open and in foreground
Quantize value	Sets the Quantize value in the current window (if this parameter is available)
Format	Sets the Format value in the current window (if this parameter is available)
Horizontal Zoom	Sets horizontal zoom in the current window (if this parameter is available)
Vertical Zoom	Sets vertical zoom in the current window (if this parameter is available)

Dependent of the option chosen in the Global menu, you have access to the following two additional parameters:

- Clock Part—Chooses the resolution of the parameter change: Bar, Beat, Format, Ticks, Cycle Length
- Marker No—Determines the destination marker number

Track

The Track option allows you to use an assignment to set a track parameter. An additional Track pop-up menu appears below the Class menu, offering the parameters listed in the following table.

Track Options	Explanation
Fader Bank	This addresses a track in the Control Surface Group's current View mode (Mixer, Global, Arrange), depending on the Control Surface Group's current Fader Bank value for this Mode (see below). Example: The View mode is Mixer, the Mixer view Fader Bank is five, and the number next to this parameter is two. Thus, the eighth track in the Mixer view is addressed (Fader Bank and No. are 0-based, so add 1)
Selected	This normally corresponds to the selected Arrange track. Exception: if the Control Surface Group's Track Lock parameter is enabled, then "Selected" corresponds to the track that was selected when Track Lock was enabled
Index	Same as Fader Bank option, but doesn't depend on the current Fader Bank value
Bus	An Audio Bus. *No.* defines which Bus is addressed (again: 0-based; to address Bus 2, use a value of 1)
Output	Same as *Bus* option, but for Output Objects
Master	The Master Output Object; If it does not exist in the song, the first Output Object is addressed

If you choose the Fader Bank, Index, Bus, Output, or Master option in the Track pop-up menu, the following two parameters are also available:

- No.—A 0-based offset which is added to the track number. Typical usage: Fader 1 uses offset 0, Fader 2 uses offset 1 and so on.
- Parameter—Clear text of the addressed parameter. Can only be set by the *Learn Assignment for xxx* menu item. Note that for plug-in and instrument parameters, Parameter Page offsets apply, allowing you to shift the parameter addressing up and down.

Key

If you choose the Key option in the *Class* menu, a key press is emulated. A field appears below the Class menu, allowing you to input the desired key.

Key Command

If you choose the Key Command option in the *Class* menu, a key command is executed. A field appears below the Class menu, where the key command that should be executed is displayed.

Some key commands provide on/off or enabled/disabled feedback. This can only be set by using the *Learn New Assignment* button in the Key Commands window.

If you want your key command assignment to be repeatedly executed, enable the Key Repeat checkbox at the bottom of the Key Command Assignments Editor. For further information, see "Key Repeat Checkbox" on page 44.

Control Surface Group

If you choose the Control Surface Group option in the *Class* menu, you can set a property for the Control Surface Group that the assignment belongs to. A Parameter menu appears below the Class menu, where you can choose between the options described in "Control Surface Group Parameters" on page 19, with the additions listed in the following table.

Note: Assignments for unsupported control surfaces always belong to the first Control Surface Group.

Parameter Option	Additional Info
Current Mode Fader Bank	Maps to the Fader Bank for the currently used View mode (Mixer, Global, Arrange). This way, you need only one assignment per left/right button for all View Modes.
Global View Filter	When this parameter is selected, eight additional switches for the eight object classes are displayed when the View mode is *Global*. Depending on the Value Mode, these switches define which objects are displayed (by using "Direct" mode) or which are toggled (by using "X-OR" mode).
MIDI Tracks Fader Bank; Inputs Fader Bank; Audio Tracks Fader Bank; Instruments Fader Bank; Aux Fader Bank; Busses Fader Bank; Output Fader Bank; User Fader Bank;	These Fader Bank parameters are used in Global View when only one object class is displayed. This way, you can switch between several object classes while retaining the current Fader Bank for each class.

If you choose a Fader Bank or Parameter Page option in the Parameter menu, the following Bank Type options are also available.

- By One—The fader bank or parameter page is shifted by one track or parameter.
- By Bank—The fader bank or parameter page is shifted by the number of displayed tracks or parameters.
- CS Group Setting—The fader bank or parameter page is shifted by the value defined by the "Parameter Shift Mode" Control Surface Group Parameter.

Automation Group

If you choose the Automation Group option in the *Class* menu, you can use the assignment to set an automation group parameter.

A Parameter Group field that allows you to determine the edited group appears below the Class menu. *Current* (entered with "0") means the group selected in the *Automation Group* Control Surface Group parameter.

The additional Parameter menu allows you to set the automation group parameter. For further information, see the Group Settings section in the *Logic Pro 7 Reference Manual*.

MIDI Input

Incoming MIDI messages are only processed on MIDI Input. When this parameter is changed, all other assignments using the same input will also have their input changed accordingly. If the assignment belongs to a supported control surface, the device's MIDI Input will also change in the Setup window. This feature allows you to create default assignments for a new control surface, which other users can use immediately. To do so, they simply need to place your *com.apple.Logic.cs* preferences file into their Preferences folder, open the Controller Assignments Editor and change one assignment's MIDI Input parameter in accordance with their MIDI setup.

Value Change

The incoming MIDI message(s) that cause a value change in the destination parameter are displayed here. To edit these MIDI messages, switch to the Expert View by activating the corresponding checkbox in the upper right corner of the Controller Assignments Editor.

In the Expert View you'll find two fields: the lower one is only a display that shows the Value Change message in plain text. The upper field display allows the messages to be viewed and edited as a sequence of bytes, displayed in hexadecimal. There are placeholders for the variable part:

- Lo7: Low 7 bits of the value
- Hi7: High 7 bits of the value

If there is only a Lo7 placeholder in the message, the value is treated as 7 bit. If there is also a Hi7 placeholder, the value is treated as 14 bit. The order of Lo7 and Hi7 is honored, and there may be constant bytes in between. This allows you to define Control Change LSB and MSB portions. As an example: B0 08 Hi7 B0 28 Lo7

Note: When entering multiple MIDI messages, do not use Running Status. Always write down the entire MIDI message(s), ensuring that you repeat the status byte, even if it's the same.

If the message does not contain Lo7 or Hi7 placeholders, an incoming value of 1 is assumed. This is typical for pressed or released buttons. Also see the "Multiply" section below.

Touch/Release

The incoming MIDI message(s) causes a change in the touched/released status of the destination parameter. A non zero value means touched; a value of 0 means released. The messages are displayed and entered in the same way as the *Value Change* field (see the "Value Change" section above).

Note: This only applies to the *Track* assignment class and parameters that can be automated.

Min/Max

Defines the minimum and maximum range for incoming values represented by Lo7 and Hi7. Typically, the full range of 0–127 is used, but some control surfaces may use the same message with different value ranges for different controls (CM Labs Motor Mix, for example).

Format

Defines the way negative values are encoded in the 7-bit portions sent over MIDI. You can choose between the following options:

- Unsigned—No negative values are possible. The full 7 or 14 bit range is treated as a positive number. This results in a value range of 0 to 127 or 0 to 16383.
- 2's complement—If the most significant bit is set, the value is negative. To obtain the absolute value, invert all bits and add 1. This results in a value range of –128 to 127 or –8192 to 8191.
- 1's complement—If the most significant bit is set, the value is negative. To set the absolute value, invert all bits. Note that this allows two possible encoding values for zero. This results in a value range of –127 to 127 or –8191 to 8191.
- Sign Magnitude—If the most significant bit is set, the value is negative. To set the absolute value, clear the most significant bit. Note that this allows two possible encoding values for zero. This results in a value range of –127 to 127 or –8191 to 8191.

The appropriate format that should be used is usually documented in your control surface user manual. If unavailable, check the control surface manufacturer's website, or contact them via phone.

Multiply

Allows the incoming value to be scaled. Especially useful for button presses that have a value of 1. Examples: to set the automation mode to *Write*, set *Multiply* to 4.00 and Mode to *Direct*. To decrement a parameter by 1 with a button press, set Multiply to –1.00 and Mode to *Relative*. The *1* and *–1* menu items in the combo box's menu conveniently enter the most commonly used values of 1 and –1

Mode

Defines the way the incoming value modifies the current parameter value. You can choose between the following parameters:

- Direct—The incoming value is the new parameter value.
- Toggle—If the parameter's current value is 0, it is set to the incoming value. Otherwise it is set to 0. This option is useful for buttons which toggle a value: Mute, Solo, and so on.
- Scale—The incoming value is scaled from its value range to the destination parameter's value range. Most useful for faders and rotary pots.
- Relative—The incoming value is added to the parameter's current value. Used by encoders, but also for buttons that increment/decrement by a certain amount (set by the Multiply parameter).
- Rotate—The incoming value is added to the parameter's current value, cycling between maximum and minimum values. This is useful for button presses that cycle between modes: automation mode, for example.
- X-OR—The value defines a bit mask which is applied to the parameter's current value with the "exclusive or" Boolean operation. Useful for enabling/disabling single Object types in Global View.

Feedback

Defines the way the parameter's current value is displayed on the control surface. You can choose between the following options:

- None—No feedback is sent.
- Single Dot/Line—LED rings: only one LED; LCDs: a single vertical line.
- Left to Right Bar—A bar from the minimum to the current value.
- Right to Left Bar—A bar from the current value to the maximum.
- Q/Spread—A bar from the center to the current value.
- Ascending Bar LCDs—A bar from the bottom to the current value.
- Descending Bar LCDs—A bar from the top to the current value.
- Text Only—LED rings: no feedback; LCDs: no feedback as a graphic element.
- Automatic—Dependent on the currently assigned parameter, the most suitable feedback mode is used: Plug-in and Instrument parameters carry this information, Pan uses *Single Dot/Line*, all other parameters use *Left to Right Bar*.

Note: Feedback only works for supported control surfaces, and not all settings are available for all controls.

Text Feedback Checkbox

If enabled, a textual representation of the current value is sent to the control surface's display. The plug-in determines the display position and number of characters that are used.

Local Feedback (Fader/Knob) Checkbox

If enabled, no feedback is sent while the parameter is in *Touched* mode. This prevents motorized faders from "fighting" against the user.

Key Repeat Checkbox

When you enable the Key Repeat checkbox, the assignment is repeatedly executed. The Key Repeat Rate slider—set in the Mac OS X Keyboard & Mouse preferences—determines how quickly Logic repeats the assignment. The duration that the button/controller must be held for, before the assignment is repeated, is set with the Delay Until Repeat slider in the Keyboard & Mouse preferences.

Example: This facility is particularly useful for the zoom function: If you assign a key repeat command to the Zoom buttons on the Logic Control, for example, you can simply hold down the Zoom In button. Logic will zoom in until the Zoom In button is released. This mirrors the behavior of the Zoom key commands. In earlier versions, you had to repeatedly press the (Logic Control) Zoom buttons to zoom in/out more than one level.

Note: The Key Repeat checkbox is only available for key commands, key presses and relative value changes. If any other assignment class is selected, the checkbox is dimmed.

Logic Pro factory key command assignments already support the Key Repeat function (if useful and/or applicable to the control surface/device)—making changes unnecessary for use of this new functionality.

If you want to enable the Key Repeat function for your own assignments, you may need to use the re-learn option for the assigned message. Key Repeat messages must include the Lo7 byte, which provides information on the up (released) or down (pressed) state of the assigned button.

Logic guides you through the re-learning process: The current MIDI message is automatically cleared, Learn mode is activated, and a Help tag prompts you to send the desired MIDI message.

Releasing the assigned button—after learning the MIDI message—automatically creates the Lo7 byte, and assigns the Lo7 value for the button release message to the Min parameter. The Lo7 value for the „button pressed" message is automatically assigned to the Max parameter.

Typically, the value range of 1–127 is used for the button pressed message. The zero (0) value is generally used for button released.

Note: Some control surfaces may use different value ranges (CM Labs MotorMix, for example). Assigning the used value range to the desired Min and Max values ensures that key repeat also works with such devices. This, however, also means that you need to take care when manually changing the Min or Max value for a key command (in cases where the Min and Max values do not match the button on and button release (off) states, the complete assignment will not work). Please consult your control surface manual for further information about the values used.

About Modal Dialogs

All modal dialogs (except file selector boxes) are shown on control surfaces that feature text displays.

Modal dialogs do not allow you to perform actions in any other window when visible. As examples, authorization warnings, edit confirmations, or error messages.

When these windows "pop up" on-screen, the upper LCD row (if applicable) shows the first part, or all, of the alert text.

If the dialog text does not fit into the LCD's upper row, it will start scrolling after three seconds. You can scroll the dialog text manually with the appropriate control (see assignment tables in the appropriate chapter). Once you start doing so, automatic scrolling is disabled.

- If there is an Enter or OK button on the control surface, it triggers the dialog's default button, where applicable.
- If there is a Cancel or Exit button on the control surface, it triggers the button labeled Cancel or Abort, where applicable.
- All buttons (push buttons, including Enter/default and Cancel, as well as checkboxes and radio buttons, but not pop-up buttons) are shown in the display's lower row.

Pressing a control surface button below the display triggers the appropriate button/function in the dialog, if applicable. Following use of the Enter/Cancel button on the control surface or with the mouse, the dialog will disappear, and all controls and displays will return to their previous state.

When a file select box is onscreen, a `There is a file select dialog on the screen` message appears on the LCD or other display (if applicable to your control surface).

Tips

Control surfaces change the way you use Logic, and are most effective if you make a few small modifications to your working methods. The following collection of hints will help you to work more smoothly and efficiently with your control surface/Logic system.

Customize your Template/Autoload Songs

- Set up Screensets 1–7 to your liking. These can be accessed directly with some control surfaces (on a Logic/Mackie Control—via Function Keys—F1 to F7. Function Key 8 (F8) will close the top-most window).
- It is recommended that a full-screen Arrange window, with Track Automation View set to on, is among your Screensets.
- A full-screen Track Mixer window is also recommended.

Make Use of Markers

Not much more can be said. *Markers* allow you to quickly navigate from location to location in a project. Most control surfaces feature a number of shortcuts that allow you to rapidly switch between *Markers*.

Markers are very useful for the creation/selection of *Cycle* areas and a number of other tasks, such as *Drop In* and *Replace*.

If you tend to follow a particular song structure, or like to work with a particular number of bars (4, 8, 16 bars, and so on) for verse and chorus sections, then set up a number of *Markers* at suitable locations in your Template/Autoload songs.

Always use Projects

As soon as Logic is launched, and the desired Template or Autoload song is loaded, you should routinely create a new project folder, and name it. This will provide a default folder structure/file path that contains the song file and all audio files associated with the project.

You can also choose to include plug-in Settings files, video files, Space Designer IR files and EXS Instruments into your Project folder, if desired.

The button assigned to Save operations on your control surface will open the File Save dialog. Once the project/song has been saved once, pressing the "Save" button will incrementally save the project without launching the File Save dialog window.

Logic Control

2

This chapter will introduce you to using Logic with a Logic/Mackie Control unit.

The Logic Control and Mackie Control Universal units are functionally identical. All information in this chapter (as appropriate for the device) applies to the Mackie Control Universal, the Mackie Extender, and the C4.

To use Logic with a Logic/Mackie Control unit, you need:

- a Logic/Mackie Control unit.
- Logic Pro 7.1, or newer.

Set Up

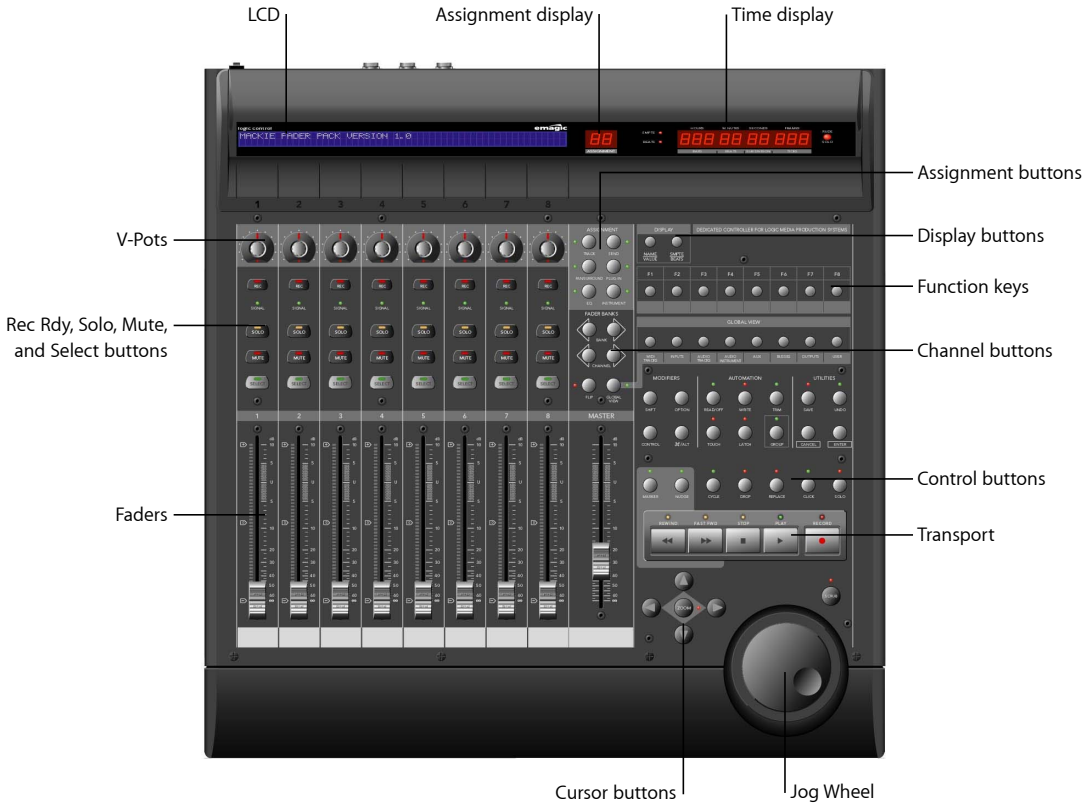
A powered Logic/Mackie Control unit will be automatically detected when Logic Pro is launched. You can use the Logic/Mackie Control in an independent control surface group (with other control surface icons placed above/below the Logic/Mackie Control icon), or combined into one control surface group with one or more control surfaces (such as Logic/Mackie Control XT or C4 units—place the icon(s) to the right of the existing icon(s).

Foot Switches

The foot switch sockets can use momentary foot pedals with either a positive or negative polarity. By default:

- USER SWITCH A is assigned to Start/Stop.
- USER SWITCH B is assigned to Record (note that a track must be selected and armed for recording to take place),
- EXTERNAL CONTROL is assigned to the MASTERfader level. Only use an expression pedal with this socket.

The polarity of the foot switches is determined by the Logic Control when powered up. As such, you should first connect the foot switches, then turn the power on.



Topics in this chapter are broken down into "Zones" of the Logic Control surface.

The Displays

The Logic Control features four displays, in addition to LEDs associated with individual switches:

- Main LCD
- Assignment LED
- Song Position/SMPTE Time display
- Solo LED

The following section discusses these displays.

Liquid Crystal Display (LCD)

Each channel/parameter can be indicated by a name or value. In general, the upper row of each channel/parameter will display an abbreviated form of the track name, and the lower row will display the (abbreviated) parameter name and/or value.
In some modes, a long (full, in other words) parameter or other name will be displayed briefly on-screen, when adjusted. The display of long names, and the duration of this display, is set in the Control Surfaces preferences. These settings are discussed in the Logic Reference manual.

Note: 8-bit ASCII characters such as curly quotes and umlaut characters are replaced by the best-possible 7-bit ASCII equivalent. As examples: ä = ae, ö=oe, ü=ue, á = a, ø = oe, œ = oe, ß = ss, å = a.

Assignment LED (Mode Display)

The Logic/Mackie Control features a two digit, seven-segment LED display which indicates the current assignment status (also referred to as the mode display).

A period is shown at the bottom-right of the display whenever a Channel Strip view is active.

Song Position/SMPTE Time Display

The Logic/Mackie Control includes a multi-digit, seven-segment LED. It is accompanied by two small LEDs which provide a quick visual indication of the currently active display format: SMPTE or BEATS.

When BEATS mode is selected, the Position/Time Display is divided into four segments, separated as follows:

Bars/Beats/Sub Divisions/Ticks

When SMPTE mode is selected, the Position/Time Display is divided into four segments, separated as follows:

Hours/Minutes/Seconds/Frames

The display format can be viewed in a number of ways. This can be altered in the Display preferences.

Solo LED

This LED indicates that either: an audio track is set to solo, or the track solo mode is enabled. It is a helpful visual aid in situations where a track has been soloed and the fader bank has been shifted—making the soloed track's *Solo* LED invisible on the control surface.

The Channel Strip(s)

As each channel strip is identical, the information discussed in this section applies equally to all eight channel strips on the Logic Control and Logic Control XT units.

V-Pot/V-Select

This "soft" potentiometer can be used to adjust the send level and pan, plus any other parameter for EQ, instruments, effects, and so on. The V-Pot can also be used to scroll through and choose items—such as plug-ins, Audio Instruments and more—from menus, and to determine destinations for sends.

The V-Pot also contains an integrated V-Select push button. This button generally sets a "default" parameter value (where a parameter has more than two possible values), or switches between two parameter values (on/off). The V-Select can also be used to activate a function, selected through use of the V-Pot. As an example, the V-Pot can be rotated in order to select an effect plug-in for a particular channel Insert slot. Once the desired effect is displayed in the LCD, a simple press downwards on the top of the V-Pot will activate the V-Select button. In the example given, this would select, and insert, the effect and launch the Plug-in window. On occasion, the V-Select is used to switch to a special Assignment mode.

The current value of any parameter being adjusted by the V-Pot is displayed on the LCD (dependent on the Name/Value setting), and is also indicated by the ring of LEDs which surround it. The various LED "ring" displays are shown here:

This will vary as follows, dependent on the selected parameter:

- Connected series of LED segments from left to right (send level, for example)
- Single segment (panorama or frequency, for example)
- Connected series of LED segments, starting in the center position and fanning to the left *or* right (EQ gain, for example)
- Series of connected LED segments, starting in the center position and fanning to the left *and* right (Q-Factor, for example)
- An LED dot *below* the V-Pot indicates the centered/default position of the parameter

Holding down the ⌘/ALT button sets the V-Pots to high resolution parameter adjustment (fine) mode, where applicable.

Holding down the OPTION button, and turning the V-Pot, switches between the minimum, default, and maximum parameter value.

Rec/Rdy (Record/Ready) Button

This button arms or disables the channel for recording. Each channel features an independent Rec/Rdy LED which is lit when a track is armed for recording.

Holding down the OPTION button, while pressing any channel's REC/RDY button will disarm *all* tracks.

In Global view, if you arm an audio channel which is currently not used by any track in the song, and then start recording, you will be asked if you want to create a new track with this audio channel in the current recording folder.

Signal LED

Indicates the presence of any outgoing MIDI or audio signal. When recording, the presence of an incoming signal will be indicated.

SOLO Button

For isolating a channel's signal. Each channel features an independent Solo LED which illuminates when a track is soloed. The Rude Solo LED—just to the right of the Position/Time Display LED—also illuminates whenever any track is soloed.

Holding down the OPTION button, while pressing any channel's SOLO button will disable solo for *all* tracks.

In the Send Destination/Level views (see "Send Assignment Modes" on page 61), the SOLO button controls the Pre/Post mode selection—in both Multi Channel and Channel Strip views.

MUTE Button

Used to defeat the track's signal. Each channel features an independent Mute LED which illuminates when a track is muted.

Holding down the OPTION button, while pressing any MUTE button will unmute all tracks.

In the EQ Frequency/Gain and Send Destination/Level views, the MUTE button controls the EQ bypass or Send mute function. This affects both Multi Channel and Channel Strip views.

SELECT Button

This button is used to select a channel for channel-based editing or assignment commands. Each channel features an independent SELECT LED which illuminates when a track is selected.

When holding down the SHIFT button, pressing any channel SELECT button will set the track's volume to unity level (0 dB).

While holding down SHIFT, a SELECT button's LED indicates if the track's volume is set to 0 dB.

When holding down the OPTION button, pressing any channel SELECT button will create a new track (assigned to the same instrument of the selected track), and switch to Arrange view.

When holding down the SHIFT and OPTION buttons, pressing any channel SELECT button will create a new track (with the next instrument, following the selected track), and switch to Arrange view.

Touch-Sensitive Motor Fader

These 100 millimeter faders control channel levels. When Flip mode is activated, the parameter currently assigned to the V-Pot can be controlled with the fader. This allows you to more easily control pans, aux returns, MIDI track parameters, EQs, plug-in, Audio Instrument, or other channel parameter levels/values. Movement of the eight faders is relative to the activity of the currently chosen bank of on-screen faders. The fader bank is shifted when one of the FADER BANK buttons is pressed.

Fader behavior in other modes

- *In Flip mode:* duplicates or swaps with V-Pot of same channel.
- *In Surround Angle/Diversity view:* adjusts surround diversity.
- *In EQ Frequency/Gain view:* adjusts gain of selected EQ band.
- *In Send Destination/Level Multi Channel view:* adjusts send level of selected send.
- *In Send Destination/Level Channel Strip view:* adjusts send level of send on selected track.

Changing Parameters and Values

Individual parameters can be adjusted via the associated V-Pot (or fader, if the FLIP button is active), located directly below the parameter entry in the LCD.

To do so, simply grab and turn the desired V-Pot. Once the required parameter value is visible in the LCD, simply release the knob.

Press the V-Select button to set the default value (for parameters that have more than two values), or switch between two values (for parameters with only two possibilities, such as on/off).

Some parameters require confirmation, such as the selection of plug-ins, Audio Instruments, sends, inputs, outputs, and so on. For these types of parameters, press the V-Select button (press down on the top of the V-Pot) to activate/select the desired value. In the case of a plug-in or Audio Instrument, this will automatically launch the Plug-in window in Logic. For a send, the confirmed channel send destination will be activated in the Logic mixer(s).

When a value has been pre-selected, but not confirmed/instantiated (such as send destination, plug-in insertion and so on) the value will flash until the V-Select button is pressed.

An exponential increase in value changes will occur as a V-Pot is rotated more quickly.

The Assignment Zone

The small light gray area just below the mode display contains six buttons.

These ASSIGNMENT buttons work in both Track and Global view modes. View modes are discussed in "Track View Mode" on page 20.

When these buttons are pressed, the mode display, plus the LED associated with each button, will update to reflect the currently selected assignment mode. The LCD will also update to display the parameters relevant to the selected assignment. These parameters are, of course, assigned to the corresponding V-Pots.

All ASSIGNMENT buttons work as switches, which means that if you click them repeatedly, they will switch between the Multi Channel and Channel Strip view modes.

- *Multi Channel view*—you see the same parameter for multiple channels. In Multi Channel view, the mode display does not show a period—Example: P1
- *Channel Strip view*—you see multiple parameters for a single channel. In Channel Strip view, the mode display shows a period to the right—Example: P1.

Switching between Multi Channel and Channel Strip views is achieved by pressing the *selected* ASSIGNMENT button multiple times.

If you press an ASSIGNMENT button which is not currently selected, the Assignment mode changes, and the view switches to Multi Channel view. Exception: Switching between Instrument Edit view and Plug-in Edit view retains the Channel Strip view.

The NAME/VALUE button also has an effect on what is shown on the LCD when in the Multi Channel and Channel Strip views. More information can be found in "Display Zone" on page 71.

Track Assignment Modes

The TRACK button selects Assignment modes which allow the editing of a number of global track parameters. It switches between all displayed channels and the individual parameters of the selected channel (Track Multi Channel view or Track Channel Strip view). The parameters in Track Multi Channel view include: Volume, Pan, Track mode, Track Input, Track Output, and Automation. In Track Channel Strip view you will see an overview of the most important track parameters: Volume, Pan, Instrument, Insert 1, Insert 2, Send 1 Level, Send 2 Level, and Send 3 Level.

Track Multi Channel View

Track Multi Channel view allows you to edit a single "global" track parameter for all tracks: Volume, Pan, Track mode, Input, Output, or Automation. The parameter being edited will be displayed briefly when switching to this mode.

- The mode display will show `tr` (for "Track").
- The upper LCD row shows track names.

```
Audio1 Audio2 Audio3 Audio4 Audio5 Audio6 Audio7 Audio8
Volume Volume Volume Volume Volume Volume Volume Volume
```

Pressing NAME/VALUE switches the display mode to show parameter values in the lower row:

```
Audio1 Audio2 Audio3 Audio4 Audio5 Audio6 Audio7 Audio8
+0.1dB -1.8dB +01.dB -30.0  +0.0dB -50.2  -24.7  -1.2dB
```

As these display variants can be switched in all Multi Channel Strip views, the following will only show displays in Value mode.

- Turning the V-Pots changes the associated track parameter.
- Pressing a V-Select sets the parameter to its default value.
- Cursor Left/Right buttons switch to the next or previous track parameter. The selected parameter will be displayed briefly in the upper LCD row.

Channel Strip View

Track Channel Strip view allows you to edit all parameters listed above, for the selected track.

- The mode display will show tr. (track channel strip).
- The upper LCD row shows the name of the track and "Track parameters."

```
Track 1 "Audio 1"                       Track parameters
Volume Pan    Inst   Ins.1  Ins.2  Send 1 Send 2 Send 3
```

Pressing NAME/VALUE switches the display mode to show parameter names in the upper row and parameter values in the lower row:

```
Volume Pan    Inst   Ins.1  Ins.2  Send 1 Send 2 Send 3
+0.5dB 0      ES2    Dstrtn AutFlt -54.0  -27.0  -oo dB
```

As these display variants can be switched in all Channel Strip views, the following will only show displays in Value mode.

- V-Pot/V-Select 1—edits Volume. The lower LCD row shows the current track volumes, either in dB or numeric format, depending on the settings of the underlying Environment Objects.
- V-Pot/V-Select 2—edits Pan position. The lower LCD row shows the current track pan value, ranging from minus 64 to plus 63. A value of 0 is the centered position. If Surround is selected as the Output value, this controls the Surround Angle.
- V-Pot 3—selects the instrument of Audio Instrument tracks. Confirm with V-Select 3.
- V-Pot/V-Select 4 and 5—selects the plug-in used in Insert slots 1 and 2 (on audio and Audio Instrument tracks). Confirm with V-Select.
- V-Pot/V-Select 6 to 8—edits the Send Level of Sends 1 to 3.

Holding SHIFT while pressing one of the MUTE or V-Select buttons switches between mute or bypass:

- 1 and 2—activates/deactivates the track's Mute button.
- 3—activates/deactivates Mute of the Audio Instrument used on the track.
- 4 and 5—activates/deactivates Bypass of plug-ins used in Insert slots 1 and 2 (of Audio and Audio Instrument tracks).
- 6 to 8—activates/deactivates Mute of Sends 1 to 3.

Shortcuts Menu

Holding down the TRACK button accesses a further sub-menu in the LCD.

```
Volume Pan    TrkMod Input  Output Auto          Setup
```

- The mode display will show t_ (Track)
- V-Select 1 or F1—switches to Track Multi Channel view and selects Volume.

- The LCD's lower line shows the current volume of the tracks, in dB or numerically, depending on the setting of the underlying Environment Object.
- Turning a V-Pot changes the volume.
- pressing a V-Select sets the volume to the default value.

- V-Select 2 or F2—switches to Track Multi Channel view and selects Pan.
- V-Select 3 or F3—switches to Track Multi Channel view and selects Track mode.
- V-Select 4 or F4—switches to Track Multi Channel view and selects Input.
- V-Select 5 or F5—switches to Track Multi Channel view and selects Output.
- V-Select 6 or F6 —switches to Track Multi Channel view and selects Automation mode.
- V-Select 7 or F7—switches to Track Multi Channel view and displays the automation parameter selected in the Arrange window. Also switches to Arrange view.
- V-Select 8 or F8—switches to Track Setup Channel Strip view (see below).

Track Setup Channel Strip View

In this mode, rarely used parameters can be edited for the selected track.

- V-Pot/V-Select 1—edits Track mode (mono, stereo, left, right).
- V-Pot/V-Select 2—selects the Surround mode. Confirm with V-Select 2.
- V-Pot/V-Select 3—selects the Track Input. Confirm with V-Select 6.
- V-Pot/V-Select 4—selects the Track Output. Confirm with V-Select 7.
- V-Pot/V-Select 5—edits Automation mode.
- V-Pot/V-Select 6—edits track group membership. You can only choose one group or "Off." To make a track a member of multiple groups, use Group Edit mode (see below).

Pan/Surround Assignment Modes

Briefly pressing the PAN/SURROUND button switches between Pan/Surround Multi Channel and Pan/Surround Channel Strip view.

Multi Channel View

Pan/Surround Multi Channel view allows you to edit one pan/surround parameter on all tracks: Angle or Pan (on non-surround tracks), Radius (diversity), LFE, Surround mode (on surround tracks). The parameter being edited will be displayed briefly when switching to this mode. Regardless of which surround parameter is selected and active, *non-surround* tracks always display the standard Pan control.

In a song that contains both surround and non-surround tracks, you can edit a specified surround parameter for surround tracks, while the V-Pot of non-surround tracks will edit panning, as usual.

- The mode display will show Pn (Pan).
- The upper LCD row shows track names.

- Turning the V-Pots changes the pan/surround parameter.
- The Surround Angle parameter rotates between 0 and 359 degrees, avoiding any angle limit.
- Pressing a V-Select sets the parameter to its default value.
- Cursor Left/Right switches to the next or previous surround parameter. The selected parameter will be displayed briefly in the upper LCD row.

Channel Strip View

Pan/Surround Channel Strip view allows you to edit all surround parameters for the selected track.

- The mode display will show Pn. (Pan/Surround channel strip).
- The upper LCD row shows the name of the track and "Pan/Surround."

```
Track 1 "Audio 1"                          Pan/Surround
SrrAng SrrDvr SrrLFE mode
```

- V-Pot/V-Select 1—edits angle (or pan on non-surround tracks).
- V-Pot/V-Select 2—edits diversity.
- V-Pot/V-Select 3—edits LFE level.
- V-Pot 4—selects the surround mode. Confirm with V-Select 4.
- V-Pot/V-Select 5—edits Surround X.
- V-Pot/V-Select 6—edits Surround Y.

The Angle/Diversity and X/Y pairs influence each other. Only the Angle/Diversity parameters are automated and recorded.

Alternate Mode Options

Holding down the PAN/SURROUND button accesses a further sub-menu in the LCD:

```
Angle  Radius LFE    mode          CStrip        Ang/Dv
```

- V-Select 1 or F1—switches to Pan/Surround Multi Channel view and selects angle.
- V-Select 2 or F2—switches to Pan/Surround Multi Channel view and selects diversity.
- V-Select 3 or F3—switches to Pan/Surround Multi Channel view and selects LFE level.
- V-Select 4 or F4—switches to Pan/Surround Multi Channel view and selects surround mode.
- V-Select 6 or F5—switches to Pan/Surround Channel Strip view.
- V-Select 7 or F6—switches to Surround Angle/Diversity Multi Channel view:
  - the mode display will show Ad (Angle/Diversity).

- the upper LCD row shows track names.
- the lower LCD row shows the surround angle currently assigned to each track.
- turning a V-Pot changes the surround angle (or adjusts pan position on non-surround tracks).
- pressing a V-Select sets the surround angle to its default value.
- the faders edit surround diversity.

- V-Select 8 or F7—switches to Surround X/Y Multi Channel view:
  - the mode display will show XY (X/Y—the X character is not available on a 7 segment display).
  - the upper LCD row shows track names.
  - the lower LCD row shows the surround X value currently assigned to each track.
  - turning a V-Pot changes the surround X value (or adjusts pan position on non-surround tracks).
  - pressing a V-Select sets surround X to its default value.
  - the faders edit surround Y.

Notes on Surround X/Y Editing

X and Y have a value range of –1000 to +1000, but the resolution is not that high, as surround positions are currently recorded as 7 bit data.

Note: The X and Y parameters are limited to a rectangular coordinate system. As such, value pairs outside the surround circle are not possible. When trying to set a value which would lead to an invalid position, the other coordinate is automatically adjusted to a valid position. Example: moving Y to +1000 will result in an X coordinate value of 0.

When editing only one coordinate, the other coordinate of the most recently track is remembered. This aids in the creation of linear (straight) lines of movement.

EQ Assignment Modes

Briefly pressing the EQ button switches between EQ Multi Channel view or EQ Channel Strip view.

Note: If no Channel or Linear Phase EQ is present on the selected track, a Channel EQ will be inserted automatically when the EQ Channel Strip view is entered.

Multi Channel View

EQ Multi Channel view allows you to edit one equalizer parameter for all tracks: Frequency, Gain, Q, or EQ bypass. The EQ band number, and parameter being edited will be displayed for one second when switching to this mode.

- The mode display will show E1 to E8, dependent on the selected EQ band number.
- The upper LCD row shows track names.
- Turning the V-Pots changes the EQ parameter.

- Pressing a V-Select sets the parameter to its default value.
- Cursor Up/Down switches to the next or previous EQ band.
- Cursor Left/Right switches to the next or previous EQ parameter. The selected parameter will be displayed briefly in the upper LCD row.
- Pressing a MUTE button while the SHIFT button is held down switches the current EQ band's Bypass status.
- When Flip mode is enabled, the MUTE buttons display and edit the current EQ band's Bypass status.

Channel Strip View

EQ Channel Strip view allows you to edit all EQ parameters—in all bands—for the selected track.

- The mode display will show EQ. (EQ channel strip).
- The upper LCD row shows the name of the track, "EQs," the page number and total number of pages—Example: "Page 1/2".
- V-Pot/V-Select 1—edits the Frequency of odd-numbered EQ bands.
- V-Pot/V-Select 2—edits Gain of odd-numbered EQ bands.
- V-Pot/V-Select 3—edits Q-Factor of odd-numbered EQ bands.
- V-Pot/V-Select 4—edits Bypass of odd-numbered EQ bands.
- V-Pot/V-Select 5—edits the Frequency of even-numbered EQ bands.
- V-Pot/V-Select 6—edits Gain of even-numbered EQ bands.
- V-Pot/V-Select 7—edits Q-Factor of even-numbered EQ bands.
- V-Pot/V-Select 8—edits Bypass of even-numbered EQ bands.
- Cursor Left/Right switches to the next or previous EQ band. The number of EQ bands displayed on the LCD depends on the number of Logic Control (XT) units (two EQ bands are shown per unit) available.

