Logic Pro 9

Control Surfaces Support

Note: Because Apple frequently releases new versions and updates to its system software, applications, and Internet sites, images shown in this manual may be slightly different from what you see on your screen.

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An Introduction to Control Surfaces

You can use hardware control surfaces to control and automate transport, mixing, recording, and other tasks in Logic Pro.

All Logic mixer controls, such as level and pan, can be adjusted onscreen—using your mouse and computer keyboard. This is not, however, an ideal method for precise real-time control. You can enhance your creative flow and achieve greater flexibility and precision by connecting a hardware control surface to your computer.

Control surfaces are ideal for creating a dynamic live (on-stage) performance when used with a portable computer, MIDI keyboard, and audio and MIDI interfaces. In the studio, you can record control surface automation (even when Logic is not in record mode). Track automation appears in Logic's Arrange window and in the Piano Roll Editor.

When you move a fader on the control surface, the corresponding fader in Logic's Mixer moves with it. EQ or other parameters can be altered by turning rotary knobs on the control surface, with assigned parameters updating instantly in Logic.

As communication between Logic and your control surface is bidirectional, adjustments to parameters onscreen are immediately reflected by the corresponding control on the control surface.

This preface covers the following:

What Are Control Surfaces?

Control surfaces are hardware devices that feature a variety of controls, which can include faders, rotary knobs, buttons, and displays. Control surfaces typically allow you to select parameters for editing, or to select particular tracks/channel strips or banks (of channel strips). Many also offer a Jog Wheel, which allows you to move the playhead precisely, transport buttons, such as Play, Rewind, and so on, and other controls.

Some simple control surfaces only provide (non-motorized) faders and knobs. More sophisticated units include motorized faders, rotary encoders, LED rings, and programmable displays. The additional feedback these control surfaces provide makes them easier to use—without having to refer to your computer screen to know what mode the device is in, or what current parameter values are.

Note: When you use a supported control surface with Logic Pro, some controls are premapped to common functions. You can map unassigned controls to other Logic Pro commands and functions (see Assigning Controllers to Logic Pro Parameters).

About the Logic Pro Documentation

Logic Pro comes with various documents that will help you get started as well as provide detailed information about the included applications.

- *Logic Pro User Manual:* This manual provides comprehensive instructions for using Logic Pro to set up a recording system, compose music, edit audio and MIDI files, and output audio for CD productions.
- *Exploring Logic Pro:* This booklet provides a fast-paced introduction to the main features and tasks in Logic Pro, encouraging hands-on exploration for new users.
- *Logic Pro Control Surfaces Support:* This manual describes the configuration and use of control surfaces with Logic Pro.
- *Logic Pro Instruments:* This manual provides comprehensive instructions for using the powerful collection of instruments included with Logic Pro.
- *Logic Pro Effects:* This manual provides comprehensive instructions for using the powerful collection of effects included with Logic Pro.
- *Logic Pro Working with Apogee Hardware:* This manual describes the use of Apogee hardware with Logic Pro.

Additional Resources

Along with the documentation that comes with Logic Pro, there are a variety of other resources you can use to find out more.

Release Notes and New Features

Each application offers detailed documentation that covers new or changed features and functions. This documentation can be accessed in the following location:

- Click the Release Notes and New Features links in the application Help menu.

Logic Pro Website

For general information and updates, as well as the latest news on Logic Pro, go to:

- http://www.apple.com/logicpro

Apple Service and Support Websites

For software updates and answers to the most frequently asked questions for all Apple products, go to the general Apple Support webpage. You'll also have access to product specifications, reference documentation, and Apple and third-party product technical articles.

- http://www.apple.com/support

For software updates, documentation, discussion forums, and answers to the most frequently asked questions for Logic Pro, go to:

- http://www.apple.com/support/logicpro/

For discussion forums for all Apple products from around the world, where you can search for an answer, post your question, or answer other users' questions, go to:

- http://discussions.apple.com

Basic Control Surface Setup

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Regardless of the control surface being used, you first need to connect, add, and configure your device for use with Logic Pro. This chapter describes the setup procedures and preferences that are common to all control surfaces. Setup information for specific devices is covered elsewhere in the documentation.

Note: Read this chapter first, and then read through the chapter that pertains to your specific device.

This chapter covers the following:

Getting Started

To use one or more control surfaces with Logic Pro, you will need:

- An installed, authorized copy of Logic Pro
- For USB- or FireWire-equipped devices (such as a Yamaha 01X), an available USB or FireWire port. Ideally, this should be a direct USB/FireWire connection with the computer, rather than via a USB/FireWire hub. Refer to the documentation provided by the manufacturer of your control surface.

- For devices that are only equipped with MIDI ports (such as a Mackie Control), a MIDI interface with free MIDI input and output ports for each device. For example, if you're using a MIDI interface with 8 MIDI input ports and 8 MIDI output ports—with one Mackie Control and one Mackie Control XT unit—you will need to use two of the interface's MIDI In ports, and two of its MIDI Out ports.
- An installed driver (if required by your control surface) that is supported by the operating system you are using on your computer

Important: Your MIDI interface must feature driver software that supports SysEx communication. Consult the documentation that shipped with your MIDI interface (or MIDI interface drivers).

The number of devices that can be used simultaneously depends on the number of free ports of the appropriate type (USB, FireWire, or other) available on your system. In a standard setup, you can use a single control surface, or one accompanied by one or more expansion devices. You can also create *control surface groups,* as described in Creating Control Surface Groups.

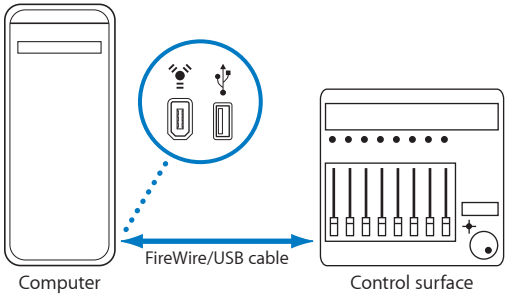
Using multiple control surfaces allows you to control more tracks and channels, effects, and other parameters simultaneously. For example, the Mackie Control XT devices are basically identical to the channel strip section (fader, V-Pot, and LCD) of the main Mackie Control unit. The Mackie C4 features a number of V-Pots, but no faders. You can add as many XT, C4, or other control surface devices as you wish to your system, provided that enough free MIDI In and Out (or USB or other suitable) ports are available.

Connecting Control Surfaces

Logic Pro supports a variety of control surfaces that connect to your computer using FireWire, USB, and other connection protocols. Be sure to check the type of connection that your device features, and that it is supported by your computer. Before connecting the device, read the installation instructions included with it, and install the latest version of any appropriate firmware or driver software, if needed. For more information, refer to the documentation that came with the device.

Connecting FireWire and USB Control Surfaces

If your control surface has a FireWire or USB port, you can connect it directly to your computer, using a cable with the appropriate connectors. FireWire and USB devices transmit and receive data through a single cable, if the device supports bidirectional communication. The following diagram illustrates a typical setup using a FireWire or USB cable:



It is recommended that you connect FireWire and USB devices directly to your computer, rather than through a hub. Daisy-chaining devices can result in errors and other problems, due to the amount of data transmitted in real time.

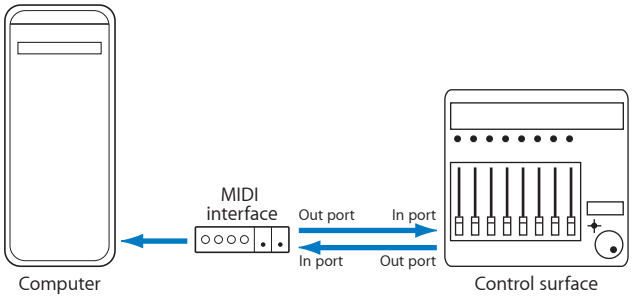
Connecting Control Surfaces via Networking Ports

A handful of devices are connected via the network (LAN) ports of your Mac computer, using a single, standard (CAT5) networking cable. Most devices connected in this way also incorporate audio I/O and digital audio converters, plus built-in MIDI ports, making the addition of these peripherals a simple, single cable (and driver) installation.

As with FireWire and USB, it is recommended that such devices are directly connected to the computer, rather than through a network hub or switch.

Connecting MIDI Control Surfaces

If your control surface has MIDI input and output ports, you can connect it to a MIDI interface, and connect the MIDI interface to your computer. MIDI interfaces are typically connected to your computer via the USB or FireWire connection protocols. MIDI uses separate ports for input and output, and you must connect both the MIDI input and output to use the device with Logic Pro. The following diagram illustrates a typical setup using MIDI input and output:



It is recommended that you do not daisy-chain other MIDI devices via MIDI through to the MIDI In or Out ports used by control surfaces. Daisy-chaining can result in errors and other problems, due to the amount of data transmitted in real time.

Optional Footswitches and Pedals

Some control surfaces allow you to connect footswitches or pedals as additional controllers. If your control surface features suitable connectors, you can connect optional footswitches to remotely control playback and other functions. This frees your hands for other controls, and can also be helpful when using guitars or other instruments that require two-handed playing.

Powering Up

Once everything is connected, press the power switch on your control surface. Once powered, the displays (such as an LCD, if your device has one) or LEDs are lit. Some LCDs display a welcome message, which includes the firmware version number. On most control surfaces with motorized faders, each fader will slide to its top position, then back to its bottom or center position. This self-diagnostic power-on procedure indicates that your units are functioning correctly.

Generally, you can turn on your computer (and MIDI interface, if applicable) either before or after you turn on the control surface, and open Logic Pro either before or after the control surface is powered up. Some devices, however, may require the computer to be turned on before or after the device has initialized. Check the device documentation, and manufacturer website.

Adding Control Surfaces to Logic Pro

Some control surfaces (such as the Mackie Control) are detected automatically when you open Logic Pro. You can add other devices that are not detected automatically using the Setup window. Installation is easy (and is covered in the setup section of the chapter for your particular device). Some devices may require different or additional steps, but generally, all you need to do is select the device that you want to use with Logic Pro, and then add it either by scanning or manually.

To add a control surface by scanning

1. Choose Logic Pro > Preferences > Control Surfaces > Setup to open the Control Surfaces Setup window.
2. In the Setup window, choose New > Install, and then select the device from the list. You can select more than one model by Command-clicking multiple entries in the list. If you select more than one model, Logic Pro performs the operation for each model, in turn.

   Note: If you don't want to select the models to be scanned, you can simply choose New > Scan All in the Setup window: Logic Pro searches for all supported control surface units on all MIDI ports. This process may take a while.
3. Click the Scan button. You can also press Enter, or double-click the device name to initiate the scan.

   Logic Pro scans your system for connected devices, and automatically installs (and connects to) those it finds.
4. When you finish, close the window.

Some control surfaces don't support automatic scanning. Such devices must be added manually to your setup. When you add a device manually, you also need to assign the appropriate MIDI In and Out port parameters.

Note: It is preferable to install devices by scanning, whenever possible. Logic Pro is able to gather more information about devices through scanning, than via manual installation.

To add a control surface manually

1. Choose Logic Pro > Preferences > Control Surfaces > Setup to open the Control Surfaces Setup window.
2. In the Setup window, choose New > Install, and select the device you want from the list.
3. Click the Add button.
4. Close the Install window when you finish.

   If another control surface of the selected type already exists in your setup, a warning dialog asks you to confirm the addition of the new device.

   You need to manually alter the MIDI In and Out port values (in the Device Parameter area of the Setup window) to match those of the connected unit.

Note: You can reinitialize the support of all connected control surfaces by choosing Logic Pro > Preferences > Control Surfaces > Rebuild Defaults.

Creating Control Surface Groups

If you have multiple control surface units in your system, you can define how they relate to each other, and create *control surface groups*. A control surface group consists of multiple devices that you combine to create a single, unified virtual control surface.

You can create up to 20 control surface groups. Each group can consist of any number of physical devices. The only limiting factor is the number of available MIDI In and Out ports (or USB/FireWire "MIDI" ports, if you are using a USB or FireWire control surface).

You can independently determine the default behavior of each device in a group. For more information, see the Device Parameters section.

To create a control surface group

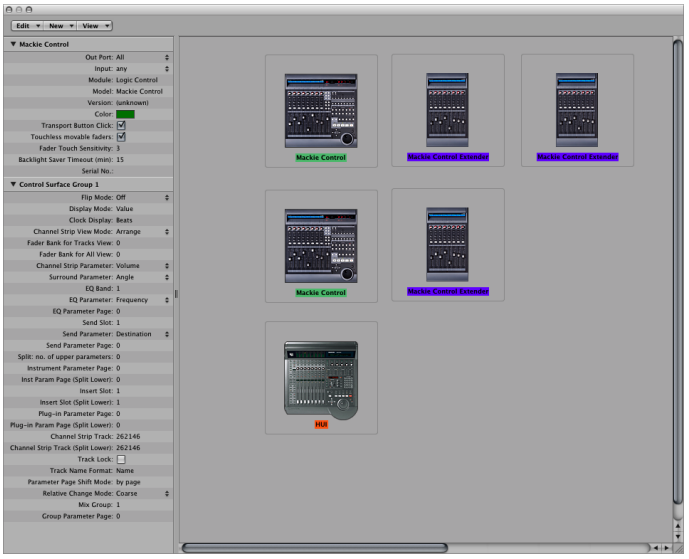
1. Choose Logic Pro > Preferences > Control Surfaces > Setup to open the Control Surfaces Setup window.
2. In the Setup window, drag the icons of the control surfaces you want to group, so that they form a single horizontal row.

The order of the icons from left to right defines the order in which tracks and parameters are arranged and displayed on the devices.

To use two control surfaces independently

1. Choose Logic Pro > Preferences > Control Surfaces > Setup to open the Control Surfaces Setup window.
2. In the Setup window, arrange the icons for the control surfaces in separate rows—that is, one above the other.

Pictured below is a multiple group example with two Mackie Controls, three Mackie Control XTs, and one HUI:



The top row, consisting of the Mackie Control #1, Mackie Control XT #1, and Mackie Control XT #2, forms a single control surface group with 24 channels. Mackie Control #1 controls channels 1 to 8, XT #1 controls channels 9 to 16, and XT #2 handles channels 17 to 24.

In the second row, the Mackie Control #2 and Mackie Control XT #3 form a second control surface group, controlling instruments (on channels 1 to 8) and auxes (on channels 9 to 16).

In the third row, the HUI forms a single unit control surface group.

Each group has individual settings, such as Flip mode, Display mode, Plug-in Parameter Bank Offset, and others. This allows you to access, edit, and automate different sections of the Logic Pro Mixer.

In the example above, the three units in the top row could be used to control audio and MIDI channel strips. In the second row, Mackie Control #2 could be used to control instrument channel strips 1 to 8, and XT #3 could be used to control aux channel strips 1 to 8. The HUI could be used to edit group definitions. The physical placement of units, and the way you use them, is completely flexible.

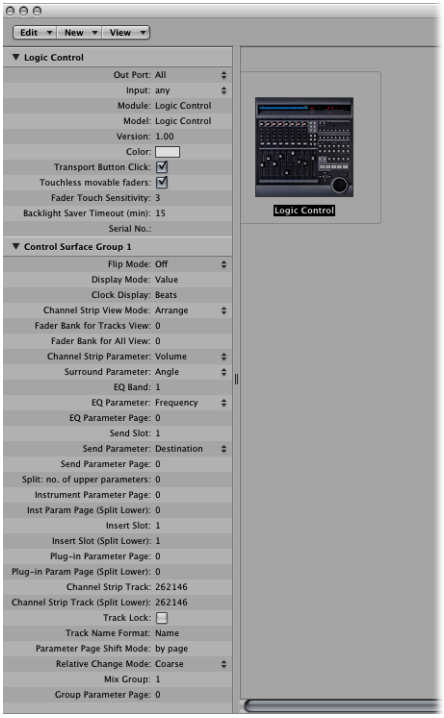
Note: In most situations, the placement of your control surface units in relation to each other should be the same onscreen as in the real world. Simply position the icons in your control surface group accordingly.

Once you have created a control surface group, you can configure it in the Setup window. For more information, see Control Surface Group Parameters.

Configuring Your Control Surface Setup

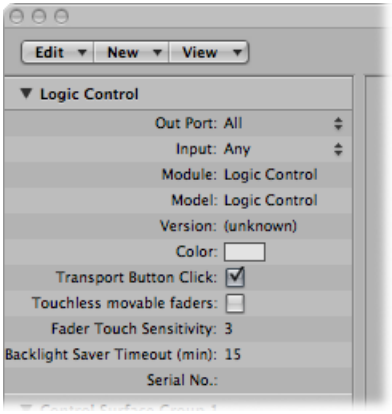
The left side of the Setup window contains two or three parameter areas: Device parameters, Special parameters (if your connected device supports them), and Control Surface Group parameters. You can configure your control surface setup to meet your needs by editing the parameters in these boxes.

Important: Any changes to settings (in the Setup window or from the device) are saved in a preferences file, named "com.apple.logic.pro.cs," located in ~/Library/Preferences. This file is saved independently of the Logic Pro Preferences file.



Device Parameters

The Device Parameters area contains the following items:



- *Out Port:* Choose the MIDI output port from the pop-up menu.
- *Input:* Choose the MIDI input port from the pop-up menu.
- *Module:* Shows the name of the control surface.
- *Model:* Shows the model name of the control surface.
- *Version:* Shows the firmware version for some control surfaces.
- *Color:* Click to choose the color that indicates which tracks are being controlled by this control surface. In the Arrange window, the tracks controlled by this device are colored along the left edge of the track list (if the track control bars are displayed).

Each control surface 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). When the device is added, the automatic setup or scan procedure sets the appropriate MIDI input and output port settings for the device. If the MIDI port settings are incorrect, you can manually choose them from the Input and Out Port pop-up menus.

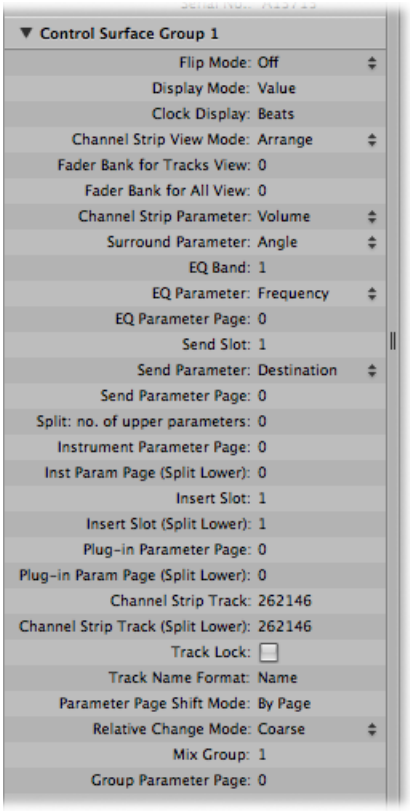
Special Parameters

Some control surfaces (such as the Mackie Control) allow you to define “special” parameters such as fader touch sensitivity. When a device that offers special parameters is connected, the Special Parameters area appears on the left side of the Setup window. For more information about supported special parameters, refer to the documentation for the specific device.

Control Surface Group Parameters

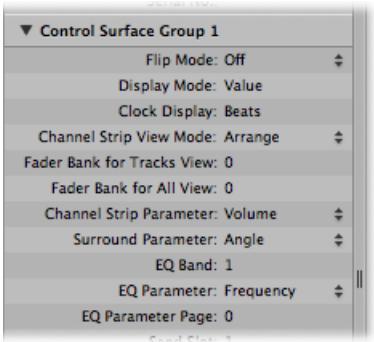
If you have created one or more control surface groups, you can configure group parameters in the Control Surface Group Parameters area. These parameters apply to the group associated with the selected device, and allow you to set up each group to meet your needs. This is especially helpful when you have multiple control surface groups. Many (if not all) control surface group parameters can also be changed directly from the control surface, as well as from the Setup window.

If you have created multiple control surface groups, the Control Surface Group Parameters area shows the settings for the group that is currently selected in the Setup window.



Control Surface Group Display Parameters

The parameters at the top of the Control Surface Group Parameters area give you control over aspects of the device displays.



- *Flip Mode:* Choose the functions for the faders and rotary encoders of the channel strips on the device. For control surfaces that contain a fader and a rotary encoder for each channel strip, Flip mode allows you to assign both controls to the same parameter, or swap their assignments. The choices are:
  - *Off:* Standard mode, with the fader acting as a volume control.
  - *Duplicate:* Assigns both the fader and encoder to the currently selected encoder parameter.
  - *Swap:* Switches the fader and encoder assignments, making the fader a pan control and the encoder a channel volume control, for example.
  - *Mute:* Disables the fader. This is useful when recording in the same room as the control surface, and you want to avoid the mechanical noise of the faders. Any existing automation still functions normally.
- *Display Mode:* Click to limit the device display to only the name or only the value of the current parameter. This is helpful if there is insufficient space for the display of both the parameter name and value.
- *Clock Display:* If your control surface features a position display, this parameter allows you to determine how the playhead position is represented. Click to switch between Beats (musical values) or SMPTE (absolute time values).