Alternate Mode Options

Holding down the EQ button accesses a further sub-menu in the LCD:

- The mode display shows E_ or E_., dependent on whether you were in EQ Multi Channel or EQ Channel Strip view.
- V-Select 1 or F1—switches to EQ Multi Channel view and selects Frequency.
- V-Select 2 or F2—switches to EQ Multi Channel view and selects Gain
- V-Select 3 or F3—switches to EQ Multi Channel view and selects Q.
- V-Select 4 or F4—switches to EQ Multi Channel view and selects Bypass.
- V-Select 6 or F6—switches to EQ Channel Strip view.

- V-Select 7 or F7—switches to Frequency/Gain Multi Channel view. In this mode you can edit the Frequency and Gain parameters of a specific EQ band (1 to 8) for *all tracks*.
  - the mode display will show F1 to F8, depending on the selected EQ band.
  - the upper LCD row shows track names.
  - the lower LCD row shows the Frequency of the selected EQ.
  - turning a V-Pot changes EQ Frequency.
  - pressing a V-Select sets the EQ Frequency to its default value.
  - use the Mute buttons to Bypass the EQ.
  - use the faders adjust the EQ Gain.
- V-Select 8 or F8—switches to Frequency/Gain Channel Strip view. In this mode you can edit the Frequency and Gain parameters for all EQ bands of the selected track. Each pair of channel strips corresponds to one of the EQ bands.
  - the mode display will show FG.
  - V-Pots 1 to 8 control the Frequency of EQ bands 1 to 8.
  - Mute buttons 1 to 8 control the Bypass of EQ bands 1 to 8.
  - Faders 1 to 8 control the Gain of EQ bands 1 to 8.

Note that the faders form a frequency response curve in this mode, if the EQ bands have ascending frequency values.

You can edit another track's EQ, without leaving this view mode, by simply selecting the track.

Send Assignment Modes

Briefly pressing the SEND button switches between Send Multi Channel or Send Channel Strip view.

Multi Channel View

Send Multi Channel view allows you to edit one Send parameter for all tracks: Destination, Level, Position, and Mute. The Send slot number, and parameter being edited will be displayed for one second when switching to this mode.

- The mode display will show S1 to S8, depending on the selected Send slot.
- The upper LCD row shows track names.
- Turning the V-Pots changes the Send parameter.
- Pressing a V-Select confirms the pre-selected Send Destination and sets the other send parameters to their defaults.
- Cursor Up/Down switches to the next or previous Send slot.

- Cursor Left/Right switches to the next or previous Send parameter. The selected parameter will be displayed briefly in the upper LCD row.

- Pressing a MUTE button while the SHIFT button is held switches the current Send's Mute status.
- When Flip mode is enabled, the MUTE buttons display and edit the current Send's Mute status.

Note: Ensure that the ZOOM button isn't active when using the cursor buttons.

Channel Strip View

Send Channel Strip view allows you to edit all Send parameters for the selected track.

- The mode display will show SE. (Send channel strip).
- The upper LCD row shows the name of the track, "Sends", the page number and total number of pages—Example: "Page 1/4"

```
Track 1 "Audio 1"             Sends              Page 1/2
Snd3Ds Send 3  Snd3Ps Snd3Mt Snd4Ds Send 4  Snd4Ps Snd4Mt
```

- V-Pot/V-Select 1—edits Destination of odd-numbered Sends.
- V-Pot/V-Select 2—edits Level of odd-numbered Sends.
- V-Pot/V-Select 3—edits Position (pre/post) of odd-numbered Sends.
- V-Pot/V-Select 4—edits Mute of odd-numbered Sends.
- V-Pot/V-Select 5—edits Destination of even-numbered Sends.
- V-Pot/V-Select 6—edits Level of even-numbered Sends.
- V-Pot/V-Select 7—edits Position (pre/post) of even-numbered Sends.
- V-Pot/V-Select 8—edits Mute of even-numbered Sends.
- The horizontal cursor buttons shift between pages. The number of Sends displayed simultaneously is dependent on the number of Logic Control XTs you have.

Alternate Edit Mode Options

Holding down the SEND button accesses a further sub-menu in the LCD:

- The mode display shows S_ or S_., depending on whether you were in Send Multi Channel or Send Channel Strip view.

```
Dest   Pos    Level  Mute   CStrip CSt2   Ds/LvM Ds/LvC
```

- V-Select 1 or F1—switches to Send Multi Channel view and selects Destination.
- V-Select 2 or F2—switches to Send Multi Channel view and selects Send Level.
- V-Select 3 or F3—switches to Send Multi Channel view and selects Position.
- V-Select 4 or F4—switches to Send Multi Channel view and selects Mute.
- V-Select 5 or F5—switches to Send Channel Strip view.
- V-Select 6 or F6—switches to Send Channel Strip 2 view:

  This mode is similar to Send Channel Strip view, but parameters are arranged in a slightly different way. You can control one parameter of all Send slots for the selected track.

  - The mode display will show SE. (Send channel strip).
  - The upper LCD row shows the name of the track, "Sends", the page number and total number of pages.

```
Track 1 "Audio 1"             Sends              Page 1/2
Snd1Ds Snd2Ds Snd3Ds Snd4Ds Snd5Ds Snd6Ds Snd7Ds Snd7Ds
```

  - V-Pot/V-Select 1 to 8—edits the displayed parameter.
  - The horizontal cursor buttons shift between pages. The number of parameters displayed simultaneously is dependent on the number of Logic Control XTs you have.

- V-Select 7 or F7—switches to Destination/Level Multi Channel view:

  In this mode, you can control one Send slot for all tracks. Each channel strip corresponds to the track shown in the upper LCD row.

  - the mode display will show d1 to d8, depending on the selected Send.
  - the upper LCD row shows track names.
  - the lower LCD row shows the destination of the selected Send.
  - turning a V-Pot pre-selects the Send Destination.
  - pressing a V-Select confirms the pre-selected Send Destination.
  - the SOLO buttons edit Send Position— a lit SOLO LED indicates Pre Fader mode.
  - the MUTE buttons edit Send Mute.
  - the faders edit Send Level.
- V-Select 8 or F8—switches to Destination/Level Channel Strip view:

  You can control all Send slots for the selected track in this mode. Each channel strip corresponds to the (embossed) Send number shown below the LCD.

  - the mode display will show dL.
  - turning a V-Pot pre-selects the corresponding Send Destination.

- pressing a V-Select confirms a preselected Send Destination.
- the Solo buttons edit Send Position—a lit Solo LED indicates Pre Fader mode.
- the MUTE buttons edit Send Mute.
- the faders edit Send Gain.

If one or more Sends are activated on multiple channels, you can switch between them in the Channel Strip views by simply pressing the SELECT button for the desired channel.

Plug-in Assignment Modes

Pressing PLUG-IN switches between Plug-in Multi Channel or Plug-in Channel Strip view.

Note: There is one exception to this behavior: if you are in Instrument Edit view, pressing this button switches to Plug-in Edit view.

Multi Channel View

This mode shows the plug-ins associated with a particular Insert slot for all channels.

- The mode display will show P1 to P9, or simply 10 to 16, dependent on the selected Plug-in Insert slot number. Note that if an Audio Instrument channel is selected, the display will show P1 to P9 and 10 to 15.
- The upper LCD row shows track names.
- The lower LCD row shows the currently selected plug-in for this Insert slot. Muted plug-ins are shown with an asterisk * that precedes the plug-in name.
- Turning the V-Pots pre-selects a new plug-in. The plug-in name flashes until confirmed with the V-Select.
- Turning another channel's V-Pot will cancel any earlier pre-selection, and will start pre-selection on the newly selected track.
- Pressing a V-Select:
  - confirms/activates the pre-selected plug-in (assuming that you've made your pre-selection by turning the V-Pot).
  - opens a Plug-in window, if none are opened. If a Plug-in window is open, and Link mode is enabled, the selection of another plug-in will replace the existing Plug-in window.
  - switches to Plug-in Edit view.
- The Cursor Up/Down buttons change the currently displayed plug-in Insert slot (1 to 15).
- Pressing a V-Select or the MUTE button while the SHIFT button is held down will mute/unmute the plug-in.

To remove a plug-in:

1. Pre-select the "- -" value (by turning the V-Pot fully counter-clockwise)
2. Press the V-Select of the appropriate Insert slot.

   Logic Control will not switch to Plug-in Edit view, and no Plug-in window will be launched. If one was previously opened, it will be closed (if Link mode is inactive).

Channel Strip View

This mode shows the plug-ins associated with all Insert slots for the selected channel.

- The mode display will show PL.
- The upper LCD row shows Ins1Pl through Ins8Pl
- The lower LCD row shows the plug-in which is currently selected for this insert slot. Muted plug-ins are indicated by an asterisk *, which precedes the plug-in name.
- Turning the V-Pots pre-selects a new plug-in. The plug-in name flashes until activated.
- Turning another channel's V-Pot will cancel any previous pre-selection and will start pre-selection on the newly selected track.
- Pressing a V-Select:
  - activates the pre-selected plug-in (assuming that you've made your pre-selection by turning the V-Pot).
  - opens a Plug-in window if none are opened (if a Plug-in window is open and Link mode is enabled, the selection of another plug-in will replace the existing plug-in).
  - switches to Plug-in Edit view.
- Pressing a V-Select while the SHIFT button is held will mute/unmute the plug-in.

To remove a plug-in:

1. Pre-select the "- -" value (by turning the V-Pot fully counter-clockwise).
2. Press the V-Select linked to the appropriate Insert slot.

   Logic Control will not switch to Plug-in Edit view, and no Plug-in window will be launched. If one was previously opened, it will be closed (if Link mode is inactive).

Plug-in Edit View

- The mode display will show P1. to P8., depending on the number of the selected plug-in Insert slot.
- Dependent on the Name/Value button, the LCD display will change in the following ways between the two modes:
  - *Name:* The upper LCD row shows the track's name, insert number, plug-in name, current parameter page and total number of parameter pages.
    The lower LCD row shows the name of the parameter which can be edited via the V-Pot located below.

- *Value*: The upper LCD row shows the name of the parameter which can be edited via the V-Pot positioned below.
  The lower LCD row shows the current value of the parameter edited with the V-Pot.
  If there is sufficient onscreen space, the unit type will be added—Example: Hz.
- Turning the V-Pots changes parameters.
- Pressing a V-Select sets the parameter to its default value, except where the parameter only has two values (on/off, for example). In this case, pressing the V-Select switches between these values.
- The Cursor Left/Right buttons switch to the next or previous parameter page.

Note: When shifting by a "page" of parameters, the display is "quantized" to integer pages. As an example:

- the plug-in has 19 parameters.
- Logic Control shows parameters 1 to 8.
- Cursor Right shifts to display parameters 9 to 16.
- Cursor Right shifts to display parameters 12 to 19.
- Cursor Left shifts back to display parameters 9 to 16, not parameters 4 to 11.

This way, you always revert to the page positions you expect to find, and are comfortable with.

- To switch by a single parameter, rather than by "page," hold down the ⌘/ALT key while pressing the Cursor Left/Right button.
- The Cursor Up/Down buttons change the currently displayed plug-in Insert slot (1 to 15).

Note: If you have a control surface group consisting of several physical Logic Control and XT units, the parameters are distributed across their displays. The number of parameters shown is dependent on the Multiple Controls Per Parameter settings in the Preferences > Control Surfaces > Preferences, as discussed in the Control Surface Setup chapter.

When exiting Plug-in Edit view, the Plug-in window will be closed.

Compatibility

Logic Control can edit all plug-ins that can be automated. The plug-in type (Logic native, TDM, Audio Units) is irrelevant.

Some third-party manufacturer plug-ins unfortunately don't provide parameter names and/or values as text. In such cases, parameters are enumerated as "Control #1," "Control #2" and so on, with values displayed as numbers ranging between 0 and 1000.

Please contact the plug-in manufacturer to obtain a version which supports this feature.

Instrument Assignment Modes

Pressing the INSTRUMENT button switches to Instrument Multi Channel view.

Please note that when in Plug-in Edit view, pressing the INSTRUMENT button will switch to Instrument Edit view.

If you can't see the Audio Instrument Objects, use the BANK or CHANNEL buttons in the FADER BANKS zone, or switch to Global view by pressing the AUDIO INSTRUMENT button. (This assumes that you have created at least one or more Audio Instrument Objects in the Environment.)

Multi Channel View

This mode shows the Instrument slot for all channels.

- The mode display will show In (Instrument)
- The upper LCD row shows track names.
- The lower LCD row shows the currently selected instrument. Muted instrument names are preceded by an asterisk *.
- Turning the V-Pots pre-selects a new instrument. The pre-selected instrument name flashes until activated.
- Turning another channel's V-Pot will cancel any previous pre-selection and will start pre-selection on the newly selected track.
- Pressing a V-Select:
  - activates the pre-selected instrument plug-in (assuming that you've made your pre-selection by turning the V-Pot).
  - opens a Plug-in window, if none are opened. If a Plug-in window *is* open, and Link mode is enabled, the selection of another Instrument plug-in will replace the existing one.
  - switches to Instrument Edit view.
- Pressing a V-Select or MUTE button while the SHIFT button is held down mute/unmutes the Instrument.

To remove an instrument:

1. Pre-select the "- -" value (by turning the V-Pot fully counter-clockwise)
2. Press the V-Select button.

Logic Control will not switch to Instrument Edit view, and no Plug-in window will be launched. If one was previously opened, it will be closed.

Instrument Edit View

- The mode display will show In.
- Dependent on the NAME/VALUE button, the LCD changes in the following ways:
  - *Name*—The upper LCD row shows the track's name, instrument name, current parameter page and total number of parameter pages. The lower LCD row shows the name of the parameter that can be edited with the V-Pot directly below it.
  - *Value*—The upper LCD row shows the name of the parameter that can be edited with the V-Pot below it. The lower LCD row shows the current value of the parameter being edited. If there is sufficient space on the LCD row, the unit type is shown after the value. Example: Hz.
- Turning a V-Pot changes the corresponding parameter.
- Pressing a V-Select sets the parameter to its default value, except where the parameter only has two values (on/off, for example). In this case, pressing the V-Select switches between these values.

Compatibility

Logic Control can edit all instruments that can be automated. The plug-in type (Logic native, TDM, Audio Units) is irrelevant.

Some third-party manufacturer instruments unfortunately don't provide parameter names and/or values as text. In such cases, parameters are enumerated as "Control #1," "Control #2," and so on, with values displayed as numbers ranging between 0 and 1000.

Please contact the plug-in manufacturer to obtain a version which supports this feature.

Fader Bank Zone

This area of the Logic Control surface contains six buttons.

Bank Left/Right

Moves up or down by "banks" of channels/tracks. To quickly explain, a single Logic Control is only capable of viewing eight tracks at a time, in either the Global or Mixer view. To see, and edit or mix more tracks, simply press the Right/Left BANK buttons to switch between tracks 1–8, 9–16, 17–24, and so on.

The BANK button pair shifts the view section by the number of channels in the control surface group. As an example; if you have a Logic Control and two Logic Control XT units, the view shifts by 24 channels.

When shifting by bank, the display is "quantized" to integer banks. As an example:

- your song has 19 tracks.
- Logic Control shows tracks 1 to 8.
- BANK Right shifts to tracks 9 through 16.
- BANK Right shifts to tracks 12 through 19.
- BANK Left shifts back to tracks 9 through 16, not tracks 4 to 11.

This way, you always revert to the bank positions you expect, and are used to.

Channel Left/Right

As per the BANK buttons, but moves up or down in increments of a single channel.

Notes on Fader Bank Editing

When holding down the OPTION button, pressing the BANK Left or CHANNEL Left button jumps to the first, and pressing the BANK Right or CHANNEL Right button jumps to the last, tracks in the song. As an example in a 64 track song, tracks 1 through 8 or tracks 57 through 64.

The fader bank offset is independently memorized for Global views where one track class is displayed (MIDI, Inputs, Audio Tracks, Instruments, Auxes, Busses, Outputs, and Master). There is also a separate fader bank offset memory location for combinations of multiple track types. This feature allows you to scroll to audio tracks 2 through 9 in Global Audio Track view, and then scroll to instruments 5 through 12 in Global Instruments view. You can switch between these views without losing the fader bank offset.

Flip

The FLIP button enables/disables the following Flip, Swap, or Zero modes:

- If the LED beside the FLIP button is off, Flip mode is off. The faders control volume.
- Pressing the FLIP button enables Flip mode (the LED is lit): in this mode, the current assignments of the eight V-Pots are mirrored by the eight channel faders. Pressing the FLIP button a second time disables Flip mode.

Turning a V-Pot in this mode will also move the corresponding fader.

- Pressing the FLIP button while the SHIFT button is held enables Swap mode (the LED will flash): in this mode, the encoder assignments are *swapped* with the fader assignments. Pressing SHIFT and FLIP again disables Swap mode. As the LCD's lower row shows the current value of the encoders, it will display volumes when in this mode.
- Pressing FLIP without SHIFT held reverts to Flip mode.
- Pressing CONTROL and FLIP switches to Zero mode. Pressing CONTROL and FLIP a second time disables Zero mode. In this mode, the faders are set to zero and don't move. This is useful for acoustic/microphone recordings if Logic Control is located in the recording booth, and you don't want to hear/capture any motor noise.

Both Flip and Swap modes work in all view modes.

Flip mode has the following advantages:

- You can edit any type of parameter with a fader, rather than a V-Pot, which allows more accurate edits.
- You can edit with touch-sensitive faders. The V-Pots are not touch-sensitive, and thus don't allow existing (controller automation) movements to be overwritten with a constant value.

Global View

This button is discussed in "The Global View Zone" on page 74.

Master Fader

Controls the level of the Master fader in the Logic mixers. This reduces the level of all tracks, but does not affect their relative positions.

When there is no Master Volume Object in the song, Logic Control's Master fader is mapped to Output 1-2.

You need to select this Object (Master) in order to set the automation mode of the Master output. To do so, press the OUTPUTS button and select the master output with the corresponding SELECT button.

If you use multiple audio systems simultaneously, the MASTER fader only controls the first device's Master Volume (in the order shown in the Audio Preferences window).

Display Zone

These buttons affect what you see in the LCD and Position/Time Display.

Name/Value

To switch between the two Display formats—Name or Value—repeatedly press the NAME/VALUE button in the Logic Control Display section—just below the SMPTE/BEATS LEDs. For more information, see "Liquid Crystal Display (LCD)" on page 49.

Pressing the NAME/VALUE button while holding the SHIFT button cycles through three level meter modes:

- *Vertical*—In this mode, the sixth (last) character of each channel in both LCD rows is overlaid by a vertical level meter bar. The text character reappears when the level meter is not visible. The last, rather than the first, character was chosen for the level meter, as this character is often unused, so no valuable information is "blocked out" by the level meter.

  Note: If you find the flickering D of the dB unit disturbing when levels are displayed, you should switch off the display of units. See "Control Surface Preferences" on page 25.

- *Horizontal*—with Peak Hold. In this mode, the second row is replaced by horizontal level meter bars. Peak Hold is shown as a hollow box which disappears after three seconds. Overload (clipping) is displayed as an asterisk. It remains on the LCD until cleared (see below).
- *Off*—In this mode, no level meters are displayed in the LCD.

In all three modes, the SIGNAL LEDs function as per usual, indicating the presence of a signal.

Note: The MIDI bandwidth required for the display of level meters is the same in all three modes—and is very low. The Position/Time Display updates require much more MIDI bandwidth than the level meters.

Pressing the NAME/VALUE button, while holding the CONTROL button, clears overload (clipping) in both the Logic mixers, and the horizontal level meters on the Logic Control.

Pressing the NAME/VALUE button, while holding the ⌘/ALT button, enters Control Surface Group Settings mode. This mode enables you to edit several control surface group settings, some of which are not accessible with a single button:

- V-Pot/V-Select 5 (label "TrkNam")—sets track name display format
  "Name"—track name only
  "#:Name"—track number and name
  This parameter can also be switched with OPTION and NAME/VALUE.
- V-Pot/V-Select 6 (label "Lock")—switches Channel Strip view track lock
  "Off"—as you are used to: selecting a track also switches the currently edited Channel Strip track.
  "On"—the currently edited Channel Strip Track is not affected by selecting a track.

When you switch from On to Off, this also updates the Channel Strip track.

To edit another track in Locked mode, first disable Lock, then select the desired track, then re-enable Lock.

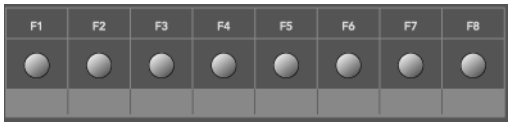
- V-Pot/V-Select 7 (label "Disply")—switches the LCD display format.
  "Name"—upper line displays global info, lower line displays parameter names.
  "Value"—upper line displays parameter names, lower line displays parameter values.
  This parameter can also be switched with NAME/VALUE.
- V-Pot/V-Select 8 (label "Clock")—switches the Clock display format.
  "Beats"—clock is displayed in format bars/measures/beats/ticks.
  "SMPTE"—clock is displayed in SMPTE format.
  This parameter can also be switched with SMPTE/BEATS.

Control Surface Group Settings mode can be exited by pressing NAME/VALUE, or by entering one of the Marker or Nudge modes.

SMPTE/Beats

To switch between the two Time formats, repeatedly press the SMPTE/BEATS button in the Display section at the top of the Logic Control—just below the SMPTE/BEATS LEDs. For more information, see "Song Position/SMPTE Time Display" on page 49.

The Function Key Zone



The eight Function keys—F1 to F8—are assigned as follows:

- F1 to F7 recalls Screensets 1 to 7.
- F8 closes the top-most window, with "floating" windows closed first.

With the SHIFT key held down, the Function keys open/close particular windows:

- F1—Arrange window
- F2—Track Mixer
- F3—Event Editor
- F4—Score Editor
- F5—Hyper Editor
- F6—Matrix Editor
- F7—Transport window
- F8—Audio window

With the ⌘/ALT key held down, the Function keys trigger common key commands:

- F1—Cut
- F2—Copy
- F3—Paste
- F4—Clear
- F5—Select All
- F6—Select All Following
- F7—Select Similar Objects
- F8—Select Inside Locators

In modal dialogs, the Function keys are equivalent to the computer's number keys:

- F1—1
- F2—2
- F3—3
- F4—4
- F5—5
- F6—6
- F7—7
- F8—8

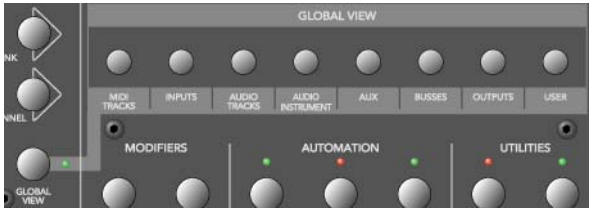
The following buttons directly below the Function keys supplement the numeric input functions:

- MIDI Tracks button—9
- Inputs button—0

In some other "modes," the Function keys perform other duties, such as shortcuts to markers. Please see "Marker" on page 79. Also see the tables in "Assignment Overview" on page 89.

The Global View Zone

The Global view mode is activated by pressing any of the GLOBAL VIEW buttons. When any is activated, the green LED to the right of the GLOBAL VIEW button will illuminate.



Pressing multiple GLOBAL VIEW buttons simultaneously will display the channels of the selected classes.

To do so:

- Hold down any GLOBAL VIEW button, and add or remove other Object classes by pressing the other desired GLOBAL VIEW buttons.

  The display order matches the order of these buttons on the front panel of the Logic Control.

  You can select multiple classes by clicking on multiple buttons simultaneously. The OUTPUTS button activates both Output and Master Objects.

  As an example: To see the busses and the outputs, hold down BUSSES, and then press OUTPUTS.

Function Button Zone

There are three areas in this zone—Modifiers, Automation, and Utilities.

Modifier Buttons

The four buttons in this area are similar to those found on your computer keyboard (but are independent from the keyboard modifiers). Many Logic functions behave differently when one or more "modifier" key(s) is pressed, in conjunction with another key or mouse click. This also applies to the Logic Control. All "modified" Logic Control commands are covered in each function's description.

A generic description of each button follows:

- SHIFT—an alternate function/meaning for a button.
- OPTION—the function applies to all objects. For relative value changes: the value is set to the minimum, default, or maximum value, depending on whether you increase/decrease it.
- CONTROL—while held down, the Group Clutch is engaged—Track Groups are temporarily disabled.
- ⌘/ALT—fine tuning/variation of the function.

Automation Buttons

The five buttons in this area activate/deactivate the various automation modes of Logic. These work in conjunction with the channel SELECT buttons. Simply choose the channel you wish to automate, select the Automation mode via one of these six buttons, and move the corresponding fader. The modes are outlined below:

- READ/OFF—Pressing this button repeatedly switches between the Read and Off automation modes.

- *Off*—Automation is off. The fader will neither send nor receive automation data. Existing automation data remains untouched. It will still behave as a fader, however, and will adjust the volume or pan position and so on as usual.
- *Read*—The fader will read (follow) any existing automation data, but will not write data, regardless of any movements you make with the mouse or external control device.

- TOUCH—Writes new parameter changes when the fader is "touched" or V-Pot turned during playback. Any existing track automation data (of the current fader type) will be replaced by new movements as long as the control is active—while the fader is being touched or V-Pot is being turned.
- LATCH—Similar to Touch mode, but the control remains activated, even when the fader is no longer being "touched" or V-Pot being turned. In other words, following the release of the fader, the current fader value will replace the existing automation data for as long as the sequencer is in playback mode. Press STOP to finish.
- WRITE—Overwrites *all* existing automation data, or creates new automation data. Only use it if you wish to destroy all existing automation data.
- TRIM—Not currently enabled.

Pressing one of the AUTOMATION buttons while holding the OPTION key assigns the selected automation mode for *all* tracks. When an automation mode has been selected for all tracks, the button's LED will illuminate whenever the OPTION key is held.

Important: This behavior is slightly different for the "Off" automation mode, when holding down the OPTION button. While doing so, all automation "writing" buttons will be turned off, but this does not necessarily mean that all tracks are actually in Off mode—they could also be in different modes. To ensure that you have set all tracks to Off mode, press READ/OFF twice (its LED goes on, then off), while holding down the OPTION key.

Group

Pressing the GROUP button enters Group Edit mode:

- GROUP button's LED is on.
- The Assignment display shows the currently displayed group—"G1", for example.

- The Time display shows the group name (ten last characters if name is longer than ten characters).
- The upper LCD line displays track names.
- The lower LCD line displays group parameters.
- Group parameters can be switched with V-Selects.
- Cursor Up/Down selects previous/next group.
- Cursor Left/Right shifts group parameter display.
- SELECT buttons display if a track is a member of the group. Pressing a SELECT button enables/disables track membership of the group.

With Group Edit mode off, holding down GROUP and pressing one or more SELECT buttons allows you to create a new group.

Pressing the GROUP button, while the SHIFT button is held down, creates a new group, opens the Group window and enters Group Edit mode.

Pressing the GROUP button, while the TRACK button is held, switches to Track Multi Channel view, with the Track Group parameter shown. It displays the group that the instrument belongs to. Multiple group membership is displayed as in the Track Mixer window. Turning a V-Pot changes group membership. Note that you can only select one group (or "Off") with this function.

Utilities Buttons

The four buttons in this area trigger functions that are often used when working with Logic.

Save

Saves the current song file. When pressed, a file save dialog will open on your computer screen, awaiting input of a filename.

The Logic Control LCD will display `There is a file select dialog on the screen` and the Position/Time Display will show ALERT. All LEDs are unlit.

Once the file save has been confirmed—in Logic—the Logic Control will return all controls to their status prior to use of the Save command.

Once the song has been saved and given a name, you may freely use the SAVE button to save any subsequent changes. This will occur without the alert messages and file save dialog appearing onscreen.

As a general working tip, you should always save your Autoload/Template song under a different name as the first step in any project. If this practice is adhered to, you will be able to simply press the SAVE button on the Logic Control to incrementally save your work.

The SAVE LED illuminates as soon as any save-able change has been made in Logic.

Holding down the OPTION button while pressing SAVE opens the "Save As" file selector box.

Undo

Pressing the UNDO button undoes the last undo-able editing step. As Logic supports near-unlimited multiple undo/redo, the green UNDO LED does not illuminate to indicate an undo-able step, but rather to indicate that Redo is available. This serves as a warning that performing a reversible editing step would render all Redo steps unavailable.

Holding down the SHIFT button while pressing UNDO performs a "Redo."

Holding down the OPTION button while pressing UNDO opens the Undo History window.

Cancel

If an alert is open on-screen, it triggers the Cancel (or Abort) button. More information on alerts is found in "About Modal Dialogs" on page 45. Pressing the CANCEL button when no alert is opened will launch the Toolbox at the current on-screen position of the mouse cursor. Alternately, it will perform any function currently assigned to the computer keyboard's Esc key.

If no alert is open, and Logic Control is currently showing the contents of a folder track, use of the CANCEL button exits the folder.

CANCEL also enables you to invalidate a (blinking) parameter value pre-selection.

Enter

If an alert is open, the ENTER button triggers the default button. See "About Modal Dialogs" on page 45 for more information.

If no alert is open, and the selected track is a folder track, the ENTER button opens the folder.

The Transport Zone

This section of the Logic Control features twelve buttons. All are equipped with a dedicated LED to indicate their current status.

It should be noted that these buttons can be used independently, or in conjunction with one another, to navigate and edit your songs.

The functionality of these buttons is as follows:

Marker

The MARKER button enables you to jump to, create, and delete markers.

Marker and Nudge mode are mutually exclusive; activating one deactivates the other.

Small Marker Mode

When active, the MARKER button reassigns the behavior of the FAST FWD and REWIND buttons. These allow you to jump to the next or previous marker.

Deactivation of the MARKER button reverts to the default behavior of the FAST FWD and REWIND buttons (see "Rewind" on page 85 and "Fast Fwd" on page 85).

Small Marker mode is useful if you want to jump to markers, but wish to continue using the V-Pots for other purposes.

Large Marker Mode

Pressing the MARKER button while holding down SHIFT shows three "create" options on the LCD, assigned to the last three V-Selects. Once markers have been created:

- V-Select 1 to 5—displays the first five markers by name. Pressing a V-Select moves the SPL to this Marker. When the current song position (indicated by the SPL) is inside a marker, the lower line displays INSIDE, and the V-Pot LED ring is lit.
- V-Select 6—Cr w/o—Creates a marker without rounding to the nearest bar.
- V-Select 7—Create—Creates a marker rounded to the nearest bar.
- V-Select 8—Delete—Deletes the marker above the current SPL location.

To create or delete a marker at the current song position, simply press the appropriate V-Select switch.

The creation or deletion of markers is best used in conjunction with the Jog/Scrub Wheel. Simply move to the desired song position by dialing with the wheel, and then press the appropriate V-Pot.

- For coarse placement, simply use the wheel to move the SPL.
- For fine placement, press the SCRUB button, then use the wheel to precisely position the SPL. (Only appropriate if creating or deleting an un-rounded marker).

For more information on the Jog/Scrub Wheel, please refer to "The Jog/Scrub Wheel Zone" on page 88.

Large Marker mode is terminated by pressing MARKER.

Temporary Marker Mode

If you want to enter Marker mode temporarily (to quickly perform a few marker functions), hold down the Marker button and press one (or more) of the V-Selects: this will execute the marker function and leave marker mode as soon as you release the MARKER button.

- When in this mode—with the MARKER button held—pressing the Function keys F1—F8 "jumps" to the first eight markers (if created). As an example, to navigate to marker 3, press-hold MARKER and press F3.
- To jump between markers, with (or without) the MARKER button held, simply press the FAST FWD or REWIND buttons.

Nudge

The NUDGE button enables you to move (nudge) selected Audio or MIDI Regions, or events.

Marker and Nudge mode are mutually exclusive; activating one deactivates the other.

Small Nudge Mode

Use of the NUDGE button reassigns the behavior of the FAST FWD and REWIND buttons. They nudge the selected Regions or events by the value defined in Large Nudge mode (see below).

Pressing the NUDGE button again reverts to the default behavior of the FAST FWD and REWIND buttons (see "Rewind" on page 85 and "Fast Fwd" on page 85).

Small Nudge mode is useful if you want to nudge Regions or events, but still use the V-Pots for other purposes.

Large Nudge Mode

Pressing the Nudge button while holding down Shift updates the LCD to display eight options, assigned to the V-Pots and V-Selects. All functions allow you to *move* the selected Region or events.

As an indicator, the position of the first selected Region or event is displayed above V-Pots 3 and 4. If nothing is displayed, either; a window that does not allow selection of Regions or events is open, or no Regions or events are selected.

The functions are as follows:

- V-Pot 1—Nudge—selects the nudge value used by the REWIND and F.FWD buttons. These buttons move the selected object(s) backwards/forwards by the defined value.
- V-Select 2—Pickup—moves to the current SPL location.
- V-Pot 3—Bar— moves by one bar.
- V-Pot 4—Beat—moves by the current song denominator value (beats).
- V-Pot 5—Format—moves by the current song format value (sub-divisions—1/16th and so on).
- V-Pot 6—Ticks—moves by single ticks.
- V-Pot 7—Frames—moves by one SMPTE frame.
- V-Pot 8—Fram/2—moves by half a SMPTE frame.

- The cursor buttons emulate the computer keyboard's cursor keys, allowing easy selection of a Region or event.

Large Nudge mode is terminated by pressing NUDGE.

Temporary Nudge Mode

If you want to use Nudge temporarily (for one or two small moves), hold down the NUDGE key, and use one or more of the V-Pots: this will execute the selected function and exit Temporary Nudge mode as soon as you release the NUDGE button.

In Temporary Nudge mode, the cursor buttons emulate the computer keyboard's cursor keys, allowing easy selection of a Region or event.

The Nudge value for the REWIND and F.FWD buttons can also be defined with the function buttons:

- F1—sets Ticks.
- F2—sets Format.
- F3—sets Beat.
- F4—sets Bar.
- F5—sets Frames.
- F6—sets Frames/2.

Cycle

Activates/deactivates Cycle mode. By default, the cycle area will fall between the first two markers.

Subsequent markers can act as left/right boundaries for further cycle areas.

To "jump" between Cycle areas—defined by the markers:

1. Press the MARKER button.
2. Press the CYCLE button, and when active, press the REWIND or FAST FWD buttons.

To set the left or right locator to the current song position:

- Hold down CYCLE and press REWIND or FAST FWD. This also enables Cycle.

The fastest way to define a new cycle area is to:

1. Navigate to the left locator with the Jog/Scrub Wheel.
2. Press CYCLE and REWIND.
3. Navigate to the right locator with the Jog/Scrub Wheel.
4. Press CYCLE and FAST FWD.

Cycle View

Pressing the SHIFT and CYCLE buttons activates Cycle view mode:

- The mode display displays Cy
- V-Pot/V-Select 1—shows and edits the current Cycle status (off or on); you can also use the CYCLE button.
- V-Select 2—BySel— sets the current Cycle area by the selection made in the Arrange window (selected Audio or MIDI Region).
- V-Pot 3—Move— moves the current Cycle by a bar with each "click" when turning the V-Pot
- The display shows the left and right locators above V-Pots 5 and 7.
- Pressing V-Select 5 picks up the current song position for the left locator.
- Turning V-Pot 5 changes the left locator in bars.
- Turning V-Pot 6 changes the left locator in beats (denominator steps).
- Pressing V-Select 7 picks up the current song position for the right locator.
- Turning V-Pot 7 changes the right locator in bars.
- Turning V-Pot 8 changes the right locator in beats (denominator steps).

To return to a regular Assignment mode, press one of the Assignment buttons.

Drop

Activates/deactivates Drop-In mode.

To navigate between drop-in areas:

1. Press the MARKER button.
2. Press the DROP button, and when active, press the FAST FWD or REWIND buttons.

To set the Drop In or Drop Out locator to the current song position:

- Hold down DROP and press FAST FWD or REWIND. This also enables Drop.

The fastest way to define a new Drop In area is to:

1. Navigate to the Drop In locator with the Jog/Scrub Wheel.
2. Press DROP and REWIND.
3. Navigate to the Drop Out locator with the Jog/Scrub Wheel.
4. Press DROP and FAST FWD.

Drop View

Pressing the SHIFT and DROP buttons activates Drop view:

- The mode display shows dr
- V-Pot/V-Select 1 shows and edits the current Drop status (off or on); you can also use the DROP button.
- V-Pot 3—Move— moves the current Drop region by a bar with each "click" when turning the V-Pot.
- The display shows the Drop In and Drop Out locators above V-Pots 5 and 7.
- Pressing V-Select 5 picks up the current song position for the Drop In locator.
- Turning V-Pot 5 changes the Drop In locator in bars.
- Turning V-Pot 6 changes the left locator in beats (denominator steps).
- Pressing V-Select 7 picks up the current song position for the Drop Out locator.
- Turning V-Pot 7 changes the Drop Out locator in bars.
- Turning V-Pot 8 changes the right locator in beats (denominator steps).

Changing a drop locator with the Logic Control enables Drop mode.

To return to a regular Assignment mode, press one of the Assignment buttons.

Replace

Activates/deactivates Replace mode.

Click

Enables/Disables MIDI (or Klopfgeist) metronome click. There are independent click settings for play and record. The click settings are enabled or disabled, dependent on the current Record state (see the "MIDI/Monitor Metronome Click" key command).

Pressing SHIFT and CLICK buttons activates/deactivates both External Sync mode and Transmit MMC.

Solo

The SOLO button behaves as per the Solo key command. Individual channels can be soloed via the channel SOLO buttons on each channel strip. MIDI or Audio Regions can be selected and soloed along with the selected channels. Each channel features an independent SOLO LED which is lit when a track is soloed. The RUDE SOLO LED—just to the right of the Position/Time Display—is lit whenever any track is soloed.

Pressing the SHIFT and SOLO buttons enables Solo Lock mode.

Rewind

Rewinds/shuttles through the song. If pressed repeatedly while rewinding, the rewind speed is accelerated. If the FAST FWD button is pressed while REWIND is engaged, the fast rewind will be slowed. Repeated presses of the FAST FWD button will slow down, stop, and eventually reverse the shuttle direction. Pressing the STOP button will halt the rewind. Using the Jog/Scrub Wheel will also exit shuttle mode.