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

- *Channel Strip View Mode:* Choose one of the following view modes:
  - *Arrange:* The channel strips on the device correspond to Logic Pro channel strips as they appear in the Mixer window. The layout of channel strips matches the way tracks are laid out in the Arrange window. Channel strip 1 in the Mixer window is equivalent to channel 1 on the control surface, channel strip 2 in the Mixer is equivalent to channel 2, and so on. Instruments and channels used by multiple tracks are merged into one channel. This is the default mode of most devices, including the Mackie Control.
  - *All:* The channel strips on the device correspond to Logic Pro channel strips of certain types, such as MIDI or aux channels, independent of their use in tracks. Control surfaces that support this view mode generally allow you to define which channel types you want to display. The contents of Logic Pro's Mixer window automatically follow the state of the control surface, provided that the View > Link Control Surfaces option is turned on.
  - *Tracks:* This view mode is similar to Arrange view mode, but individual channel strips are shown when multiple arrange tracks address the same channel. Typically, this will be an instrument channel, with several tracks routed to it.
  - *Single:* This mode shows a single channel (and its routing to auxes and so on). You can determine which parameters the channel strip controllers (on the control surface) will edit.

  Note: Keep in mind that the View mode is a property of the control surface group, not a global setting. One group can display busses, while the other shows tracks, for example.
- *Fader Bank for Tracks View:* Drag vertically, or enter an integer value to offset which tracks are controlled by the channel strips of the device in Tracks view. For example, if your device has eight channel strips, these might normally be assigned to audio channel strips 1–8 in Logic Pro. If you set this parameter to 2, the device channel strips would control Logic Pro Mixer channel strips 3–10 (1 + 2 = 3).
- *Fader Bank for All View:* Drag vertically, or enter an integer value to offset which Logic Pro channel strips are controlled by the device in All view. This parameter is only available when multiple channel strip types are displayed in the Mixer. When single channel strip types are displayed, there are separate fader bank parameters. (These aren't displayed in the parameter list.)
- *Channel Strip Parameter:* Choose which function is controlled by the channel strip encoders on the device. The choices are:
  - *Volume:* Encoders adjust channel volume.
  - *Pan:* Encoders adjust channel panorama position.
  - *Format:* Encoders adjust/select channel format.
  - *Input:* Encoders adjust/select channel input source.

- *Output:* Encoders adjust/select channel output (main outs/auxes/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. (This can only be done directly in the Logic Pro Mixer.)
- *Displayed Par.:* Encoders adjust the automation parameter selected in the Arrange window. This is especially useful if you set the control surface to Arrange View mode, and your Arrange window shows multiple subtracks with various parameters.

- *Surround Parameter:* Choose the surround parameter that the rotary encoders will control. The choices are:
  - *Angle:* Encoders adjust surround angle.
  - *Diversity:* Encoders adjust surround diversity (direction).
  - *LFE:* Encoders adjust LFE level.
  - *Spread:* Encoders adjust the Spread parameter of Stereo to Surround channel strips.
  - *X:* Encoders adjust surround X position.
  - *Y:* Encoders adjust surround Y position.
  - *Center:* Encoders adjust the Center channel level.

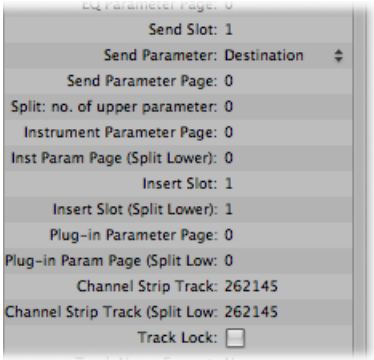
  Note: The X and Y parameters are a different representation of the Angle and Diversity parameters, and thus are independent of them. The X and Y parameters support the use of surround joysticks.
- *EQ Band:* Sets the current EQ band, so that you can edit a particular Channel EQ or Linear Phase EQ parameter for all tracks in the EQ Multi Channel View.
- *EQ Parameter:* Choose which parameter of the selected EQ band is controlled by the encoders in EQ Multi Channel View. The choices are:
  - *Frequency:* Encoders adjust the frequency of the selected band.
  - *Gain:* Encoders adjust the gain of the selected 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 adjust the Q factor of the selected band.
  - *On/Off:* Encoders bypass the selected EQ band.
- *EQ Parameter Page:* Sets the EQ parameter displayed in EQ Channel Strip view.

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

If your control surface does not display all EQ parameters at once, you view them by stepping through the parameter pages in sequence. For example, if your control surface has eight channel strips, you can directly control parameters 1 to 8 with knobs or sliders 1 to 8 when you switch to EQ Channel Strip Edit view. You then need to switch by a page to access parameters 9 to 16.

Control Surface Group Send and Plug-in Parameters

The parameters in the middle of the Control Surface Group Parameters area let you control different operational aspects when working with Send and Plug-in parameters.



- *Send Slot:* Sets the currently selected Send slot. The default is 1, which sets the first (top) Send on each channel as the Send slot. A value of 2 sets the second send as the Send slot, a value of 3, the third Send slot, and so on.
- *Send Parameter:* Choose the Send parameter controlled by the encoders when in the Send Multi Channel view. The choices are:
  - *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, Post, or Post Pan fader modes.
  - *Mute:* Encoders mute/unmute the selected Send slot.
- *Send Parameter Page:* Sets the current page for the Send 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).
- *Split: no. of upper parameters:* Sets the number of encoders that belong to Split Upper, for control surfaces that support Split mode. The remaining encoders belong to Split Lower. A value of 0 means that Split mode is off—all encoders are assigned to the Split Upper area.

  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*.

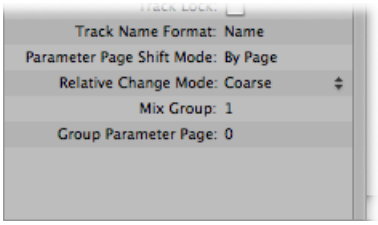
- *Instrument Parameter Page:* Determines which parameter is assigned to the leftmost encoder when editing a software instrument. The next instrument parameter is assigned to encoder 2, and so on. This applies to Split Upper when Split mode is turned on.
- *Inst Parameter Page (Split Lower):* Sets the parameter that is assigned to the leftmost encoder of Split Lower when editing a software instrument (when Split mode is turned on). The next instrument parameter is assigned to encoder 2, and so on.
- *Insert Slot:* Sets the current Insert slot number, both for selecting a plug-in (in Plug-in Channel Strip view) and for editing its parameters. The default is 1, which sets the first (top) plug-in slot on each channel as the Insert slot. A value of 2 sets the second plug-in slot as the Insert slot, and so on. With Split mode turned on, this applies to Split Upper.
- *Insert Slot (Split Lower):* Sets the current Insert slot number for Split Lower when selecting or editing a plug-in when Split mode is turned on.
- *Plug-in Parameter Page:* Defines which parameter is assigned to the leftmost encoder when editing a plug-in. The next plug-in parameter is assigned to encoder 2, and so on. This applies to Split Upper when Split mode is turned on.

Note: The plug-in and instrument page parameters are kept separate, as this allows you to quickly switch between editing an instrument and an effect plug-in on a channel, without having to adjust the parameter page every time.

- *Plug-in Param Page (Split Lower):* Defines which parameter is assigned to the leftmost encoder of Split Lower when editing a plug-in (with Split mode turned on). The next plug-in parameter is assigned to encoder 2, and so on.
- *Track:* Defines which track is displayed for Channel Strip views. When Split mode is turned on, this applies to Split Upper.
- *Track (Split Lower):* Sets which track is displayed (in the Split Lower section of the control surface) for Channel Strip views, when Split mode is turned on.
- *Track Lock:* Determines how the control surface responds when a track is selected in Logic Pro—in essence, this remotely affects the Track and Track (Split Lower) parameters. When set to "on," the control surface group continues to display the same track, independent of the currently *selected* track in Logic Pro. When set to Off, the control surface group automatically switches to the selected track, whenever a track is selected in Logic Pro.

Control Surface Group Other Parameters

The parameters at the bottom of the Control Surface Group Parameters area let you set the Track Name Format, Parameter Page Shift Mode, Relative Change Mode, Mix Group, and Group Parameter Page parameters.



- *Track Name Format:* Determines whether the track name display shows only the track name, or the track name and number.
- *Parameter Page Shift Mode:* Determines whether the parameter is shifted by one page or by one parameter.
- *Relative Change Mode:* Choose the mode for controller assignments that support a Relative Value Change mode (rotary encoders, for example). The choices are:
  - *Coarse:* The parameter is adjusted in coarse steps.
  - *Full:* Turning the encoder to the right sets the maximum value. Turning it to the left sets the minimum value. The encoder also stops at its default value. For example, when the Pan knob is left of center, turning the encoder to the right initially sets the Pan parameter to center (its default value). A further turn to the right sets the Pan to full right (its maximum value).
  - *Fine:* The parameter is incremented or decremented in fine steps—by one tick or other unit. In this mode, the highest possible resolution is used. For example, when editing the Sample Delay plug-in's Delay parameter, every encoder tick increases or decreases the value by 1 sample, regardless of the resolution value.
- *Mix Group:* Determines which group is edited when in Group Edit mode.
- *Group Parameter Page:* Defines which parameter of the edited group is assigned to the leftmost encoder.

Setting Control Surfaces Preferences

Various settings that affect the onscreen appearance and performance of control surfaces can be made in the Logic Pro Control Surfaces preferences.

To open the Control Surfaces preferences

- Choose Logic Pro > Preferences > Control Surfaces > Preferences (or use the Open Control Surfaces Preferences key command).

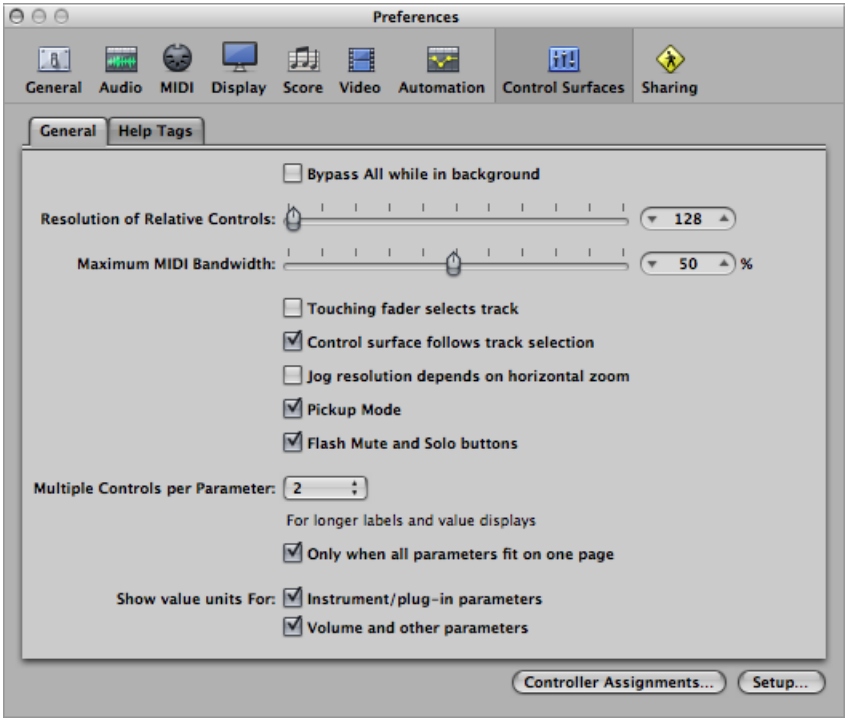
To temporarily disable your control surfaces

- Choose Logic Pro > Preferences > Control Surfaces > Bypass all Control Surfaces.

This command is useful for silencing motorized control surface faders when recording in the same room. It is also handy when troubleshooting MIDI data errors, or for reducing MIDI bandwidth requirements.

General Preferences

General control surface preferences include resolution of relative controls, maximum MIDI bandwidth, and other functions.



- *"Bypass All while in background" checkbox:* Allows you to share your control surface with other applications, when Logic Pro is not the active program.
- *Resolution of Relative Controls slider:* Sets the resolution of controls that change values in a relative manner. The default resolution is 128 steps. Choose a higher resolution value to divide the value range into finer increments.
- *Maximum MIDI Band Width slider:* Drag to set the maximum amount of MIDI bandwidth that your control surface can use. This is set to a default of 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" checkbox:* When this option is selected, touching a fader on the control surface selects the track corresponding to the fader. For this to work, the device must feature touch-sensitive faders.
- *"Control surface follows track selection" checkbox:* When this checkbox is selected, selecting a track in the Arrange window automatically selects the corresponding track or channel on the control surface.
- *"Jog resolution depends on horizontal zoom" checkbox:* When selected, the precision of scrubbing (using the Jog/Shuttle Wheel of your control surface) is determined by the horizontal zoom level of Logic Pro. Your control surface must feature a Jog/Shuttle Wheel (or similar control) for this to have any effect. To retain a consistent resolution, regardless of Logic Pro window zoom levels, deselect this checkbox.
- *Pickup Mode checkbox:* When selected, the control surface operates in Pickup mode (if this mode is available). Some control surfaces, typically those without motorized faders or knobs, do not show parameter changes—caused by playing back existing automation data—on their interface. Such control surfaces usually offer a Pickup mode. In Pickup mode, the controller must reach ("pick up") the current value before the value starts to change. This prevents sudden jumps of parameter values caused by playing back automation. Your device may feature a display (usually a pair of arrow LEDs) that indicates the direction or distance you need to move the controller, in order to match the settings shown in Logic Pro (also known as NULL). Once you have matched the onscreen values, deactivate Pickup mode and start automating.

  When Pickup mode is turned off, adjusting a fader modifies the parameter immediately (which can result in parameter value jumps).
- *Flash Mute and Solo buttons checkbox:* When selected, the Mute and Solo buttons on the control surface will blink (flash) on and off when mute or solo modes are engaged.
- *Multiple Controls per Parameter pop-up menu:* Choose the maximum number of encoders used for each parameter, when editing plug-ins or audio instruments. The choices are:
  - *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.
  - *8:* On each unit, encoders 1 to 8 are used for the first parameter, encoders 9 to 16 for the second, and so on.

  When multiple encoders are used per parameter, the encoders are divided into groups (1/2, 3/4, 5/6, 7/8, for example). The first encoder of each group controls the parameter shown in the display. The remaining encoders 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 to longer parameter names and values. The more control surfaces you have within a control surface group, the more you benefit from this feature.

- *"Only when all parameters fit in one page" checkbox:* When selected, the defined number of encoders are only used when there are sufficient encoders available to show all parameters, without changing pages. For example, if you have a Mackie Control and two Mackie Control XTs (giving you at total of 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 subdivisions mentioned above).

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

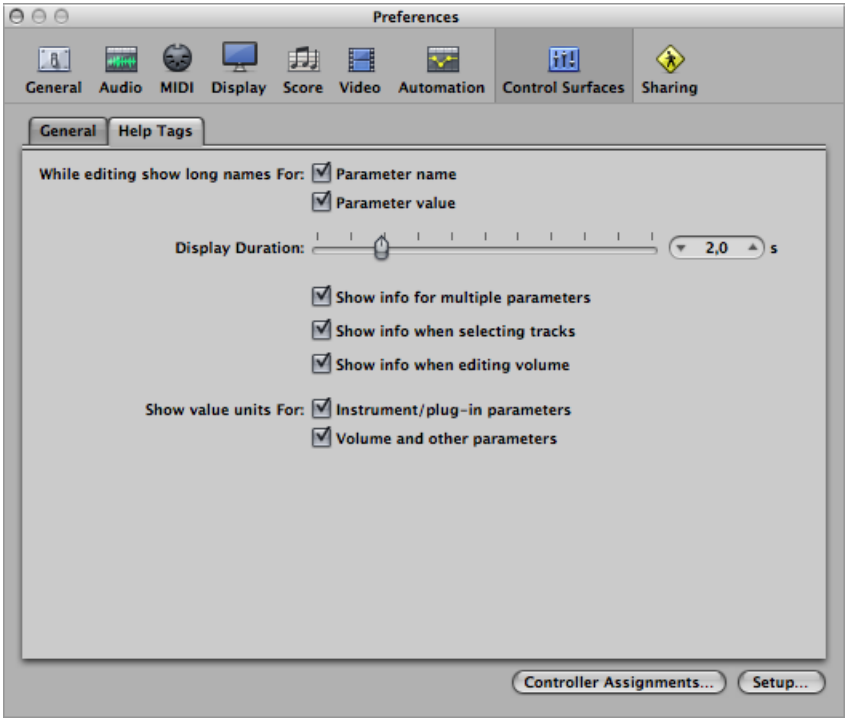
- *"Show value units for" checkboxes:* The two checkboxes in this section allow you to adjust whether parameter values are appended by the measurement unit, where applicable—"Hz" or "%," for example. You can set this option separately for instrument and plug-in parameters, and for volume and other channel strip parameters. When selected, applicable values are appended with the appropriate unit. Turn off this option if viewing units makes the display too cluttered.

- *Controller Assignments button:* Click to open the Controller Assignments window.

- *Setup button:* Click to open the Control Surfaces Setup window.

Help Tags Preferences

For control surfaces that feature freely programmable displays with more than six characters per line (or segment) of the display, you can change the way help tags are shown. Control surface help tags are similar to Logic Pro help tags, showing additional information during use.



- *"While editing show long names for" checkboxes:* The two checkboxes in this section allow you to set how the names and values of parameters are displayed on the LCD of the control surface.
  - *"Parameter name" checkbox:* When selected, the upper LCD line displays the full parameter name, rather than an abbreviated form of it, when you edit a parameter.
  - *"Parameter value" checkbox:* When selected, the lower LCD line displays the full parameter value when you edit a parameter. If the "Show value units for parameter" checkboxes (see below) are selected, it will be appended by the measurement unit, where applicable (for example, "dB," "Hz," or "%").

  Note: The following options only have an effect if at least one of the two parameters described above is active.
- *Display Duration slider:* Drag to adjust the time that parameter names and values remain on the LCD display, following selection and adjustments.

- *"Show info for multiple parameters" checkbox:* When selected, the long name information appears in the display until the most recently edited parameter's display times out. This may cause overlapping text. When unselected, the long name display is only shown for the most recently edited parameter, which can cause screen flicker.
- *"Show info when selecting tracks" checkbox:* When turned on, Selected appears in the upper row of the LCD, and the selected track's name is shown in the lower row, when you select a track.
- *"Show info when editing volume" checkbox:* When selected, the word *Volume* appears in the upper row of the LCD, and the edited value appears in the lower row, when you edit a track's volume.
- *"Show value units for" checkboxes:* When selected, parameter values are appended by the appropriate measurement unit ("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 value units, the display is less cluttered.

  Note: This parameter only applies while you are editing the relevant values.

Modal Dialog Display

All modal dialogs (except File Open dialogs) appear on the LCD display of control surfaces that feature text displays. Examples of modal dialogs include authorization warnings, edit confirmations, or error messages. While a modal dialog is visible, you cannot perform actions in any other window.

The modal dialog text appears in the upper row of the LCD. If the dialog text does not fit in the LCD's upper row, it starts 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 scrolling the text manually, automatic scrolling is disabled.

- If the control surface has an Enter or OK button, pressing it triggers the dialog's default button, where applicable.
- If the control surface has a Cancel or Exit button, pressing it triggers the button labeled Cancel or Abort, where applicable.
- All buttons in the modal dialog (push buttons, including Enter, Default, and Cancel, as well as checkboxes and radio buttons, but not pop-up menus) appear in the display's lower row.

Pressing a control surface button below the display triggers the appropriate function in the dialog, if applicable. Once you press an Enter or Cancel button on the control surface or click it onscreen, the dialog disappears, and all controls and displays return to their previous state.

When a File Open dialog appears onscreen, the "There is a file select dialog on the screen" message appears on the LCD or other display (if your control surface has one).

Control Surface Usage Tips

You may find that using control surfaces changes the way you use Logic Pro. Slight changes to your working methods can help you to use control surfaces more effectively. The following hints may streamline your Logic Pro control surface workflow.

Customize Your Templates

- Set up screensets 1–7 as your most frequently used screensets. You can access these directly on some control surfaces. On a Mackie Control, for example, you can access them with function keys F1 to F7, while function key 8 (F8) closes the topmost window.
- It is recommended that you assign a full-screen Arrange window, with track automation view set to On (for all tracks), as one of your screensets.
- A full-screen Mixer window is also recommended as another screenset.

Make Use of Markers

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 move between markers, which is an extremely useful way of moving around in your projects.

Markers are also useful for creating or selecting cycle areas and a number of other tasks, such as punch and replace recording.

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 templates.

Control Surfaces Supported by Logic Pro

Following is an alphabetical listing of control surfaces directly supported by Logic Pro. The list contains cross-references to the relevant device-specific chapters.

Note: It is possible that your device may be directly supported in Logic Pro via one or more downloadable support files. This is often a driver or plug-in supplied by the manufacturer. (See About Control Surface Plug-ins.) Check the documentation and discs that came with the device, and the manufacturer's website. Follow any written instructions supplied with the files, 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.