When one of the Marker modes is activated, repeated presses of the REWIND button will move the Song Position Line (SPL) to the previous marker.

When one of the Nudge modes is activated, the REWIND button will move the selected Region(s) or event(s) backward by the value defined in Large Nudge mode.

Fast Fwd

Fast forwards/shuttles through the song. If pressed repeatedly while fast forwarding, the shuttle speed is accelerated. If the REWIND button is pressed while FAST FWD is engaged, the fast forward will be slowed. Repeated presses of the REWIND button will slow down, stop, and eventually reverse the shuttle direction. Pressing the STOP button will halt the fast forward. Using the Jog/Scrub Wheel will also exit shuttle mode.

When one of the Marker modes is activated, repeated presses of the FAST FWD button will move the *Song Position Line* to the next marker.

When one of the Nudge modes is activated, the FAST FWD button will move the selected Region(s) or event(s) forward by the value defined in Large Nudge mode.

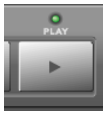
As a tip, you can combine markers with Cycle areas by pressing the respective buttons on the Logic Control. This, in conjunction with navigation between markers (using the REWIND and FAST FWD buttons), will move the SPL and automatically set a cycle area between adjacent markers. Try this, and other options, with various button combinations.

Stop

Stops all other Transport functions. Pressing the STOP button a second time will return to the song start point, or the beginning of the nearest cycle area, if Cycle is active. Repeated presses will switch between the two.

Play

Plays from the current song position. If pressed repeatedly, it will jump to the beginning of the nearest cycle area, if Cycle is active.



SHIFT and PLAY works as a Pause command.

Record

Activates recording on the selected MIDI, audio, or Audio Instrument track.

A special note for audio tracks if you have not "Saved as Project": When the *first* audio track is armed by pressing the REC/RDY button on the desired channel, a file save dialog will open on your computer screen, awaiting entry of a filename. The Logic Control LCD display shows `There is a file select dialog on the screen` and the Position/Time Display will show ALERT. All LEDs will go off.

Once the file name has been entered—in Logic—the Logic Control will return all controls to their prior status.

Once the "default" audio file name has been entered, you may freely select and arm any Audio track, and then press the RECORD button. This will happen without the alert messages and file save dialog appearing onscreen.

As a general working tip, you should save your Autoload/Template song as a project immediately. This will avoid the need to define filenames, and makes handling faster and easier—particularly when "driving" Logic with the Logic Control.

The Cursor/Zoom Key Zone

This collection of five buttons serves a number of purposes.

Normal Operation

When the ZOOM button's LED is off, these buttons select the current parameter, shift the current parameter page or Send/EQ/Insert slot, depending on the current V-Pot assignment.

When holding down the OPTION button, the Cursor Left/Right buttons scroll to the first/last page, and the Cursor Up/Down buttons scroll to the first/last slot.

When holding down the ⌘/Alt button, the Cursor Left/Right buttons shift the parameter display by one parameter, rather than one page.

In view modes which don't require page or slot shifts, they emulate the computer keyboard's cursor keys. Example: Track Multi Channel view.

In Large and Temporary Nudge mode, the Cursor Left/Right buttons emulate the computer keyboard's cursor keys, allowing easy Region or event selection.

Zoom Mode

Pressing the ZOOM button enables Zoom mode. The cursor buttons are then used to change the vertical or horizontal zoom factor of the active window.

In the Arrange window:

- OPTION and Cursor Up/Down changes the zoom factor of the selected track.
- OPTION and Cursor Left resets the zoom factor of the selected track.
- OPTION and Cursor Right resets the zoom factor of all tracks of the same class (audio, MIDI, and so on) as the selected track.

Computer Cursor Key Emulation

To use the cursor buttons as a replacement for the computer keyboard cursor keys, hold down the SHIFT key.

By pressing SHIFT and ZOOM, the cursor buttons go to Permanent Cursor Key mode—they mimic the computer cursor keys without the need to hold down SHIFT. The ZOOM button LED flashes when in this mode.

You can deactivate this mode by pressing the ZOOM button.

The Jog/Scrub Wheel Zone

The Jog/Scrub Wheel and SCRUB button can be used to navigate through the song, which is useful for a number of Transport tasks. Simply turn the dial to use it. The following Scrub modes change the behavior of the Jog/Scrub Wheel.

- Scrub mode off: the Jog/Scrub Wheel moves the SPL.
- Scrub mode on: the Jog/Scrub Wheel performs "scrubbing," which allows you to hear the data of the selected track while scrolling/moving through the song.

  Audio tracks are normally played back at their original speed. If you would prefer to hear them at double speed, choose Preferences > Audio > Drivers, and set Maximum Scrub Speed to Double in the pull-down menu.

  Note: You can also use the SCRUB button for Pause functionality.
- SHUTTLE mode (Scrub button LED flashing): the Jog/Scrub Wheel shuttles the SPL—turning it increases or decreases the speed of SPL movement.

Assignment Overview

The following assignment tables are broken down into "zones" of the Logic Control.

Channel Strip (x8)

Logic Control	Modifier	Function/Comments
V-Pot	—	Modify parameter displayed in LCD.
	OPTION	Set parameter to minimum, default, or maximum value.
	⌘/ALT	Modify parameter at high resolution.
V-Select	—	Set parameter displayed on LCD to default value, or: Switch between two possible values.
	Flashing pre-selection:	
	—	Enter the pre-selected value.
	Menu options:	
	—	Enter whatever option is visible in display.
	If track is folder:	
	—	Enter folder.
REC/RDY	—	Activate/Deactivate Record Enable button of track.
	OPTION	Disable Record Enable button for all tracks.
SOLO	—	Activate/Deactivate Solo button of track's Audio Object.
	OPTION	Disable Solo button for all Audio Objects.
	In Send Destination/Level Multi Channel view:	
	—	Switch pre/post status of selected send.
	In Send Destination/Level Channel Strip view:	
	—	Switch between pre/post of send on selected track.

Logic Control	Modifier	Function/Comments
MUTE	—	Activate/Deactivate Mute button of track's Audio Object.
	OPTION	Disable Mute button for all Audio Objects.
	In Track Multi Channel view:	
	SHIFT	Activate/Deactivate mute/bypass of the shown parameter.
	In EQ Multi Channel view:	
	SHIFT	Activate/Deactivate bypass of the current EQ band.
	In EQ Frequency/Gain view:	
	—	Activate/Deactivate bypass of selected EQ band.
	In Send Multi Channel view:	
	SHIFT	Activate/Deactivate bypass of selected send.
	In Send Destination/Level Multi Channel view:	
	—	Activate/Deactivate bypass of selected send.
	In Send Destination/Level Channel Strip view:	
	—	Activate/Deactivate mute of send on selected track.
	In Plug-in Multi Channel view:	
	SHIFT	Activate/Deactivate bypass of plug-in.
	In Instrument Multi Channel view:	
	SHIFT	Activate/Deactivate bypass of instrument.
SELECT	—	Select track.
	SHIFT	Set track volume to unity level (0 dB).
	OPTION	Creates a new track with the same instrument as the selected track and switches to Arrange view.
	SHIFT+ OPTION	Create a new track with the next instrument (following the selected track) and switches to Arrange view.

Logic Control	Modifier	Function/Comments
FADER	—	Adjust volume.
	In Flip mode "Duplicate":	
	—	Same function as V-Pot of same channel.
	In Flip mode "Swap":	
	—	Swap function with V-Pot of same channel.
	In Surround Angle/Diversity view:	
	—	Adjust surround diversity.
	In EQ Frequency/Gain view:	
	—	Adjust gain of selected EQ band.
	In Send Destination/Level Multi Channel view:	
	—	Adjust send level of selected send.
	In Send Destination/Level Channel Strip view:	
	—	Adjust send level of send on selected track.

ASSIGNMENT Section

Hold down to show soft-button menu; release to switch V-Pots to Multi Channel or Channel Strip views for:

Logic Control	Modifier	Function/Comments
TRACK	—	Track parameters
PAN/SURROUND	—	Pan/Surround parameters
EQ	—	EQ parameters
SEND	—	Send parameters
PLUG-IN	—	Plug-in selection or Plug-in Edit mode
INSTRUMENT	—	Instrument selection or Instrument Edit mode
BANK <>	—	Shift fader bank left/right by number of channel strips.
	OPTION	Shift fader bank to beginning or end.
CHANNEL<>	—	Shift fader bank left/right by one channel.
	OPTION	Shift fader bank to beginning or end.
FLIP	—	Switch Flip mode between Off and Duplicate.
	SHIFT	Switch Flip mode between Off and Swap.
	CONTROL	Switch Flip mode between Off and Zero (turns fader motors off).
GLOBAL VIEW	—	Switch between Mixer view and Global view.
	SHIFT	Switch between Mixer view and Arrange view.

DISPLAY Parameters

Logic Control	Modifier	Function/Comments
NAME/VALUE	—	Switch between parameter name and parameter value display.
	SHIFT	Cycle through level meter displays: vertical, horizontal, and off.
	OPTION	Switch between track name and track number:name display.
	CONTROL	Clear clip/overload flags.
	⌘/ALT	Enter control surface group settings mode.
SMPTE/BEATS	—	Switch between SMPTE and beat format in clock display.

Function Buttons

Logic Control	Modifier	Function/Comments
F1	—	Recall Screenset 1.
	SHIFT	Open/Close Arrange window.
	⌘/ALT	Cut
	TRACK	Switch to Multi Channel view—Volume.
	PAN/ SURROUND	Switch to Multi Channel view—Pan/surround angle.
	EQ	Switch to Multi Channel view—Bypass.
	SEND	Switch to Multi Channel view—Destination.
	MARKER	Create marker without rounding.
	NUDGE	Nudge value: Tick
In modal dialog:		F1 key is equivalent to computer keyboard 1 key.
F2	—	Recall Screenset 2.
	SHIFT	Open/Close Track Mixer window.
	⌘/ALT	Copy
	TRACK	Switch to Multi Channel view—Pan.
	PAN/ SURROUND	Switch to Multi Channel view—Pan/surround radius.
	EQ	Switch to Multi Channel view—EQ Type.
	SEND	Switch to Multi Channel view—Level.
	MARKER	Create marker with rounding.
	NUDGE	Nudge value: Format
In modal dialog:		F2 key is equivalent to computer keyboard 2 key.

Logic Control	Modifier	Function/Comments
F3	—	Recall Screenset 3.
	SHIFT	Open/Close Event Editor.
	⌘/ALT	Paste
	TRACK	Switch to Multi Channel view—Track mode.
	PAN/ SURROUND	Switch to Multi Channel view—Pan/surround LFE.
	EQ	Switch to Multi Channel view—Frequency.
	SEND	Switch to Multi Channel view—Position.
	MARKER	Delete marker.
	NUDGE	Nudge value: Beat
In modal dialog:		F3 key is equivalent to computer keyboard 3 key.
F4	—	Recall Screenset 4.
	SHIFT	Open/Close Score Editor.
	⌘/ALT	Clear
	TRACK	Switch to Multi Channel view—Input.
	PAN/ SURROUND	Switch to Multi Channel view—Pan/surround mode.
	EQ	Switch to Multi Channel view—Gain.
	SEND	Switch to Multi Channel view—Mute.
	NUDGE	Nudge value: Bar
In modal dialog:		F4 key is equivalent to computer keyboard 4 key.
F5	—	Recall Screenset 5.
	SHIFT	Open/Close Hyper Editor.
	⌘/ALT	Select All.
	TRACK	Switch to Multi Channel view—Output.
	PAN/ SURROUND	Switch to Channel Strip view.
	EQ	Switch to Multi Channel view—Q Factor.
	SEND	Switch to Channel Strip view.
	NUDGE	Nudge value: Frame
In modal dialog:		F5 key is equivalent to computer keyboard 5 key.

Logic Control	Modifier	Function/Comments
F6	—	Recall Screenset 6.
	SHIFT	Open/Close Matrix Editor.
	⌘/ALT	Select All Following
	TRACK	Switch to Multi Channel view—Automation.
	PAN/ SURROUND	Switch to Angle/Diversity view.
	EQ	Switch to Channel Strip view.
	SEND	Switch to Channel Strip 2 view.
	NUDGE	Nudge value: 1/2 Frame
In modal dialog:		F6 key is equivalent to computer keyboard 6 key.
F7	—	Recall Screenset 7.
	SHIFT	Open/Close Transport window.
	⌘/ALT	Select Similar Regions/events.
	TRACK	Switch to Multi Channel view—Displayed Parameter
	PAN/ SURROUND	Switch to Surround X/Y view.
	EQ	Switch to Frequency/Gain Multi Channel view.
	SEND	Switch to Destination/Level Multi Channel view.
In modal dialog:		F7 key is equivalent to computer keyboard 7 key.
F8	—	Close top-most floating window.
	SHIFT	Open/Close Audio window.
	⌘/ALT	Select Inside Locators.
	TRACK	Switch to Track Setup view.
	EQ	Switch to Frequency/Gain Channel Strip view.
	SEND	Switch to Destination/Level Channel Strip view.
In modal dialog:		F8 key is equivalent to computer keyboard 8 key.

GLOBAL VIEW Buttons

Logic Control	Modifier	Function/Comments
MIDI TRACKS	—	Switch to Global view and show MIDI tracks.
	SHIFT	Set to fader bank no. 1 (tracks 1 to 8, for example).
In modal dialog:		MIDI TRACKS button is equivalent to computer keyboard 9 key.
INPUTS	—	Switch to Global view and show Audio Input Objects.
	SHIFT	Set to fader bank no. 2 (tracks 9 to 16, for example).
In modal dialog:		INPUTS button is equivalent to computer keyboard 0 key.
AUDIO TRACKS	—	Switch to Global view and show Audio Track Objects.
	SHIFT	Set to fader bank no. 3 (tracks 17 to 24, for example).
In modal dialog:		AUDIO TRACKS button is equivalent to computer keyboard's period key.
AUDIO INSTRUMENTS	—	Switch to Global view and show Audio Instrument Objects.
	SHIFT	Set to fader bank no. 4 (tracks 25 to 32, for example).
In modal dialog:		AUDIO INSTRUMENTS button is equivalent to computer keyboard / key.
AUX	—	Switch to Global view and show Aux Objects.
	SHIFT	Set to fader bank no. 5 (tracks 33 to 40, for example).
In modal dialog:		AUX button is equivalent to computer keyboard * key.
BUSSES	—	Switch to Global view and show Bus Objects.
	SHIFT	Set to fader bank no. 6 (tracks 41 to 48, for example).
In modal dialog:		BUSSES button is equivalent to computer keyboard – key.
OUTPUTS	—	Switch to Global view and show Outputs and Master Objects.
	SHIFT	Set to fader bank no. 7 (tracks 49 to 56, for example).
In modal dialog:		OUTPUTS button is equivalent to computer keyboard + key.
USER	—	Currently unassigned.
	SHIFT	Set to fader bank no. 8 (tracks 57 to 64, for example).

MODIFIERS—While Held Down:

Logic Control	Function/Comments
SHIFT	Switch to second function.
OPTION	Apply function to all tracks or set parameter to minimum, default, or maximum value.
CONTROL	Disable Group functions while held down.
⌘/ALT	Enable fine mode; shift parameter page by one parameter instead of page.

AUTOMATION Buttons

Logic Control	Modifier	Function/Comments
READ/OFF	—	Set selected track's automation to Read or Off.
	OPTION	Set all tracks' automation to Read or Off.
TOUCH	—	Set selected track's automation to Touch.
	OPTION	Set all tracks' automation to Touch.
LATCH	—	Set selected track's automation to Latch.
	OPTION	Set all tracks' automation to Latch.
WRITE	—	Set selected track's automation to Write.
	OPTION	Set all tracks' automation to Write.
TRIM		Currently unassigned.
GROUP	—	Enter Group Edit mode.
	SHIFT	Create a new group, open the Group window and enter Group Edit mode.
	TRACK	Switch to Track Multi Channel view, displaying Track Group parameter.

UTILITIES Buttons

Logic Control	Modifier	Function/Comments
SAVE	—	Save Song.
	OPTION	Save Song as.
UNDO	—	Undo
	SHIFT	Redo
	OPTION	Open Undo History.
CANCEL	—	Leave folder.
	Flashing pre-selection:	
	—	Cancel pre-selection.
	In alerts:	
	—	Execute Cancel button.
ENTER	—	Enter folder of selected track.
	In alerts:	
	—	Execute default button.

TRANSPORT Buttons

Logic Control	Modifier	Function/Comments
MARKER	—	Switch Small Marker mode on/off.
	SHIFT	Switch Large Marker mode on/off.
NUDGE	—	Switch Small Nudge mode on/off.
	SHIFT	Switch Large Nudge mode on/off.
	MARKER	Create a marker. This allows you to create a marker with one hand without entering Large Marker mode.
CYCLE	—	Activate/Deactivate Cycle.
	SHIFT	Switch to Cycle view.
DROP	—	Activate/Deactivate Drop.
	SHIFT	Switch to Drop view.
REPLACE	—	Activate/Deactivate Replace.
CLICK	—	Activate/Deactivate metronome click (separately for playback and record).
	SHIFT	Activate/Deactivate internal/external sync and MMC.
SOLO	—	Activate/Deactivate Solo Lock function.
	SHIFT	Enable Solo Lock function.
REWIND <<	—	Shuttle rewind.
	MARKER	Go to previous marker.
	NUDGE	Nudge left by chosen value.
	CYCLE	Engage Cycle function and set left locator to SPL.
	DROP	Engage Drop and set Drop In to SPL.
	In Marker mode:	
	—	Go to previous marker.
	In Nudge mode:	
	—	Nudge left by chosen value.
F.FWD >>	—	Shuttle forward.
	MARKER	Go to next marker.
	NUDGE	Nudge right by chosen value.
	CYCLE	Engage Cycle function and set right locator to SPL.
	DROP	Engage Drop and set Drop Out to SPL.
	In Marker mode:	
	—	Go to previous marker.
	In Nudge mode:	
	—	Nudge right by chosen value.
STOP	—	Stop.

Logic Control	Modifier	Function/Comments
PLAY	—	Play
	SHIFT	Pause
RECORD	—	Record

Cursor Keys and Scrub Wheel

Logic Control	Modifier	Function/Comments
Cursor Left/Right	If in Multi Channel view:	
	—	Select previous/next parameter of current view.
	ZOOM	Scroll window horizontally by page.
	If in Channel Strip EQ, Send view or Plug-in/Instrument Edit view:	
	—	Shift current editor page by one page.
	⌘/ALT	Shift current editor page by one parameter.
	ZOOM	Scroll window horizontally by page.
	Otherwise (always in Nudge mode):	
	—	Mimic computer keyboard Left/Right Arrow keys.
	ZOOM	Scroll window horizontally by page.
	In Zoom mode:	
	—	Change horizontal zoom level.
	SHIFT	Reset individual track zoom of current track (Cursor Left) or all tracks of same class (Cursor Right).
Cursor Up/Down	In Channel Strip EQ, Send view or Plug-In/Instrument Editor view:	
	—	Select previous/next EQ band, Send, or Insert slot.
	ZOOM	Scroll window vertically by page.
	Otherwise (always in Nudge mode):	
	—	Mimic computer keyboard Up/Down Arrow keys.
	ZOOM	Scroll window vertically by page.
	In Zoom mode:	
	—	Change vertical zoom level.
	SHIFT	Change individual track zoom of current track.
ZOOM	—	Switch between default cursor button behavior (see above) and Zoom mode.
	SHIFT	Switch between default cursor button behavior and permanently mimicking computer keyboard arrow keys.
SCRUB	—	Activate/Deactivate Scrub mode.
	SHIFT	Enable Shuttle mode on the Jog Wheel (SCRUB button LED flashes)

Logic Control	Modifier	Function/Comments
Jog Wheel	—	Move song position line.
	CYCLE	Set the Left locator to the current SPL, advance the SPL as normally, then set the Right locator to the SPL. Further Jog Wheel turns while still holding down CYCLE advances the SPL and sets the Right locator again. Tip: Rotating the Jog Wheel counterclockwise while holding down CYCLE defines a skip-cycle range.
	DROP	Set the Drop In locator to the current SPL, advance the SPL as normally, then set the Drop Out locator to the SPL. Further Jog Wheel turns while still holding down DROP advances the SPL and sets the Drop out locator again.
	In Scrub mode (SCRUB button LED on):	
	—	Scrub
	In Shuttle mode (SCRUB button LED flashing):	
	—	Shuttle

External Inputs

Logic Control	Modifier	Function
USER SWITCH A	—	Play/Stop
USER SWITCH B	—	Drop In/Out
EXTERNAL CONTROL	—	Master Volume

M-Audio iControl

3

This chapter will introduce you to using Logic Pro with the M-Audio iControl.

The iControl support in Logic Pro has been designed to ensure full GarageBand compatibility. When a GarageBand song is imported into Logic, the iControl can be used to edit the song in exactly the same fashion as it would in GarageBand.

Logic, however, offers many more functions than GarageBand, leading to some iControl buttons not being assigned as you might expect in Logic. But don't worry: you can easily reassign these buttons using the sophisticated Control Surfaces Assignments Editor of Logic (see the Control Surface chapter for more information).

To use Logic with an iControl unit, you need:

- an iControl unit
- Logic Pro 7. 2, or later
- a free USB port

Setting Up the iControl

Setting up your iControl for use with Logic is a simple process: Connect the iControl to any of your computer's USB ports.

Logic automatically detects a connected iControl. You can use the iControl in an independent control surface group (with other control surface icons placed above/below the iControl icon), or combined into one control surface group with one or more control surfaces.

If *Cycle* mode is enabled in your song or any tracks are muted, the corresponding LEDs will be illuminated, reflecting each track's current status.

The following sections will provide you with information on accessing parameters and functions that may not be apparent at first glance. You are strongly encouraged to experiment with these parameters and functions—this will help to familiarize you with iControl support in Logic.

Compatibility

The iControl can edit all plug-ins that offer parameters which can be automated.

Many Logic plug-ins—effects and Audio Instruments—plus those of third-party manufacturers, feature dozens of parameters. Every one of these parameters can be accessed by the iControl.

To give you an example of how this works, imagine a plug-in that contains, say, 16 parameters.

Once you've switched to the appropriate Channel Strip View of the plug-in you wish to adjust, you can directly affect parameters 1 to 8 with encoders 1 to 8. You can then switch by a "page" to access parameters 9 to 16.

Simply press the Arrow Up or Arrow Down button to step up/down to the next "page" of parameters.

Should you find that your third-party plug-in does not support remote editing or other features mentioned in this document, please contact the plug-in manufacturer to obtain an updated version that supports these facilities.

Channel Views

The channels section (the eight channel strips on the right side of your iControl; each channel strip comprises of a Select, Record Enable, Mute, and Solo button plus a rotary encoder) operates in two view "modes"—*Multi Channel* and *Channel Strip View*. Switching between these modes only affects the rotary encoders, with the other channel controls always remaining in *Multi Channel View*.

- *Multi Channel View*—accesses one parameter for eight tracks, such as pan or volume (normally a section of the Track Mixer window).
- *Channel Strip View*—accesses eight parameters of the selected track.

Switching to a *Multi Channel* or *Channel Strip* view is achieved by pressing one of the Assignment buttons (see the following section).

The Assignment Buttons

The two button areas labelled "All Tracks" and "Selected Track" are used to define the behavior of the channel strip buttons.

Volume

Pressing the Volume button enters Volume Multi Channel View; you can use the rotary encoders to control the Volume fader of the eight active tracks in this mode.

The other channel strip buttons maintain the default Multi Channel View function:

- Sel buttons: Selects the track for editing.
- Record Enable buttons: Enables/disables the track for recording.
- Mute button: Activates/deactivates the Mute button of the Audio Object that corresponds with the track.
- Solo button: Activate/deactivates the Solo button of the Audio Object that corresponds with the track.

Pan

Pressing the Pan button enters Pan Multi Channel View; you can use the rotary encoders to control the Pan knob of the eight active tracks in this mode.

The other channel strip buttons maintain the default Multi Channel view function:

- Sel buttons: Selects the track for editing.
- Record Enable buttons: Enables/disables the track for recording.
- Mute button: Activates/deactivates the Mute button of the Audio Object that corresponds with the track.
- Solo button: Activate/deactivates the Solo button of the Audio Object that corresponds with the track.

Track Info

Pressing the Track Info button enters Track Channel Strip View. In this mode, you can use the Sel buttons and rotary encoders of the eight channel strips to edit global parameters of the selected track. The Record Enable, Mute, and Solo buttons maintain their default Multi Channel view functions.

- Sel button 1 to 5: Switches the bypass status of the first five Insert slots.
- Sel button 6 and 7: Switches the bypass status of the first and second Send slots.

Note: A Select button is illuminated if the Insert or Send slot is enabled, and unlit if the effect is bypassed.

- Sel button 8: Not assigned.
- Encoder 1: In GarageBand, every Real Instrument track (Real Instrument tracks are audio tracks in Logic) contains a Noise Gate plug-in. Given this default plug-in assignment, encoder 1 is assigned to controlling the Threshold parameter of the Noise Gate in Track Channel Strip mode (if inserted in the *selected* channel strip).
- Encoder 2: In GarageBand songs, every Real Instrument track contains a Compressor plug-in. Again, in Track Channel Strip mode, encoder 2 is assigned to controlling the Compressor's Ratio (if inserted in the *selected* channel strip).
- Encoders 3 and 4 are not assigned.
- Encoder 5 controls the Pan knob of the channel.
- Encoder 6 controls the Send level of the first Send.

- Encoder 7 controls the Send level of the second Send.
- Encoder 8 controls the Volume fader of the channel.

Generator
Pressing the Generator button allows you to edit all sound generation parameters of the software instrument for the selected track. The Arrow Up and Arrow Down buttons switch to the previous or next eight parameters.

Note: This mode can only be accessed if the selected channel strip contains an audio instrument.

Effect 1 and Effect 2
Pressing Effect 1 or Effect 2 allows you to edit the parameters of the third or fourth Insert slot of the selected track (where applicable).

- Turning the encoders changes the parameter value.
- The Arrow Up and Arrow Down buttons switch to the previous or next parameter page.

Note: When shifting by a "page," this always "quantizes" to integer pages. As an example: The plug-in has 19 parameters and the iControl displays parameters 1 to 8.

- Pressing the Arrow Down button shifts to parameters 9 to 16.
- Pressing the Arrow Down button again shifts to parameters 12 to 19
- Pressing the Arrow Up button shifts back to parameters 9 to 16, not 4 to 11.

This way, you always revert to the page positions you expect to find, and are comfortable with.

Pressing the Effect 1 or Effect 2 button while pressing the Option button switches the bypass status of Insert slots 3 and 4, respectively.

EQ
Pressing the EQ button allows you to edit all EQ parameters—in all bands—for the selected track.

Pressing the EQ button opens or closes the Channel EQ plug-in window of the track. If no Channel or Linear Phase EQ is present on the selected track, a Channel EQ will be inserted automatically when the EQ Channel Strip View is entered.

Note: You can use the Arrow Down and Up buttons to switch to the next or previous parameter page.

Arrow Up and Arrow Down Buttons

The Arrow Up and Arrow Down buttons move up or down by "banks" of tracks (or between "pages" of parameters, as discussed earlier). To quickly explain, a single iControl device is only capable of viewing eight tracks at a time. To see, and edit or mix more tracks, simply press the Arrow Up or Arrow Down button to switch between tracks 1 to 8, 9 to 16, 17 to 24 and so on.

Note that when shifting by bank, this always "quantizes" to integer banks. As an example: Your song has 19 tracks, and the iControl is displaying tracks 1 to 8.

- Pressing the Arrow Down button shifts to tracks 9 to 16
- Pressing the Arrow Down button again shifts to tracks 12 to 19
- Pressing the Arrow Up button shifts back to tracks 9 to 16, not 4 to 11

This way, you always revert to the bank positions you expect, and are used to.

Note: Pressing the Arrow Up button while holding down the Option button jumps to the first tracks, and pressing the Arrow Down button jumps to the last tracks in the song—as an example (in a 64 track song), tracks 1 to 8 or tracks 57 to 64.

If the Generator, EQ, Effect 1, or Effect 2 button is illuminated, the Arrow Up and Arrow Down buttons have different functionality. See the sections above for details.

The Channel Strip(s)

As each channel strip is identical, the information discussed in this section applies equally to all eight of the iControl channel strips.

Select Button

This button is used to select a channel for channel-based editing or assignment commands. Each channel features an independent Select LED which is lit when a track is selected.

Note: If the Track Info button is illuminated, the Select buttons behave differently. See "Track Info" on page 103 for details.

Record Enable Button

This button arms or disables the channel for recording. Each channel features an independent Record Button LED which illuminates when a track is "armed" for recording.

Note: Holding down the Option button, while pressing any Record Enable button will disarm *all* tracks.

Mute Button

Used to mute the track's signal. Each channel features an independent Mute LED which illuminates when a track is muted.

Note: Holding down the Option button, while pressing any Mute button will unmute *all* tracks.

Solo Button

Used to solo channel signals. Each channel features an independent Solo LED which illuminates when a track is soloed.

Note: Holding down the Option button, while pressing any Solo button will disable solo for *all* tracks.

Encoder

The eight encoders are used for a number of operations, depending on the current status of the Assignment buttons to the left. See "The Assignment Buttons" on page 102.

Note: Pressing the Option button while turning an encoder sets the Relative Controller mode to Full: The encoder switches between the parameter's minimum, default, or maximum value.

The Jog Wheel

The Jog Wheel can be used to navigate through the song, which is useful for a number of transport tasks. Simply turn the dial to move to a song position.

The Transport Zone

This section of the iControl features six buttons.

It should be noted that these buttons can be used independently, or in conjunction with one another, to navigate and edit your songs.

Record Button

Activates recording on the selected track.

Return to Zero Button (RTZ)

Moves the SPL to the beginning of the song.

Rewind Button

Holding the Rewind button moves the song position line backwards. Quickly pressing the Rewind button once, moves the SPL one bar backwards. Pressing the Rewind and Cycle buttons simultaneously enables Cycle mode, and sets the left border of the Cycle area (left locator) to the current song position.

Play

Plays from the current song position. If pressed during playback, it will stop playback.

Fast Forward Button

Holding the Fast Forward button moves the song position line forwards. Quickly pressing the Fast Forward button once, moves the SPL one bar forward. Pressing the Fast Forward and Cycle buttons simultaneously enables Cycle mode, and sets the right border of the Cycle area (right locator) to the current song position.

Cycle

Activates/deactivates *Cycle* mode. By default, the Cycle area will fall between the first two *markers*.

You can use the iControl to set the left or right locator to the current song position and enable Cycle mode.

To define a new Cycle area, using the Cycle button:

1. Navigate to the desired left locator position with the Jog Wheel.
2. Do one of the following:
   - Press the Cycle and Rewind buttons simultaneously, navigate to the desired right locator position with the Jog Wheel, then press the Cycle and Fast Forward buttons simultaneously.
   - Hold down the Cycle button, navigate to the desired right locator position with the Jog Wheel, then release the Cycle button.

Master Fader

Controls the level of the *Master* fader in the Mixer windows of Logic. This reduces the level of all tracks, but does not affect their relative positions.

Assignment Overview

The following assignment tables are broken down into "zones" of the iControl.

Assignment Section

The Assignments button in the All Tracks and Selected Tracks area defines the behavior of the channel strip buttons.

iControl button	Modifier	Function/Comments
Volume	—	Encoders control track's Volume parameter.
Pan	—	Encoders control track's Pan parameter.
Generator	—	Encoders control software instrument parameters.
Track Info	—	Encoders control track parameters.
EQ	—	Encoders control EQ parameters.
Effect 1	—	Encoders control Insert 3 parameters.
Effect 2	—	Encoders control Insert 4 parameter.
Option	—	Modifier for other controls; while held down, the modified control either applies the function to all tracks or sets the parameter to its minimum, default, or maximum value.
Arrow Up/Down	—	Shift fader bank left/right by number of channel strips.
	Option	Shift fader bank to beginning or end.

Channel Strip (x8)

iControl	Modifier	Function/Comments
Encoder	—	Modify currently selected parameter.
	Option	Set parameter to minimum, default, or maximum value.
Record Enable	—	Activates/Deactivates Record Enable button of track.
	Option	Disable Record Enable button for all tracks.
Solo	—	Activates/Deactivates Solo button of track.
	Option	Disable Solo button for all tracks.
Mute	—	Activates/Deactivates Mute button of track.
	Option	Disable Mute button for all tracks.
Sel	—	Select track, except in Channel Strip mode.

Jog Wheel

iControl	Modifier	Function/Comments
Jog Wheel	—	Move Song Position Line.
	Cycle	Set the Left locator to the current SPL, advance the SPL as per usual, then set the Right locator to the new SPL position. Further Jog Wheel turns (to the right) while holding down the Cycle button advances the SPL and resets the Right locator position. Tip: rotating the Jog Wheel counter-clockwise (to the left) while holding down Cycle defines a skip-cycle range.

Transport Buttons

iControl	Modifier	Function/Comments
Record	—	Record
Return To Zero	—	Go to beginning of song
Rewind	—	Move the SPL one bar backward. If held, continue to scroll backwards.
	Cycle	Engage Cycle function and set left locator to SPL.
Play	—	Play or Stop
Fast Forward	—	Move the SPL one bar forward. If held, continue to scroll forwards.
	Cycle	Engage Cycle function and set right locator to SPL.
Cycle	—	Switch Cycle mode on or off.

EuCon Support of Euphonix MC and System 5-MC

4

Logic Pro 7.2.1 supports the EuCon protocol developed by Euphonix, enabling enhanced communication between the MC or System 5-MC and Logic.

The following chapter describes how the MC and System 5-MC control Logic in EuCon mode. Please note that this is an addendum to the MC operation manual and is limited to descriptions of Logic specific features. Please refer to the device operating manuals for more information about your control surface(s).

Setting Up the MC or System 5-MC With Logic

Please follow the steps outlined in the section below to use your MC or System 5-MC with Logic.

To set up the MC or System 5-MC with Logic:

1. Set up your MC and/or CM408T units as described in the MC operation manual.
2. Install the EuConWS software (version 1.1.2 or later) on your Macintosh.
3. Ensure that your Macintosh computer is set up as a workstation on the MC (see MC operation manual).
4. Assuming that the MC software is running on the MC: Select the Euphonix Menu icon on the MC Touchscreen and choose the Prefs menu item, then go to the About tab. Ensure that EuCon version is 1.1.2 or later. If it isn't, you'll need to update the EuCon software. Go to the Euphonix website for more information.

Note: If you have been using an earlier EuCon version, you should delete or rename the Logic Pro.xml file before installing newer EuCon versions. This file is used when controlling Logic with the Euphonix device(s) HUI emulation, which causes conflicts when controlling Logic in EuCon mode. Exit the MC and return to the operating system by choosing Euphonix > Shutdown > Exit to Operating System, then open the C:\Program Files\Euphonix\EuCon\UserSets\MCUser\MC_USER_SET__Root folder and rename or delete the Logic Pro.xml file.

5 If you have a CM408T and the correct MC software is running: Choose Euphonix > Prefs > Modules, select the CM408T in the "All Online" list, then touch "Add."

6 Launch Logic Pro 7.2.1.

The startup screen advises that Logic is starting EuCon.

7 On the MC, press the workstation button associated with your Macintosh computer.

The MC display will show an "Attaching to Logic Pro" progress bar.

Note: The EuCon support of Logic is not achieved through special control surface plug-ins. As a consequence, you can not use the Control Surface Assignments Editor to change assignments. You can only use the facilities provided by the MC or System 5-MC. More information about this can be found in the operation manuals provided with your EuCon device(s). EuCon devices do not appear in the Control Surfaces Setup window.

Setting Up Soft Key Assignments

The "Logic Pro.xml" Application Set file—installed with EuCon version 1.1.2—features a number of useful Soft Key assignments. The MC Touchscreen can be used to edit them.

To change a Soft Key assignment:

1 Select the respective Soft Key.

2 Touch the Euphonix Menu icon, then choose Setup in the ensuing pop-up menu.

3 Choose the desired EuCon command in the menu.

Logic supports the following EuCon commands:

- *Key Commands:* All Logic key commands (except the transport commands) are found here. The Touchscreen uses the same hierarchy as the Key Commands window. Many of these key commands switch between states (on/off, for example) or set a value. Most also provide feedback on the Soft Key (as an example: a Soft Key assigned to the Open/Close Score Editor command is illuminated when a Score Editor window is open).
- *Left Wheel/Right Wheel:* The commands found here allow you to configure the left or right wheel to perform a certain action when turned. This includes horizontal or vertical zoom, waveform zoom, individual track zoom, move locators, adjust left locator, adjust right locator, move drop locators, adjust drop in (punch in), adjust drop out (punch out), move marker, adjust marker length, nudge selected Regions or events, left/right pan (surround X), and front/back pan (surround Y).

- *Project > Markers:* All markers defined in the open song are shown as a list. Assigning a Soft Key to a marker command will display the marker title on the Soft Key LCD display. Pressing the Soft Key will move the SPL to the marker start point. The Soft Key is illuminated while the SPL falls within the marker boundaries. Renaming a marker in Logic also changes the associated Soft Key title. Moving a marker, however, disconnects the Soft Key from the marker.
- *Transport:* All transport related key commands are found here.

Note: Marker Soft Keys are a part of the Application Set, not the song data. Don't forget to save the User Set after defining a Marker Soft Key.

Main-Tracks Touchscreen

The MC Main-Tracks Touchscreen always displays a song's tracks (channels) in the Track Mixer's (adaptive) Track view:

- The channels are laid out in the same order as in the Arrange window.
- Redundant tracks are suppressed (not accessible), where multiple tracks represent the same output.

Note: Filtered selections (different view modes) are not reflected on the MC Main-Tracks Touchscreen track list.

The transport information is displayed as follows:

- SMPTE clock
- Bars/beats time
- Left locator
- Right locator

Main-Layouts

Layouts are automatically saved with the Logic song. When re-loading a song, all defined layouts are available.

Faders

The following section outlines the functionality of the MC fader elements in Logic.

Solo Keys

This key activates the Solo button for each Audio Object.