Supported devices	Manufacturer	Notes
01X	Yamaha	The Yamaha 01X emulates a Mackie Control. It does not feature all controls available to the Mackie units, however. Refer to the 01X documentation for details. Logic Pro recognizes the 01X as an 01X, and displays a custom icon, but communication is as with a Mackie Control unit. See Mackie Control.
02R96	Yamaha	The Yamaha 02R96 emulates three HUI units, using three virtual MIDI In and Out connections over its USB cable. See Yamaha 02R96.
Baby HUI	Mackie	The Baby HUI is a stripped-down version of the HUI. See Mackie Baby HUI.
C4	Mackie	The Mackie C4 is directly supported. See Mackie C4.
CM408T (System 5-MC)	Euphonix	See Euphonix MC Pro, System 5-MC, MC Control, MC Mix, and MC Transport.
CS-32 MiniDesk	JLCooper	See JLCooper CS-32 MiniDesk.
DM1000	Yamaha	The Yamaha DM1000 emulates two HUI units, using two virtual MIDI In and Out connections over its USB cable. See Yamaha DM1000.
DM2000	Yamaha	The Yamaha DM2000 emulates three HUI units, using three virtual MIDI In and Out connections over its USB cable. See Yamaha DM2000.
FaderMaster 4/100	JLCooper	See JLCooper FaderMaster 4/100.
FE-8	Tascam	Extension unit for FW-1884. See Tascam FW-1884.
FW-1082	Tascam	A stripped-down version of the FW-1884. See Tascam FW-1884.
FW-1884	Tascam	See Tascam FW-1884.
HUI	Mackie	See Mackie HUI.
iControl	M-Audio	See M-Audio iControl.
KONTROL49	Korg	A larger version of the microKONTROL. See Korg microKONTROL and KONTROL49.
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 (or Mackie) Control. See Mackie Control.
Logic/Mackie Control	Mackie/Emagic	See Mackie Control for more details.

Supported devices	Manufacturer	Notes
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 Pro also recognizes the Mackie Control protocol, you may use any firmware version. If your unit has firmware version 1.02 or later, you can freely use either the Logic Control or Mackie Control mode. See Mackie Control.
Mackie Control Extender	Mackie	Mackie-badged version of the Logic Control XT. As Logic Pro also recognizes the Mackie Control protocol, you may use any firmware version. If you have firmware version 1.02 or later, you can freely use either the Logic Control or Mackie Control mode. See Mackie Control.
Mackie Control Universal	Mackie	A Mackie Control with Logic Control silk screening (legend) and firmware version 2.0 or later (including HUI emulation). As Logic Pro also recognizes the Mackie Control protocol, you may use any firmware version. If you have firmware version 1.02 or later, you can freely use either the Logic Control or Mackie Control mode. See Mackie Control.
MC	Euphonix	See Euphonix MC Pro, System 5-MC, MC Control, MC Mix, and MC Transport.
MCS3	JLCooper	See JLCooper MCS3.
microKONTROL	Korg	See Korg microKONTROL and KONTROL49.
Motormix	CM Labs	See CM Labs Motormix.
Radikal Technologies	SAC-2.2	The SAC-2.2/2k's native mode is directly supported, but it can also emulate a Mackie Control. You should use the native mode. See Radikal Technologies SAC-2K.
Radikal Technologies	SAC-2k	See Radikal Technologies SAC-2K.
SI-24	Roland	See Roland SI-24.
TranzPort	Frontier Design Group	See Frontier Design TranzPort.
US-224	Tascam	A stripped-down version of the US-428. See Tascam US-428 and US-224.
US-2400	Tascam	Logic Pro supports the US-2400's native mode. In contrast to its Mackie Control mode, all controls, including the joystick, are supported. See Tascam US-2400.
US-428	Tascam	See Tascam US-428 and US-224.

About Control Surface Plug-ins

Supported control surfaces communicate with Logic Pro via special plug-in files that are installed along with Logic Pro. The plug-in files are located in the /Contents/MIDI Device Plug-ins subfolder of the Logic Pro application bundle. To view the bundle contents, Control-click the Logic Pro application icon, and choose Show Package Contents from the shortcut menu. Logic Pro also checks for control surface plug-ins installed in the (optional) /Library/Application Support/MIDI Device Plug-ins and ~/Library/Application Support/MIDI Device Plug-ins (the "~" denotes your user home directory) folders.

When new control surface plug-ins are released independently of a Logic Pro update (or supplied directly by the device manufacturer), 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 depend on Logic Pro for their functionality, and cannot be operated if Logic Pro is not running. They do not provide any additional functionality that is not available in Logic Pro itself. One advantage of this approach is that as new functions are added to Logic Pro, or as you create new assignments, your control surface will be able to access and control them.

Most control surface units do include a form of software called *firmware*. Firmware is similar to the low-level boot software found in your computer, mobile phone, iPod, and so on.

New behaviors, such as improved control of motorized faders and changes to the display, can be provided by firmware updates. You should periodically check the manufacturer's website for your device, to check for updates that may enhance use or performance.

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 (from Logic Pro) to your control surfaces, which will be updated accordingly. The steps required to perform a firmware update will be outlined in the documentation that accompanies the MIDI file. Read this *before* attempting any update.

Note: Some control surfaces may require that you physically replace the chip for firmware updates. Contact the manufacturer of your device for details.

Customizing Controller Assignments

2

You can assign controllers to Logic Pro parameters, and edit controller assignments to fit your workflow.

This section explains how to assign controllers to Logic parameters, edit controller assignments, and use zones and modes to switch between groups of assignments.

This chapter covers the following:

Assigning Controllers to Logic Pro Parameters

You can assign any controller that is capable of generating a MIDI message to a parameter in Logic Pro. Assigning controllers to Logic parameters lets you use faders, knobs, switches, and other controllers to remotely control Logic functions. These can be used "as is," or in conjunction with modifier keys.

Most supported control surfaces include preset controller assignments that become active when you add the device to your system. You can change existing assignments for supported control surfaces, and create new assignments for both supported and unsupported devices. For example, the default assignments of the F1 to F7 buttons on the Mackie Control open screensets 1 to 7 in Logic Pro. You can reassign these control surface buttons to other Logic commands—either alone or in conjunction with the Command, Shift, Option, and Control modifier buttons (on the control surface)—in any combination.

You can assign controllers to parameters in Logic's Controller Assignments window, using the Learn process. The Controller Assignments window has two views: a compact *Easy view*, where you can assign channel strip and plug-in parameters; and the more extensive *Expert view*, where you can create and edit any type of controller assignment, including global, automation, and control surface group assignments.

Controller Assignments: Working in Easy View

Easy view allows you to see and assign controllers to channel strip and plug-in parameters, and to change the track that assignments apply to.

To open the Easy view of the Controller Assignments window

- Choose Logic Pro > Preferences > Control Surfaces > Controller Assignments (or use Command-K), and click the Easy View button.

The Easy view of the Controller Assignments window contains the following fields and buttons:

- *Expert View button:* Click to open the editor in Expert view.
- *Back/Forward buttons:* Click to move back and forth between assignments.
- *Link button:* When active, the assignment that matches the most recently received MIDI message is automatically selected.
- *Parameter field:* Displays the name of the selected parameter.
- *Channel Strip pop-up menu:* Choose whether the assignment applies to the selected track, or matches the channel strip number entered in the field beside the pop-up menu (as shown in the Mixer's All view).
- *"Input message" field:* Displays the incoming MIDI message data of the controller being assigned to a function.

Assigning and Deleting Controllers in Easy View

Only one set of assignment parameters is visible at a time in Easy view. You use the Learn process to assign controllers to channel strip and plug-in parameters. The Learn process basically involves moving a controller on your control surface. This sends a MIDI message to Logic Pro, thus "teaching" Logic Pro which controller you are assigning to the chosen parameter.

To assign a controller in Easy view

1. In the Mixer, or in any plug-in window, select the parameter that you want Logic Pro to learn as a controller assignment.
2. Choose Logic Pro > Preferences > Control Surfaces > Learn Assignment for [parameter name]. (Alternately, you can use the Learn new Controller Assignment key command, default: Command-L, to open the Controller Assignments window, and activate Learn mode.)

   The Controller Assignments window opens in Easy view, with the Learn Mode button activated. In most cases, the name of the selected parameter is shown in the Parameter field.
3. Move the hardware controller you want to assign to the selected parameter.

   Moving the controller sends a MIDI message to Logic Pro, which appears in the "Input message" field. This memorizes the controller assignment, and you can click the Learn Mode button to complete the Learn process.

   If you do not click the Learn Mode button, Learn mode remains active, allowing you to make further assignments.
4. To make another assignment, select the parameter you want to assign in Logic Pro, then move the controller on the control surface.
5. When you finish, click the Learn Mode button (or press Command-L) to complete the Learn process.

To assign a controller using a modifier key

1. Choose Logic Pro > Preferences > Control Surfaces > Learn Assignment for [parameter name] (or press Command-L) to open the Controller Assignments window.
2. Hold down the modifier key you want to use (Command, for example) as you select the parameter you want to assign, while moving the control.
3. Click the Learn Mode button to complete the Learn process.

   If Logic Pro receives a MIDI message from the device while you are holding down the modifier key, the Learn Mode button is deactivated when you release the key, and the Learn process is complete. If you release the modifier key before Logic Pro receives a MIDI message, the Learn Mode button remains active, so you can still move a controller to send a MIDI message. In this situation, be sure to click the Learn Mode button when you are finished to end the Learn process.

To delete a controller assignment in Easy view

- Select the assignment you want to remove in the Controller Assignments window (Easy view), and click the Delete button.

Assigning a Series of Controllers in Easy View

Logic Pro includes a shortcut that makes it easy to assign a series of controllers to a series of similar parameters. For example, you can use this shortcut to assign a series of faders to volume; to assign a series of knobs to other channel strip parameters such as pan, solo, or mute; or to assign a series of controllers to a set of plug-in parameters.

To assign a series of controllers to a series of parameters

1. In the Mixer, or in any plug-in window, select the parameter that you want Logic Pro to learn as a controller assignment.
2. Choose Logic Pro > Preferences > Control Surfaces > Learn Assignment for [parameter name]. (Alternately, you can use the Learn new Controller Assignment key command, default: Command-L, to open the Controller Assignments window, and activate Learn mode.)

   The Controller Assignments window opens in Easy view, with the Learn Mode button activated. In most cases, the name of the selected parameter is shown in the Parameter field.
3. Assign the first controller in the series to the first parameter (assign fader 1 to control volume for channel strip 1, for example).
4. Assign the last controller in the series to the last parameter (assign fader 16 to control volume for channel strip 16, for example). The number of controllers between the first and last in the series must match the number of parameters between the first and last parameter. In the example, the distance between 1 and 16 would equal 15.

   A “Do you want to fill up in between?” dialog appears.
5. Click OK to automatically fill the controllers between the first and last with the corresponding assignments.

   Note: You can only use shortcuts 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. Consult the documentation that came with your device for information on its data structure.