On Keys

The MC On keys provide the same functionality as the Mute buttons in Logic, but work in reverse: An MC On key must be lit to hear the channel. If a channel strip has been muted in Logic, the corresponding MC channel On key is not illuminated. A track that is not muted features a lit On key.

L LED

When the Logic track controlled by the fader belongs to an automation group, the L LED on the channel strip is lit.

Touching Fader Selects Track Preference

Please note that the "Touching fader selects track" preference of Logic (Logic > Preferences > Control Surfaces > Preferences) does not apply to the MC and System 5-MC when they are used with the EuCon protocol. This function is offered by the MC itself, with the "Select channel by touching fader/joystick" preference.

Choosing Automation Modes

The MC and System 5-MC only support Read and Write automation modes. Logic, however, also features Touch and Latch automation modes. When you use these devices with Logic, activating the "Read and Write" mode in the Touchscreen activates Touch mode in Logic. Latch mode can not be activated with the MC or System 5-MC. When you choose Latch mode with the mouse in Logic, the green R and red W LEDs are lit (as per Read and Write mode).

To choose an automation mode:

1. Press the Wave and Select keys simultaneously.
2. Select the desired automation mode in the pop-up menu displayed on the Touchscreen. You can choose between:
   - *Isolate:* Automation mode is off.
   - *Read:* Activates Read mode in Logic.
   - *Write:* Activates Write mode in Logic.
   - *Read/Write:* Activates Touch mode in Logic.

Note: If a write automation mode (Touch, Latch, Write) is active (and an automation parameter enabled in the Logic > Preferences > Automation > Touch/Latch/Write Erase settings is chosen), the red W LED is lit. The green LED is lit when a read automation mode is active.

Knobsets

When using the Euphonix MC with Logic, a knobset contains pages, each comprised of eight parameters.

The top level knobset leads to the following knobsets:

- *Inserts:* Pressing the Inserts Soft Key switches to a list of currently instantiated plug-ins (see the following section for details). The On key is lit if a plug-in is enabled (not bypassed) and does not belong to the dynamic, EQ, or filter plug-in groups. (Please note that this also applies to Audio Unit plug-ins.) Pressing the On key switches the bypass state of all plug-ins that do not fall into the dynamic, EQ, or filter groups.
- *Input:* Pressing the Input Soft Key switches to input parameters (see "Input Knobset" on page 116).
- *Dyn:* The Dyn Soft Key is not currently used to display a list, or allow editing, of dynamic plug-ins. The On key is lit when any Dynamic plug-ins are enabled (not bypassed). Please note that this only applies to Logic plug-ins, not Audio Unit plug-ins. Pressing the On key switches the bypass state of all Dynamic plug-ins.
- *EQ:* Pressing the EQ Soft Key switches to EQ editing (see "EQ Knobset" on page 118). The On key is lit when EQ plug-ins are enabled (not bypassed). Please note that this only applies to Logic plug-ins, not Audio Unit plug-ins. Pressing the On key switches the bypass state of all EQ plug-ins.
- *Sends:* Pressing the Sends Soft Key switches to Send editing mode (see "Sends Knobset" on page 118).
- *Pan:* Pressing the Pan Soft Key switches to Pan/Surround editing mode (see "Pan/Surround Editing Knobset" on page 119).
- *Groups:* Pressing the Groups Soft Key switches to Group editing mode (see "Groups Knobset" on page 119).
- *Output:* Pressing the Output Soft Key switches to Output parameter editing mode (see "Output Knobset" on page 119).

Inserts (Configuration) Knobset

In this mode, the Soft Keys display the effect plug-ins inserted on the selected track.

If more than eight effect plug-ins are instantiated, you can use the right Page key of the left Page key set to display ensuing plug-ins.

To edit an effect plug-in:

1. Press the Soft Key (or respective knob top) that features the name of the effect plug-in that you wish to edit.

   This switches to Effect Plug-in Editing mode. The parameters of the plug-in are displayed in the order shown in the Controls view of the effect.

2. Turn the respective knob(s) to change the desired value(s).

Pressing a knob top sets the controlled parameter to its default value. For parameters with only two values, the On key is lit when the value is 1 (or on) and unlit when the value is 0 (or off). Pressing the On key switches between the two value.

If the plug-in features more than eight parameters, use the left Page key set to navigate between pages of parameters.

Pressing the Back key returns to the Inserts (Configuration) knobset.

To insert effect plug-ins:

1. In the Inserts (Configuration) Knobset mode, press both Page keys simultaneously.

   This switches to Effect Insert mode. The Soft Keys display the first eight Insert slots of a channel.

2. Select the desired Insert slot by pressing the respective knob top. You can use the left Page key to display Insert slots 9 to 15.

   When you press the respective knob top, the Soft Keys display the Logic plug-in menu that appears when you click-hold on an Insert slot with the mouse.

Tip: If the selected Insert slot already contains an effect plug-in, the MC reflects the bold menu entries (indicating the selected plug-in name/type) with a lit On key.

3. Choose the desired effect plug-in:
   - Pressing the Soft Key or knob top enters a submenu or inserts a selected effect plug-in.
   - Pressing the Back key navigates up one level in the menu hierarchy.

Input Knobset

If the Input knobset is active, the Soft Keys display all possible input values for audio tracks:

- The first value is "--", meaning no input.
- The currently active input value is indicated by a lit On key.
- Pressing the respective On key, Soft Key or knob top chooses the respective input value.
- If there are more than eight values (inputs), the left Page key set switches to the previous/next values.
- Pressing the two Page keys simultaneously switches to Input Configuration mode: the Soft Keys display mode values (Mono, Stereo, Left, Right) for the track. Again, the active value is indicated by a lit On key. Pressing the respective On key, Soft Key or knob top chooses the respective value.
- Pressing the Back key returns to the top-level knobset.

On Audio Instrument tracks, the Input knobset displays the inserted instrument.

To edit an instrument:

- Press the respective knob top or Soft Key.

  Instrument parameters are displayed in the order shown in the Controls view of the plug-in. Turning a knob changes the parameter value. Pressing a knob top sets the controlled parameter to its default value. For parameters with only two values, the On key is lit when the value is 1 (or on) and unlit when the value is 0 (or off).

To change or insert an instrument:

1. Press both Page keys simultaneously.

   This switches to Insert Instrument mode. The Soft Key display indicates the Instrument slot of the channel. When you press the knob top or Soft Key, the Soft Keys display the Instrument plug-in menu that appears when you click-hold on an Instrument slot with the mouse.

2. Choose the desired Instrument plug-in:

   - Pressing the Soft Key or knob top enters a submenu or inserts a selected instrument plug-in.
   - Pressing the Back key navigates up one level in the menu hierarchy (or switches back to the Input Knobset if you are in the top level of the menu).

Opening and Closing Plug-in windows

Logic supports the MC "Open plugins on workstation when editing" and "Close plugins on workstation when exiting" preferences.

This behavior is dependent on the Link button being enabled in plug-in windows. If a Link-enabled plug-in window is open:

- "Open plugins on workstation when editing" does not open a new window when a new plug-in is selected, but will replace the open window's contents.
- "Close plugins on workstation when exiting" does nothing.

Otherwise, "Open plug-ins on workstation when editing" opens a new plug-in window, with the Link button disabled. "Close plugins on workstation when exiting" closes the Plug-in window.

Dyn(amic) Knobset

This knobset is not currently implemented.

EQ Knobset

This knobset allows you to edit the first EQ plug-in (Channel EQ or Linear Phase EQ). There are two pages, with each band featuring two knobs. Page 1 shows the parameters of the first, second, 7th, and 8th EQ bands. Page 2 shows the parameters of EQ bands 3 to 6. When no Linear Phase or Channel EQ is present on the selected track, pressing the last Soft Key in the second row (labeled AddChEQ) inserts a Channel EQ.

For each band:

- The upper knob controls either Frequency or Q. You can switch between Frequency or Q with the Select key for the Knobset. Pressing the knob top sets the controlled parameter to its default value.
- The lower knob controls Gain (or Slope). Again, pressing the knob top sets the controlled parameter to its default value.
- The lower knob's On key switches the bypass state of the band. When the band is bypassed, the On key is unlit. When the band is active, the On key is illuminated.

To return to the top-level knobset:

- Press the Back key.

Sends Knobset

The Sends knobset displays the current track send options.

- The Soft Key shows the send destination.
- The knob controls send level.
- The Select key switches between pre fader (off—unlit) and post fader (on—lit) modes.
- The On key switches the bypass state of the send.
- Pressing both Page keys simultaneously enters Send Configuration mode (see the following section).
- Pressing the Back key returns to the top-level knobset

Send Configuration Knobset

In Send Configuration mode, a list of the first eight Send slots is displayed.

When you touch the knob, the Soft Key shows the send level (provided the send slot is already assigned to a bus).

To change a send destination:

1. Select the desired Send slot by pressing the respective Soft Key or knob top.

   The first eight Send destinations are displayed. You can use the right Page key of the left Page key set to display ensuing Send destinations.

2. Choose the desired destination by pressing the respective Soft Key or knob top.

To return to send editing mode:

- Press the Back key.

Pan/Surround Editing Knobset

This knobset displays the Pan parameter unless Surround mode is active on the track(s).

On tracks where Surround Mode is active, this knobset displays:

- Surround Angle
- Surround Diversity
- LFE
- Surround X (left/right)
- Surround Y (front/back)
- Center Level

Press the Back key to return to the top-level knobset. Pressing a knob top sets the controlled parameter to its default value.

Groups Knobset

This knobset displays all currently used automation groups.

- The Soft Keys show group names. Press to choose the respective group(s).
- The On key displays and switches between active/inactive group membership for the track.
- Pressing the Back key returns to the top-level knobset.

Output Knobset

If the Output knobset is active, the Soft Keys display all possible output values for the track:

- The first value is "Surround," the second is "--", meaning no output.
- The currently active output is indicated by a lit On key.
- Pressing the On key, Soft Key, or knob top chooses the respective output value.
- If there are more than eight outputs, you can use the right Page key of the left Page keys to display ensuing outputs.
- If the selected track is a surround track, pressing the two Page keys simultaneously will switch to Surround Output Configuration mode: the Soft Keys display the surround format parameters (Stereo, LCR, Center Only, Quadro, and so on) of a track. Again, the active value is indicated by a lit On key and pressing the On key, Soft Key or knob top chooses the respective value.
- Pressing the Back key returns to the top-level knobset.

Assignable Knob

The Assignable Knob can be used for control of any parameter that can be automated. You must click on the target parameter with the mouse. Pointing with the mouse is not sufficient to assign a parameter.

Pressing the knob top locks/unlocks the Assignable Knob. When locked, clicking a parameter with the mouse will not reassign the Assignable Knob.

Both the On and the Smart key switch the currently assigned parameter between values of 0 and 1 (useful for on/off parameters).

Monitors and Control Room

Logic Pro does not support EuCon monitoring control. Please use the Studio Monitor Pro application.

Clear Keys

The "Clear Mute" and "Clear Solo" keys turn off Mute or Solo on all tracks. The Clear Mute/Clear Solo key is lit when any track is muted/soloed.

The button without a label above the Clear Mute key provides a special feature on the CM408T: when it is active (lit), pressing a CM408T key/knob activates the respective view (knobsets, sub-menus, and so on) for all channels.

Track Control Bar

The Track Control Bar of the Logic Arrange window offers a special feature on the Euphonix MC and System 5-MC devices: it shows "attentioned" tracks in light blue. All currently "accessed" tracks are shown in dark blue.

Note: The color of the track control bar can not be changed in the Control Surface Setup window.

System 5-MC Specific Features

This section describes how the System 5-MC's CM408T fader module controls Logic in EuCon mode.

TFT Display

- *Level meters:* Display the level of the respective track. Two discrete stereo level meters are shown for stereo tracks.
- *Track Info section:* Displays the track name, number, stereo/surround mode, input and output assignments.

- *Graphs:* In all knobsets (except EQ), the graph section displays the current pan or surround position. If the EQ knobset is selected, the graph section displays the current frequency response. If the EQ plug-in is bypassed, the curve is displayed in gray, rather than green.
- *Knobset assignment:* The eight lines normally display the assignment of a knob. The current value of a knob is displayed when it is touched. In the Output and Group knobset, a green frame is shown around the text of knob cells with a lit On key.
- *Color bar:* The color corresponds to the color assigned to the audio channel (or Logic instrument) of the track.

Two Keys Above Knobsets

Pressing the two keys above a knobset is equivalent to pressing the MC Back key: You move up one level in the hierarchy, if applicable.

Knob Cells

The CM408T knob cells are almost identical to the MC knob cells. There is just one difference: They feature a four-character LED, but no Soft Key.

Top Level Knobset Keys

These keys allow you to access knobsets directly:

- "*" (asterisk) key: Same as Inserts Soft Key (see "Inserts (Configuration) Knobset" on page 115).
- *Input:* Accesses Input knobset (see "Input Knobset" on page 116)
- *Dyn:* Selects the Dynamic knobset (see "Dyn(amic) Knobset" on page 117).
- *EQ:* Selects the EQ/Filter knobset (see "EQ Knobset" on page 118).
- *Aux:* Selects the Sends knobset (see "Sends Knobset" on page 118).
- *Pan:* Selects the Pan knobset (see "Pan/Surround Editing Knobset" on page 119).
- *Grp:* Selects the Group knobset (see "Groups Knobset" on page 119).
- *Mix:* Selects the Output knobset (see "Output Knobset" on page 119).

In Keys

These keys allow you to switch the bypass status of particular plug-in types.

- *Ins In key:* Switches the bypass status of all plug-ins that do not belong to the dynamic, EQ, or filter categories (please note that this also applies to Audio Unit plug-ins).
- *Dyn In:* Switches the bypass status of all dynamic plug-ins (please note that this only applies to Logic, not Audio Unit plug-ins).
- *EQ In:* Switches the bypass status of all EQ plug-ins (please note that this only applies to Logic, not Audio Unit plug-ins).
- *Filt In:* Switches the bypass status of all filter plug-ins (please note that this only applies to Logic, not Audio Unit plug-ins).

Identical Keys

The following CM408T keys work in the same fashion as their MC counterparts:

- Page/Configure key
- Channel Select key
- Rec key
- Solo key
- On key

CM Labs Motormix

5

Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- Ensure that your Motormix unit(s) are connected bi-directionally with the MIDI interface.
- Choose Logic Pro > Preferences > Control Surfaces > Setup.
- Choose the New > Install menu item from the Setup window's local menu.
- Select "Motormix" in the Install window, choose "Add," then set the appropriate MIDI In and Out ports in the Setup window—for each Motormix unit.

Assignment Overview

A right-aligned modifier button (SHIFT, for example) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

Select Buttons

The Select buttons (buttons just below the LCD) have multiple uses, depending on the current mode.

Mode	Assignment
normal	Selects track displayed in upper LCD line. Tracks can be shifted to the left and right with the View left and right buttons.
bank button LED flashing	Track View Select mode: selects type of tracks to be displayed: • 1: Track View • 2: Arrange View • 3: Global View, MIDI tracks • 4: Global View, Input channels • 5: Global View, Audio tracks • 6: Global View, Audio Instruments • 7: Global View, Bus, and Aux channels • 8: Global View, Outputs, and Master

Mode	Assignment
WINDOW/ tool button LED on	Opens, activates, or closes a window of a certain class. LED off: If the window is not open, the button opens it. LED on: If the window is open, but not active, the button activates it. LED flashes: If the window is active, the button closes it. • 1: Arrange Window • 2: Track Mixer • 3: Event List • 4: Score Editor. • 5: Hyper Editor • 6: Matrix Editor. • 7: Transport window • 8: Audio window.
WINDOW/ tool button flashes	Chooses a tool. • 1: Pointer • 2: Pencil • 3: Eraser • 4: Text tool • 5: Scissors • 6: Glue • 7: Solo tool • 8: Mute tool
PLAY/ transport button flashes	Transport section • 1: Record • 2: Pause • 3: Stop • 4: Play • 5: Rewind • 6: Fast Forward • Upper LCD row displays current clock position.
STOP/locate button flashes	Locating functions • 1: Goes to left locator. • 2: Goes to right locator. • 3: Enables/Disables Cycle. • 4: Enables/Disables Drop. • 5: Enters Marker mode (see below). • 6: Opens floating Marker List. • Upper LCD row displays current clock position.
Marker mode	• 1 to 6: Selects markers 1 to 6. Marker names are displayed in the upper LCD row. • 7: Creates a new marker. • 8: Deletes current marker.
Group Edit mode	Switches between group parameters. Parameter view can be shifted by the View left and right buttons when the SHIFT button is held down.
Plug-in Assign	Enters Plug-in Edit mode for selected track.
Plug-in Edit	Enables/Disables parameter or resets it to default value.

Mode	Assignment
Instrument Assign	Enters Instrument Edit mode for selected track.
Instrument Edit	Enables/Disables parameter or resets it to default value.

Note: In modal dialogs, the Select buttons generate the computer keyboard character shown on the button face.

Rotary Pots

Control	Assignment
Rotary pots 1 to 8	Control parameter chosen with the Rotary Selector, as displayed in the 7 segment display (see below).
7 segment display	Shows current selection for Rotary pots: Send editing (S-MUTE or PRE/PST LED is on): • S1 to S8 = Send 1 to 8 level • F1 to F8 = EQ band 1 to 8 frequency • G1 to G8 = EQ band 1 to 8 gain • q1 to q8 = EQ band 1 to 8 Q factor Pan/Surround editing (select LED is on): • Pn = Pan • An = Surround Angle • dv = Surround Diversity • FE = Surround LFO • Md = Assign Surround Mode • X = Surround X • Y = Surround Y Track parameter editing (eff-4 LED is on): • VL = Volume • Pn or An = Pan/Surround Angle • Md = Channel Mode • In = Channel input • Ou = Channel output • Au = Automation mode • Gr = Group membership Assignment: • d1 to d8 = Assign Send 1 to 8 destination Plug-in editing (DSP/compare LED is on): • P1 to 15 = Assign Insert slot 1 to 15 to plug-in • P1. to 15. = Plug-in parameter editing Instrument editing (DSP/compare LED is on): • IA = Assign instrument • IE. = Instrument parameter editing. Group property editing (group LED is on): • G1 to 32 = group number

Control	Assignment
Rotary Selector	Selects a slot or parameter for rotary encoders, depending on the parameter type(s) being edited with the rotary encoders: • Send slot when editing send level or assigning send destination. • EQ band when editing an EQ parameter. • Effect/Instrument slot when assigning an effect/instrument. • Pan/Surround parameter when editing a Pan/Surround parameter. • Track parameter when editing a Track parameter. • Effect/instrument parameter page when editing a plug-in or instrument.
Rotary Selector push button	Switches Flip mode between *Off* and *Duplicate* (faders duplicate rotary encoder assignments).
SHIFT	Switches Display mode for channel strip displays: switches between: • Page info in upper line, parameter name in lower line. • Parameter name in upper line, parameter value in lower line.

Multi Buttons

These buttons (labelled A to H) have multiple uses, depending on the current mode, as indicated by the green and yellow LEDs to the right.

Mode	Assignment
fx bypass	Enables/Disables bypass of currently selected insert effect.
SHIFT (eff-1)	Enables/Disables bypass of currently selected EQ band and switches rotary encoders to EQ frequency editing.
s-mute	Enables/Disables bypass of currently edited Send and switches rotary encoders to send level editing.
SHIFT (eff-2)	Enables/Disables bypass of currently selected EQ band and switches rotary encoders to EQ Gain editing.
pre/post	Switches between pre and post of currently edited send and switches rotary encoders to send level editing. Post mode is indicated by a lit LED.
SHIFT (eff-3)	Enables/Disables bypass of currently selected EQ band and switches rotary encoders to (EQ) Q factor editing.
select	Switches rotary encoders to Pan/Surround editing. The edited parameter is selected with the Rotary Selector.
SHIFT (eff-4)	Switches rotary encoders to track parameter editing.

Note: In modal dialogs, the Multi buttons generate the computer keyboard character shown on the button face.

Burn Buttons

These buttons (labelled I to P) have multiple uses, depending on the current mode, as indicated by the red LEDs to the left.

Mode	Assignment
record	Enables/Disables Record Enable status of track.
SHIFT (fnctA)	Switches automation mode to Latch.
ALL + SHIFT (fnctA)	Switches automation mode of all tracks to Latch.
write	Switches automation mode to Write.
ALL	Switches automation mode of all tracks to Write.
SHIFT (fnctB)	Switches automation mode to Read.
ALL + SHIFT (fnctA)	Switches automation mode of all tracks to Read.
burn	Switches automation mode to Touch.
ALL	Switches automation mode of all tracks to Touch.
SHIFT (fnctC)	Switches automation mode to Off.
ALL + SHIFT (fnctA)	Switches automation mode of all tracks to Off.

Note: In modal dialogs, the Burn buttons generate the computer keyboard character shown on the button face.

SOLO Buttons

These buttons switch the Solo status of the displayed track.

Note: In modal dialogs the Solo buttons generate the computer keyboard character shown on the button face.

MUTE Buttons

These buttons switch the Mute status of the displayed track.

Note: In modal dialogs, the Solo buttons generate the computer keyboard character shown on the button face.

VIEW Section

Control	Assignment
Left/right buttons	In Plug-in and Instrument Edit mode: shifts the parameter bank by one bank. In other modes: • If BANK LED is off: shifts the fader bank by one channel. • If BANK LED is on: shifts the fader bank by one bank.
SHIFT	In Plug-in and Instrument Edit mode: shifts the parameter bank by one parameter. In Group Edit mode, the group parameter bank is shifted.
bank	Switches mode of left/right buttons (see above).
SHIFT	Sets Select buttons to Track View Select mode (see below).
group	Sets Select buttons, rotary encoders and Multi buttons to Group Edit mode.
SHIFT	Displays tracks' group assignments in the LCD. The rotary encoders allow you to change assignments.

Left Function Buttons

Control	Assignment
AUTO ENBL/mode	Currently unassigned.
SHIFT	Switches rotary encoders to automation enable mode.
SUSPEND/create	While held down, the groups are temporarily disabled.
SHIFT	Creates a new group and enters Group Edit mode.
PLUG-IN/compare	Switches rotary encoders and Multi buttons to Plug-in Assign mode. The Rotary Select knob is used to select the Insert slot you want to use/edit. In Plug-in Assign or Instrument Assign mode, it switches to Pan mode. In Plug-in Edit mode, it switches to Plug-in Assign mode. In Instrument Edit mode, it switches to Instrument Assign mode.
SHIFT	Switches rotary encoders and Multi buttons to Instrument Assign mode.
WINDOW/tools	Switches Select buttons to Window Select mode.
SHIFT	Switches Select buttons to Select Tool mode.
ALL/alt/fine	While ALL/alt/fine is held down, rotary encoders are in full mode: rotating counter-clockwise sets minimum, rotating clockwise sets maximum value.
SHIFT	while SHIFT and ALL/alt/fine are held down, rotary encoders are in fine mode.
DEFAULT/bypass	Currently unassigned.
SHIFT	In Instrument Edit mode: switches bypass state of the instrument. In Plug-in Edit mode: switches bypass state of the currently edited plug-in.
UNDO/save	Performs an Undo step. The LED is lit if there is a Redo step available.
SHIFT	Saves the song. The LED is lit if the song contains unsaved changes.
SHIFT	Switches to Shift mode—where the functions indicated by the lower case (inverted) labels below the buttons apply.

Faders

The faders normally control volume, except when in Flip mode, where they duplicate the rotary encoder assignments.

Right Function Buttons

Control		Assignment
PLAY/ transport		Play key command.
	SHIFT	Switches Select buttons to Transport Section mode.
STOP/locate		Stop key command.
	SHIFT	Switches Select buttons to Locate mode.
FFWD/monitor		Shuttle Forward key command.
	SHIFT	Opens System Performance window.
REWIND/status		Shuttle Rewind key command.
	SHIFT	Opens Synchronization window.
NEXT/configure		Navigates to next marker.
LAST/assign		When rotary encoders are displaying send destinations, use of LAST/assign switches them back to displaying send levels. Otherwise: goes to previous marker.
	SHIFT	When rotary encoders are displaying send levels, use of LAST/assign switches them to displaying send destinations. When rotary encoders are in Plug-in Edit mode, use of LAST/assign switches them to Plug-in Assign mode. When rotary encoders are in Instrument Edit mode, use of LAST/assign switches them to Instrument Assign Mode.
ENTER/utility		Identical to Enter key on computer keyboard.
	SHIFT	Opens Automation Settings window.
ESCAPE		When LED is lit, escapes from "special" mode (denoted by flashing LED). At all other times: identical to Esc key on computer keyboard.

Frontier Design TranzPort

6

Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- Ensure that the software shipped with the TranzPort is installed.
- Make sure that the "Tranz Bridge" (the wireless transmitter) is connected to the computer via USB.
- When Logic Pro 7 is launched, it installs the TranzPort automatically, and sets it to "native mode."

LCD

The LCD displays the following information:

- Top line left: name of currently displayed track.
- Top line middle: volume of currently displayed track.
- Top line right: panning of currently displayed track.
- Bottom line left: level meter of currently displayed track (stereo).
- Bottom line right: current clock position.

Assignment Overview

A right-aligned SHIFT (or other) button below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

Channel Strip

Control		Assignment
<CHAN		Shift the currently displayed track to the left by one track.
	SHIFT	Shift the currently displayed track left by eight tracks.
CHAN>		Shift the currently displayed track right by one track.
	SHIFT	Shift the currently displayed track right by eight tracks.
REC		Activate/Deactivate Record Enable button for the currently displayed track.
	SHIFT	Disable Record Enable button for all tracks.
SOLO		Enables/Disables Solo for the currently displayed track.
	SHIFT	Disable Solo for all tracks.
MUTE		Enables/Disables Mute for the currently displayed track.
	SHIFT	Disable Mute for all tracks.
ANY SOLO		Lit if any tracks or Regions are soloed.
UNDO		Undo
	SHIFT	Redo

Master Section

Control		Assignment
SHIFT		Modifier for function of other controls.
IN		Go to left Cycle locator.
	PUNCH	Engage Drop and set Drop In locator to SPL.
	LOOP	Engage Cycle and sets left Cycle locator to SPL.
OUT		Go to right Cycle locator.
	PUNCH	Engage Drop and set Drop Out locator to SPL.
	LOOP	Engage Cycle and set right Cycle locator to SPL.
PUNCH		Enables/Disables Drop mode.
LOOP		Enables/Disables Cycle mode.
PREV		Go to previous marker.
	SHIFT	Set locators by previous marker.
ADD		Create marker at SPL.
	SHIFT	Delete marker at SPL.
NEXT		Go to next marker.
	SHIFT	Set locators by next marker.

Control		Assignment
Jog Wheel		Depending on current Jog Wheel mode: • Move SPL by bars. • Audio scrubbing or • Shuttle.
	SHIFT	Adjust volume of the currently displayed track.
	LOOP	Set the Left locator to the current SPL, advance the SPL as per usual, then set the Right locator to the SPL. Further Jog Wheel use while holding down LOOP advances the SPL and sets the Right locator. Tip: Rotating the Jog Wheel counter-clockwise while holding down LOOP defines a skip-cycle range.
	DROP	Set the Drop In locator to the current SPL, advance the SPL as per usual, then set the Drop Out locator to the SPL. Further jog wheel use while holding down DROP advances the SPL and sets the Drop Out locator.
REW		Shuttle backward.
	SHIFT	Go to last play position.
	PUNCH	Engage Drop mode and set Drop In locator to SPL.
	LOOP	Engage Cycle mode and set left locator to SPL.
F FWD		Shuttle forward.
	PUNCH	Engage Drop mode and set Drop Out locator to SPL.
	LOOP	Engage Cycle moce and set right locator to SPL.
STOP		Stop
	SHIFT	Switch Jog Wheel modes between *Move SPL by Bars*, *Audio Scrubbing* and *Shuttle*.
PLAY		Play
	SHIFT	Pause
RECORD		Record
	SHIFT	Save

External Input

Control	Assignment
Foot Switch	Drop In/Out

JLCooper CS-32 MiniDesk

7

Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- Install the software that ships with the CS-32.
- Ensure that the CS-32 is in Host mode:
- Make sure that your CS-32 unit(s) are connected to the computer via USB or MIDI.

USB units are installed automatically. You must manually scan for MIDI units:

- Choose Logic > Preferences > Control Surfaces > Setup.
- Choose New > Install in the Setup window's local menu.
- Select the CS-32 from the list in the Install window.
- Click the Scan button.

Assignment Overview

A right-aligned modifier button (such as SHIFT) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

Display

The 2-digit 7-segment display shows information on the current mode and currently edited parameter:

Display text	Meaning
--	A "switching" parameter (Solo, Mute, Rec/Rdy) has been disabled.
AE	Mute buttons 1–6 display/set Automation Enable.
AS	Pots are in Pan/Send Assignment mode.
b1–b9	Pots are in Plug-in or Instrument bank select mode.
In	Pots are in Instrument Edit mode.
Lt	Mute buttons display/set "Latch" automation mode.
MI	Mute buttons display/set "MIDI" automation mode.
Mu	Mute has been enabled.
P1–P9	Pots are in Plug-in Edit mode.

Display text	Meaning
PA	Pots are in Pan/Send mode.
rd	Mute buttons display/set "Read" automation mode.
Re	Rec/Rdy has been enabled.
So	Solo has been enabled.
Tc	Mute buttons display/set "Touch" automation mode.
Wr	Mute buttons display/set "Write" automation mode.
Other text	When a track is selected, the first two characters of its name are shown briefly.
Numbers	While editing a numerical value with a fader or pot, the current value is displayed. If there are more than two digits, only the last digits of the mantissa are displayed. Signs (+/–) are only shown if only one digit is displayed.

Pots

As the pots are not motorized, Pickup mode is used, if enabled in the Control Surfaces preferences. This means that the pots will not "take over" until NULLed. NULL status is displayed by the NULL arrow LEDs. The Upper arrow is lit if the pot's value is above the NULL point, the Lower arrow is lit if the pot's value is below the NULL point, and both arrow LEDs are lit if NULLed.

The pots can operate in one of three modes, with one sub-mode each.

Pan/Send Mode

In Pan/Send mode (enabled with F7; display shows "PA"), the pots control global track parameters:

Control	Assignment
SEND A/P1	Controls Send 1 Level of selected track.
SEND B/P2	Controls Send 2 Level of selected track.
PAN/P3	Controls Pan of selected track.
SEND C/P4	Controls Send 3 Level of selected track.
SEND D/P5	Controls Send 4 Level of selected track.
SEND E/P6	Controls Send 5 Level of selected track.

While SHIFT is held down (display shows "AS"), the pots perform the following assignments:

Control	Assignment
SEND A/P1	Assigns Send 1 Destination of selected track.
SEND B/P2	Assigns Send 2 Destination of selected track.
PAN/P3	Assigns Track mode of selected track.
SEND C/P4	Assigns Send 3 Destination of selected track.

Control	Assignment
SEND D/P5	Assigns Send 4 Destination of selected track.
SEND E/P6	Assigns Send 5 Destination of selected track.

Instrument Edit Mode

In Instrument Edit mode (enabled with F8; display shows "In"), the pots control instrument parameters.

With SHIFT held down (display shows "b1"–"b9"), you can choose the parameter bank (see "Cursor Section" on page 139).

Plug-in Edit Mode

In Plug-in Edit mode (enabled with F9, display shows "P1"–"P9"), the pots control plug-in parameters of the currently selected insert.

With SHIFT held down (display shows "b1"–"b9"), you can choose the current insert and parameter bank (see "Cursor Section" on page 139).

Channel Strips

Control	Assignment
PAN SELECT/TRACK SELECT	Selects track.
SOLO	Enables/Disables Solo.
LOCATE	Navigates to markers 1–32.
SHIFT	LOCATE 17: Creates new marker. LOCATE 18: Creates new marker without rounding. LOCATE 19: Deletes marker at SPL. LOCATE 25: Opens Marker List. LOCATE 26: Opens Marker Text window. LOCATE 28: Sets locators by previous marker. LOCATE 29: Sets locators by current marker. LOCATE 30: Sets locators by next marker. LOCATE 31: Navigates to previous marker. LOCATE 32: Navigates to next marker.
MUTE	Enables/Disables Mute.
F1	Automation Enable setup (display shows "AE"). MUTE 1: Enables/Disables volume automation. MUTE 2: Enables/Disables pan automation. MUTE 3: Enables/Disables mute automation. MUTE 4: Enables/Disables automation of solo. MUTE 5: Enables/Disables send automation. MUTE 6: Enables/Disables automation of plug-in parameters.
F2	Displays/sets automation mode to "Read" (display shows "Td").
F3	Displays/sets automation mode to "Touch" (display shows "Tc").
F4	Displays/sets automation mode to "Latch" (display shows "Lt").

Control		Assignment
	F5	Displays/sets automation mode to "Write" (display shows "Wr").
	F6	Displays/sets automation mode to "MIDI" (display shows "MI").
ARM		Activates/Deactivates Record Enable button.
Faders		Control volume. As the faders don't offer feedback, Pickup mode is used, if enabled in the Control Surfaces preferences. This means that they will not "take over" until NULLed. NULL status is displayed by the NULL arrow LEDs. Upper arrow is lit if the pot's value is above the NULL point, the lower arrow is lit if the pot's value is below the NULL point, and both are lit if NULLed.

Bank Button

Control	Assignment
(Small red button with green LED)	LED off: black labels of channel strip buttons apply (TRK/LOC/ARM). LED on: white labels of channel strip buttons apply (PAN/SOLO/MUTE).

F Key Section

Control		Assignment
SHIFT		Modifier for function of other controls. See right-aligned "SHIFT" in left column.
F1		While held down, MUTE buttons 1–6 enables/disables automation of certain parameters (see MUTE).
	SHIFT	Enables/Disables Cycle mode.
F2		While held down, MUTE buttons set automation mode to Read.
	SHIFT	Enables/Disables Drop mode.
F3		While held down, MUTE buttons set automation mode to Touch.
	SHIFT	Sets left locator by current SPL.
F4		While held down, MUTE buttons set automation mode to Latch.
	SHIFT	Sets right locator by current SPL.
F5		While held down, MUTE buttons set automation mode to Write.
	SHIFT	Sets Drop In locator by current SPL.
F6		While held down, MUTE buttons set automation mode to MIDI.
	SHIFT	Sets Drop Out locator by current SPL.
F7		Sets pots to Pan/Send mode (display shows "PA").
	SHIFT	Enables/Disables metronome click.
F8		Sets pots to Instrument Edit mode (display shows "In").
F9		Sets pots to Plug-in Edit mode (display shows "P1"–"P9").

Cursor Section

Control		Assignment
Up		Zooms out vertically.
	SHIFT	In Plug-in edit mode: decrements current Insert slot.
Down		Zooms in vertically.
	SHIFT	In Plug-in Edit mode: increments current Insert slot.
Left		Zooms out horizontally.
	SHIFT	In Instrument and Plug-in Edit modes: decrements current parameter bank.
Right		Zooms in horizontally.
	SHIFT	In Instrument and Plug-in Edit modes: increments current parameter bank.

Transport Section

Control	Assignment
RECORD	Record
STOP	Stop
REW	Moves SPL backward by one bar.
PLAY	Play
F FWD	Moves SPL forward by one bar.

Jog Wheel Section

Control	Assignment
Jog Wheel	SCRUB off: moves SPL in bars. SCRUB on: Audio Scrubbing. SHUTTLE on: Shuttle mode.
SCRUB	Switches Jog Wheel between Move SPL by Bars and Audio Scrubbing mode.
SHUTTLE	Switches Jog Wheel between Move SPL by Bars and Shuttle mode.

JLCooper FaderMaster 4/100

8

Requirements

You need one or more FaderMaster 4/100 (MIDI or USB version) units with firmware version 1.03 or higher.

Important: If you have older firmware (see the sticker on the back of the unit), please contact JLCooper.

Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- USB model only: install the software that ships with the FaderMaster 4/100.
- Ensure that your FaderMaster 4/100 unit(s) are connected to the computer via USB or MIDI.

USB units are installed automatically.

You must manually scan for MIDI units:

1. Choose Logic > Preferences > Control Surfaces > Setup.
2. Choose New > Install in the Setup window's local menu.
3. Select the FaderMaster 4/100 from the list in the Install window.
4. Click the Scan button.

Note: You can combine several FaderMaster 4/100 units to form one large virtual control surface. The meaning/functionality of the Track buttons, however, are individually switched for each unit.

Assignment Overview

The following assigment tables are broken down into "zones" of the FaderMaster 4/100.

Global buttons

Control	Assignment
Select	Switches Track buttons to track selection.
Aux	Switches Track buttons to Record Ready.
Solo	Switches Track buttons to Solo.
Mute	Switches Track Buttons to Mute.
Inc	Increases fader bank display to show next four tracks.
Dec	Decreases fader bank display to show previous four tracks.

Channel Strip

Control	Assignment
Track button	Performs currently selected function (Select, Record Ready, Solo, Mute).
Fader	Controls volume (touch sensitive and motorized).

Korg microKONTROL and KONTROL49

9

Set Up

Please follow these steps before using your control surface with Logic Pro.

- Ensure that your unit(s) is/are connected to the computer via USB.
- Boot Logic, and the unit(s) will be scanned for, and installed automatically.
- When Logic launches, the microKONTROL/KONTROL49 is automatically set to "Native mode"—internal Scene settings are ignored.

Note: If installation and identification fails, it may be possible that the microKONTROL/KONTROL49 reaction time is too slow, due to USB bus-power issues. In this situation, connect the supplied power adapter, and set the power switch to the "DC" position.

When Logic quits (or the icon is removed from the Control Surface Setup window), the microKONTROL/KONTROL49 is reset to normal operation.

Assignment Overview

A right-aligned modifier button (shown below a button description) indicates that the button has an alternate meaning/use while holding down this modifier.

Pads

The Pads can operate in one of eight modes and three overlays. While pressing SCENE, the Pads allow you to select modes for the Pads and channel strips. Releasing SCENE without pressing a Pad does not affect the currently selected Pad or Channel Strip modes.

Pad	Assignment
1	Switches Pads to Transport mode.
2	Switches Pads to Solo/Mute mode.
3	Switches Pads to Rec/Select mode.
4–8	Switches Pads to User 4–8 mode. These modes have unassigned Pads. You can add assignments to key commands with the Learn function.
9	Switches channel strips to Pan mode.

Pad	Assignment
10	Switches channel strips to Send mode.
11	Switches channel strips to Automation mode.
12	Switches channel strips to Instrument Edit mode.
13	Switches channel strips to Plug-in Edit mode.
14–16	Switches channel strips to User 6–8 mode. These modes have unassigned encoders. You can add assignments with the Logic Learn function.

Transport Mode

This mode is enabled by pressing SCENE and Pad 1.

Pad	Assignment
1	Sets main encoder to Transport mode.
2	Sets main encoder to Scrub mode.
3	Sets main encoder to Shuttle mode.
7	Switches sync between internal and external.
8	Enables/Disables metronome click (separately for Playback and Record).
9	Enables/Disables Cycle function.
10	Enables/Disables Drop function.
11	Enables/Disables Replace function.
12	Enables/Disables Solo function.
13	Record
14	Pause
15	Play
16	Stop

Solo/Mute Mode

This mode is enabled by pressing SCENE and Pad 2.

Pad	Assignment
1–8	Enables/Disables Solo for the eight tracks being controlled with the eight channel strips.
9–16	Enables/Disables Mute for the eight tracks being controlled with the eight channel strips.

Rec/Select Mode

This mode is enabled by pressing SCENE and Pad 3.

Pad	Assignment
1–8	Activates/Deactivates Record Enable button for the eight tracks being controlled with the eight channel strips.
9–16	Selects one of the eight tracks being controlled with the eight channel strips.

User 4–8 Modes

These modes are enabled by pressing SCENE and Pad 4 to 8.

In these modes, the Pads are unassigned. Use the Learn function (Logic > Preferences > Control Surfaces > Learn Assignment for xxx) to assign them to key commands, for example.

Send Mode

This mode is enabled by pressing SCENE and Pad 10.

Send overlay

Pressing SETTING while the encoders are in Send mode, changes the operation of the Pads in Send mode.

Pad	Assignment
1–8	Switches send bypass state of the currently selected send for the eight channel strips.
9–16	Switches send position (Pre/Post) of the currently selected send for the eight channel strips.

Plug-in Edit Mode

This mode is enabled by pressing SCENE and Pad 13.

Plug-in Edit overlay

Pressing SETTING while the encoders are in Plug-in Edit mode changes the operation of the Pads in Plug-in Edit mode.

Pad	Assignment
1–8	Switches plug-in bypass state of the currently selected Insert slot for the eight channel strips.

Main Section

The main LCD shows information on the current mode of the encoders.

Display text	Meaning
<Instrument name>	Encoders edit Instrument parameters.
<Plug-in name>	Encoders edit Plug-in parameters (xx is for the currently selected insert).
Automatn	Encoders control Automation mode.
Ins. x	(SETTING held down) Main encoder chooses Plug-in insert.
ModePad?	Displayed while SCENE button is held down.
Pan	Encoders control pan.
Send x	Encoders control send level of send x.
User 6	Channel Strip User Mode 6. Encoders are initially unassigned.
User 7	Channel Strip User Mode 7. Encoders are initially unassigned.
User 8	Channel Strip User Mode 8. Encoders are initially unassigned.

The LCD backlight is red while recording, and green at other times.

The controls in the main section have the following meaning:

Control	Assignment
Main encoder	Controls SPL in one of three modes (see Pads 1–3 in "Transport Mode" on page 144).
SETTING	Held down in Send mode: • Main encoder chooses current send. • Pads have special meaning—see "Send Mode" on page 145. • LCDs display send destinations. • Encoders choose send destinations. Holding down in Plug-in Edit mode: • Main encoder chooses current plug-in insert. • Pads have special meaning—see "Plug-in Edit overlay" on page 145. • LCDs display plug-in name of the eight tracks.
MESSAGE	Enables/Disables Flip mode. When enabled, the encoders control volume and the faders control the parameter displayed in the LCDs.
SCENE	While held down, pads switch Pad and Channel Strip modes. See "Pads" on page 143.
EXIT	—
HEX LOCK	Shifts fader bank to the previous eight tracks (LED is on if previous tracks exist).
ENTER	Shifts fader bank to the next eight tracks (LED is on if subsequent tracks exist).
<	Octave Shift Down
>	Octave Shift Up

Channel Strips

There are several modes for the encoders, enabled with SCENE and Pad 9–16.

Control	Assignment
LCD	Shows the parameter controlled by the encoder. The currently chosen value is displayed for a few seconds while operating an encoder or fader. When the encoders are in a multi-channel view (Pan, Send, Send Setup), the background color indicates the track's automation mode: • green—off or Read • yellow—Touch or Latch • red—Write or MIDI
Encoder	Controls the parameter shown directly above the encoder in the LCD.
Fader	Controls volume. As the faders don't offer feedback, "Pickup mode" is used if enabled in the Logic Preferences. This means that they will not "take over" until NULLed.

External Input

Control	Assignment
Foot Switch	Starts and stops playback.
Pedal	Controls master volume.

Mackie Baby HUI

10

Set Up

Please make sure that your Baby HUI unit(s) is/are connected bi-directionally with the computer.

You must manually scan for Mackie Baby HUI units:

1. Choose Logic > Preferences > Control Surfaces > Setup.
2. Choose New > Install in the Setup window's local menu.
3. Select *Baby HUI* in the Install window.
4. Click the Scan button.

Assignment Overview

A right-aligned SHIFT below a button description indicates that the control has an alternate meaning/use while holding down this modifier.

Channel Strips

Control	Assignment
Rotary encoder	Adjusts parameter selected in the Encoder Assignment section.
Rotary encoder push button	Selects track.
SHIFT	Enables/Disables Record Ready.
Signal indicator	Illuminates when a signal is present in the channel. It also indicates channel selection.
SOLO	Enables/Disables Solo.
MUTE	Enables/Disables Mute.
Fader	Adjusts volume.

Encoder Assignment Section

Control	Assignment
PAN	Assigns Pan to rotary encoders.
SEND 1	Assigns Send 1 Level to rotary encoders.
SEND 2	Assigns Send 2 Level to rotary encoders.
SEND 3	Assigns Send 3 Level to rotary encoders.
SEND 4	Assigns Send 4 Level to rotary encoders.

Automation Section

Control	Assignment
BYPASS/OFF	Sets selected track to automation mode Off.
SHIFT	Enables/Disables automation playback and recording of volume.
READ	Sets selected track to automation mode Read.
SHIFT	Enables/Disables automation playback and recording of mute.
WRITE	Sets selected track to automation mode Write.
SHIFT	Enables/Disables automation playback and recording of pan.
TOUCH	Sets selected track to automation mode Touch.
SHIFT	Enables/Disables automation playback and recording of Send Level.

Display Section

Control	Assignment
TRANSPORT	Opens/Closes the Transport window.
MEM–LOC	Opens/Closes the Marker List.
MIXER	Opens/Closes the Track Mixer.
EDIT	Opens/Closes the Arrange window.

Utility Section

Control	Assignment
UNDO	Performs Undo.
SHIFT	Shifts to alternate use of some buttons (see below).

Navigation Section

Control		Assignment
RTZ		Navigates to the left locator.
	SHIFT	Sets Drop In locator.
END		Navigates to the right locator.
	SHIFT	Sets Drop Out locator.
BANK SELECT Left		Shifts channel strips by one bank to the left.
	SHIFT	Shifts channel strips by one channel to the left.
BANK SELECT Right		Shifts channel strips by one bank to the right.
	SHIFT	Shifts channel strips by one channel to the right.

Transport Section

Control	Assignment
REWIND	Shuttles backward.
FAST FWD	Shuttles forward.
STOP	Stop
PLAY	Play
RECORD	Record

Mackie C4

11

Set Up

A powered Mackie C4 unit will automatically be detected when Logic Pro is launched. You can use the C4 in an independent control surface group (with other control surface icons placed above/below the C4 icon), or combined into one control surface group with one or more control surfaces (such as the Logic Control—place the icon to the right or left of the existing icon(s).

Although the C4 can be used independently, it is most useful when combined with other control surfaces, particularly the Logic/Mackie Control. In the latter case, the C4 adds eight channels in Multi Channel view. Using the C4 in its own control surface group allows you to edit instruments and plug-ins independently, while performing mixing and other tasks on the Logic/Mackie Control or other control surface.

V-Pots, V-Selects

Functionality depends on current view mode, and optional overlay (see below).

- The top row (row 1) consists of V-Pot/V-Select 1 to 8.
- Row 2 consists of V-Pot/V-Select 9 to 16.
- Row 3 consists of V-Pot/V-Select 17 to 24.
- The bottom row (row 4) consists of V-Pot/V-Select 25 to 32.

V-Pot/V-Select 1 to 8

While no overlay is active, V-Pot/V-Selects 1 to 8 (the top row) normally perform in the same way as their counterparts on a Logic Control or Logic Control XT. See "The Assignment Zone" on page 54.

V-Pot/V-Select 9 to 32

These V-Pots have additional functionality in many views.

In Multi Channel views, the V-Pot/V-Selects of rows 2, 3 and 4 usually edit the parameter that "follows" the parameter edited on row 1.

Example: In Pan Multi Channel view (see "Multi Channel View" on page 57); where row 1 edits the Pan/Surround Angle, row 2 edits Surround Diversity, row 3 edits LFE and row 4 edits Surround mode.

In Channel Strip view, all four rows build a group of 32 editable parameters.

In Plug-in and Instrument Edit views, it can be split into two groups (8/24, 16/16 or 24/8 parameters), see "SPLIT" on page 157.

Pan/Surround Multi Channel View

In Pan/Surround Multi Channel view:

- Row 1 edits Pan/Surround parameter 1.
- Row 2 edits Pan/Surround parameter 2.
- Row 3 edits Pan/Surround parameter 3.
- Row 4 edits Pan/Surround parameter 4 (in this order; Pan/Angle, Diversity, LFE, Surround Mode, X, Y).

SINGLE Left/Right changes the parameter edited in row 1, thus affecting the parameters shown and edited in rows 2 to 4.

To access Pan/Surround Multi Channel view:

1. Hold the CHAN STRIP button.

   The Channel Strip overlay labels appear on the C4 displays.

2. Press V-Select 18 (labeled Surrnd MultiC).

Pan/Surround Channel Strip View

In Pan/Surround Channel Strip view, row 1 edits all eight surround parameters of a surround channel. If a stereo or mono channel is selected, V-Pot 1 edits the Pan (or Balance) parameter.

To access Pan/Surround Channel Strip view:

1. Hold the CHAN STRIP button.

   The Channel Strip overlay labels appear on the C4 displays.

2. Press V-Select 26 (labeled Surrnd).

Track Multi Channel View

In Track Multi Channel View, the lowest V-Pot row (row 4) edits the currently chosen track parameter. Row 3 edits track parameter 2, Row 2 track parameter 3, and row 1 track parameter 4.

The row order is reversed, so that the lowest row (editing parameter 1) is closest to the buttons.

The V-Pots edit the following track parameters in this order: Volume, Pan/Angle, Track Mode, Input, Output, Automation Mode, Group, Displayed Automation Parameter).

BANK Left/Right and SINGLE Left/Right change the parameter edited in row 4, thus affecting the parameters shown/edited in rows 1 to 3.

To access Track Multi Channel view:

1. Hold the CHAN STRIP button.

   The Channel Strip overlay labels appear on the C4 displays.

2. Press V-Select 17 (labeled Track MultiC).

EQ Multi Channel View

In EQ Multi Channel view:

- Row 1 edits EQ band bypass.
- Row 2 edits EQ band frequency.
- Row 3 edits EQ band gain/slope.
- Row 4 edits EQ band Q factor.
- The SLOT UP/DOWN buttons select the EQ band.

This only works if a Channel or Linear Phase EQ is inserted in the selected channel strip.

To access EQ Multi Channel view:

1. Hold the CHAN STRIP button.

   The Channel Strip overlay labels appear on the C4 displays.

2. Press V-Select 19 (labeled EQ MultiC).

EQ Channel Strip View

In EQ Channel Strip view:

- Row 1 edits EQ Frequency of all eight bands.
- Row 2 edits EQ Gain/Slope of all eight bands.
- Row 3 edits EQ band Q factor of all eight bands.
- Row 4 edits EQ bypass of all eight bands.

If no Channel or Linear Phase EQ is present on the selected track, a Channel EQ will be inserted automatically when the EQ Channel Strip view is entered. The TRACK L and TRACK R buttons switch to the previous or next track. If you switch to a track with no Channel or Linear Phase EQ inserted, the C4 displays show "–" and the V-Pots do nothing.

To access EQ Channel Strip view:

1. Hold the CHAN STRIP button.

   The Channel Strip overlay labels appear on the C4 displays.

2 Press V-Select 27 (labeled EQs).

Send Multi Channel View

In Send Multi Channel view:

- Row 1 edits send destination.
- Row 2 edits send level.
- Row 3 edits send position.
- Row 4 edits send mute.
- The SLOT UP/DOWN button selects the edited Send slot.
- The TRACK L and TRACK R buttons shift the fader bank left or right by the number of channel strips in the control surface group.

To access Send Multi Channel view:

1 Hold the CHAN STRIP button.

The Channel Strip overlay labels appear on the C4 displays.

2 Press V-Select 20 (labeled Sends MultiC).

Send Channel Strip View

In Send Channel Strip view:

- Row 1 edits the eight send destinations of the channel strip.
- Row 2 edits the send level of sends 1 to 8
- Row 3 edits send positions 1 to 8.
- Row 4 edits send mutes 1 to 8.
- TRACK L and TRACK R switch to the previous or next track.

To access Send Channel Strip view:

1 Hold the CHAN STRIP button.

The Channel Strip overlay labels are shown on the C4 displays.

2 Press V-Select 28 (labeled Sends).

Plug-in Select Multi Channel View

In Plug-in Select Multi Channel view, the C4 displays the first four Insert slots of the eight selected channels.

- Turn a V-Pot to switch between plug-ins.
- Press the respective V-Select to insert the selected effect. This enters Plug-in Edit view, where you can directly edit plug-in parameters. See the section below for more information.
- The SLOT UP/DOWN buttons switch between Insert slots.
- TRACK L and TRACK R shift the fader bank left or right by the number of channel strips in the control surface group.

- Holding SHIFT and pressing a V-Select switches the bypass state of the respective Insert slot. Bypassed plug-ins are denoted by an asterisk which precedes the plug-in name(s).

To access Plug-in Select Multi Channel view:

1. Hold the CHAN STRIP button.

   The Channel Strip overlay labels are shown on the C4 displays.

2. Press V-Select 21 (labeled PlugIn MultiC).

Plug-in Edit View

In Plug-in Edit view:

- V-Pot/V-Select 1 to 32 builds a group of 32 parameters. Splitting is possible.
- SLOT UP/DOWN button selects the desired plug-in insert slot.
- BANK Left/Right shifts the edited parameters by one page. In Split mode, this applies to Split Upper. When holding down SHIFT, this applies to Split Lower.
- SINGLE Left/Right shifts the edited parameters by 1. In Split mode, this applies to Split Upper. When holding down SHIFT, this applies to Split Lower.

To access Plug-in Edit view:

- Access Plug-in Select Multi Channel view, then insert or select a plug-in (see section above for details).

  This automatically switches to Plug-in Edit view.

Instrument Select Multi Channel View

In Instrument Select Multi Channel view, the C4 displays the Instrument slots of the selected instrument channels.

- Turn a V-Pot to select an instrument.
- Press the respective V-Select to insert the selected instrument. This enters Instrument Edit view, where you can edit instrument parameters. See the section below for more information.
- TRACK L and TRACK R shift the fader bank left or right by the number of channel strips in the control surface group.
- Holding SHIFT and pressing a V-Select switches the bypass state of the respective Instrument slot. An asterisk symbol precedes the name of bypassed instruments.

To access Instrument Select Multi Channel view:

1. Hold the CHAN STRIP button.

   The Channel Strip overlay labels are shown on the C4 displays.

2. Press V-Select 22 (labeled Instru MultiC).

Instrument Edit View

In Instrument Edit View:

- V-Pot/V-Select 1 to 32 builds a group of 32 parameters. Splitting is possible.
- BANK Left/Right shifts the edited parameters by one page. In Split mode, this applies to Split Upper. When holding down SHIFT, this applies to Split Lower.
- SINGLE Left/Right shifts the edited parameters by 1. In Split mode, this applies to Split Upper. when holding down SHIFT, this applies to Split Lower.

To access Instrument Edit view:

- Access Instrument Select Multi Channel view, then insert or select an instrument (see section above for details).

This automatically switches to Instrument Edit view.

Cycle View

Holding the CHAN STRIP button and pressing V-Select 31 activates Cycle view. In this mode, the V-Pots/V-Selects behave as follows:

- V-Pot/V-Select 1 (labeled Cycle): shows and edits the current Cycle status (off or on).
- V-Select 2 (labeled BySet): matches the Cycle area to selections made in the Arrange window (selected Audio or MIDI Region).
- V-Pot 3 (labeled Move): moves the current Cycle area by a bar with each "click" of the V-Pot, when turned.
- V-Pot 4: moves the current Cycle area by a beat with each "click" of the V-Pot, when turned.
- The display shows the left and right locators above V-Pots 5 and 7.
- Pressing V-Select 5 picks up (uses) the current song position for the left locator.
- Turning V-Pot 5 changes the left locator position by bars.
- Turning V-Pot 6 changes the left locator position by beats (denominator steps).
- Pressing V-Select 7 picks up (uses) the current song position for the right locator.
- Turning V-Pot 7 changes the right locator position by bars.
- Turning V-Pot 8 changes the right locator position by beats (denominator steps).

Drop View

Holding the CHAN STRIP button and pressing V-Select 32 activates Drop (also called "punch") view. In this mode, the V-Pots/V-Selects behave as follows:

- V-Pot/V-Select 1 shows and edits the current Drop status (off or on).
- V-Pot 3 (labeled Move): moves the current Drop-in area by a bar with each "click" of the V-Pot, when turned.
- V-Pot 4: moves the current Drop-in area by a beat with each "click" of the V-Pot, when turned.
- The display shows the Drop In and Drop Out locators above V-Pots 5 and 7.

- Pressing V-Select 5 picks up (uses) the current song position for the Drop In locator.
- Turning V-Pot 5 changes the Drop In locator position by bars.
- Turning V-Pot 6 changes the left locator position by beats (denominator steps).
- Pressing V-Select 7 picks up (uses) the current song position for the Drop Out locator.
- Turning V-Pot 7 changes the Drop Out locator position by bars.
- Turning V-Pot 8 changes the right locator position by beats (denominator steps).

Note: Changing a drop locator position with the C4 automatically enables Drop mode.

Buttons at Bottom

The following section outlines the functionality of the buttons found at the bottom of the C4 control surface.

SPLIT

Switches edit split between 4/0, 1/3, 2/2 and 3/1 rows. Split Edit allows you to simultaneously edit two separate sections of a plug-in/instrument, or even two different plug-ins.

Split Edit is also possible across multiple C4 units. As an example with two units, pressing the SPLIT button offers the following split modes:

- 1/7 (Split Upper is top line of first unit, Split Lower is bottom 3 lines of first unit and all lines of second unit. LED 1/3 is lit.)
- 2/6 (Split Upper is top two lines of first unit, Split Lower is bottom two lines of first unit and all lines of second unit. LED 2/1 is on.)
- 3/5 (LED 3/1 is on.)
- 4/4 (all three LEDs are on.)
- 5/3 (all three LEDs are on.)
- 6/2 (all three LEDs are on.)
- 7/1 (all three LEDs are on.)

LOCK

Activates/deactivates Track Lock. When enabled, selecting a track does not switch the current track selection.

SPOT ERASE

Currently unassigned.

MARKER

Switches between Marker overlay (see "Marker Overlay" on page 160) and normal view.

TRACK

Switches between Track overlay (see "Track Overlay" on page 160) and normal view.

Alternate mode options

Holding down the TRACK button accesses a further submenu in the lower LCD, enabling you to enter Global view with a certain Object type:

- V-Select 25 switches to MIDI tracks.
- V-Select 26 switches to Input Objects.
- V-Select 27 switches to Audio tracks.
- V-Select 28 switches to Audio Instrument tracks.
- V-Select 29 switches to Auxiliary Objects.
- V-Select 30 switches to Bus Objects.
- V-Select 31 switches to Outputs.
- V-Select 32 switches to Master Output.

Releasing the TRACK button without pressing a V-Select returns to Mixer view.

CHAN STRIP

Switches between Channel Strip overlay (see "Channel Strip Overlay" on page 160) and normal view.

Alternate mode options

Holding down the CHAN STRIP button accesses a further submenu in the lower LCD:

- V-Select 9 to 16 switches to one of eight user modes, where you can freely assign parameters to V-Pots or V-Selects.
- V-Select 17 switches to Track Multi Channel view (see "Track Multi Channel View" on page 152).
- V-Select 18 switches to Pan/Surround Multi Channel view (see "Pan/Surround Multi Channel View" on page 152).
- V-Select 19 switches to EQ Multi Channel view (see "EQ Multi Channel View" on page 153).
- V-Select 20 switches to Sends Multi Channel view (see "Send Multi Channel View" on page 154).
- V-Select 21 switches to Plug-in Select Multi Channel view (see "Plug-in Select Multi Channel View" on page 154).
- V-Select 22 switches to Instrument Select Multi Channel view (see "Instrument Select Multi Channel View" on page 155).
- V-Select 26 switches to Pan/Surround Channel Strip view (see "Pan/Surround Channel Strip View" on page 152).
- V-Select 27 switches to EQ Channel Strip view (see "EQ Channel Strip View" on page 153).

- V-Select 28 switches to Send Channel Strip view (see "Send Channel Strip View" on page 154).
- V-Select 31 activates the Cycle view (see "Cycle View" on page 156).
- V-Select 32 activates the Drop view (see "Drop View" on page 156).

FUNCTION

Switches between Function overlay (see "Function Overlay" on page 161) and normal view.

Modifier Buttons

The four buttons in this area are similar to those found on your computer keyboard (but are independent of the keyboard modifiers). Many Logic functions behave differently when one or more "modifier" key(s) is pressed, in conjunction with another key or mouse click. This also applies to the C4 control surface. All "modified" C4 commands are covered in each function description.

Here is a generic description of the modifier button functions:

- SHIFT: Switches other buttons to alternate function.
- OPTION: While held down, parameters are set to the minimum, default or maximum value when edited with a V-Pot.
- CTRL: Disables the Group function.
- ⌘/ALT: While held down, parameters are edited in fine (high resolution) mode with a V-Pot.

BANK Left/Right

Shifts parameter display by one page in particular view modes.

SINGLE Left/Right

Shifts parameter display by one parameter in particular view modes.

TRACK L/R

In Multi Channel view, TRACK L/R shifts the fader bank left or right by the number of channel strips in the control surface group. As an example: If you have two C4 units in a control surface group, the view shifts by 16 channels. Simultaneously pressing TRACK L or TRACK R and OPTION switches the fader bank to the beginning or end. As an example, if you are viewing the first eight channels (of 64 Audio Objects) in the fader bank, pressing OPTION and TRACK L or TRACK R will switch to view the last eight channels in the fader bank (Audio Objects 57 to 64).

In Channel Strip view, TRACK L/R selects the previous or next track. With SHIFT held down: as above, but for Split Lower.

SLOT UP/DOWN

Selects the desired EQ, Send or plug-in insert slot.

Marker Overlay

The Marker overlay is active when the MARKER button light is on.

- V-Select 1 to 30 is assigned to markers 1 to 30. The upper LCD line shows the marker name; the lower line displays "INSIDE" when the SPL falls between marker boundaries.
- V-Select 31 creates a new marker.
- V-Select 32 deletes the current marker.

Track Overlay

The Track overlay is active when the TRACK button light is on.

- V-Select 1 to 32 changes the currently edited track. When a track is selected for Split Upper, the lower LCD line displays the word "UPPER." If a track is selected for Split Lower, the word "LOWER" is shown.

  To select a track for Split Upper, press the appropriate V-Select.

  To select a track for Split Lower, press the V-Select while holding down SHIFT.
- BANK Left/Right shifts the fader bank by the number of channels in the control surface group.
- SINGLE Left/Right shifts the fader bank by one track.

Channel Strip Overlay

The Channel Strip overlay is active when the CHAN STRIP button light is on.

- V-Pot/V-Select row 1 edits the frequency and gain of EQ bands 3 to 6 (the parametric bands), provided an EQ plug-in is inserted in the current channel strip.
- V-Pot/V-Select row 2 switches to edit mode for plug-in inserts 1 to 8, provided a plug-in is inserted in the respective Insert slot. If no plug-in is inserted, turn the respective V-Pot to select a plug-in, then press V-Select, to instantiate it.
- V-Pot/V-Select row 3 edits Send 1 to 8 Level, provided the current track has active sends.
- V-Pot/V-Select 25 switches to Instrument Edit mode, provided the selected track is an Audio Instrument track and an Audio Instrument is inserted.
- V-Pot/V-Select 26 edits track output.
- V-Pot/V-Select 27 sets the automation mode.
- V-Pot/V-Select 28 edits group membership.
- V-Pot/V-Select 29 edits volume.

- V-Pot/V-Select 30 edits pan/surround angle (for surround channels).
- V-Pot/V-Select 31 edits Surround Diversity.
- V-Pot/V-Select 32 edits track mode (mono/stereo).

Function Overlay

The Function overlay is active when the FUNCTION button light is on.

Control	Assignment
1 (display: Params)	Enables/Disables the parameter display of the active window.
2 (Channl Strip)	Enables/Disables Channel Strip Only option in Arrange.
3 (Delay in ms)	Activates/Deactivates display of delays in milliseconds.
4 (Ruler: SMPTE)	Activates/Deactivates SMPTE display of time ruler.
5 (Global Track)	Activates/Deactivates display of Global tracks.
6 (Arrang Grid)	Activates/Deactivates display of the grid in Arrange.
7 (Event Float)	Activates/Deactivates display of the floating Event List.
8 (Name/Value)	Switches the display mode between Name and Value (identical to the NAME/VALUE button on the Logic Control).
9 (Track Autom.)	Enables/Disables display of track automation in Arrange windows.
10 (Trk>Rg Autom.)	Performs Move Current Track Automation Data To Region key command. With the SHIFT button held down (display: Trk>Ob Au All), Move All Track Automation Data To Region key command is performed.
11 (Rg>Trk Autom.)	Performs Move Current Region Control Data To Track Automation function. With the SHIFT button held down (display: Ob>Trk Au All), Move All Region Control Data To Track Automation key command is performed.
12 (Clear Autom.)	Performs Delete Currently Visible Automation Data of Current Track key command. With the SHIFT button held down (display: Clear Au All), Delete All Automation Data of Current Track function is performed.
13 (ClrAll Overld)	Resets the Level Meter Overload displays.
14 (ClrAll RecRdy)	Switches off Record Ready for all tracks.
15 (ClrAll Solo)	Switches off Solo for all tracks.
16 (ClrAll Mute)	Switches off Mute for all tracks.
17 (Tool: Pointr)	Chooses the Pointer tool.
18 (Tool: Pencil)	Chooses the Pencil tool.
19 (Tool: Scissr)	Chooses the Scissors tool.
20 (Tool: Glue)	Chooses the Glue tool.
21 (Tool: Text)	Chooses the Text tool.
22 (Tool: Xfade)	Chooses the Crossfade tool.
23 (Tool: Marque)	Chooses the Marquee tool.
24 (Tool: Autom.)	Chooses the Automation tool.

Control	Assignment
V-Pot 25 (WfZoom)	Edits the active Arrange waveform zoom factor.
V-Pot 26 (V.Zoom)	Edits the vertical zoom factor of the active window.
V-Pot 27 (H.Zoom)	Edits the horizontal zoom factor of the active window.
V-Pot 28 (Move Cycle)	Moves the Cycle locators.
V-Pot 29 (Quantz)	Chooses the Quantize Again value. V-Select 29 performs Quantize Again for the selected Regions or events.
V-Pot 30 (Format)	Chooses the Format value for clock display.
V-Select 31 (Prev SetEXS)	Performs "Next Plug-in Setting or EXS Instrument" key command.
V-Select 32 (Next SetEXS)	Performs "Previous Plug-in Setting or EXS Instrument" key command.

The SHIFT modifier button is currently assigned to V-Selects 10 to 12 (see above). Use of the OPTION, CTRL or ⌘/ALT modifiers don't alter V-Select/V-Pot functionality, as they are unassigned. You can freely assign new key commands to these encoders, or may choose to reassign the existing assignments in Logic Pro.

Mackie HUI

12

Set Up

Please make sure that your HUI unit(s) are connected bi-directionally with the computer, using a MIDI interface.

To set up Mackie HUI units:

1. Choose Logic Pro > Control Surfaces > Setup.
2. Choose New > Install in the Setup window's local menu.
3. Select *HUI* in the Install window.
4. Click the Scan button.

   Logic Pro will scan for, and automatically install, your control surface(s).

Other HUI Compatible Devices

If the unit emulates one HUI unit, proceed as if using a HUI.

If you experience problems in the DSP Edit display, install the unit as a DM2000.

If the unit emulates more than one HUI, add the required number of additional devices in the Setup window (see the Yamaha digital mixer sections in this document). If the unit is limited to support of only one HUI DSP edit section, choose *HUI Channel Strips only* as the model name for these additional units. This ensures that scrolling in the DSP edit section is limited to four parameters.

If you wish to know more about button assignments, refer to the Assignment Overview section below, and the device's user manual.

Assignment Overview

A right-aligned modifier button (such as SHIFT) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

ASSIGN Section

Control	Assignment
SEND A	Assigns Send 1 Level to V-Pots, and Send 1 to 4 Levels to DSP V-Pots. While held down, the scribble strips show the current Send 1 destination assignment.
SHIFT/ADD	As above, for Send 6
SEND B	Assigns Send 2 Level to V-Pots, and Send 1 to 4 Levels to DSP V-Pots. While held down, the scribble strips show the current Send 2 destination assignment.
SHIFT/ADD	As above, for Send 7
SEND C	Assigns Send 3 Level to V-Pots, and Send 1 to 4 Levels to DSP V-Pots. While held down, the scribble strips show the current Send 3 destination assignment.
SHIFT/ADD	As above, for Send 8
SEND D	Assigns Send 4 Level to V-Pots, and Send 1 to 4 Levels to DSP V-Pots. While held down, the scribble strips show the current Send 4 destination assignment.
SEND E	Assigns Send 5 Level to V-Pots, and Send 5 to 8 Levels to DSP V-Pots. While held down, the scribble strips show the current Send 5 destination assignment.
PAN	Assigns Pan to V-Pots; assigns selected track's Pan/Surround parameters to DSP V-Pots.
INPUT	Assigns Track Input to V-Pots. While held down, the scribble strips show the current Track Input assignment.
OUTPUT	Assigns Track Output to V-Pots. While held down, the scribble strips show the current Track Output assignment.
REC/RDY ALL	Disable Record Ready on all tracks.
BYPASS	Switches the INSERT buttons between Insert Select and Insert Bypass mode. Also see Insert entry in Channel Strips table on page 166.
MUTE	Switches the V-Select buttons between Send Position and Send Mute mode.
SHIFT	Enables/Disables Flip mode.
SELECT-ASSIGN	Displays the V-Pot assignment as follows: Pan, Snd1 to Snd8, S1As to S8As, In, Out.
SUSPEND	—
DEFAULT	Switches V-Select buttons between normal behavior and setting default value.
ASSIGN	When V-Pots display a Send level, the ASSIGN button switches them to Send Destination Assignment mode. Press V-Select or ASSIGN button again to confirm the assignment.

Fader Bank Buttons

Control	Assignment
Bank Left	Shifts channel strips by one bank to the left.
Bank Right	Shifts channel strips by one bank to the right.
Channel Left	Shifts channel strips by one channel to the left.
Channel Right	Shifts channel strips by one channel to the right.

WINDOW Section

Control	Assignment
TRANSPORT	Opens/Closes the Transport window.
EDIT	Opens/Closes the Arrange window.
MIX	Opens/Closes the Track Mixer.
ALT	Opens/Closes the Sample Editor.
STATUS	Opens/Closes the Audio window.
MEM-LOC	Opens/Closes the Marker List.

KEYBOARD SHORTCUTS Section

Control	Assignment
UNDO	Performs Undo.
SHIFT/ADD	Performs Redo.
OPTION/ALL	Opens Undo History window.
SAVE	Saves the song.
OPTION/ALL	Performs Save As function, allowing you to save the song under a different name.
EDIT MODE	—
EDIT TOOL	Selects the next tool. While held down, numerical buttons select a specific tool.
SHIFT/ADD	Shifts to second meaning of some buttons. See descriptions of other buttons.
OPTION/ALL	While held down, value change mode is set to "relative": relative value changes result in a minimum, default, or maximum value for the edited parameter. Also see description of other buttons.
CTRL/CLUTCH	While held down, the Group Clutch is engaged (all groups are disabled).
⌘/ALT/FINE	While held down, value change mode is set to "fine": relative value changes work at maximum resolution. Also see descriptions of other buttons.

Channel Strips

Control	Assignment
Level meters	Displays momentary and peak levels.
REC/RDY	Activates/Deactivates Record Enable button.
OPTION/ALL	Disables Record Enable button for all tracks.
INSERT	BYPASS button off (see Insert Select mode on page 164): selects track for plug-in selection. BYPASS button on (see Insert Bypass mode page 164): enables/disables bypass of currently selected Insert slot.
V-SEL	PAN button on: sets Pan parameter to center if DEFAULT button is on. Send 1 to 8 selected: edits Send Pre/Post, activates/deactivates Send Mute or sets Send Level to default value. In Send Destination Assignment mode, Track Input (see Input button on page 164) or Track Output Assignment mode (see Output button on page 164), the V-SEL buttons confirm the selection.
V-Pot	Adjusts parameter selected in the ASSIGN section.
AUTO	Cycles through automation modes. With an automation mode button held down, the button sets this automation mode.
SOLO	Enables/Disables Solo.
OPTION/ALL	Disables Solo for all tracks.
MUTE	Enables/Disables Mute.
OPTION/ALL	Unmutes all tracks.
Scribble strip	Displays track name, or Send, In, or Out assignment.
SELECT	Selects track.
SHIFT/ADD	Sets volume to unity level.
DEFAULT	Sets volume to unity level.
Fader	Adjusts volume, or duplicates V-Pot in Flip mode.

DSP EDIT/ASSIGN Section

Control	Assignment
ASSIGN	—
COMPARE	Switches DSP display between "track name/parameter name" and "parameter name/parameter value" modes.
BYPASS	Enables/Disables bypass of currently edited plug-in insert.
DSP Select 1 to 4	Assignment Pan: • DSP Select 1 centers Pan or Surround Angle. • DSP Select 2 centers Surround Diversity. • DSP Select 3 centers Surround LFE. • DSP Select 4 selects Surround mode. Assignment Send: • Activate/Deactivate Sends 1 to 4 or Mutes 5 to 8. Plug-in Assign mode: • Confirms insert 1 to 4 or 5 to 8 plug-in selection, selects this insert and enters Plug-in Edit mode. Plug-in Edit mode: • Sets value to default, or turns parameter "switch" on/off.
DSP V-Pots	Assignment Pan: • DSP V-Pot 1 controls Pan or Surround Angle. • DSP V-Pot 2 controls Surround Diversity. • DSP V-Pot 3 controls Surround LFE. • DSP V-Pot 4 controls Surround Mode. Assignment Send: • Control Send 1 to 4 or 5 to 8 Level. Plug-in Assign mode: • Assigns plug-in inserts 1 to 4 or 5 to 8. Plug-in Edit mode: • Controls the selected plug-in parameter.
INSERT/PARAM	Switches between Plug-in Assign and Plug-in Edit modes.
SCROLL	Plug-In Edit mode: shifts parameter display by the number of DSP V-Pots in the control surface group (usually four).
⌘/ALT/FINE	Plug-in Edit: mode shifts parameter display by one.

Function Keys

Control	Assignment
F1	Clears Overload LEDs.
SHIFT/ADD	Switches to Global View and enables MIDI tracks.
⌘/ALT/FINE	Opens/Closes Arrange window.
F2	Recalls Screenset 2.
SHIFT/ADD	Switches to Global View and enables Input Objects.
⌘/ALT/FINE	Opens/Closes Track Mixer.
F3	Recalls Screenset 3.
SHIFT/ADD	Switches to Global View and enables audio tracks.
⌘/ALT/FINE	Opens/Closes Event Editor.
F4	Recalls Screenset 4.
SHIFT/ADD	Switches to Global View and enables Audio Instrument trackss.
⌘/ALT/FINE	Opens/Closes Score Editor.
F5	Recalls Screenset 5.
SHIFT/ADD	Switches to Global View and enables Aux Objects.
⌘/ALT/FINE	Opens/Closes Hyper Editor.
F6	Recalls Screenset 6.
SHIFT/ADD	Switches to Global View and enables Bus Objects.
⌘/ALT/FINE	Opens/Closes Matrix Editor.
F7	Switches counter display between SMPTE and bars/beats/format/ticks.
SHIFT/ADD	Switches to Global View and enables Outputs and Master Object.
⌘/ALT/FINE	Opens/Closes Transport window.
F8/ESC	Default: exits folder. Goto Marke mode: cancels dialog.
⌘/ALT/FINE	Opens/Closes Audio window.

AUTO ENABLE Section

Control	Assignment
FADER	Activates/Deactivates volume automation playback and recording.
PAN	Activates/Deactivates pan automation playback and recording.
PLUG IN	Activates/Deactivates plug-in parameter automation playback and recording.
MUTE	Activates/Deactivates mute automation playback and recording.
SEND	Activates/Deactivates send level automation playback and recording.
SEND MUTE	—

AUTO MODE Section

Control	Assignment
READ	Sets selected track to Read automation mode. While held down, the channel strip AUTO buttons set automation mode to Read.
OPTION/ALL	Sets all tracks to Read automation mode.
LATCH	Sets selected track to Latch automation mode. While held down, the channel strip AUTO buttons set automation mode to Latch.
OPTION/ALL	Sets all tracks to automation mode Latch.
TRIM	—
TOUCH	Sets selected track to Touch automation mode. While held down, the channel strip AUTO buttons set automation mode to Touch.
OPTION/ALL	Sets all tracks to Touch automation mode.
WRITE	Sets selected track to Write automation mode. While held down, the channel strip AUTO buttons set automation mode to Write.
OPTION/ALL	Sets all tracks to Write automation mode.
OFF	Sets selected track to Off automation mode. While held down, the channel strip AUTO buttons set automation mode to Off.
OPTION/ALL	Sets all tracks to Off automation mode.