Controller Assigments: Working in Expert View

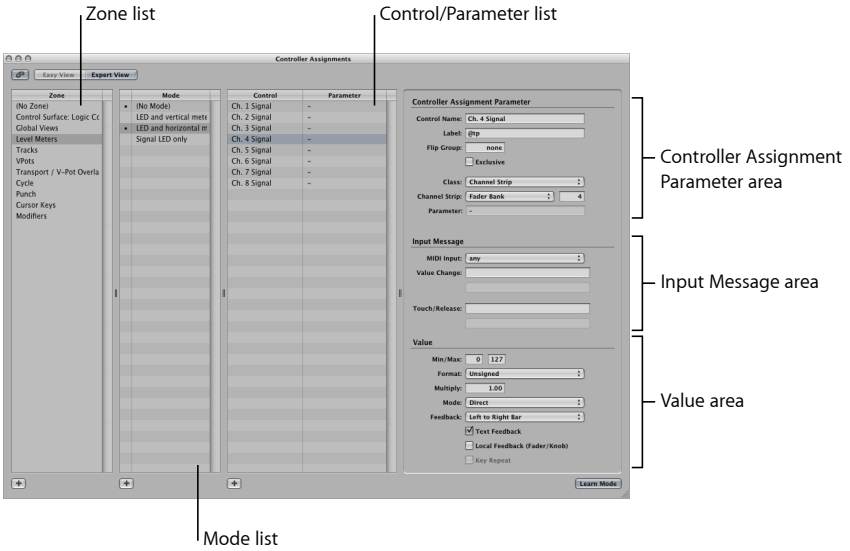
You can use Expert view to make advanced controller assignments. These include Logic Pro parameters other than channel strip and plug-in parameters. For example, you can assign controllers to global, automation, and control surface group parameters in Expert view. You can also extensively edit controller assignments in Expert view, and define zones and modes, which let you switch between groups of controllers.

The Learn process opens the Controller Assignments window in Easy view, which shows the basic parameters for the current assignment. To make assignments other than channel strip or plug-in assignments (or to edit other assignment parameters), you need to switch to Expert view.

Tip: You can only switch back to Easy view if a track or plug-in parameter is selected.

To open the Expert view of the controller assignments window

- Choose Logic Pro > Preferences > Control Surfaces > Controller Assignments (or use Command-K), and click the Expert View button.



In Expert view, the Controller Assignments window contains the following fields, menus, and buttons that you use to edit assignment parameters and define zones and modes.

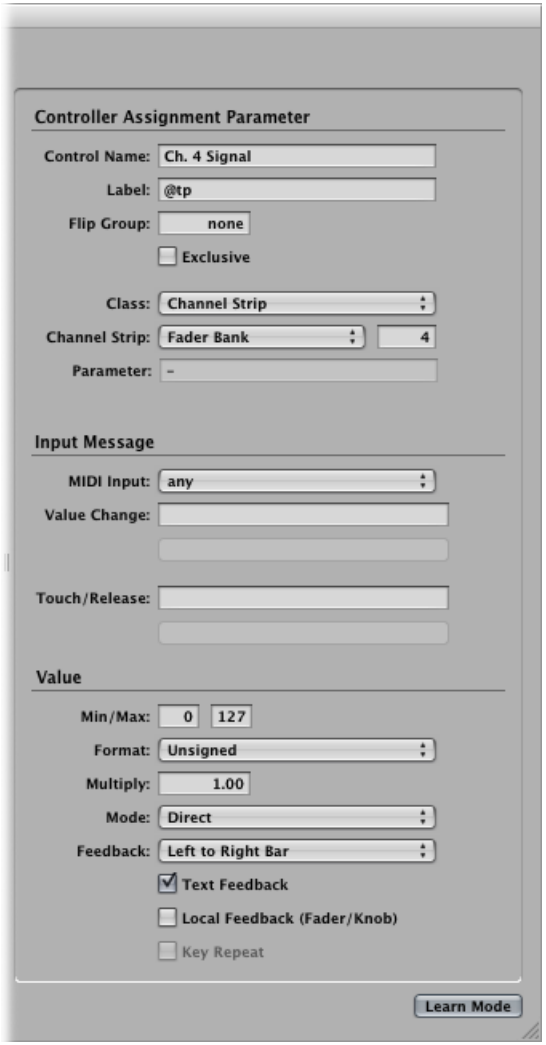
- *Zone list:* Displays the available zones for the device. The first entry "(No Zone)" is for zoneless assignments—assignments that are always active, regardless of the active zone. Select a zone in the list to see its modes (in the Mode list), and its current assignments (in the Control/Parameter list). You can also double-click a zone to rename it. See Getting to Know Zones and Modes.

- *Mode list:* Displays the modes for the currently selected zone. The first entry "(No Mode)" is for modeless assignments. Select a mode in the list to see its assignments in the Control/Parameter list, and make it the selected zone's active mode. You can also double-click a mode to rename it. See Getting to Know Zones and Modes.
- *Control/Parameter list:* Select the assignment you want to edit. The left column displays the name of the control, and the right column displays the name of the parameter being controlled (in an abbreviated form). The parameters of the selected assignment appear in the fields to the right of the list. See Controller Assignments Window Expert View Settings.

  Note: You can select multiple assignments in the list, but only the parameters of the first selected assignment are displayed. When multiple assignments are selected, operations performed via the Edit menu can be applied to all selected assignments. All other operations apply only to the first assignment.
- *Controller Assignment Parameter area:* All aspects of the selected controller assignment parameter are shown, and can be changed, in this area. See Controller Assignment Parameter Area.
- *Input Message area:* The port and MIDI input message can be altered directly. Some fields in this section are merely displays, and cannot be changed. See Input Message Area.
- *Value area:* The range of values, and response, of the controller assignment to incoming messages is determined in this area. Feedback to the display of control surfaces can also be determined here. See Value Area.

Controller Assignments Window Expert View Settings

This section outlines each parameter shown in the fields on the right side of the Controller Assignments window when in Expert view. Detailed descriptions of each parameter can be found in Using the Control Name and Label Fields.



Controller Assignment Parameter Area

The area at the top right shows the following parameters:

- *Control Name field:* Displays the name of the controller for supported devices. For unsupported devices, Learned is displayed. See Using the Control Name and Label Fields.

- *Label field:* Displays characters that represent the label for the assignment on the control surface's display. You can view this much like a scribble strip on a mixer. See Using the Control Name and Label Fields.
- *Flip Group field:* Enter an integer to define a flip group for the assignment. See Setting the Flip Group and Exclusive Parameters.
- *Class pop-up menu:* Choose the class of parameter (parameter type) you want to assign. See Setting Class Pop-Up Menu Parameters.

  Note: Depending on the chosen class, different fields and pop-up menus for that class appear below the Class pop-up menu.
- *Parameter/Mode pop-up menu and field:* Depending on your choice in the Class pop-up menu, you can choose from dozens of different parameters and modes. The options available change as different classes are selected.
- *Group/Track/Command/Key field pop-up menu:* These options also change depending on your choice in the Class pop-up menu.
- *Bank Type pop-up menu:* This pop-up menu determines the bank relationship of the assigned parameter. This can be as per the Group setting, By One, or By Bank.

Input Message Area

The area at the center right shows the following parameters. See Editing Input Message Parameters in Expert View for details.

- *MIDI Input pop-up menu:* Choose a MIDI input source (MIDI Port or Caps Lock Keyboard). This can be changed by incoming MIDI messages, shown in the Value Change field.
- *Value Change field:* Displays incoming MIDI messages that cause a value change.
- *Touch/Release field:* Enter an integer value to force incoming MIDI messages to change the touch/release status of the selected parameter. This only applies to control surfaces that offer touch-sensitive controls (where touching or releasing a fader, for example, enables or disables reception of data from the control surface).

Value Area

The area at the bottom right shows the following parameters. See Editing Value Parameters in Expert View for details.

- *Min and Max fields:* Enter integer values to set the range of incoming MIDI values.
- *Format pop-up menu:* Choose the format used to encode negative values.
- *Multiply field:* Enter a value to scale incoming MIDI values.
- *Mode pop-up menu:* Choose the mode used by incoming values to modify the current parameter value.
- *Feedback pop-up menu and checkboxes:* Choose the display format of the parameter value (on the control surface display, if applicable).

Assigning and Deleting Controllers in Expert View

You can use the Learn process to assign controllers when the Controller Assignments window is in Expert view, just as you would in Easy view. You can also assign controllers to classes of Logic Pro parameters that are not accessible in Easy view.

To learn a controller for a non-channel strip or plug-in parameter

1. Choose Logic Pro > Preferences > Control Surfaces > Controller Assignments (or use Command-K), and click the Expert View button.
2. Choose a zone or mode (unless you want to make a modeless assignment), and click the plus button in the lower-left corner of the Control/Parameter list.

   A new, blank assignment appears in the Control/Parameter list.
3. Click the Learn Mode button to start the Learn process.
4. Move the controller (on your control surface) that you want to assign to the selected parameter.

   Moving the controller sends a MIDI message to Logic Pro, thus "teaching" Logic Pro which controller you are assigning. The Learn Mode button remains active, allowing you to make further assignments.
5. The incoming MIDI message appears in the Input message field. Once Logic Pro has received the message, choose the class of parameter you want to assign from the Class pop-up menu.
6. Assign the parameter by making appropriate choices in the pop-up menus and fields that appear below the Class pop-up menu.

   Note: A detailed explanation of classes and other assignment parameters can be found in Using the Control Name and Label Fields.
7. When you finish, click the Learn Mode button (or press Command-L) to complete the Learn process.

   Tip: You can use the shortcut described in Assigning a Series of Controllers in Easy View to assign a series of controllers to a series of similar parameters.

Should you accidentally move the wrong controller in Learn mode, you can easily delete an unwanted assignment.

To delete an assignment in Expert view

1. Select the assignment that you want to delete in the Control/Parameter list.
2. Choose Edit > Delete (or press the Delete key).

Getting to Know Zones and Modes

You can define a group of controllers as a *zone* in Expert view, and switch all controls in a zone to different parameters, all in one operation. Using a Mackie Control, for example, you can define the eight rotary encoders as a zone, and switch them between pan, send level, and plug-in parameters. You can also define multiple zones for a control surface: one for the encoders, and a second one that switches the function keys (F1 to F8) to different functions.

Each set of zone parameters is called a *mode*. A zone can contain one or more modes, but only one mode can be the active mode at any given time. A zone can also contain assignments that are always active, regardless of the active mode. (These are known as *modeless assignments*.)

The simultaneous use of modal and modeless assignments allows you to do things such as:

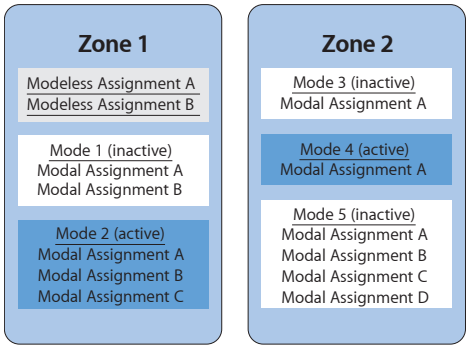
- Define a zone that switches between two modes (or functions) by pressing and releasing a control surface modifier button (such as Shift or Option) while using a particular function button (on the control surface).
- Define a zone that allows you to use modeless assignments for things like updating the display, Transport functions, and Save and Undo operations. The same zone could contain a modal assignment for all Volume and Pan controls. Switching to another mode would provide access to EQ parameters. In both modal situations, the display, Transport, and Save and Undo functions would be available.