STATUS/GROUP Section

Control	Assignment
AUTO	While held down, the scribble strips display the tracks' automation mode.
MONITOR	—
PHASE	—
GROUP	Enters Group Edit mode: • The upper line in the DSP edit section displays the currently edited group number and name. • DSP Select buttons 1 to 4 switch between the properties of the currently edited group. The group name is shown in the lower line. • When the INSERT/PARAM button is off, the DSP Edit V-Pots scroll through the group properties. If the INSERT/PARAM button is on, the DSP EDIT V-Pots select the group currently being edited. • The SELECT buttons enable/disable group membership of the track.
SHIFT/ADD	Switches to Track View.
CREATE	Creates a new group and enters Group Edit mode (see above).
SHIFT/ADD	Switches to Global View.
SUSPEND	Activates/Deactivates the Group Clutch.
SHIFT/ADD	Switches to Arrange View.

EDIT Section

Control	Assignment
CAPTURE	—
SEPARATE	—
CUT	Cuts the selection.
COPY	Copies the selection.
PASTE	Pastes the Clipboard contents.
DELETE	Deletes the selection.

Time Display

Control	Assignment
TIME CODE	Lit if counter displays time code.
FEET	Not assigned.
BEATS	Lit if counter displays bars/beats/format/ticks.
Time display	Displays time code or bars/beats/format/ticks.
RUDE SOLO LIGHT	Flashes if any track is soloed.

LOCATE/NUMERICS Section

Control	Assignment
CLR	Deletes current marker.
=	Creates a marker at the current song position.
/	Equivalent to computer keyboard / key.
*	Equivalent to computer keyboard * key.
–	Equivalent to computer keyboard – key.
+	Equivalent to computer keyboard + key.
0 to 9	Normal: 1 to 9 recalls markers 1 to 9. If in Goto Marker dialog: Equivalent to computer keyboard keys 0 to 9.
SHIFT/ADD	Switches to Global View and enables: 1: MIDI tracks 2: Input Objects 3: Audio tracks 4: Audio Instrument Objects 5: Aux Objects 6: Bus Objects 7: Outputs and Master Object

Control	Assignment
EDIT TOOL	Selects tool: 1: Pointer 2: Pencil 3: Eraser 4: Text tool 5: Scissors 6: Glue 7: Solo tool 8: Mute tool 9: Magnifying Glass
0	If in Goto Marker dialog: Equivalent to computer keyboard 0 key.
.	If not in Goto Marker dialog: Enters Goto Marker dialog. In in Goto Marker dialog: Confirms entered marker number.
ENTER	If not in Goto Marker dialog: Enters folder of selected track. If in Goto Marker dialog: Confirms entered marker number.

Transport Section

Control	Assignment
AUDITION	—
PRE	Sets left locator.
IN	Sets Drop In locator.
OUT	Sets Drop Out locator.
POST	Sets right locator.
RTZ	Goes to the left locator.
END	Goes to the right locator.
ON LINE	Switches between internal/external sync.
LOOP	Enables/Disables Cycle mode.
QUICK PUNCH	Enables/Disables Drop mode.
REWIND	Shuttles backward.
FAST FWD	Shuttles forward.
STOP	Stop playback.
PLAY	Starts playback.
SHIFT/ADD	Pause
RECORD	Record

Cursor Buttons

Control	Assignment
Cursor Up	Cursor mode: Equivalent to computer keyboard Up Arrow key. Zoom mode: Zooms out vertically.
SHIFT/ADD	Zoom mode: Individual track zoom in.
⌘/ALT/FINE	Page up
OPTION/ALL + ⌘/ALT/FINE	Scroll to top.
Cursor Down	Cursor mode: Equivalent to computer keyboard Down Arrow key. Zoom mode: Zooms out vertically.
SHIFT/ADD	Zoom mode: Individual track zoom out.
⌘/ALT/FINE	Page down
OPTION/ALL + ⌘/ALT/FINE	Scroll to bottom.
Cursor Left	Cursor mode: Equivalent to computer keyboard Left Arrow key. Zoom mode: Zooms out horizontally.
SHIFT/ADD	Zoom mode: Individual track zoom reset of tracks from the same class.
⌘/ALT/FINE	Page left
OPTION/ALL + ⌘/ALT/FINE	Scroll to left border.
Cursor Right	Cursor mode: Equivalent to computer keyboard Right Arrow key. Zoom mode: Zooms in horizontally.
SHIFT/ADD	Zoom mode: Individual track zoom reset of all tracks.
⌘/ALT/FINE	Page right
OPTION/ALL + ⌘/ALT/FINE	Scroll to right border.
MODE	Switches between Cursor and Zoom modes.

Jog Wheel

Control	Assignment
Jog Wheel	Default: Move SPL by one bar. Scrub button lit: Scrub mode. Shuttle button lit: Shuttle mode.
SCRUB	Activates/Deactivates Scrub mode.
SHUTTLE	Activates/Deactivates Shuttle mode.

Foot Switches

Control	Assignment
Foot Switch 1	Play or Stop
Foot Switch 2	Record On/Off

Radikal Technologies SAC-2K

13

Set Up

Please make sure that your control surface is connected bi-directionally with the computer, either using a MIDI interface or the built-in USB connector. If the unit(s) are connected via USB, ensure that the MIDI driver shipped with the unit is installed.

To set up SAC-2K units:

1. Choose Logic > Preferences > Control Surfaces > Setup.
2. Choose New > Install in the Setup window's local menu.
3. Select the SAC-2K in the Install window.
4. Click the Scan button.

Assignment Overview

A right-aligned modifier button (such as SHIFT) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

LCDs and Encoders

Control	Assignment
Left and middle LCDs	Upper row displays track number (if in a Multi Channel View) or parameter name (if in a Channel Strip View). Lower row shows the parameter value of the encoder below the display. Level meters are displayed to the right.
Right LCD	Upper row displays the name of the parameter edited with the encoder below. Lower row displays the parameter value assigned to the encoder below the display. The Master Output level meter is displayed at the far right.
Encoders	Edit the corresponding parameter displayed in the LCD.
Encoder push buttons	Parameters with two values (On/Off): Switches between the two values. Parameters that access items (plug-in selection): Confirms preselection. At other times: Sets parameter to default value.

Channel Strips

Control	Assignment
Mute/Solo	Switches Mute/Solo 1 to 8 buttons between Mute and Solo modes. LED off: Mute/Solo buttons switch Mute state on/off. LED on: Mute/Solo buttons switch Solo state on/off. LED flashes: Mute/Solo buttons switch Rec/Rdy state on/off.
SHIFT	Sets Mute/Solo buttons to Rec/Rdy mode.
Mute/Solo 1 to 8	Mute/Solo LED off: Enables/Disables Mute; LED displays Mute status. Mute/Solo LED on: Enables/Disables Solo; LED displays Solo status. Mute/Solo LED flashing: Enables/Disables Rec/Rdy; LED displays Rec/Rdy status.
SELECT 1 to 8 buttons	Selects track. Exception: In Group mode, these buttons define group membership of the track.
Master Select button	Switches Flip mode between Off and Duplicate.
Fader 1 to 8	Controls volume, or duplicates encoder above if Flip mode is enabled. The silk screened legend lines are scaled as follows: +6 dB, +3 dB, 0 dB, –5 dB, –10 dB, –15 dB, –20 dB, –25 dB, –30 dB, –35 dB, –40 dB, –45 dB, –50 dB, –60 dB, –inf.
Master Fader	Controls master volume.

Mixe Mode Section

Control	Assignment
Pan	Switches to multi-channel pan editing. Encoders 9 to 12 edit Pan/Angle, Diversity, LFE, and Surround Mode of selected track (in Surround mode).
High, HiMid, LowMid, Low	Switches to multi-channel gain editing of a certain EQ band. Encoders 9 to 12 edit Frequency, Gain, Q factor, and On/Off for the selected track. Pressing and releasing the button chooses a specific EQ band. • Low: Band 3 (first parametric EQ band) • LowMid: Band 4 (second parametric EQ band) • HiMid: Band 5 (third parametric EQ band) • High: Band 6 (fourth parametric EQ band) While held down, Encoder 9 lets you choose the EQ band to edit (bands 1 to 8). The button's LED is lit when in multi-channel gain editing mode of the button's EQ band.
Snd/Ins	Switches the four Snd/Ins (1 to 4) buttons between Send and Insert modes. • LED off: Send mode • LED on: Insert mode

Control		Assignment
Snd/Ins 1 to 4		• If in Send mode, switches to multi-channel send level editing of Sends 1 to 4. Encoders 9 to 12 edit Destination, Level, Pre/Post and Mute of the selected track. Destination must be confirmed by encoder 9's push-button. While held down, Encoder 9 selects the desired Send number (1 to 8). The button's LED is lit when in multi-channel send level editing mode of the button's send number. • If in Insert mode, switches to multi-channel plug-in selection for Inserts 1 to 4. Plug-in selection is confirmed by the encoder's push-button. While held down, Encoder 9 enables you to choose the desired Insert number (1 to 15). The button's LED is lit when in plug-in selection mode (of the corresponding button's insert number).
Audio		Switches to Global View and displays audio tracks.
	SHIFT	Switches to Mixer View.
MIDI		Switches to Global View and displays MIDI tracks.
	SHIFT	Switches to Arrange View.
Input		Switches to Global View and displays Input Objects.
	SHIFT	Switches to Global View and displays Outputs and Master Object.
Inst		Switches to Global View and displays Audio Instrument Objects.
	SHIFT	Switches to Global View and displays Aux Objects.
Bus		Switches to Global View and displays Bus Objects.
	SHIFT	Switches to Global View and displays folders and all tracks shown when the View > Other Tracks option is activated in the Track Mixer.
Group		Switches to Group editing: • Encoder 1 to 10 push buttons edit a group property (Property shown in the LCD's lower line). • Encoder 11 scrolls through group properties. • Encoder 12 selects a group to edit. Its name is displayed in the lower line, above Encoder 12. • Select buttons 1 to 8 activate/deactivate track membership within the group.
1 to 8		Shifts the fader bank offset to the left by one bank.
9 to 16		Shifts the fader bank offset to the right by one bank.
17 to 24		Shifts the fader bank offset to the left by one track.
25 to 32		Shifts the fader bank offset to the right by one track.

Software Navigation Section

Control	Assignment
1	Num LED off: — Num LED on: Equivalent to '1' on computer keyboard.
2	Num LED off: Equivalent to Left Arrow key on computer keyboard. Num LED on: Equivalent to '2' on computer keyboard.
3	Num LED off: Equivalent to Up Arrow key on computer keyboard. Num LED on: Equivalent to '3' on computer keyboard.
4	Num LED off: Eequivalent to Right Arrow key on computer keyboard. Num LED on: Equivalent to '4' on computer keyboard.
5	Num LED off: Performs Undo. Num LED on: Equivalent to '5' on computer keyboard.
6	Num LED off: — Num LED on: Equivalent to '6' on computer keyboard.
7	Num LED off: Copies the selection. Num LED on: Equivalent to '7' on computer keyboard.
8	Num LED off: Equivalent to Down Arrow key on computer keyboard. Num LED on: Equivalent to '8' on computer keyboard.
9	Num LED off: Pastes the Clipboard contents. Num LED on: Equivalent to '9' on computer keyboard.
0	Num LED off: Saves the song. Num LED on: Equivalent to '0' on computer keyboard.
Num	Switches the numeric buttons between primary and secondary function (see above).
Enter	Equivalent to Enter key on the computer keyboard.

Locator Section

The locator displays the current song position in bars/beats format, as defined in the song settings. The spaces between the sections are replaced with a period, as the bars/beats format uses up to 14 characters in Logic, and the SAC display is limited to eight digits.

Marker Section

Control		Assignment
SHIFT		Shifts to secondary function of other buttons.
Scrub		Rotates thru the three modes for the Jog Wheel: • LED off: Move SPL by one bar. • LED on: Activates Scrub mode. • LED flashes: Activates Shuttle mode.
From		Sets left locator to current SPL.
	SHIFT	Sets SPL to left locator.
Store Marker		Creates a marker at the current SPL.
	SHIFT	Deletes marker at the current SPL.
To		Sets right locator to current SPL.
	SHIFT	Sets SPL to right locator.
Recall Marker		Opens the Goto Marker dialog.
	SHIFT	Opens the Marker List.
Jog Wheel		Moves the SPL in one of three modes, depending on the state of the Scrub button (see above).

Transport Section

Control		Assignment
<<		Shuttles backward.
	SHIFT	Goes to previous marker.
>>		Shuttles forward.
	SHIFT	Goes to next marker.
STOP		Stops playback.
PLAY		Starts playback.
	SHIFT	Enables/Disables Cycle mode.
RECORD		Record
	SHIFT	Enables/Disables Replace mode.

Channel Strips Section

Control	Assignment
EQs	Enters Channel Strip EQ editing mode. Pressing the button again cycles through the available pages.
Inserts/Sends	Enters Channel Strip plug-in editing mode—edits the currently selected insert of the selected track. Pressing the button again cycles through the available pages.
Dynamics	—
MIDI	—
Instrument	Enters Channel Strip instrument editing mode—edits the instrument of the selected track (if it's an Audio Instrument track). Pressing the button again cycles through the available pages.

Troubleshooting

The track names are shorter than necessary, and the assignments don't work correctly.

The SAC-2K is in an emulation mode (Logic Control or HUI, for example).

To resolve this issue, simply switch the SAC-2K power off, and then back on.

The faders don't work, and the locator display shows 00000000.

You have manually switched the SAC-2K to SLAVE mode. This, unfortunately, does not initialize some settings required for proper communication.

To resolve this issue, simply switch the SAC-2K power off, and then back on.

Roland SI-24

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Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- Ensure that your SI-24 unit(s) are connected to the RPC card with the (included) blue cable. This connector provides both digital audio and MIDI connections.
- Make sure that the MIDI driver shipped with the unit is installed.

To scan for your Roland SI-24 unit:

1. Choose Logic > Preferences > Control Surfaces > Setup
2. Choose New > Install in the Setup window's local menu.
3. Select Roland SI-24 in the Install window.
4. Click the Scan button.

   Logic Pro will scan for, and automatically install, your control surfaces.

Assignment Overview

A right-aligned modifier button (such as SHIFT) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

Channel Strips

Control	Assignment
EQ ON/OFF 1 to 4	In Pan mode: • Switches bypass state of EQ bands 1–4. • Enters EQ/Send mode. If no Channel or Linear Phase EQ is present on the selected track, a Channel EQ will automatically be inserted. In EQ/Send mode: • Switches bypass state of EQ bands 1–4. The button LED is lit when the EQ is enabled. In Plug-in mode: • Switches to insert 1–4. The lit button LED indicates the selected insert. • If a Plug-in window is open, it will also switch to the selected insert.
SHIFT	In EQ/Send mode: Enables/Disables Send 1–4 Mute.

Control	Assignment
EQ/SEND	Switches track edit section between: • EQ/Send mode (LED on). • Pan mode (LED off).
PLUG-IN	Switches track edit section between: • Plug-in mode (LED on) (Plug-in window opens.) • Pan mode (LED off) Plug-in window closes when Plug-in mode is exited.
SHIFT	Switches track edit section between: • Instrument mode (LED on) (Instrument window opens.) • Pan mode (LED off) Instrument editor window closes when Instrument mode is exited.
PAN 1 to 12	In Pan mode: • Controls channel strip's Pan (surround angle for tracks in surround mode). In EQ/Send mode: • 1/3/5/7: EQ 1–4 Gain. • 2/4/6/8: EQ 1–4 Frequency. • 9–12: Send 1–4 Level. In Plug-in mode: • 1–10: Edits plug-in parameter. • 11: Bypasses plug-in. • 12: Shifts plug-in parameter page. In Instrument mode: • 1–10: Edits Instrument parameter. • 11: Bypasses Instrument. • 12: Shifts Instrument parameter page.
SHIFT	In EQ/Send mode: • 1/3/5/7: EQ 1–4 Type • 2/4/6/8: EQ 1–4 Q factor. • 9–12: Send 1–4 destination.
CH SELECT 1 to 12	Selects track/channel.
STATUS 1 to 12	In Automation mode: Switches Automation mode between: • Off (LED off) • Read (green) • Latch (orange) • Write (red) In Record Ready mode: Enables/Disables Record Ready. In Solo mode: Enables/Disables Solo. In Mute mode: Enables/Disables Mute.
Fader 1 to 12	Controls volume.

STATUS MODE Section

Control	Assignment
AUTOMIX	Sets STATUS 1 to 12 buttons to Automation mode.
SHIFT	Sets all tracks to Off, Read, Latch, or Write (cycles through) automation mode.
REC/PLAY	Sets STATUS 1 to 12 buttons to Record Ready mode.
SOLO	Sets STATUS 1 to 12 buttons to Solo mode.
MUTE	Sets STATUS 1 to 12 buttons to Mute mode.

CH ASSIGN Controls

Control	Assignment
INPUT	Shows the first 12 audio inputs (Global View) on channel strips.
SHIFT	Shows the first 12 MIDI channels (Global View) on channel strips.
OUTPUT	Shows the first 12 audio outputs (Global View) on channel strips: • 1: Output 1–2 (front). • 2: Output 3–4 (rear). • 3: Output 5 (center). • 4: Output 6 (LFE). • 5: Output 7–8 (digital out).
SHIFT	Shows the first 12 audio channels (Global View) on channel strips.
BUS	Shows the first 12 audio buses (Global View) on channel strips.
SHIFT	Shows the first 12 Audio Instruments (Global View) on channel strips.
Tr 1 to 12	Shows tracks 1 to 12 (Track View) on channel strips.
Tr 13 to 24	Shows tracks 13 to 24 (Track View) on channel strips.

MASTER Section

Control	Assignment
Master Fader	Controls output 1-2 volume.

SURROUND PAN Section

Control	Assignment
ON/OFF	Switches selected track's output between: • Surround (LED on) and • Out 1-2 (LED off). Also shows/hides the Surround Pan window.
Joystick	Surround X/Y of selected track.

Numeric Key Section

Control	Assignment
SYSTEM	Switches SI-24 to System mode. See SI-24 user manual for details.
LOCATE	Switches numeric keys to Locate mode.
SHORT CUT	Switches numeric keys to Shortcut mode.
SCREEN SET	Switches numeric keys to Screenset mode.
0 to 9	System mode: See SI-24 user manual. Locate mode: • 1 to 9: Goes to markers 1 to 9. • 0: Creates marker at SPL. Shortcut mode: • 1: Saves song. LED is lit if song has changed since last save. • 2: Performs undo. LED is on if Redo is possible. • 3: Copies the selection. • 4: Pastes the Clipboard contents. • 5: Deletes the selection. • 6: Enables/Disables Scrub mode. LED is on if Scrub mode is enabled. • 7: Enables/Disables Cycle mode. LED is on if Cycle mode is enabled. • 8: Enables/Disables Drop mode. LED is on if Drop mode is enabled. • 9: Switches Arrange window to volume automation view. • 0: Switches Arrange window to pan automation view. Screenset mode: • 1 to 9: Recall Screensets 1 to 9. • 0: Enables/Disables Lock Screenset.
SHIFT	Locate mode: • 1 to 9: Goes to Markers 10 to 18. • 0: Deletes marker at SPL. Shortcut mode: • 1: Performs Save As. • 2: Performs Redo. • 3: Cuts selection. • 4: Pastes the Clipboard contents. Screenset mode: • 1: Opens/Closes Arrange window. • 2: Opens/Closes Track Mixer. • 3: Opens/Closes Event Editor. • 4: Opens/Closes Score Editor. • 5: Opens/Closes Hyper Editor. • 6: Opens/Closes Matrix Editor. • 7: Opens/Closes Transport window. • 8: Opens/Closes Audio window. • 9: Opens/Closes Sample Editor.

Transport Section

Control	Assignment
PAUSE	Pause
REW	Rewinds SPL by one bar.
F FWD	Advances SPL by one bar.
STOP	Stops playback.
PLAY	Starts playback.
RECORD	Record
Jog wheel	Scrub mode off: Moves SPL by bars. Scrub mode on: Scrubs audio.

Tascam FW-1884

15

Introduction

Logic Pro 7 supports the Tascam FW-1884, FE-8 extension and the FW-1082.

Version 1.10 of the plug-in also supports the SoftLCD application which displays information on track names, parameter assignments and the current value of the encoders. SoftLCD displays the tracks' current automation mode while one of the automation mode buttons is held down. The corresponding encoder edits the parameter.

Alerts are displayed in SoftLCD. Select buttons allow you to remotely-control alert buttons.

The following text referring to the FW-1884 also applies to FE-8 and FW-1082, except where mentioned explicitly.

Set Up

Please follow these steps before using your control surface with Logic Pro.

- Ensure that the FW-1884's MIDI driver is installed. See the FW-1884 documentation for details.
- Connect the FW-1884 to your computer with the supplied FireWire cable.
- Boot Logic Pro. The FW-1884 is installed automatically.

Assignment Overview

A right-aligned modifier button (such as SHIFT) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

Note: The FE-8 units only offer the Channel Strip section, so other facilities mentioned here don't apply. The FW-1884 ENCODERS section does, however, apply to the FE-8 channel strips.

The FW-1082 has no channel encoders, and offers an extended channel strip section.

ENCODERS Section (FW-1884 only)

Control	Assignment
FLIP	Switches Flip mode between Off and Swap.
PAN	Assigns Pan to encoders.
AUX 1	Assigns Send 1 level to encoders.
AUX 2	Assigns Send 2 level to encoders.
AUX 3	Assigns Send 3 level to encoders.
AUX 4	Assigns Send 4 level to encoders.
AUX 5	Assigns Send 5 level to encoders.
AUX 6	Assigns Send 6 level to encoders.
AUX 7	Assigns Send 7 level to encoders.
AUX 8	Assigns Send 8 level to encoders.

SHORTCUTS Section (FW-1884 only).

Control	Assignment
SAVE/F1	Saves the active song; The button's LED is lit when the song has been edited.
REVERT/F2	Reverts the active song to the saved version.
ALL SAFE/F3	Disables Record Enable button for all tracks.
CLR SOLO/F4	Switches Solo off on all tracks.
SHIFT	Switches Mute off on all tracks.
MARKERS/F5	Creates a new marker at the current SPL.
SHIFT	Deletes the marker at the SPL.
LOOP/F6	Enables/Disables Cycle mode.
CUT	Cuts the current selection and places it in the Clipboard.
DEL	Deletes the current selection.
COPY	Copies the current selection to the Clipboard.
PASTE	Pastes the Clipboard contents to the current SPL.
ALT/CMD	Modifier for other buttons.
UNDO	Performs Undo; The button's LED is lit when Redo is possible.
SHIFT	Performs Redo.
SHIFT	Modifier for other buttons.
CTRL	Modifier for other buttons.

Channel Strips

Control		Assignment
REC LEDs		These LEDs are lit when the corresponding track is recording. The LEDs flash when the track is in Record Ready mode (armed).
SEL		Selects the track.
	SHIFT	Enables/Disables Send mute, when encoders are controlling a Send level.
	READ	Sets the track's automation mode to Read.
	WRITE	Sets the track's automation mode to Write.
	TCH	Sets the track's automation mode to Touch.
	LATCH	Sets the track's automation mode to Latch.
SOLO		Enables/Disables the Solo status of the track.
	SHIFT	Disables Solo status for all tracks (new for plug-in version 1.20).
MUTE		Enables/Disables the Mute status of the track.
	SHIFT	Disables Mute status for all tracks (new for plug-in version 1.20).
Encoder		Controls parameter chosen with the ENCODERS section.
	SET	When encoders control a Send's level, this combination sets the Send destination.
Fader		Controls volume of the track.

EQ Section (FW-1884 only)

The EQ controls apply to a certain EQ band of the selected track. A Channel or Linear Phase EQ will be automatically inserted in the track, if not already present.

Mode		Assignment
REC		While held down, the SEL buttons in the channel strips enable/disable the track's Record Enable button.
GAIN		Edits Gain of currently selected EQ band.
	SET	Selects track input.
FREQ		Edits Frequency parameter of currently selected EQ band.
	SET	Selects Track output.
Q		Edits Q Factor of currently selected EQ band.
	SET	Selects Track mode (mono/stereo).
HIGH		Selects EQ band 6.
	SHIFT	Selects EQ band 8.
	REC	Switches bypass state of EQ band 6 (new in plug-in version 1.20).
HI-MID		Selects EQ band 5.
	SHIFT	Selects EQ band 7.
	REC	Switches bypass state of EQ band 7 (new in plug-in version 1.20).
LOW-MID		Selects EQ band 4.

Mode	Assignment
SHIFT	Selects EQ band 2.
REC	Switches bypass state of EQ band 3 (new in plug-in version 1.20).
LOW	Selects EQ band 3.
SHIFT	Selects EQ band 1.
REC	Switches bypass state of EQ band 3 (new in plug-in version 1.20).

Encoders and Controls Section (FW-1082 only)

The three buttons at the bottom of this section define the mode of the other controls:

- EQ/Pan mode: The controls apply to a certain EQ band of the selected track.
- AUX 1–4 mode: The controls apply to Sends 1–4.
- AUX 5–8 mode: The controls apply to Sends 5–8.

Mode	Assignment
REC	While held down, the SEL buttons in the channel strips enable/disable the track's Record Enable button status.
EQ GAIN–AUX 1/5	• EQ/PAN mode: edits Gain of currently selected EQ band. • AUX 1–4 mode: controls Send 1 level. • AUX 5–8 mode: controls Send 5 level.
SET	Selects Track input.
EQ FREQ–AUX 2/6	• EQ/PAN mode: edits Frequency of currently selected EQ band. • AUX 1–4 mode: controls Send 2 level. • AUX 5–8 mode: controls Send 6 level.
SET	Selects Track output.
EQ Q–AUX 3/7	• EQ/PAN mode: edits Q Factor of currently selected EQ band. • AUX 1–4 mode: controls Send 3 level. • AUX 5–8 mode: controls Send 7 level.
SET	Selects Track mode.
PAN–AUX 4/8	• EQ/PAN mode: edits Pan. • AUX 1–4 mode: controls Send 4 level. • AUX 5–8 mode: controls Send 8 level.
EQ HI–AUX 1/5	• EQ/PAN mode: selects EQ band 6. • AUX 1–4 mode: switches Send 1 Mute on/off. • AUX 5–8 mode: switches Send 5 Mute on/off.
SHIFT	• EQ/PAN mode: selects EQ band 8. • AUX 1–4 mode: switches Send 1 Position (pre/post.) • AUX 5–8 mode: switches Send 5 Position (pre/post).
REC	Switches bypass state of EQ band 6.
EQ HI MID–AUX 2/6	• EQ/PAN mode: selects EQ band 5. • AUX 1–4 mode: switches Send 2 Mute on/off. • AUX 5–8 mode: switches Send 6 Mute on/off.

Mode	Assignment
SHIFT	• EQ/PAN mode: selects EQ band 7. • AUX 1–4 mode: switches Send 2 Position (pre/post). • AUX 5–8 mode: switches Send 6 Position (pre/post).
REC	Switchess bypass state of EQ band 5.
EQ LO MID–AUX 3/7	• EQ/PAN mode: selects EQ band 4. • AUX 1–4 mode: switches Send 3 Mute on/off. • AUX 5–8 mode: switches Send 7 Mute on/off.
SHIFT	• EQ/PAN mode: selects EQ band 2. • AUX 1–4 mode: switches Send 3 Position (pre/post). • AUX 5–8 mode: switches Send 7 Position (pre/post).
REC	Switches bypass state of EQ band 4.
EQ LOW–AUX 4/8	• EQ/PAN mode: selects EQ band 3. • AUX 1–4 mode: switches Send 4 Mute on/off. • AUX 5–8 mode: switches Send 8 Mute on/off
SHIFT	• EQ/PAN mode: selects EQ band 1. • AUX 1–4 mode: switches Send 4 Position (pre/post). • AUX 5–8 mode: switches Send 8 Position (pre/post).
REC	Switches bypass state of EQ band 3.
EQ/PAN	Chooses EQ/PAN mode.
SHIFT	Enables/Disables Flip mode; With Flip mode enabled, the faders control Pan.
AUX 1–4	Chooses AUX 1–4 mode.
AUX 5–8	Chooses AUX 5–8 mode.

MASTER Fader

This fader always controls the master volume. If no Master Object exists in the Environment, it controls Output 1/2.

Automation/Clock Rate Section (FW-1884 only)

Control	Assignment
READ	While held down, SEL buttons are on if a track is in Read automation mode. Pressing the SEL button sets Read mode. Turning the encoder also edits the automation mode.
WRITE	While held down, SEL buttons are on if a track is in Write automation mode. Pressing the SEL button sets Write mode. Turning the encoder also edits the automation mode.
TCH	While held down, SEL buttons are on if a track is in Touch automation mode. Pressing the SEL button sets Touch mode. Turning the encoder also edits the automation mode.
LATCH	While held down, SEL buttons are on if a track is in Latch automation mode. Pressing the SEL button sets Latch mode. Turning the encoder also edits the automation mode.

Control	Assignment
F7	Switches encoders to editing of pan/surround parameters on selected track: angle, radius, LFE, surround mode, X, Y.
F8	Switches encoders to EQ editing on selected track. See upper line on SoftLCD application for parameter assignment. Cursor left/right shifts the parameter bank.
F9	Switches encoders to plug-in editing on selected track. Cursor left/right shifts parameter bank; Cursor up/down chooses insert to edit.
F10	Switches encoders to instrument editing on selected track. Cursor left/right shifts parameter bank.

Mode Controls Section (FW-1082 only)

Control	Assignment
F1	Saves the active song; The button's LED is lit if the song has been edited.
SHIFT	Opens the Save As dialog.
F2	Performs Undo; The button's LED is lit when Redo is possible.
SHIFT	Performs Redo.
F3	Copies the current selection to the Clipboard.
SHIFT	Cuts the current selection and places it in the Clipboard.
F4	Pastes the Clipboard contents.
SHIFT	Clears the current selection.

Master Section

Control	Assignment
Cursor buttons	Identical to computer keyboard's Arrow keys—except when encoders are in EQ, Plug-in or Instrument Edit modes (see above).
SHIFT	Zoom in and out horizontally or vertically.
SHTL	Enables Shuttle mode for wheel.
Wheel	Shuttle mode off: moves SPL by bar. Shuttle mode on: shuttles SPL.
Bank LEDs	Show currently selected fader bank. If you only have an FW-1884, a bank refers to eight tracks. If you have FE-8 extensions added, a bank means the entire number of channel strips: 16, 24, and so on. If no LED is lit, a bank higher than 4 is selected.
< BANK	Shifts fader bank down by one bank.
SHIFT	Shifts fader bank down by one track.
SET	Switches to Track view (new in plug-in version 1.20).
BANK >	Shifts fader bank up by one bank.
SHIFT	Shifts fader bank up by one track.
SET	Switches to Global view and shows Aux, Bus, and Output Objects (new in plug-in version 1.20).

Control		Assignment
<< LOCATE		Goes to previous marker.
	SET	Deletes the current marker (new in plug-in version 1.20).
LOCATE >>		Goes to next marker.
	SET	Creates a new marker at the SPL (new in plug-in version 1.20).
NUDGE buttons		Nudge the selected event/Region left or right (by the current nudge value).
	SET	Chooses the current nudge value: tick, format, denominator, bar, frame, 1/2 frame.
SET		Modifier for other buttons.
IN		Goes to left locator.
	SET	Sets left locator to SPL.
	SHIFT	Sets Drop In locator to SPL.
OUT		Goes to right locator.
	SET	Sets right locator to current SPL.
	SHIFT	Sets Drop Out locator to SPL.
REW		Shuttle Rewind key command.
FFWD		Shuttle Forward key command.
STOP		Stops playback.
PLAY		Starts playback.
REC		Record key command.

Tascam US-2400

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Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- Make sure that your US-2400 unit(s) are connected to the computer via USB.
- Ensure that the US-2400 is in native mode. Please consult your US-2400 manual for more information on this.
- Launch Logic Pro 7. Your control surface(s) will be scanned for, and installed, automatically.

Special Note

The US-2400 is capable of running in both "native" and Logic Control emulation modes. If the unit is set up in Logic Control emulation mode, and the native support plug-in is installed in the Logic Pro 7 program bundle, Logic will detect both a US-2400 native control surface and a Logic Control plus two Extender (XT) units.

If you wish to run the US-2400 in Logic Control mode, you may find it most convenient to remove the US-2400 plug-in from the Logic Pro 7 application bundle. Logic will then detect a Logic Control plus two Extender (XT) units (the appropriate setup for the US-2400 in Logic Control emulation mode), when you scan your control surfaces.

The Logic/Mackie Control differs in button layout to the Tascam US-2400. When running the Tascam US-2400 in Logic Control mode, certain controllers are not accessible (the Joystick, as an example). Given these restrictions, it's not recommended that the Tascam US-2400 is used in Logic Control mode with Logic. If you choose to do so, please refer to the documentation supplied with the Tascam US-2400 for details.

Assignment Overview

A right-aligned modifier button (such as SHIFT) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

Channel Strips

Control		Assignment
Encoder(s)		CHAN button on: see "Encoder Details" on page 194. CHAN button flashing: Encoders control Instrument parameters, also see "Instrument Edit View" on page 197. PAN button flashing: Encoders control plug-in parameters, also see "Plug-in Edit View" on page 197. Other modes: Encoders control the mode's parameters.
	F-KEY	• If you are in Instrument Edit view (CHAN button flashing), pressing the F-Key enters the Instrument Assignment view: The encoders then choose an instrument. • If you are in Plug-in Edit view (PAN button flashing), pressing the F-Key enters the Plug-in Assignment view: the encoders then choose a plug-in. • If you are in Send views (AUX button LED flashes) and press the F-Key, the encoders assign the send's destination.
SEL buttons		Select tracks.
	SHIFT	In Pan view: sets volume to Unity (0 dB) In Send views: switches Send mode pre/post
	F-KEY	Activates/Deactivates Record Enable buttons.
SOLO button(s)		Enables/Disables Solo.
MUTE button(s)		Enables/Disables Mute. In Send views with Flip mode enabled: activates/deactivates Send mute.
	SHIFT	In Send views: activates/deactivates Send mute.
Faders		Control volume.

Encoder Details

In CHAN mode (CHAN button on), the encoders control these parameters on the selected track:

Control	Assignment
Encoder 1 (AUX 1)	Controls Send 1 level.
Encoder 2 (AUX 2)	Controls Send 2 level.
Encoder 3 (AUX 3)	Controls Send 3 level.
Encoder 4 (AUX 4)	Controls Send 4 level.
Encoder 5 (AUX 5)	Controls Send 5 level.
Encoder 6 (AUX 6)	Controls Send 6 level.
Encoder 7	Controls Send 7 level.
Encoder 8	Controls Send 8 level.

Control	Assignment
Encoder 11 (GAIN 1)	Controls the Gain parameter of band 3, if a Channel or Linear Phase EQ is inserted.
Encoder 12 (FREQ 1)	Controls the Frequency parameter of band 3, if a Channel or Linear Phase EQ is inserted.
Encoder 13 (Q 1)	Controls the Q factor of band 3, if a Channel or Linear Phase EQ is inserted.
Encoder 14 (GAIN 2)	Controls the Gain parameter of band 4, if a Channel or Linear Phase EQ is inserted.
Encoder 15 (FREQ 2)	Controls the Frequency parameter of band 4, if a Channel or Linear Phase EQ is inserted.
Encoder 16 (Q 2)	Controls the Q factor of band 4, if a Channel or Linear Phase EQ is inserted.
Encoder 17 (GAIN 3)	Controls the Gain parameter of band 5, if a Channel or Linear Phase EQ is inserted.
Encoder 18 (FREQ 3)	Controls the Frequency parameter of band 5, if a Channel or Linear Phase EQ is inserted.
Encoder 19 (Q 3)	Controls the Q factor of band 5, if a Channel or Linear Phase EQ is inserted.
Encoder 20 (GAIN 4)	Controls the Gain parameter of band 6, if a Channel or Linear Phase EQ is inserted.
Encoder 21 (FREQ 4)	Controls the Frequency parameter of band 5, if a Channel or Linear Phase EQ is inserted.
Encoder 22 (Q 4)	Controls the Q factor of band 5, if a Channel or Linear Phase EQ is inserted.
Encoder 24 (PAN)	Controls Panning.

In CHAN mode, with the SHIFT button held, the encoders control the following parameters on the selected track:

Control	Assignment
Encoder 1 (AUX 1)	Controls Pan/Surround Angle
Encoder 2 (AUX 2)	Controls Surround Radius.
Encoder 3 (AUX 3)	Controls Surround LFE.
Encoder 4 (AUX 4)	Controls Surround mode.
Encoder 5 (AUX 5)	Controls Surround X.
Encoder 6 (AUX 6)	Controls Surround Y.
Encoder 11 (GAIN 1)	Controls the Slope parameter of band 1, if a Channel or Linear Phase EQ is inserted.
Encoder 12 (FREQ 1)	Controls the Frequency parameter of band 1, if a Channel or Linear Phase EQ is inserted.
Encoder 13 (Q 1)	Controls the Q factor of band 1, if a Channel or Linear Phase EQ is inserted.
Encoder 14 (GAIN 2)	Controls the Gain parameter of band 2, if a Channel or Linear Phase EQ is inserted.
Encoder 15 (FREQ 2)	Controls the Frequency parameter of band 2, if a Channel or Linear Phase EQ is inserted.

Control	Assignment
Encoder 16 (Q 2)	Controls the Q factor of band 2, if a Channel or Linear Phase EQ is inserted.
Encoder 17 (GAIN 3)	Controls the Gain parameter of band 7, if a Channel or Linear Phase EQ is inserted.
Encoder 18 (FREQ 3)	Controls the Frequency parameter of band 7, if a Channel or Linear Phase EQ is inserted.
Encoder 19 (Q 3)	Controls the Q factor of band 7, if a Channel or Linear Phase EQ is inserted.
Encoder 20 (GAIN 4)	Controls the Slope parameter of band 8, if a Channel or Linear Phase EQ is inserted.
Encoder 21 (FREQ 4)	Controls the Q factor of band 8, if a Channel or Linear Phase EQ is inserted.
Encoder 22 (Q 4)	Controls the Q factor of band 8, if a Channel or Linear Phase EQ is inserted.
Encoder 24 (PAN)	Controls Panning.

Master Channel

Control		Assignment
SEL		Selects Master Output track (if Master Output Object exists).
CLR SOLO		Disables Solo for all tracks.
	SHIFT	Disables Mute for all tracks.
	F-KEY	Disables Record Enable button for all tracks.
FLIP		Switches Flip mode between Off (LED off) and Duplicate (LED on).
	SHIFT	Sets Flip mode to Swap (LED flashing).
	F-KEY	Sets Flip mode to Zero—fader motors are disabled (LED flashing).

Encoder Assignment Section

This is the standard assignment of these buttons:

Control		Assignment
CHAN		Switches encoders to Channel Strip view (see encoders' legend)—CHAN button LED is lit.
	F-KEY	Switches encoders to Instrument Edit view—CHAN button LED flashes. See "Instrument Edit View" on page 197 for details.
PAN		Switches encoders to Multi Channel view of panning—PAN button LED is lit.
	F-KEY	Switches encoders to Plug-in Edit view—PAN button LED flashes. See "Plug-in Edit View" on page 197 for details.
AUX 1		Switches encoders to Multi Channel view of Send 1 level.
	F-KEY	Switches display of Arrange window: • If Arrange window is open, it will be closed. • If Arrange window is closed, it will be opened.
AUX 2		Switches encoders to Multi Channel view of Send 2 level.

Control		Assignment
	F-KEY	Switches display of Event List: • If Event List is open, it will be closed. • If Event List is closed, it will be opened.
AUX 3		Switches encoders to Multi Channel view of Send 3 level.
	F-KEY	Switches display of Score Editor: • If Score Editor is open, it will be closed. • If Score Editor is closed, it will be opened.
AUX 4		Switches encoders to Multi Channel view of Send 4 level.
	F-KEY	Switches display of Audio window: • If Audio window is open, it will be closed. • If Audio window is closed, it will be opened.
AUX 5		Switches encoders to Multi Channel view of Send 5 level.
	F-KEY	Switches display of Hyper Editor: • If Hyper Editor is open, it will be closed. • If Hyper Editor is closed, it will be opened.
AUX 6		Switches encoders to Multi Channel view of Send 6 level.
	F-KEY	Switches display of Matrix Editor: • If Matrix Editor is open, it will be closed. • If Matrix Editor is closed, it will be opened.

Instrument Edit View

In Instrument Edit view, the following AUX buttons have special assignments:

Control	Assignment
AUX 1	Scrolls parameter fader bank left by 24 parameters.
AUX 2	Scrolls parameter fader bank right by 24 parameters.
AUX 4	Enables/Disables Bypass button of the currently edited Instrument.

The AUX button LEDs show the currently selected parameter bank. AUX 2 LED is on if parameters 25–48 are shown on the encoders.

Plug-in Edit View

In Plug-in Edit view, the following AUX buttons have special assignments:

Control	Assignment
AUX 1	Scrolls parameter fader bank left by 24 parameters.
AUX 2	Scrolls parameter fader bank right by 24 parameters.
AUX 3	Increments Insert slot.
AUX 4	Enables/Disables Bypass button of the currently edited plug-in.
AUX 6	Decrements Insert slot.

The AUX button LEDs show the currently selected Insert slot. As an example: AUX 2 LED is on if Insert slot 2 is being edited.

Master Section

Control		Assignment
MTR		Switches encoder LED rings between value controlled by encoder (LED off), and level and peak hold meters (LED on). In Level Meter mode, the LED below the encoder displays signal overloads (clipping).
F-KEY		Modifier key, used to switch the function of other controls (see right-aligned "F-KEY" in left column).
NULL		Sets Surround x/y or Panning of selected track to center position—LED is on if Surround X (or Panning) is centered.
	F-KEY	Resets overload for level meters.
Jog Wheel		SCRUB off: moves SPL by bars. SCRUB on: audio scrubbing. SCRUB flashing: Shuttle mode.
Joystick		Edits Surround x/y or Panning of selected track.
SCRUB		Switches Jog Wheel between "Move SPL by Bars" (LED off) and audio scrubbing (LED on).
	F-KEY	Sets Jog Wheel to Shuttle mode (LED flashes).
BANK –		Shifts fader bank left by one bank—LED is lit if the left-most fader bank has not been reached.
	F-KEY	Shifts fader bank left by one track.
BANK +		Shifts fader bank right by one bank—LED is lit if the right-most fader bank has not been reached.
	F-KEY	Shifts fader bank right by one track.
IN		Sets Drop In locator to Song Position Line.
	SHIFT	Navigates to left Cycle locator.
	F-KEY	Sets left Cycle locator to Song Position Line.
OUT		Sets Drop Out locator to Song Position Line.
	SHIFT	Navigates to right Cycle locator.
	F-KEY	Sets right Cycle locator to Song Position Line.
SHIFT		Modifier key, used to switch the function of other controls (see right-aligned "SHIFT" in left column).
REW		Shuttles backward.
	SHIFT	Identical to Left Arrow key on computer keyboard.
F FWD		Shuttles forward.
	SHIFT	Identical to Right Arrow key on computer keyboard.
STOP		Stops playback.
	SHIFT	Identical to Down Arrow key on computer keyboard.
PLAY		Starts playback.
	SHIFT	Identical to Up Arrow key on computer keyboard.
RECORD		Enables/Disables Record.

Tascam US-428 and US-224

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Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- Ensure that your US-428/224 unit(s) are connected to the computer via USB.
- Launch Logic, and the unit(s) will be scanned for, and installed, automatically.

Assignment Overview

A right-aligned modifier button (such as NULL) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

Note: The US-224 has only four channel strips, and the EQ section, as well as the Master section (except the NULL button and data wheel) are not available.

Channel Strips

Control	Assignment
MUTE 1 to 8	SOLO LED off: Switches Mute on/off; LED displays Mute status. SOLO LED on: Switches Solo on/off; LED displays Solo status.
REC 1 to 8 LEDs	Displays Record Ready status.
NULL	On if fader is higher than actual volume.
SELECT 1 to 8 LEDs	Displays select status.
NULL	On if fader is lower than actual volume.
SELECT 1 to 8 buttons	Selects track.
REC	Enables/Disables Record Ready status.
Fader 1 to 8	Controls Volume.
NULL	Allows you to update the fader position to match the actual volume.
Master fader	Controls master volume (Outputs 1 and 2 if no Master Fader Object is available in the Environment).

EQ Section

Control		Assignment
Gain		Controls gain of currently selected EQ of chosen track.
Freq		Controls frequency of currently selected EQ of chosen track.
Q		Controls Q factor of currently selected EQ of chosen track.
HIGH		Selects EQ band 3 for Gain, Freq, and Q controls.
	ASGN	Switches EQ band 3 bypass state.
HI-MID		Selects EQ band 4 for Gain, Freq, and Q controls.
	ASGN	Switches EQ band 4 bypass state.
LO-MID		Selects EQ band 5 for Gain, Freq, and Q controls.
	ASGN	Switches EQ band 5 bypass state.
LOW		Selects EQ band 6 for Gain, Freq, and Q controls.
	ASGN	Switches EQ band 6 bypass state.

Master Section Controls

Control		Assignment
AUX 1		Switches data wheel between Transport/Scrub mode and Send Level 1.
	ASGN	Switches Send 1 Mute state.
AUX 2		Switches data wheel between Transport/Scrub mode and Send Level 2.
	ASGN	Switches Send 2 Mute state.
AUX 3		Switches data wheel between Transport/Scrub mode and Send Level 3.
	ASGN	Switches Send 3 Mute state.
AUX 4		Switches data wheel between Transport/Scrub mode and Send Level 4.
	ASGN	Switches Send 4 Mute state.
ASGN		Modifier for function of EQ controls, AUX 1 to 4 buttons, PAN knob and data wheel.
F1		Enables/Disables Cycle mode.
F2		Enables/Disables Drop mode.
F3		Enables/Disables Scrub mode.
PAN		Controls panning of selected track.
	ASGN	Selects current track's input.
NULL		Modifier for NULL mode. NULL mode allows you to update the fader positions to match the actual volume.

Control	Assignment
Data wheel	AUX 1 LED on: Controls Send 1 Level of selected track. AUX 2 LED on: Controls Send 2 Level of selected track. AUX 3 LED on: Controls Send 3 Level of selected track. AUX 4 LED on: Controls Send 4 Level of selected track. F3 LED on: Data wheel is in Scrub mode. None of the above is lit: Data wheel is in Transport mode and moves the SPL by bars.
ASGN	Selects current track's output.

LOCATE Section

Control	Assignment
<< LOCATE	Goes to previous marker.
LOCATE >>	Goes to next marker.
SET	Creates a new marker at the current SPL.

BANK Section

Control	Assignment
< BANK	Shifts fader bank left by one bank. The LED is lit if the left-most fader bank has not been reached.
BANK >	Shifts fader bank right by one bank. The LED is lit if the right-most fader bank has not been reached.

Transport Section

Control	Assignment
REW	Shuttles backward.
F FWD	Shuttles forward.
STOP	Stops playback.
PLAY	Starts playback.
RECORD	Record

Yamaha 01V96

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Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- Make sure that your 01V96 unit(s) are connected to the computer via USB.
- Make sure that the MIDI driver shipped with the unit is installed.

Basically, you set up the 01V96 as if you are using it with Pro Tools. See the 01V96 user manual.

Here are the necessary steps:

1. Press DISPLAY ACCESS [SETUP] repeatedly until the Setup/MIDI/Host page is visible.
2. Move the cursor to the port parameters: select *DAW*, then select *USB* and *1-2*.
3. Press DISPLAY ACCESS [REMOTE].
4. Choose *General DAW* as the *TARGET* parameter.
5. Press LAYER [REMOTE].

The unit is installed automatically when Logic Pro is launched. You should see two 01V96 (USB 1–2) icons in the setup window, aligned horizontally.

Assignment Overview

A right-aligned modifier button (such as SHIFT) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

DISPLAY ACCESS Section

Control	Assignment
DISPLAY	Hides/shows the Sample Editor.
AUTOMIX	While held, the Channel Strip displays show the automation mode of the selected tracks.
PAIR/GROUP	Enters Group Edit mode: • The upper line in the DSP edit section displays the currently edited group number and name. • Parameter control push-switch buttons 1 to 4 switch the properties of the currently edited group. Group name is shown in the lower line. • When INSERT/PARAM is off, DSP Edit Scroll encoder scrolls through the group properties. At other times, it selects the group currently being edited. • The SELECT buttons switch group membership of the track.
DAW SHIFT/ADD	Switches to Track View.
EFFECT	Hides/shows the Sample Editor.

FADER MODE Section

Control	Assignment
AUX 1	Assigns Send 1 Level to encoders, and Send 1 to 4 Levels to DSP encoders. While held, the Channel Strip displays show the current Send 1 Destination assignment.
DAW SHIFT/ADD	As above, for Send 6.
AUX 2	Assigns Send 2 Level to encoders, and Send 1 to 4 Levels to DSP encoders. While held, the Channel Strip displays show the current Send 2 Destination assignment.
DAW SHIFT/ADD	As above, for Send 7.
AUX 3	Assigns Send 3 Level to encoders, and Send 1 to 4 Levels to DSP encoders. While held, the Channel Strip displays show the current Send 3 Destination assignment.
DAW SHIFT/ADD	As above, for Send 8.
AUX 4	Assigns Send 4 Level to encoders, and Send 1 to 4 Levels to DSP encoders. While held, the Channel Strip displays show the current Send 4 Destination assignment.
AUX 5	Assigns Send 5 Level to encoders, and Send 5 to 8 Levels to DSP encoders. While held, the Channel Strip displays show the current Send 5 Destination assignment.
AUX 6	Switches Encoder Push-Switch buttons between normal behavior and setting default value.

Control	Assignment
AUX 7	Assigns Pan to encoders; assigns selected track's pan/surround parameters to DSP encoders.
AUX 8	Determines mode of channel strip SEL buttons when channel strip AUTO button is off: • Indicator off: Track selection. • Indicator on: Insert selection.
HOME	Enables/Disables Flip mode.

LCD Function

Control	Assignment
Left/Right buttons	Plug-in Edit mode: Shifts parameter display by the number of parameters shown in the control surface group (usually four).
DAW ALT/FINE	Plug-in Edit mode: Shifts parameter display by one.
F1	Clears Overload LEDs.
DAW SHIFT/ADD	Switches to Global View and enables MIDI tracks.
DAW ALT/FINE	Opens/Closes Arrange window.

LCD

The LCD displays different data, depending on the page selected with the F2, F3, and F4 buttons:

Insert Display Mode

Press the [F2] button to select Insert Display mode. In this mode, the LCD displays parameter details and you can edit and select plug-ins.

Display	Assignment
TIME CODE option	Active if counter is displaying time code.
FEET	Not assigned.
BEATS option	Active if counter is displaying bars/beats/format/ticks.
Time display	Displays time code or bars/beats/format/ticks.
SELECT ASSIGN	Displays the encoder assignment as follows: Pan, Snd1 to Snd8, S1As to S8As, In, Out.
ASSIGN	—
COMPARE	Switches DSP display between "track name/parameter name" and "parameter name/parameter value" modes.
BYPASS	Switches bypass status of plug-in insert currently being edited.
INSERT/PARAM	Switches between Plug-in Assign and Plug-in Edit modes.

Display	Assignment
Parameter control 1 to 4 push-switch	Assignment Pan: • Parameter control 1 push-switch centers Pan or Surround Angle. • Parameter control 2 push-switch centers Surround Diversity. • Parameter control 3 push-switch centers Surround LFE. • Parameter control 4 push-switch sets Surround Mode to center. Assignment Send: • Enables/Disables Sends 1 to 4 or Mutes 5 to 8. Plug-in Assign: • Confirms insert 1 to 4 or 5 to 8 plug-in selection, selects this insert slot and enters Plug-in Edit mode. Plug-In Edit mode: • Sets value to default, or bi-polar switch to on/off.
Parameter controls	Assignment Pan: • Parameter control 1 controls Pan or Surround Angle. • Parameter control 2 controls Surround Diversity. • Parameter control 3 controls Surround LFE. • Parameter control 4 controls Surround Mode. Assignment Send: • Control Send 1 to 4 or 5 to 8 Level. Plug-in Assign: • Assigns insert 1 to 4 or 5 to 8. Plug-in Edit mode: • Sets value to default.

LCD Channel Page

Control	Assignment
Encoder	Adjusts parameter selected in the FADER MODE section.
Encoder Switch	Pan selected: Sets Pan to center if MATRIX 1 is on. Send 1 to 8 selected: Edits Send Pre/Post, enables/disables Send Mute or sets Send Level to default value. Assignment Send, Input, or Output: Confirms selection.

Selected Channel Section

Control	Assignment
Pan controls	Adjusts parameter selected in the FADER MODE section.
SEL	Switches channel strip SEL buttons between track and insert selection.

Data Entry Section

Control	Assignment
Parameter Wheel	Default: Move SPL by one bar. Scrub: Scrubbing. Shuttle: Shuttle mode.
– (DEC)	Default: Exits Folder. Goto Marker: Cancels dialog.
DAW ALT/FINE	Opens/Closes Audio window.
+ (INC)	Enters folder of selected track.

Channel Strips

Control	Assignment
Level Meters	Display momentary and peak level.
SEL	If AUTO off: • FADER MODE [AUX 8] off: Selects track. • FADER MODE [AUX 8] on: Selects track for insert assignment. If AUTO on: • Cycles through automation modes. With an automation mode button held down, sets this automation mode.
DAW SHIFT/ADD	Sets volume to unity level.
MATRIX SELECT 1	Sets volume to unity level.
SOLO	Enables/Disables Solo.
DAW OPTION/ALL	Disables Solo for all tracks.
ON	Enables/Disables Mute.
DAW OPTION/ALL	Unmutes all tracks.
Fader	Adjusts volume, or duplicates encoder in Flip mode.

Stereo Channel Strip

Control	Assignment
SEL	Switches channel strips' SEL buttons between track and insert selection.

User Defined Keys Section

These keys can be assigned to the following functions:

Control	Assignment
DAW WIN STATUS	Opens/Closes the Audio window.
DAW REC/RDY 1 to 16	Enables/Disables Record Ready.
DAW WIN TRANSPORT	Opens/Closes the Transport window.
DAW BANK–	Shifts channel strips by one bank to the left.
DAW BANK+	Shifts channel strips by one bank to the right.
DAW SHIFT/ADD	Shifts to second meaning of some buttons. See descriptions of other buttons.
DAW OPTION/ALL	While held down, value change mode is set to "relative": relative value changes result in a minimum, default, or maximum value for the edited parameter. Also see description of other buttons.
DAW GROUP STATUS	Enters Group Edit mode: • The upper line in the DSP edit section displays the currently edited group number and name. • Parameter control push-switch buttons 1 to 4 switch between properties of the currently edited group. Group name is shown in the lower line. • When INSERT/PARAM is off, DSP Edit Scroll Encoder scrolls through the group properties. At other times, it selects the group currently being edited. • The SELECT buttons enable/disable group membership of the track.
DAW SHIFT/ADD	Switches to Track View.
DAW SUSPEND	Enables/Disables the Group Clutch.
DAW SHIFT/ADD	Switches to Extended Track View.
DAW CREATE GROUP	Creates a new group and enters Group Edit mode (see above).
DAW SHIFT/ADD	Switches to Global View.
DAW WIN MIX/EDIT	Switches between the Arrange and Track Mixer windows.
DAW CHANNEL –	Shifts channel strips by one channel to the left.
DAW CHANNEL+	Shifts channel strips by one channel to the right.
DAW CTRL/CLUTCH	While held down, the Group Clutch is engaged (all groups are disabled).
DAW ALT/FINE	While held down, value change mode is set to "fine": relative value changes work at maximum resolution. Also see description of other buttons.
DAW MONI STATUS	—
DAW UNDO	Performs Undo.
DAW SHIFT/ADD	Performs Redo.
DAW OPTION/ALL	Opens Undo History window.
DAW SAVE	Saves the song.
DAW WIN MEM-LOC	Opens/Closes the Marker List.

Control	Assignment
DAW OPTION/ALL	Performs Save As and allows saving the song under a different name.
DAW EDIT TOOL	Selects the next tool. While held, numerical buttons select a specific tool.
DAW WIN INSERT	Opens/Closes the Sample Editor.
DAW REC/RDY ALL	Disable Record Ready on all tracks.
DAW SCRUB	Enables/Disables Scrub mode.
DAW SHUTTLE	Enables/Disables Shuttle mode.
DAW REW	Shuttles backward.
DAW FF	Shuttles forward.
DAW STOP	Stop
DAW PLAY	Play
DAW SHIFT/ADD	Pause
DAW REC	Record
DAW PRE	Sets left locator.
DAW IN	Sets Drop In locator.
DAW OUT	Sets Drop Out locator.
DAW POST	Sets right locator.
DAW RTZ	Goes to the left locator.
DAW END	Goes to the right locator.
DAW ONLINE	Enables/Disables internal/external sync.
DAW QUICK PUNCH	Enables/Disables Drop mode.
DAW AUTO FADER	Enables/Disables Volume automation playback and recording.
DAW AUTO PAN	Enables/Disables Pan automation playback and recording.
DAW AUTO PLUGIN	Enables/Disables Plug-in parameter automation playback and recording.
DAW AUTO MUTE	Enables/Disables Mute automation playback and recording.
DAW AUTO SEND	Enables/Disables Send Level automation playback and recording.
DAW AUTO SEND MUTE	—
DAW AUTO WRITE	Sets selected track to Write automation mode. While held down, channel Strip AUTO buttons set automation mode to Write.
DAW OPTION/ALL	Sets all tracks to Write automation mode.
DAW AUTO TOUCH	Sets selected track to Touch automation mode. While held down, channel Strip AUTO buttons set automation mode to Touch.
DAW OPTION/ALL	Sets all tracks to Touch automation mode.
DAW AUTO LATCH	Sets selected track to Latch automation mode. While held down, channel Strip AUTO buttons set automation mode to Latch.
DAW OPTION/ALL	Sets all tracks to Latch automation mode.
DAW AUTO READ	Sets selected track to Read automation mode. While held down, channel Strip AUTO buttons set automation mode to Read.

Control	Assignment
DAW OPTION/ALL	Sets all tracks to Read automation mode.
DAW AUTO TRIM	—
DAW AUTO OFF	Sets selected track to Off automation mode. While held down, channel Strip AUTO buttons set automation mode to Off.
DAW OPTION/ALL	Sets all tracks to Off automation mode.
DAW AUTO STATUS	While held down, the Channel Strip displays show the automation mode of the selected track.

Yamaha 02R96

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Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- Make sure that your 02R96 unit(s) are connected to the computer via USB.
- Make sure that the MIDI driver shipped with the unit is installed.

On the 02R96 Front Panel:

Basically, you set up the 02R96 as if you are using it with Pro Tools. See the 02R96 user manual. Here are the necessary steps:

- Press DISPLAY ACCESS [SETUP] repeatedly until the Setup / MIDI/Host page is visible. Now move the cursor to the port parameters: select *DAW*, then select *USB* and *1-3*.
- Press DISPLAY ACCESS [REMOTE]. Choose *General DAW* as the *TARGET* parameter.
- Press LAYER [REMOTE].

In Logic:

The unit is installed automatically when Logic Pro is launched. You should see three 02R96 (USB 1-3) icons in the setup window, aligned horizontally.

Assignment Overview

A right-aligned modifier button (such as SHIFT) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

DISPLAY ACCESS Section

Control	Assignment
METER	Clears Overload LEDs.

AUX SELECT Section

Control	Assignment
AUX 1	Assigns Send 1 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 1 destination assignment.
AUX 2	Assigns Send 2 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 2 destination assignment.
AUX 3	Assigns Send 3 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 3 destination assignment.
AUX 4	Assigns Send 4 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 4 destination assignment.
AUX 5	Assigns Send 5 Level to Encoders, and Send 5 to 8 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 5 destination assignment.

ENCODER MODE Section

Control	Assignment
PAN	Assigns Pan to Encoders; assigns selected track's pan/surround parameters to DSP Encoders.
AUX	Assigns Send 1 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 1 destination assignment.

FADER MODE Section

Control	Assignment
FADER	Enables/Disables Flip mode.
AUX/MTRX	Enables/Disables Flip mode.

EFFECTS/PLUG-INS Section

Control	Assignment
Display	Opens/Closes the Sample Editor window.
PLUG-INS	Switches Encoder Push-Switch buttons between normal behavior and setting default value.
CHANNEL INSERTS	Determines mode of channel strip SEL buttons: • Indicator off: track selection. • Indicator on: Insert selection.
1	—
2	Switches DSP display between "track name/parameter name" and "parameter name/parameter value" modes.
3	Switches bypass status of currently edited plug-in insert.
4	Switches between Plug-in Assign and Plug-in Edit modes.
Parameter Up & Parameter Down	Plug-In Edit: shifts parameter display by the number of parameters shown in the control surface group (usually four).
Parameter control 1–4 push-switch	Assignment Pan: • Parameter control 1 push-switch centers Pan or Surround Angle. • Parameter control 2 push-switch centers Surround Diversity. • Parameter control 3 push-switch centers Surround LFE. • Parameter control 4 push-switch sets Surround Mode to center. Assignment Send: • Enables/Disables Sends 1 to 4 or Mutes 5 to 8. Plug-In Assign: • Confirm insert 1 to 4 or 5 to 8 plug-in selection, selects this insert slot and enters Plug-In Edit mode. Plug-In Edit mode: • Sets value to default, or sets bi-polar switch to on/off.
Parameter controls	Assignment Pan: • Parameter control 1 controls Pan or Surround Angle. • Parameter control 2 controls Surround Diversity. • Parameter control 3 controls Surround LFE. • Parameter control 4 controls Surround Mode. Assignment Send: • Control Send 1 to 4 or 5 to 8 Level. Plug-In Assign: • Assigns insert 1 to 4 or 5 to 8. Plug-In Edit mode: • Sets value to default.

LCD

The LCD displays different data, depending on the page selected with the F2, F3, and F4 buttons:

- INSERT ASSIGN/EDIT Display Mode: parameter details, plug-in selection or plug-in parameters. Press [F2] to select this mode.

Display	Assignment
TIME CODE	Active if counter is displaying time code.
FEET	Not assigned.
BEATS	Active if counter is displaying bars/beats/format/ticks.
Time display	Displays time code or bars/beats/format/ticks.
SELECT ASSIGN	Displays the Encoder assignment as follows: Pan, Snd1 to Snd8, S1As to S8As, In, Out.

- Channel Display Mode: Encoder values and Channel Strip display). Press [F3] to select this mode.
- level meters. Press [F4] to select this mode.

USER DEFINED KEYS Section

Control	Assignment
DISPLAY	While held, the Channel Strip displays show the automation mode of the selected tracks.
1	Switches between the Arrange and Track Mixer windows.
2	Enables/Disables the Group Clutch.
3	Sets selected track to "Write" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Write."
4	Sets selected track to "Touch" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Touch."
5	Sets selected track to "Latch" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Latch."
6	Sets selected track to "Read" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Read."
7	—
8	Sets selected track to "Off" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Off."
9	Shifts channel strips by one bank to the left.
10	Shifts channel strips by one bank to the right.
11	Enables/Disables Volume automation playback and recording.
12	Enables/Disables Mute automation playback and recording.
13	Enables/Disables Pan automation playback and recording.
14	Enables/Disables Send Level automation playback and recording.

Control	Assignment
15	—
16	Enables/Disables Plug-in parameter automation playback and recording.

Channel Strips

Control	Assignment
Encoder	Adjusts parameter selected in the AUX SELECT section.
Encoder Push-Switch	Pan selected: sets Pan to center. If EFFECTS/PLUG-INS [PLUG-INS] on Sends 1 to 8 selected: edits Send Pre/Post, switches Send Mute status or sets Send Level to default value. Send Assign, Input, or Output: confirms selection.
AUTO	Cycles through automation modes. With an automation mode button held down, sets this automation mode.
SEL	If EFFECTS/PLUG-INS [CHANNEL INSERTS] off: selects track. If EFFECTS/PLUG-INS [CHANNEL INSERTS] on: chooses track for plug-in selection/insertion.
SOLO	Enables/Disables Solo.
ON	Enables/Disables Mute.
Fader	Adjusts volume, or duplicates Encoder in Flip mode.

MACHINE CONTROL Section

Control	Assignment
DISPLAY	Opens/Closes the Marker List window.
1 to 8	Recalls markers 1 to 8.
REW	Shuttles backward.
FF	Shuttles forward.
STOP	Stop
PLAY	Play
REC	Record

Data Entry Section

Control	Assignment
SCRUB	Enables/Disables Scrub mode.
SHUTTLE	Enables/Disables Shuttle mode.
Parameter Wheel	Default: move SPL by one bar. Scrub: scrubbing. Shuttle: Shuttle mode.
ENTER	Enters folder of selected track.
DEC	Exits Folder.

Control	Assignment
INC	Switches between Cursor and Zoom modes.
Cursor Up	Cursor mode: equivalent to computer keyboard up arrow key. Zoom mode: zooms out vertically.
Cursor Down	Cursor mode: equivalent to computer keyboard down arrow key. Zoom mode: zooms out vertically.
Cursor Left	Cursor mode: equivalent to computer keyboard left arrow key. Zoom mode: zooms out horizontally.
Cursor Right	Cursor mode: equivalent to computer keyboard right arrow key. Zoom mode: zooms in horizontally.

Yamaha DM1000

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Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- Make sure that your DM1000 unit(s) are connected to the computer via USB.
- Make sure that the MIDI driver shipped with the unit is installed.

On the DM1000 Front Panel:

Basically, you set up the DM1000 as if you are using it with Pro Tools. See the DM1000 user manual, section 17. Here are the necessary steps:

- Press DISPLAY ACCESS [SETUP] repeatedly until the Setup / MIDI/Host page is visible. Now move the cursor to the port parameters: select *DAW*, then select *USB* and *1-2*.
- Press DISPLAY ACCESS [REMOTE], then [F1] (below the LCD). Choose *General DAW* as the *TARGET* parameter.
- Press LAYER [REMOTE 1].

In Logic:

When Logic Pro is launched, the unit is installed automatically. You should see two DM1000 (USB 1-2) icons in the Setup window, aligned horizontally.

Assignment Overview

A right-aligned modifier button (such as SHIFT) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

DISPLAY ACCESS Section

Control	Assignment
DISPLAY	Opens/Closes the Sample Editor window.
AUTOMIX	While held, the Channel Strip displays show the automation mode of the selected track.
PAIR/GROUP	Enters Group Edit mode: • The upper line in the DSP edit section displays the currently edited group number and name. • Parameter control push-switch buttons 1 to 4 switch between properties of the currently edited group (name shown in lower line of LCD). • When INSERT/PARAM is off, DSP Edit Scroll Encoder scrolls through the group properties. Otherwise, it selects the currently edited group. • The SELECT buttons enable/disable group membership of the track.
DAW SHIFT/ADD	Switches to Track View.
METER	Clears Overload LEDs.
DAW SHIFT/ADD	Switches to Global View and enables MIDI Tracks.
DAW ALT/FINE	Opens/Closes Arrange window.
EFFECT	Opens/Closes the Sample Editor window.

AUX SELECT Section

Control	Assignment
AUX 1	Assigns Send 1 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 1 destination assignment.
DAW SHIFT/ADD	As above, for Send 6.
AUX 2	Assigns Send 2 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 2 destination assignment.
DAW SHIFT/ADD	As above, for Send 7.
AUX 3	Assigns Send 3 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 3 destination assignment.
DAW SHIFT/ADD	As above, for Send 8.
AUX 4	Assigns Send 4 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 4 destination assignment.
AUX 5	Assigns Send 5 Level to Encoders, and Send 5 to 8 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 5 destination assignment.

Control	Assignment
AUX 6	Switches Encoder Push-Switch buttons between normal behavior and setting default value.
AUX 8	Determines mode of channel strip SEL buttons when channel strip AUTO button is off: • Indicator off: track selection. • Indicator on: Insert selection.

ENCODER MODE Section

Control	Assignment
PAN	Assigns Pan to Encoders; assigns selected track's pan/surround parameters to DSP Encoders.
AUX	Assigns Send 1 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 1 destination assignment.

FADER MODE Section

Control	Assignment
FADER MODE	Enables/Disables Flip mode.

LCD Function

Control	Assignment
Left & Right	Plug-In Edit: shifts parameter display by the number of Parameter controls in the control surface group (usually four).
DAW ALT/FINE	Plug-In Edit: shifts parameter display by one (parameter).

LCD

The LCD displays different data, depending on the page selected with the F2, F3, and F4 buttons:

- INSERT ASSIGN/EDIT Display Mode: parameter details, plug-in selection or plug-in parameters. Press [F2] to select this mode.

Display	Assignment
LCD	Displays parameter details, plug-in selection or plug-in parameters.
TIME CODE	Active if counter is displaying time code.
FEET	Not assigned.
BEATS	Active if counter is displaying bars/beats/format/ticks.
Time display	Displays time code or bars/beats/format/ticks.
SELECT ASSIGN	Displays the Encoder assignment as follows: Pan, Snd1 to Snd8, S1As to S8As, In, Out.

LCD Insert Page

Control	Assignment
ASSIGN	—
COMPARE	Switches DSP display between "track name/parameter name" and "parameter name/parameter value" modes.
BYPASS	Activates/Deactivates bypass of plug-in insert currently being edited.
INSERT/PARAM	Switches between Plug-in Assign and Plug-in Edit modes.
Parameter control 1–4 push-switch	Assignment Pan: • Parameter control 1 push-switch centers Pan or Surround Angle. • Parameter control 2 push-switch centers Surround Diversity. • Parameter control 3 push-switch centers Surround LFE. • Parameter control 4 push-switch sets Surround Mode to center. Assignment Send: • Enables/Disables Sends 1 to 4 or Mutes 5 to 8. Plug-In Assign: • Confirm insert 1 to 4 or 5 to 8 plug-in selection, selects this insert slot and enters Plug-In Edit mode. Plug-In Edit mode: • Sets value to default, or sets bi-polar switch on/off.
Parameter controls	Assignment Pan: • Parameter control 1 controls Pan or Surround Angle. • Parameter control 2 controls Surround Diversity. • Parameter control 3 controls Surround LFE. • Parameter control 4 controls Surround Mode. Assignment Send: • Control Send 1 to 4 or 5 to 8 Level. Plug-In Assign: • Assigns insert 1 to 4 or 5 to 8. Plug-In Edit mode: • Sets value to default.

Data Entry Section

Control	Assignment
Parameter Wheel	Default: move SPL by one bar. Scrub: scrubbing. Shuttle: Shuttle mode.
– (DEC)	Default: leaves Folder. Goto Marker: cancels dialog.
DAW ALT/FINE	Opens/Closes Audio window.
+ (INC)	Enters folder of selected track.

Channel Strips

Control	Assignment
Level Meters	Display momentary and peak level.
Encoder	Adjusts parameter selected in the AUX SELECT section.
Encoder Push-Switch	Pan selected: sets Pan to center if MATRIX 1 on. Send 1 to 8 selected: edits Send Pre/Post, activates/deactivates Send Mute or sets Send Level to default value. Send Assign, Input, or Output: confirms selection.
SEL	If AUTO off: • AUX [AUX 8] off: selects track. • AUX [AUX 8] on: selects track for insert assignment. If AUTO on: • Cycles through automation modes. With an automation mode button held down, sets this automation mode.
DAW SHIFT/ADD	Sets volume to unity level.
MATRIX SELECT 1	Sets volume to unity level.
SOLO	Enables/Disables Solo.
DAW OPTION/ALL	Disables Solo for all tracks.
ON	Enables/Disables Mute.
DAW OPTION/ALL	Unmutes all tracks.
Fader	Adjusts volume, or duplicates Encoder assignment in Flip mode.

Stereo Channel Strip

Control	Assignment
AUTO	Switches channel strips' SEL buttons between track and insert selection.

USER DEFINED KEYS Section

These keys can be assigned to the following functions:

Control	Assignment
DAW WIN STATUS	Opens/Closes the Audio window.
DAW REC/RDY 1 to 16	Enables/Disables Record Ready.
DAW WIN TRANSPORT	Opens/Closes the Transport window.
DAW BANK-	Shifts channel strips by one bank to the left.
DAW BANK+	Shifts channel strips by one bank to the right.
DAW SHIFT/ADD	Shifts to second meaning of some buttons.
DAW OPTION/ALL	While held down, value change mode is set to "relative": relative value changes result in a minimum, default, or maximum value for the edited parameter. Also see description of other buttons.

Control	Assignment
DAW GROUP STATUS	Enters Group Edit mode: • The upper line in the DSP edit section displays the currently edited group number and name. • Parameter control push-switch buttons 1 to 4 switch between properties of the currently edited group. Group name shown in lower line of LCD. • When INSERT/PARAM is off, DSP Edit Scroll Encoder scrolls through the group properties. At other times, it selects the group currently being edited. • The SELECT buttons enable/disable group membership of the track.
DAW SHIFT/ADD	Switches to Track View.
DAW SUSPEND	Enables/Disables the Group Clutch.
DAW SHIFT/ADD	Switches to Extended Track View.
DAW CREATE GROUP	Creates a new group and enters Group Edit mode (see above).
DAW SHIFT/ADD	Switches to Global View.
DAW WIN MIX/EDIT	Switches between the Arrange and Track Mixer windows.
DAW CHANNEL -	Shifts channel strips by one channel to the left.
DAW CHANNEL+	Shifts channel strips by one channel to the right.
DAW CTRL/CLUTCH	While held down, the Group Clutch is engaged (all groups are disabled).
DAW ALT/FINE	While held down, value change mode is set to "fine": relative value changes work at maximum resolution. Also see description of other buttons.
DAW MONI STATUS	—
DAW UNDO	Performs undo.
DAW SHIFT/ADD	Performs redo.
DAW OPTION/ALL	Opens undo history window.
DAW SAVE	Saves the song.
DAW WIN MEM-LOC	Opens/Closes the Marker List window.
DAW OPTION/ALL	Save As…: saves the song under a different name.
DAW EDIT TOOL	Selects the next tool. While held, numerical buttons select a specific tool.
DAW WIN INSERT	Opens/Closes the Sample Editor window.
DAW REC/RDY ALL	Disable Record Ready on all tracks.
DAW SCRUB	Enables/Disables Scrub mode.
DAW SHUTTLE	Enables/Disables Shuttle mode.
DAW REW	Shuttles backward.
DAW FF	Shuttles forward.
DAW STOP	Stop
DAW PLAY	Play
DAW SHIFT/ADD	Pause
DAW REC	Record
DAW PRE	Sets left locator.

Control	Assignment
DAW IN	Sets Drop In locator.
DAW OUT	Sets Drop Out locator.
DAW POST	Sets right locator.
DAW RTZ	Goes to the left locator.
DAW END	Goes to the right locator.
DAW ONLINE	Activates/Deactivates internal/external Sync.
DAW QUICK PUNCH	Enables/Disables Drop mode.
DAW AUTO FADER	Enables/Disables Volume automation playback and recording.
DAW AUTO PAN	Enables/Disables Pan automation playback and recording.
DAW AUTO PLUGIN	Enables/Disables Plug-in parameter automation playback and recording.
DAW AUTO MUTE	Enables/Disables Mute automation playback and recording.
DAW AUTO SEND	Enables/Disables Send Level automation playback and recording.
DAW AUTO SEND MUTE	—
DAW AUTO WRITE	Sets selected track to "Write" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Write."
DAW OPTION/ALL	Sets all tracks to "Write" automation mode.
DAW AUTO TOUCH	Sets selected track to "Touch" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Touch."
DAW OPTION/ALL	Sets all tracks to "Touch" automation mode.
DAW AUTO LATCH	Sets selected track to "Latch" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Latch."
DAW OPTION/ALL	Sets all tracks to "Latch" automation mode.
DAW AUTO READ	Sets selected track to "Read" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Read."
DAW OPTION/ALL	Sets all tracks to "Read" automation mode.
DAW AUTO TRIM	—
DAW AUTO OFF	Sets selected track to "Off" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Off."
DAW OPTION/ALL	Sets all tracks to "Off" automation mode.
DAW AUTO STATUS	While held down, the Channel Strip displays show the automation mode of the selected track.