A mode can contain any number of assignments. Only the assignments for the active mode are processed by Logic Pro. Assignments of inactive modes are ignored.

You can switch the active mode for a zone by making special assignments. See Defining Zones and Modes.

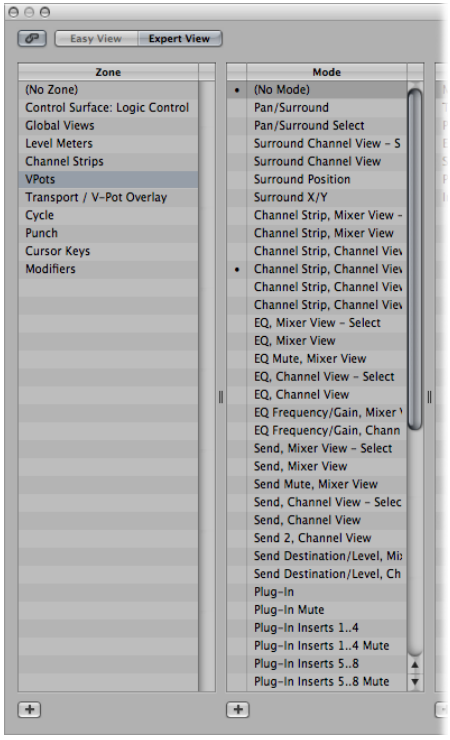
Zones and modes can be defined across multiple control surfaces, to support the use of control surface groups.

The following example illustrates one possible arrangement of zones and modes, and shows how you can define them, hierarchically:



Defining Zones and Modes

You can only define zones and modes in the Expert view of the Controller Assignments window.



To define a zone

1 Click the Add button in the lower-left corner of the Zone list.

A new, blank zone appears in the Zone list. It is highlighted, allowing you to immediately rename it.

2 Enter a name for the zone.

If you want to add controllers to the zone, see Assigning and Deleting Controllers in Expert View.

To define a mode

1 Click the Add button in the lower-left corner of the Mode list.

A new, blank mode appears in the Mode list. It is highlighted, allowing you to immediately rename it.

2 Enter a name for the mode.

If you want to add controllers to a mode, see Assigning and Deleting Controllers in Expert View.

Reassigning a Controller in Expert View

The procedure for reassigning an active controller (an assigned controller in the *active* mode) is different from that of an inactive controller (one with an assignment in an *inactive* mode).

To reassign an active controller

- Use the Learn process described in Assigning and Deleting Controllers in Expert View to assign an active controller (one with an assignment in the active mode), and choose one of the options shown in the dialog:

- *Cancel:* Deletes the new assignment, retaining the existing assignment.
- *Keep Both:* Retains the new and old assignments. Used typically when one knob controls multiple parameters as a macro.
- *Reassign:* Deletes all existing active assignments for this parameter. Used to reassign a function key (F1 to F8, for example) to a new key command.

To reassign an inactive controller

- Use the Learn process described in Assigning and Deleting Controllers in Expert View to assign a controller in an inactive mode. Note that the new assignment becomes part of the active mode in the same zone that contained the previous, inactive assignment.

This is typically used as follows: Supported control surfaces generally have empty user pages available, allowing for new encoder assignments. You would select a particular user page mode (page 3, for example), and then learn an assignment for the encoder.

Using the Control Name and Label Fields

The following describes the use and options available for the Control Name and Label fields in the Controller Assignment Parameter area at the top right of the Expert View window.

Control Name Field

Shows the name of the control. For supported devices, the control surface name is used. For assignments created with the Learn process on unsupported control surfaces, the control name defaults to Learned. You can enter a new name in the field. The control name is for display only, and has no effect on functionality.

Label Field

For supported control surfaces, shows characters that represent the label for the assignment that appears on the control surface display. Unsupported control surfaces can only send information, not receive it, and cannot display an assignment label.

If the field contains fixed text, it can contain any number of characters. When used as a placeholder for dynamically created text, however, the field contains three characters that represent the label. The first character is always @, followed by two additional characters.

- *Second Character:* This character is used to define a type for the event label; for example, track, Insert slot, Send slot, and so on.
- *Third Character:* This character is used to define a value for the chosen event label type, such as the track number or name.

  For example, "Send@s#" translates as "Send1," "Send2," and so on.

The following table shows the possible meaning for the second character.

Second character	Meaning
t	Track
r	Surround
s	Send slot
S	Number of sends
e	EQ band
E	Number of EQs
p	Insert slot
i	Instrument

The following table shows the possible meaning for the third character.

Third character	Meaning
#	Number of above (track number, Send slot, EQ band, Insert 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

Setting the Flip Group and Exclusive Parameters

The following describes the use and options available for the Flip Group field and Exclusive checkbox in the Controller Assignment Parameter area at the top right of the Expert View window.

Flip Group Field

Enter the same integer value for two assignments, to define a counterpart for Flip mode (for supported control surfaces that offer Flip mode). By setting a fader and an encoder to the same flip group, for example, they are coupled. To set "none," enter a value of 0.

For unsupported devices, you need to set up two active assignments, both of which use the same flip group. One assignment needs to be absolute (using a fader, for example), the other relative (encoder, for example).

Exclusive Checkbox

When selected, the assignment deactivates all other assignments that have Exclusive turned off for the same control (on supported control surfaces). This limits the overwriting of a modeless assignment to particular modes. For example, faders normally control volume. To create a mode where faders control the send level, select Exclusive.

Setting Class Pop-Up Menu Parameters

Choose the class of assignment (the type of destination parameter controlled) from the pop-up menu. Different options appear below the Class pop-up menu when you choose a class. The following section describes the different classes, and the options available for each.

Mode Change

Choosing the Mode Change class lets you use an assignment to switch from one mode to another. An additional Mode pop-up menu appears below the Class pop-up menu, allowing you to choose between available modes. For example, the assignment buttons on a Mackie Control can be used to choose different modes for the encoders.

Note: The mode chosen in the Mode pop-up menu is only activated when the Value section: Mode menu is set to Direct.

If any of the other Value section: Mode menu options is chosen, the following applies:

- *Toggle:* The assignment toggles between the zone's first mode and the chosen mode. The mode change assignment *must* be located in the same zone.
- *Relative:* Useful for stepping up and down through modes in a zone (using two buttons) or for choosing a mode with an encoder. The minimum destination parameter represents this zone's first mode, and the maximum represents the zone's last mode. The mode change assignment *must* be located in the same zone.
- *Rotate:* Useful for stepping through all available modes with a single button. Used with a Jog Wheel, for example: Off > Scrub > Shuttle > Off. The minimum destination parameter represents this zone's first mode, and the maximum represents the zone's last mode. The mode change assignment *must* be located in the same zone.

Global

Choosing the Global class lets you use an assignment to control global parameters. A Parameter pop-up menu appears below the Class pop-up menu, offering the parameters listed in the following table.

Note: All options listed in the table below only work in relative mode, where changes are relative to the starting value/position, and so on.

Global options	Explanation
Playhead	This assignment controls the position of the playhead; feedback is sent in the format chosen in the control surface group's Clock Display parameter.
Playhead (Beats)	As above, but feedback is sent in beats format.
Playhead (Time Code)	As above, but feedback is sent in SMPTE time code format.
Playhead (Beats, Scrubbing)	Moving the controller doesn't set the playhead position, but initiates scrubbing. The format is defined by the control surface group's Format parameter. The controller value defines the scrubbing speed.
Move Locators	Moves left and right locators.
Left Locator	Sets left locator.
Right Locator	Sets right locator.
Move Punch Locators	Moves punch in and punch out locators.

Global options	Explanation
Punch In Locator	Sets punch in locator.
Punch Out Locators	Sets punch out locator.
Marker Position	Edits position of current marker.
Marker Length	Edits length of current marker.

Global options	Explanation
Nudge selected Regions/Events	Nudges the selected regions or events by the chosen nudge value. (See below.)
Any Solo	Feedback only. On if any (track or region) Solo button is active.
Nudge Value	Controls the nudge value used for Nudge selected Regions/Events. Switches between tick, division, beat, bar, frame, 1/2 frame.
Scrub Status	Sets the scrubbing status for the Playhead parameter (beats, scrubbing). Possible values are set clock, audio scrubbing, shuttle.
Automation of all tracks	Switches the automation status of all tracks between the following values: Off, Read, Touch, Latch, Write.
Alert Text, Alert Button, Alert Icon	Used by plug-ins to define special Alert mode. This is mainly of use to control surface developers.
Dummy	Used to temporarily disable a modeless assignment, by using the Exclusive checkbox. See Control Name Field.
Cycle	Toggles the Cycle function on and off.
Autopunch	Toggles the Autopunch function on and off.
Go to Marker	Allows you to move the playhead to a marker number. An additional number field below the Parameter pop-up menu is used to determine the destination marker number.
Group Clutch	Sets the automation group clutch; automation groups are disabled when the clutch is enabled. For buttons, sets the group clutch to 1 when the button is pressed, and sets it to 0 when the button is released.
Active Sense	Used by some control surfaces (such as the HUI) to process incoming Active Sensing messages.
Shuttle Speed	Sets the shuttle (forward and backward) speed directly. Use this for controllers (usually knobs) that send an absolute, rather than relative, value.
Waveform Zoom	Sets the waveform zoom level in the key focus Arrange area.
Quantize value	Sets the Quantize value in the key focus window (if this parameter is available).
Division	Sets the Division value in the key focus window (if this parameter is available).
Horizontal Zoom	Sets horizontal zoom in the key focus window (if this parameter is available).

Global options	Explanation
Vertical Zoom	Sets vertical zoom in the key focus window (if this parameter is available).

Channel Strip

Choosing the Channel Strip class lets you use an assignment to set a channel strip parameter. A Channel Strip pop-up menu appears below the Class pop-up menu, offering the following parameters.

Channel strip type	Explanation
Selected track	Normally corresponds to the selected Arrange track. Exception: If the control surface group's Track Lock parameter is active, the "selected" track is the one that was chosen when Track Lock was enabled.
Fader Bank	Addresses a channel strip in the control surface group's current View mode (Arrange, All, Tracks, Single). This is dependent on the current Fader Bank value for this mode (see below). Example: The View mode is All, the All view Fader Bank is five, and the number next to this parameter is two. Thus, the eighth channel strip in the All view is addressed (Fader Bank and No. are 0-based, so add 1).
Index	Same as the Fader Bank setting, but doesn't depend on the current Fader Bank value.
Audio	An audio channel. The numerical value (No.) determines which audio channel is addressed (again: 0-based; to address audio channel 2, use a value of 1).
Software Instrument	Same as Audio setting, for software instrument channel strips.
Bus	Same as Audio setting, for bus channel strips.
Auxiliary	Same as Audio setting, for auxiliary channel strips.
Output	Same as Audio setting, but for output channel strips.
Master	The Master channel strip; if it does not exist in the project, the first output channel strip is addressed.