Yamaha DM2000

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Set Up

Please follow these steps before using your control surface with Logic Pro 7.

- Make sure that your DM2000 unit(s) are connected to the computer via USB.
- Make sure that the MIDI driver shipped with the unit is installed.

On the DM2000 Front Panel:

Basically, you set up the DM2000 as if you are using it with Pro Tools. See the DM2000 user manual, section 19. Here are the necessary steps:

- Press DISPLAY ACCESS [SETUP], then [F4] (below the LCD) so that the Setup / MIDI/Host page is visible. Now move the cursor to the port parameters: select *DAW*, then select *USB* and *1-3*.
- Press DISPLAY ACCESS [REMOTE], then [F1] (below the LCD). Choose *General DAW* as the *TARGET* parameter.
- Press LAYER [REMOTE 1].

In Logic:

When Logic Pro is launched, the unit is installed automatically. You should see three DM2000 (USB 1-3) icons in the Setup window, aligned horizontally.

Assignment Overview

A right-aligned modifier button (such as SHIFT) below a button description indicates that the button has an alternate meaning/use while holding down this modifier.

MATRIX SELECT Section

Control	Assignment
MATRIX 1	Switches Encoder Push-Switch buttons between normal behavior and setting default value.
MATRIX 2	Switches the Encoder Push-Switch buttons between Send Position and Send Mute mode.
MATRIX 4	If ENCODER MODE [ASSIGN 4] is on, switches the channel strip SEL buttons between Insert Select (indicator off) and Insert Bypass mode (indicator on).

AUX SELECT Section

Control	Assignment
AUX 1	Assigns Send 1 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 1 destination assignment.
USER 4	As above, for Send 6.
AUX 2	Assigns Send 2 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 2 destination assignment.
USER 4	As above, for Send 7.
AUX 3	Assigns Send 3 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 3 destination assignment.
USER 4	As above, for Send 8.
AUX 4	Assigns Send 4 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 4 destination assignment.
AUX 5	Assigns Send 5 Level to Encoders, and Send 5 to 8 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 5 destination assignment.

ENCODER MODE Section

Control	Assignment
PAN	Assigns Pan to Encoders; assigns selected track's pan/surround parameters to DSP Encoders.
AUX/MTRX	Assigns Send 1 Level to Encoders, and Send 1 to 4 Levels to DSP Encoders. While held, the Channel Strip displays show the current Send 1 destination assignment.
ASSIGN 1	Assigns Track Input to Encoders. While held down, the Channel Strip displays show the current Track Input assignment.
ASSIGN 2	Assigns Track Output to Encoders. While held down, the Channel Strip displays show the current Track Output assignment.
ASSIGN 3	When Encoders display a Send level, switches them to Send Destination assignment mode. Press Encoder Push-Switch or ASSIGN 3 again to confirm the assignment.
ASSIGN 4	Determines mode of channel strip SEL buttons: • Indicator off: track selection. • Indicator on: Insert selection or Insert Bypass, depending on MATRIX SELECT [MATRIX 4].

FADER MODE Section

Control	Assignment
FADER	Enables/Disables Flip mode.
AUX/MTRX	Enables/Disables Flip mode.

DISPLAY ACCESS Section

Control	Assignment
METER	Clears Overload LEDs.
USER 4	Switches to Global View and enables MIDI Tracks.
USER 13	Opens/Closes Arrange window.

EFFECTS/PLUG-INS Section

Control	Assignment
Display	Opens/Closes the Sample Edit window.
5	—
6	Switches DSP display between "track name/parameter name" and "parameter name/parameter value" modes.
7	Activates/Deactivates bypass of plug-in insert that is currently being edited.
8	Switches between Plug-in Assign and Plug-in Edit modes.
Parameter Up & Parameter Down	Plug-In Edit: shifts parameter display by the number of Parameter controls in the control surface group (usually four).
USER 13	Plug-In Edit: shifts parameter display by one (parameter).
Parameter control 1–4 push-switch	Assignment Pan: • Parameter control 1 push-switch centers Pan or Surround Angle. • Parameter control 2 push-switch centers Surround Diversity. • Parameter control 3 push-switch centers Surround LFE. • Parameter control 4 push-switch sets Surround Mode to center. Assignment Send: • Enables/Disables Sends 1 to 4 or Mutes 5 to 8. Plug-In Assign: • Confirm insert 1 to 4 or 5 to 8 plug-in selection, selects this insert slot and enters Plug-In Edit mode. Plug-In Edit mode: • Sets value to default, or switches bi-polar parameter value on/off.
Parameter controls	Assignment Pan: • Parameter control 1 controls Pan or Surround Angle. • Parameter control 2 controls Surround Diversity. • Parameter control 3 controls Surround LFE. • Parameter control 4 controls Surround Mode. Assignment Send: • Control Send 1 to 4 or 5 to 8 Level. Plug-In Assign: • Assigns insert 1 to 4 or 5 to 8. Plug-In Edit mode: • Sets value to default.

LCD

Display	Assignment
LCD	Displays parameter details, plug-in selection or plug-in parameters.
TIME CODE	Active if counter is displaying time code.
FEET	Not assigned.
BEATS	Active if counter is displaying bars/beats/format/ticks.
Time display	Displays time code or bars/beats/format/ticks.
SELECT ASSIGN	Displays the Encoder assignment as follows: Pan, Snd1 to Snd8, S1As to S8As, In, Out.

TRACK ARMING Section

Control	Assignment
1 to 24	Enables/Disables Record Ready.
USER 5	Disables Record Ready for all tracks.
MASTER	Disables Record Ready for all tracks.

AUTOMIX Section

Control	Assignment
DISPLAY	While held, the Channel Strip displays show the automation mode of selected track.
REC	Sets selected track to "Write" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Write."
USER 5	Sets all tracks to "Write" automation mode.
ABORT/UNDO	Sets selected track to "Touch" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Touch."
USER 5	Sets all tracks to automation mode "Touch."
AUTOREC	Sets selected track to "Latch" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Latch."
USER 5	Sets all tracks to automation mode "Latch."
RETURN	Sets selected track to "Read" automation mode. While held down, channel Strip AUTO buttons set automation mode to" Read."
USER 5	Sets all tracks to "Read" automation mode.
RELATIVE	—
TOUCH SENSE	Sets selected track to "Off" automation mode. While held down, channel Strip AUTO buttons set automation mode to "Off."
USER 5	Sets all tracks to "Off" automation mode.
OVERWRITE [FADER]	Enables/Disables volume automation playback and recording.
OVERWRITE [PAN]	Enables/Disables pan automation playback and recording.
OVERWRITE [EQ]	Enables/Disables Plug-in parameter automation playback and recording.
OVERWRITE [ON]	Enables/Disables mute automation playback and recording.
OVERWRITE [AUX]	Enables/Disables Send level automation playback and recording.
OVERWRITE [AUX ON]	—

USER DEFINED KEYS Section

Control		Assignment
DISPLAY		Opens/Closes the Audio window.
1		Opens/Closes the Transport window.
2		Shifts channel strips by one bank to the left.
3		Shifts channel strips by one bank to the right.
4		Shifts to second meaning of some buttons (see descriptions of other buttons).
5		While held down, value change mode is set to "full": any relative value changes will "jump" to their minimum or maximum values.
6		Enters Group Edit mode: • The upper line in the DSP edit section displays the currently edited group number and name. • Parameter control push-switch buttons 1 to 4 switch the properties of the group currently being edited (names shown in lower line of display). • When INSERT/PARAM is off, DSP Edit Scroll Encoder scrolls through the group properties. Otherwise, it selects the currently edited group. • The SELECT buttons activate/deactivate group membership of the track.
	USER 4	Switches to Track View.
7		Activates/Deactivates the Group Clutch (disables all groups).
	USER 4	Switches to Extended Track View.
8		Creates a new group and enters Group Edit mode (see above).
	USER 4	Switches to Global View.
9		Switches between the Arrange and Track Mixer windows.
10		Shifts channel strips by one channel to the left.
11		Shifts channel strips by one channel to the right.
12		While held down, the Group Clutch is engaged (all groups are disabled).
13		While held down, value change mode is set to "fine": relative value changes work at maximum resolution. Also see descriptions of other buttons.
14		—
15		Performs Undo.
	USER 4	Performs Redo.
	USER 5	Opens Undo History window.
16		Saves the song.
	USER 5	Save As…: saves the song under a different name.

LOCATOR Section

Control	Assignment
DISPLAY	Opens/Closes the Marker List window.
1 to 8	Recalls markers 1 to 8.
USER 4	Switches to Global View and enables: 1: MIDI Tracks. 2: Inputs. 3: Audio Tracks. 4: Audio Instruments. 5: Aux Tracks. 6: Busses. 7: Outputs and Master object.
DISPLAY HISTORY [FORWARD]	Selects tool: 1: Arrow. 2: Pencil. 3: Eraser. 4: Text edit. 5: Scissors. 6: Glue. 7: Solo. 8: Mute.
AUDITION	—
PRE	Sets left locator.
IN	Sets Drop In locator.
OUT	Sets Drop Out locator.
POST	Sets right locator.
RETURN TO ZERO	Navigates to the left locator.
END	Navigates to the right locator.
ONLINE	Enables/Disables internal/external sync.
QUICK PUNCH	Enables/Disables Drop mode.

Channel Strips

Control	Assignment
Level Meters	Displays momentary and peak levels.
Encoder	Adjusts parameter selected in the AUX SELECT section.
Encoder Push-Switch	Pan selected: sets Pan to center if MATRIX 1 on Send 1 to 8 selected: edits Send Pre/Post, activates/deactivates Send Mute or sets Send Level to default value. Send Assign, Input, or Output selected: confirms selection.
AUTO	Cycles through automation modes. With an automation mode button held down, sets this automation mode.
SEL	If ENCODER MODE [ASSIGN 4] off: selects track. If ENCODER MODE [ASSIGN 4] on: • BYPASS off: selects track for plug-in selection. • BYPASS on: switches bypass status of currently selected insert slot.
USER 4	Sets volume to unity level.
MATRIX SELECT 1	Sets volume to unity level.
SOLO	Enables/Disables Solo.
USER 5	Disables Solo for all tracks.
ON	Enables/Disables Mute.
USER 5	Unmutes all tracks.
Channel strip display	Displays track name, or Send, In, or Out assignment.
Fader	Adjusts volume, or duplicates Encoder in Flip mode.

Transport/Cursor Section

Control	Assignment
REW	Shuttles backward.
FF	Shuttles forward.
STOP	Stop
PLAY	Play
USER 4	Pause
REC	Record
DISPLAY HISTORY [BACK]	—
DISPLAY HISTORY [FORWARD]	Selects the next tool. While held down, numerical buttons select a specific tool.
SCRUB	Enables/Disables Scrub mode.
SHUTTLE	Enables/Disables Shuttle mode.

Control	Assignment
Parameter Wheel	Default: move SPL by one bar. Scrub: scrubbing. Shuttle: Shuttle mode.
DEC	Default: leaves Folder. Goto Marker: cancels dialog.
USER 13	Opens/Closes Audio window.
INC	Switches between Cursor and Zoom mode.
Cursor Up	Cursor mode: equivalent to computer keyboard up arrow key. Zoom mode: zooms out vertically.
USER 4	Zoom mode: Individual track zoom in.
USER 13	Page Up.
USER 5 + USER 13	Scroll to top.
Cursor Down	Cursor mode: equivalent to computer keyboard down arrow key. Zoom mode: zooms out vertically.
USER 4	Zoom mode: Individual track zoom out.
USER 13	Page Down.
USER 5 + USER 13	Scroll to bottom.
Cursor Left	Cursor mode: equivalent to computer keyboard left arrow key. Zoom mode: zooms out horizontally.
USER 4	Zoom mode: Individual track zoom reset for tracks of the same type.
USER 13	Page Left.
USER 5 + USER 13	Scroll to left border.
Cursor Right	Cursor mode: equivalent to computer keyboard right arrow key. Zoom mode: zooms in horizontally.
USER 4	Zoom mode: Individual track zoom reset of all tracks.
USER 13	Page Right.
USER 5 + USER 13	Scroll to right border.
ENTER	Enters folder of selected track.

Logic Control—Specifications

Logic Control (Base Unit)

This appendix describes the specifications of the Logic Control unit.

Display

- 55 × 2-digit (LCD) backlit multi-function display for detailed parameter information and metering
- Built-in screensaver function
- 2-digit, 7-segment display for mode displays
- 10-digit, 7-segment display for song position information in either SMPTE or bar/beats/ticks
- 1 × button to toggle the LCD between parameter name/value and to activate the level meters.
- 1 × button to toggle the 7-segment display between SMPTE and bar/beats/ticks.
- 2 × LEDs show the current 7-segment display status.
- 1 × LED shows the current Solo status.

Per Channel (8 Channels)

- 1 × motorized 100mm touch-sensitive Penny & Giles faders with 10Bit resolution (1024 steps)
- 1 × V-POT: digital endless rotary knob with position indicator and integrated push button for parameter adjustments of pan, EQ, send levels, and so on
- 4 × buttons with integrated colored LED for channel functions such as: Record, Solo, Mute, and Channel Selection
- Signal Present LED indicates when an audio or MIDI signal is present.

Master Fader

- 1 × motorized 100mm touch-sensitive Penny & Giles fader with 10Bit resolution (1024 steps).

Controller

- 6 × buttons with status LED for direct selection of parameter groups for Track, Pan/Surround, EQ, Send, Plug-In, Instrument
- 8 × buttons to directly select sections of Logic mixers such as audio tracks, MIDI tracks, inputs, busses, and so on
- 4 × buttons to shift the displayed mixer channels to the left and right, either one channel at a time, or in banks
- 1 × button with status LED for the channel fader/V-POT flip: swaps the assignments of fader and V-POTs
- 1 × button with status LED to toggle between Mixer View and Global View
- 4 × buttons with status LED to activate automation modes such as Read, Write, Touch, and Latch
- 4 × buttons to select utility functions such as: "Save Song,""Undo,""Cancel," or confirmations in dialogs
- 4 × buttons to access additional functions through modifier keys
- 8 × freely definable user keys
- 2 × currently unassigned buttons for future use

Transport Controls

- 5 × Transport buttons with status LED for Forward, Rewind, Stop, Play, Record
- 1 × Jog/Scrub wheel for precise location of any song position and audio scrubbing
- 1 × Scrub button with status LED to activate the scrub function
- 1 × Marker and 1 × Nudge button with status LED to extend the functionality of the Forward/Rewind buttons (Nudge functionality only available in Logic Pro)
- 4 × Navigation buttons to quickly navigate through plug-in slots and parameter pages
- 1 × Zoom button to switch the navigate buttons to zoom

Internal Processor

- High-speed RISC micro controller
- Firmware can be updated via MIDI dump.

Connections

- 1 × MIDI in, 1 × MIDI out.
- 2 × assignable foot switch inputs to control Start/Stop and Punch In/Out, for example
- 1 × assignable external control signal input to connect a volume pedal.
- Power supply jack

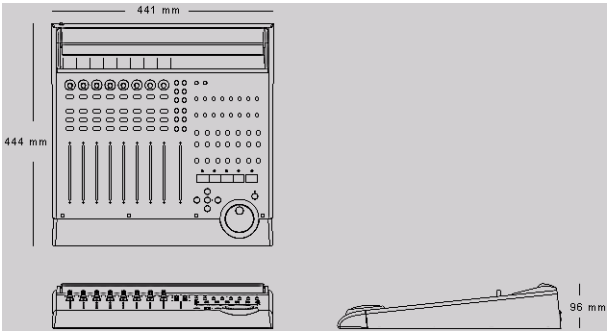
Power Supply

- International (100–250V) external power supply for standard power cords
- Rear-mounted power switch

Weight and Construction

- Logic Control weighs 5.05 kg (unpacked).
- High quality, sturdy 1mm steel chassis and case
- Comfortable, durable wrist rest

Dimensions



Logic Control XT (Extension Unit)

Display

- 55 × 2-digit (LCD) backlit multi-function display for detailed parameter information and metering
- Built-in screensaver function

Per channel (8 channels)

- 1 × motorized 100mm touch-sensitive Penny & Giles faders with 10Bit resolution (1024 steps)
- 1 × V-POT: digital endless rotary knob with position indicator and integrated push button for parameter adjustments of pan, EQ, send levels, and so on
- 4 × buttons with integrated colored LED for channel functions such as: Record, Solo, Mute, and Channel Selection
- Signal Present LED indicates the presence of an audio signal

Internal Processor

- High-speed RISC micro controller
- Firmware can be updated via MIDI dump.

Connections

- 1 × MIDI in, 1 × MIDI out
- Power supply jack

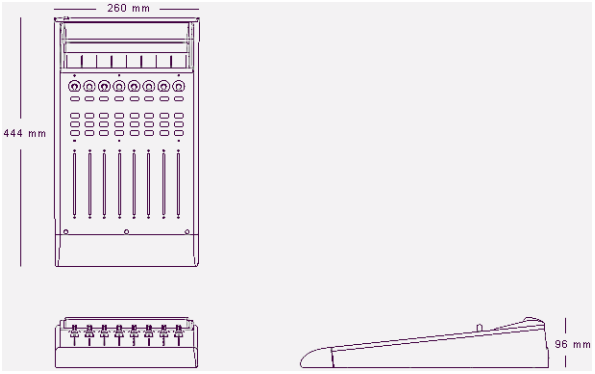
Power Supply

- International (100–250V) external power supply for standard power cords
- Rear-mounted power switch

Weight and Construction

- Logic Control XT weighs 3.45 kg (unpacked)
- High quality, sturdy 1mm steel chassis and case
- Comfortable, durable wrist rest

Dimensions



Logic Control—
MIDI Implementation

The following information is important for software vendors who wish to create a level of software integration for the Logic/Mackie Control/XT units.

This documentation covers firmware version V1.0.

Note: All numbers are in hexadecimal format.

Variable bytes are shown in *italics* and use characters other than a-f as a placeholder.

All channel messages use running status messages. Once an initial 3-byte message has been sent, the status byte is dropped from proceeding transmitted channel messages, in order to conserve bandwidth.

SysEx Message Header

The following documentation uses the place holder "<Hdr>" whenever the SysEx header is transmitted or received. It has the following form:

F0	MIDI SysEx status byte
00 00 66	Mackie 3-byte SysEx manufacturer ID
ii	Model ID
10	Logic Control
11	Logic Control XT

A device ID is not required, as each unit needs a dedicated MIDI cable.

Global Control Messages

Host Connection and Initialization

Received:

<Hdr> 00 F7
Device Query

<Hdr> 02 ss ss ss ss ss ss ss *rr rr rr rr* F7
Host Connection Reply

<Hdr> 0F 7F F7
Go Offline

Transmitted:

<Hdr> 01 *ss ss ss ss ss ss ss ll ll ll ll* F7
Host Connection Query

<Hdr> 03 *ss ss ss ss ss ss ss* F7
Host Connection Confirmation

<Hdr> 04 *ss ss ss ss ss ss ss* F7
Host Connection Error

ss	=	Serial number (7 bytes ASCII text, non null-terminated)
ll	=	Challenge code (4 bytes)
rr	=	Response code (4 bytes)

Offline Mode:
Logic Control employs a query system to maintain a connection to the host software. When Logic Control is initially powered up, it defaults to Offline mode. In Offline mode, Logic Control's faders move to their lowest setting, and the LCD reads "EMAGIC LOGIC CONTROL -- by MACKIE." After power-on, Logic Control also transmits a system exclusive Host Connection Query message that is used (by the host) to detect a connection, and what type of device is connected (Logic Control/Logic Control XT).

Communications Initialization:
When the host software receives a Host Connection Query message (containing a serial number and a random challenge code), it should transmit a Host Connection Reply command within 300ms to initialize Logic Control. The command must contain the same serial number and the correct response code for the challenge code. Here is the algorithm (*l1* to *l4* = challenge code bytes 1 to 4, *r1* to *r4* = response code bytes 1 to 4):

r1 = 0x7F & (*l1* + (*l2* ^ 0xa) – *l4*);
r2 = 0x7F & ((*l3*>>4) ^ (*l1*+*l4*));
r3 = 0x7F & (*l4*-(*l3*<<2) ^ (*l1*|*l2*));
r4 = 0x7F & (*l2*-*l3*+(0xF0^(*l4*<<4)));

Logic Control will, in turn, respond with either:

- a Host Connection Confirmation message that contains the serial number, and switch to Online mode—where it will await further instructions from the host, or
- reply with a Host Connection Error message, if the response code was wrong.

Online Mode:
Once the connection between Logic Control and the host software has been made, Logic Control stays in Online Mode until it receives a Go Offline message.

Firmware version request

Received:

<Hdr> 13 00 F7 Version request

Transmitted:

<Hdr> 14 *vv vv vv vv vv* F7 Version reply

vv 5 ASCII bytes containing version string, e. g. "V1.0".

Note: When Logic Control receives a version request message, it sends the version reply message.

Reset Messages

Received:

<Hdr> 61 F7 Faders to minimum
(Sends all faders to the bottom of their throw)
<Hdr> 62 F7 All LEDs off
(Turns off all LEDs on Logic Control)
<Hdr> 63 F7 Reset
(Re-Boots Logic Control into Offline mode)

Transmitted: No

Configuration Messages

Received:

<Hdr> 0A *tt* F7 Transport button click
<Hdr> 0B *ll* F7 LCD back light saver
<Hdr> 0C *mm* F7 Touchless movable faders
<Hdr> 0E *ii ss* F7 Fader touch sensitivity

Transmitted: No

tt 00 = no transport button click
01 = transport button click (default)

ll 00 = LCD back light off
01 to 7F = LCD back light on, with time out in minutes (default: 0F = 15 minutes)

mm 00 = fader movements are only transmitted if the fader has been recognized as touched
01 = fader movements are also transmitted if the fader has not been recognized as touched (e. g. with fingernail or pen)

ii Fader ID (00 thru 07; Master = 08)

ss Fader touch sensitivity (00 to 05; default: 03)

Common Control Messages

Faders

Received: E*i*, *ll*, *hh* Move fader to position

Transmitted: E*i*, *ll*, *hh* Fader moved by user

i Fader ID (00 thru 07; Master = 08)

ll Fader position value low 7 bits (00–7F)

hh Fader position value high 7 bits (00–7F)

Example: E0, 40, 55 = Fader Ch. 1, position (55 << 7) + 40

Note: Message format for transmitted fader position is the same as for received position. Only the top (high) 10 of the 14 transmitted bits are required. Positions 0 to 1023 (decimal) are transmitted as 0000 to 03FF (E*i* 00 00 to E*i* 7F 7F).

Switches

Received: None

Transmitted: 90, *ii*, *ss* Switch pressed/released by user

ii Switch ID (See "Logic Control—Control Surface Layout and IDs" on page 251.)

ss Switch State
00 = switch or fader relead
7F = switch pressed or fader touched

Example: 90, 0F, 7F = SOLO Ch. 8 is pressed
90, 0F, 00 = SOLO Ch. 8 is released

Note: LEDs and switches use the same control message. This approach means that an LED has the same ID as its corresponding switch.

LEDs

Received: 90, *ii*, *ss* Set LED status

Transmitted: None

ii LED ID (See "Logic Control—Control Surface Layout and IDs" on page 251.)

ss LED State (7F = on, 00 = off, 01 = flashing)

Example: 90, 08, 7F = Turn LED 08 on
90, 08, 00 = Turn LED 08 off

Note: Switches and LEDs use the same control message. This ensures that an LED always shares an ID with its corresponding switch.

V-Pots

Received: None

Transmitted: B0, 1*i*, *XX* V-POTs turned by user

i V-POT ID (00–07)

XX delta value in the form of (0 *s v v v v v v*)

s direction bit:
0 = clockwise,
1 = counter clockwise

vv number of ticks

Examples:

- B0, 10, 01 = V-POT Ch. 1 is being turned clockwise by one tick.
- B0, 17, 47 = V-POT Ch. 8 is being turned counter-clockwise by 7 ticks.

V-Pot LED ring

Received: B0, 3*i*, *XX* Set LED ring display

Transmitted: None

i V-POT number (0 thru 7)

XX V-POT display control byte in the form of
(0 *p x x v v v v*):

p V-POT display center LED state
(1 = on, 0 = off)

xx V-POT mode (00 thru 03; see diagrams below)

vv V-POT display position value
00 = all LEDs in ring off;
01 thru 0B see diagrams below

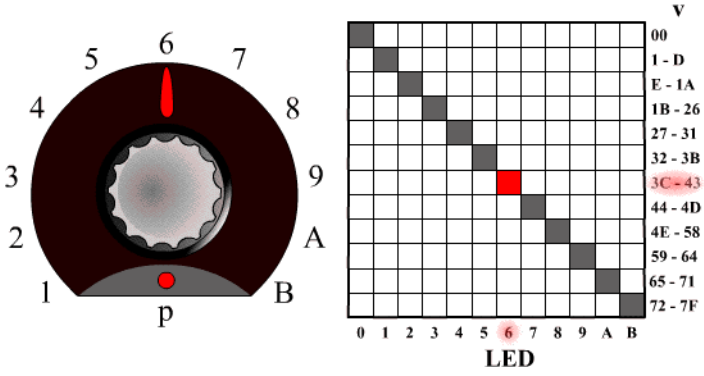
Example:

- B0, 31, 06 = V-POT 2 display shows LEDs at position 6.

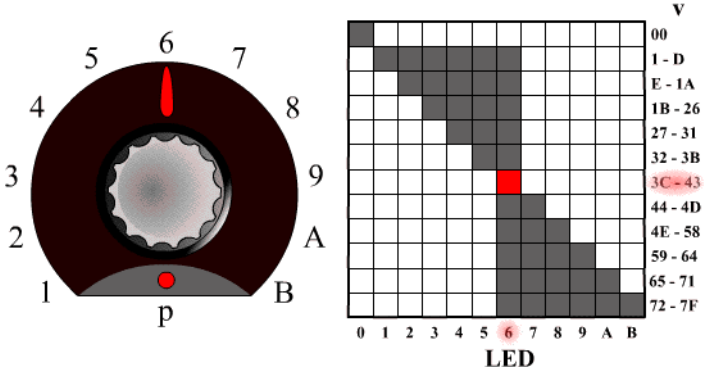
Note: In any V-POT display mode, a received LED position value of 00 will turn off all of the V-POT LEDs.

V-POT Display modes available:

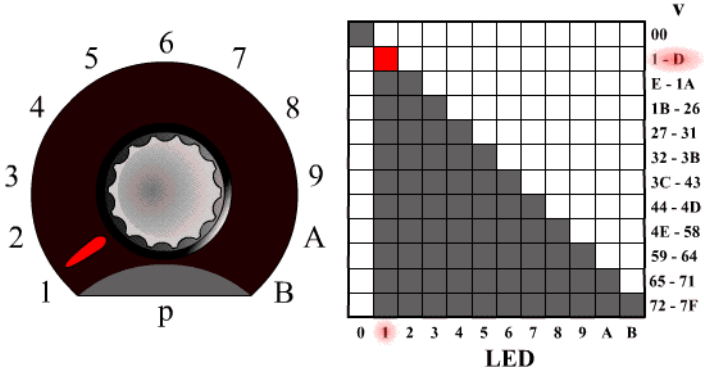
Mode 0 - Single Dot



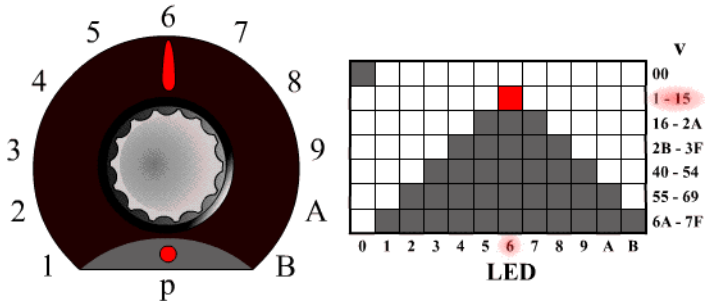
Mode 1 - Boost/Cut



Mode 2 - Wrap



Mode 3 - Spread



External Controller

Received: None

Transmitted: B0, 2E, *vv* External Controller changed

vv External Controller position value (00–7F)

Example:

- B0, 2E, 07 = External Controller value = 07

Jog Wheel

Received: None

Transmitted: B0, 3C, *XX* Jog wheel turned by user

XX delta value in the form of (0 *s v v v v v v*)

s direction bit: 0 = clockwise, 1 = counter clockwise

vv number of ticks

Examples:

- B0, 3C, 01 = Jog forward.
- B0, 3C, 41 = Jog reverse.

LCD

Received: <Hdr>, 12, *oo*, *yy*, …, F7 Update LCD

Transmitted: None

oo Display offset to write from:
00 thru 37 for upper line,
38 thru 6F for lower line.

yy Data: ASCII equivalents for display characters—written from left to right—and including line wrapping between upper and lower lines. Up to 100 data bytes may be sent in one message.

Example:

- The following message writes "Hello" to the top left of the LCD on a Logic Control master section.
  F0 00 00 66 10 12 00 48 65 6C 6C 6F F7

Notes:

- There are 7 displayed characters per channel, with the exception of channel 8, which is limited to displaying the first 6 characters. Internally however, the LCD stores 2 x 56 characters.
- In most cases, you will use the LCD in a scribble-strip fashion (text above each channel). In this scenario, you should only use the first six characters per channel, thus allowing for spaces between the text of each channel.
- The lower line can be switched into meter mode. See "Metering" on page 249 for further details.
- While the LCD switches between horizontal and vertical metering modes, it ignores LCD messages. You should delay LCD messages for at least 600 ms after sending an LCD metering mode change message.

Time Code/BBT Display

Received:

<Hdr>, 10, *yy*, …, F7 Update multiple characters
B0, 4*i*, *yy* Update single character

Transmitted: None

i Digit ID: 0 = right-most, 9 = left-most

yy Data bytes representing character to be written (See "7-Segment Display Character Table" on page 248). Up to ten characters can be sent in the SysEx message.

Examples:

- The following message writes "109.02.01.126" to the Time Code display (note decimal points).
  F0 00 00 66 10 10 36 32 31 71 30 72 30 79 30 31 F7
- B0 40 30 41 31 = writes "10" into the last two digits.

Important: The digits in the Time Code and Assignment displays are written RIGHT-TO-LEFT, which helps to conserve bandwidth.

Assignment 7-segment display

Received:

<Hdr>, 11, *yy*, *yy*, F7 Update multiple characters
B0, 4*i*, *yy* Update single character

Transmitted: None

i Digit ID: A= right, B = left

yy Data bytes representing character to be written (See "7-Segment Display Character Table" on page 248). Two characters can be sent in the SysEx message.

Example:

- B0 4B 10 4A 4E = writes "Pn." to the Assignment display.

Important: The digits in the Time Code and Assignment displays are written RIGHT-TO-LEFT, to help conserve bandwidth.

7-Segment Display Character Table

Hint:

- Characters @ (40h) thru ` (60h) = (ASCII value) – 40h
- Characters ! (21h) thru ? (3Fh) = ASCII value

Note: The decimal point on each 7-segment character can be lit by adding 40 Hex to the value of the data.

Metering

Received:

D0, *XX*	Peak level
<Hdr>, 20, *ii*, *mm*, F7	Channel meter mode
<Hdr>, 21, *yy*, F7	Global LCD meter mode

Transmitted: None

XX Meter level in the form of (0 *h h h l l l l*):

- *hh* Channel to be addressed (0 thru 7)
- *ll* Meter level:
  - 0 thru C = level meter 0% to 100%
    Overload not cleared!
  - E = set overload
  - F = clear overload

ii Channel ID (0 to 7)

mm mode bit map in the form of (0 0 0 0 0 *l p s*):

- *l* Enable level meter on LCD
- *p* Enable peak hold display (horizontal only)
- *s* Enable Signal LED

yy 00 = horizontal; 01 = vertical

Notes:

- There is only one level meter per channel. For stereo tracks, use the maximum of left and right levels.
- Only transmit peak levels. Logic Control automatically decreases the level meter bars, and switches off the Signal Present LED (over time). This approach ensures that MIDI bandwidth takes only a fraction of that required by implementations where the current level (and peak level) is transmitted constantly.
- Decay rate is approximately 300ms per meter division (1.8 seconds to fall from 100% to 0%).
- The LCD meter value and the duration of the Signal Present LED are controlled by the same data byte.
- While the LCD switches between horizontal and vertical metering mode, it ignores LCD messages. You should delay LCD messages for at least 600 ms after sending an LCD metering mode change message.

Logic Control—
Control Surface Layout and IDs

ID	Switch	LED	Function
00	•	•	REC/RDY Ch. 1
01	•	•	REC/RDY Ch. 2
02	•	•	REC/RDY Ch. 3
03	•	•	REC/RDY Ch. 4
04	•	•	REC/RDY Ch. 5
05	•	•	REC/RDY Ch. 6
06	•	•	REC/RDY Ch. 7
07	•	•	REC/RDY Ch. 8
08	•	•	SOLO Ch. 1
09	•	•	SOLO Ch. 2
0A	•	•	SOLO Ch. 3
0B	•	•	SOLO Ch. 4
0C	•	•	SOLO Ch. 5
0D	•	•	SOLO Ch. 6
0E	•	•	SOLO Ch. 7
0F	•	•	SOLO Ch. 8
10	•	•	MUTE Ch. 1
11	•	•	MUTE Ch. 2
12	•	•	MUTE Ch. 3
13	•	•	MUTE Ch. 4
14	•	•	MUTE Ch. 5
15	•	•	MUTE Ch. 6
16	•	•	MUTE Ch. 7
17	•	•	MUTE Ch. 8
18	•	•	SELECT Ch. 1
19	•	•	SELECT Ch. 2

ID	Switch	LED	Function
1A	•	•	SELECT Ch. 3
1B	•	•	SELECT Ch. 4
1C	•	•	SELECT Ch. 5
1D	•	•	SELECT Ch. 6
1E	•	•	SELECT Ch. 7
1F	•	•	SELECT Ch. 8
20	•		V-Select Ch. 1
21	•		V-Select Ch. 2
22	•		V-Select Ch. 3
23	•		V-Select Ch. 4
24	•		V-Select Ch. 5
25	•		V-Select Ch. 6
26	•		V-Select Ch. 7
27	•		V-Select Ch. 8
28	•	•	ASSIGNMENT: TRACK
29	•	•	ASSIGNMENT: SEND
2A	•	•	ASSIGNMENT: PAN/SURROUND
2B	•	•	ASSIGNMENT: PLUG-IN
2C	•	•	ASSIGNMENT: EQ
2D	•	•	ASSIGNMENT: INSTRUMENT
2E	•		FADER BANKS: BANK Left
2F	•		FADER BANKS: BANK Right
30	•		FADER BANKS: CHANNEL Left
31	•		FADER BANKS: CHANNEL Right
32	•	•	FLIP
33	•	•	GLOBAL VIEW
34	•		NAME/VALUE
35	•		SMPTE/BEATS
36	•		F1
37	•		F2
38	•		F3
39	•		F4
3A	•		F5
3B	•		F6
3C	•		F7
3D	•		F8

ID	Switch	LED	Function
3E	•		GLOBAL VIEW: MIDI TRACKS
3F	•		GLOBAL VIEW: INPUTS
40	•		GLOBAL VIEW: AUDIO TRACKS
41	•		GLOBAL VIEW: AUDIO INSTRUMENT
42	•		GLOBAL VIEW: AUX
43	•		GLOBAL VIEW: BUSSES
44	•		GLOBAL VIEW: OUTPUTS
45	•		GLOBAL VIEW: USER
46	•		SHIFT
47	•		OPTION
48	•		CONTROL
49	•		CMD/ALT
4A	•	•	AUTOMATION: READ/OFF
4B	•	•	AUTOMATION: WRITE
4C	•	•	AUTOMATION: TRIM
4D	•	•	AUTOMATION: TOUCH
4E	•	•	AUTOMATION: LATCH
4F	•	•	GROUP
50	•	•	UTILITIES: SAVE
51	•	•	UTILITIES: UNDO
52	•		UTILITIES: CANCEL
53	•		UTILITIES: ENTER
54	•	•	MARKER
55	•	•	NUDGE (Logic Pro only)
56	•	•	CYCLE
57	•	•	DROP
58	•	•	REPLACE
59	•	•	CLICK
5A	•	•	SOLO
5B	•	•	REWIND
5C	•	•	FAST FWD
5D	•	•	STOP
5E	•	•	PLAY
5F	•	•	RECORD
60	•		Cursor Up
61	•		Cursor Down

ID	Switch	LED	Function
62	•		Cursor Left
63	•		Cursor Right
64	•	•	Zoom
65	•	•	Scrub
66	•		User Switch A
67	•		User Switch B
68	•		Fader Touch Ch. 1
69	•		Fader Touch Ch. 2
6A	•		Fader Touch Ch. 3
6B	•		Fader Touch Ch. 4
6C	•		Fader Touch Ch. 5
6D	•		Fader Touch Ch. 6
6E	•		Fader Touch Ch. 7
6F	•		Fader Touch Ch. 8
70	•		Fader Touch Master
71		•	SMPTE LED
72		•	BEATS LED
73		•	RUDE SOLO LIGHT
76		•	Relay click

Logic Control—
MIDI Implementation Chart

Function	Transmitted	Recognized	Remarks
Channel, Default: Changed:	1 1	1 1	Each Logic Control unit should be installed on a separate MIDI port.
Mode, Default: Messages: Altered:	X X X	X X X	
Note Number True Voice:	O 0–127 X	O 0–127 X	
Velocity, Note On: Note Off:	O v = 1–127 X v = 00	O v = 1–127 X v = 00	
After Touch, Keys: Chan's:	X X	X O	
Pitch Bend	O	O	Used for motor faders
Control Change	O	O	
Program Change True #:	X	X	
SYSTEM EXCLUSIVE:	O	O	
SYSTEM COMMON:	X	X	

Mode 1: OMNI ON, POLY, Mode 2: OMNI ON, MONO, O: Yes
Mode 3: OMNI OFF, POLY, Mode 4: OMNI OFF, MONO, X: No