If you choose the Fader Bank, Index, Audio, Software Instrument, Bus, Auxiliary, Output, or Master setting in the Channel Strip pop-up menu, the following two parameters become available:

- *Number field:* A 0-based offset, which is added to the channel strip number. The typical use for this field is for sequential controls: Fader 1 uses offset 0, Fader 2 uses offset 1, and so on.
- *Parameter field:* Text description of the addressed parameter. Can only be set by choosing the Logic Pro > Preferences > Learn Assignment for [parameter name] menu item. Note that for plug-in and instrument parameters, Parameter Page offsets apply, allowing you to shift the parameter addressing up and down by page.

Key

Choosing the Key class lets you use assignments to emulate keystrokes on your *computer* keyboard. You can enter the key to emulate in the Key field, which appears below the Class pop-up menu. This is not case-sensitive.

Key Command

Choosing the Key Command class lets you use an assignment to perform a key command. You can enter the key command in the Command field, which appears below the Class pop-up menu. Some key commands provide on/off or enabled/disabled feedback.

If you want your key command assignment to be executed repeatedly, select the Key Repeat checkbox at the bottom of the Controller Assignments window. For further information, see "Key Repeat Checkbox" in Editing Value Parameters in Expert View.

Click the Show button to open the Key Commands window. The key command shown in the Command field is automatically selected and shown in the Key Commands window.

Control Surface Group

Choosing the Control Surface Group class allows you to set a property for the control surface group (that the assignment belongs to). When you choose this class, a Parameter pop-up menu appears below the Class pop-up menu. This pop-up menu allows you to choose one of the options described in Control Surface Group Parameters, or one from those listed in the following table.

Note that assignments for unsupported control surfaces always belong to the first control surface group.

Parameter option	Additional info
Fader Bank for Current View	Maps to the fader bank for the currently used View mode. This way, you need only one assignment per left/right button for all View modes.
Filter for All View	When this parameter is selected, eight additional checkboxes (for the eight channel strip types) are displayed, when the View mode is All. Depending on the Value mode, these switches define which channel strips are displayed (by using Direct mode) or which are toggled (by using X-OR mode).
Fader Bank for: MIDI Channel Strips, Input Channel Strips, Audio Channel Strips, Instrument Channel Strips, Aux Channel Strips, Bus Channel Strips, Output Channel Strips	These fader bank parameters are used in All View when only one channel strip type is displayed. This allows you to switch between several channel strip types, while retaining the current fader bank for each type.

If you choose one of the fader bank or parameter page settings in the Parameter pop-up menu, the following Bank Type options appear below the pop-up menu.

- *By One:* The fader bank or parameter page is shifted by one channel strip or parameter.

- *By Bank:* The fader bank or parameter page is shifted by the number of displayed channel strips or parameters.
- *CS Group Setting:* The fader bank or parameter page is shifted by the value defined for the Parameter Page Shift Mode control surface group parameter.

Automation Group
Choosing the Automation Group class allows you to use the assignment to set an automation group parameter.

When this class is chosen, a Group field appears below the Class pop-up menu. You can determine the edited group by entering a number in the field. Entering a "0" sets this parameter to the group selected for the Automation Group parameter (in the control surface group parameters).

A Parameter pop-up menu also appears below the Group field, allowing you to choose the automation group parameter for the assignment. For further information, see the Group Settings section of the *Logic Pro User Manual*.

Editing Input Message Parameters in Expert View

The parameters in this section let you control different aspects of MIDI input.

MIDI Input Pop-Up Menu
When you choose a MIDI input (port) from the pop-up menu, all assignments that use the same input are changed accordingly. If the assignment belongs to a supported control surface, the device's MIDI input also changes in the Setup window.

This makes it easy for you to create default assignments for a new control surface. These new assignments can be moved to other computers by copying your com.apple.Logic.cs preferences file. Simply paste this preference file into the Preferences folder of another computer, open the Controller Assignments window in Expert view, and change the MIDI Input parameter of one assignment (as applicable to the MIDI setup on the other computer).

Value Change Field
Shows incoming MIDI messages that cause a value change in the destination parameter, and lets you edit these MIDI messages.

The Value Change field displays the message as a sequence of hexadecimal bytes. The plain language meaning appears below the field. The placeholders for the variable part of the message are:

- *Lo7:* Low 7 bits of the value (LSB or Least Significant Bits)
- *Hi7:* High 7 bits of the value (MSB or Most Significant Bits)

For messages containing only a Lo7 placeholder, the value is treated as 7 bit. For messages containing both a Lo7 and 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. For example, B0 08 Hi7 B0 28 Lo7 indicates a 14-bit message.

Note: When you enter multiple MIDI messages, always enter each message completely, being sure to repeat the status byte, even if it's the same. It may help to write out the message to ensure that the correct byte works, as you can't know what status the previously sent message had.

For messages containing neither Lo7 nor Hi7 placeholders, Logic Pro assumes an incoming value of 1. This is typical for pressed or released buttons. Also see "Multiply Field" in Editing Value Parameters in Expert View.

Touch/Release Field
Enter an integer value to use the incoming MIDI message for status changes of the destination parameter from touched to released, or vice versa. A non-zero value means touched; a value of 0 means released. The messages are shown and edited in the same way as the Value Change field.

Note: The Touch/Release setting only applies to the Channel Strip assignment class, and to parameters that can be automated.

Editing Value Parameters in Expert View

The parameters in this section let you control different aspects of the values for incoming MIDI messages.

Min and Max Fields
Enter an integer value to set the minimum and maximum range for incoming values represented by Lo7 and Hi7. Typically, the minimum defaults to 0, and the maximum defaults to 127. Some control surfaces (such as the CM Labs Motor Mix) may use the same message, with different value ranges, for different controls. For more specific information, refer to the documentation that came with your device.

Format Pop-Up Menu
Choose the encoding format for negative values in the 7-bit portions sent over MIDI. The choices are:

- *Unsigned:* No negative values are possible. The full 7- or 14-bit range is treated as a positive number. The value range is 0 to 127 (7 bit) or 0 to 16383 (14 bit).
- *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. The value range is from –128 (7 bit) to 127 or –8192 to 8191 (14 bit).

- *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. The value range is –127 to 127 (7 bit) or –8191 to 8191 (14 bit).
- *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 (7 bit) or –8191 to 8191 (14 bit).

The appropriate format for a device is usually specified in its documentation. If unavailable, check the control surface manufacturer's website or contact them for more information.

Multiply Field
Enter a scaling value for incoming values. This is especially useful for button presses that have a value of 1. For example:

- 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.

Mode Pop-Up Menu
Choose the mode used by incoming values to modify the current parameter value. The choices are:

- *Direct:* The incoming value is used as the parameter value.
- *Toggle:* If the parameter's current value is 0, it is set to the incoming value. All other values set the parameter value to 0. This option is useful for buttons that toggle a value: Mute, Solo, and so on.
- *Scaled:* The incoming value is scaled from its value range to the destination parameter's value range. This is useful for faders and rotary encoders.
- *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 (a filter, in other words), which is applied to the parameter's current value with the "exclusive or" Boolean operation. Useful for enabling/disabling single channel strip types in All view.

For On/Off parameters, Mode is set to Toggle by default. It is set to Scaled for absolute controls (faders and knobs, for example), or to Relative for encoders.

Feedback Pop-Up Menu
Choose the display format for the parameter's current value (on the control surface display). The choices are:

- *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.
- *Bar from Center:* A bar from the center position to the current value.
- *Right to Left Bar:* A bar from the current value to the maximum.
- *Q/Spread:* Two equal bars from the center to the current value.
- *Ascending Bar:* A bar from the bottom to the current value.
- *Descending Bar:* A bar from the top to the current value.
- *Text Only:* LED rings: no feedback; LCDs: no feedback as a graphics element.
- *Automatic:* Dependent on the currently assigned parameter, the most suitable feedback mode is used: Plug-in and Instrument parameters carry this information, Pan displays a Single Dot/Line, and all other parameters display a bar that runs from left to right (Left to Right Bar).

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

Text Feedback Checkbox
When selected, a text representation of the current value is sent to the control surface's display. The control surface display capabilities determine the display position and number of characters that are used.

Local Feedback (Fader/Knob) Checkbox
When selected, no feedback is sent while the parameter is in Touch mode. This prevents motorized faders from "fighting" against the user.

Key Repeat Checkbox
When selected, the assignment is repeatedly executed. The Key Repeat Rate slider—set in the Mac OS X Keyboard & Mouse preferences—determines how quickly Logic Pro 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.

Key Repeat is particularly useful for the zoom function. For example, if you assign a Key Repeat command to the Mackie Control Zoom buttons, holding down the Zoom In button will continuously zoom in the Logic Pro window until the button is released. This mirrors the behavior of the Zoom key commands. The alternative is to repeatedly press the (Mackie Control) Zoom buttons to zoom in or 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.

The default key command assignments support the Key Repeat function (if useful or applicable to the control surface or device), making changes unnecessary for use of this 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 Pro 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 to 127 is used for the button pressed message. The zero (0) value is generally used for the button release message.

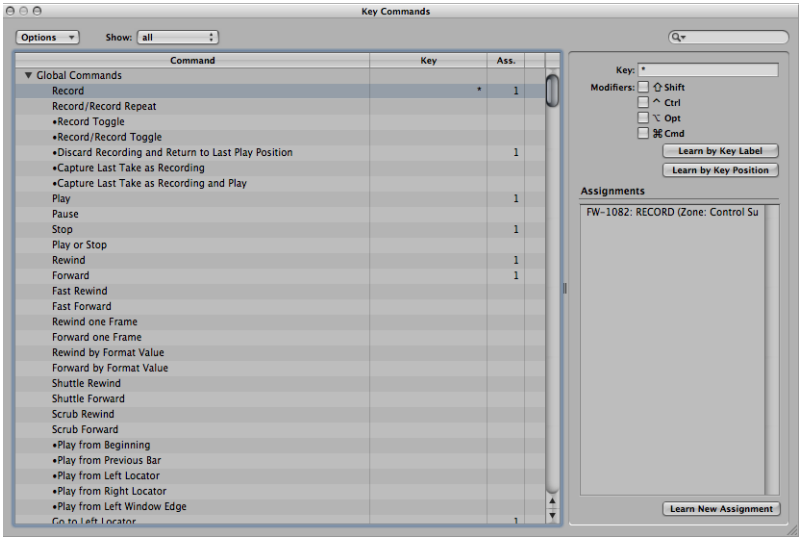
Note: Some control surfaces may use different value ranges (CM Labs Motormix, for example). Assigning appropriate Min and Max values ensures that the Key Repeat function will work with such devices. This, however, means that you need to take care when manually changing the Min or Max value for a key command; in cases where the Min and Max values do not match the button pressed (on) and button released (off) states, the complete assignment will not work. Consult your control surface manual for further information about the values it uses.

Assigning Buttons to Key Commands

In addition to assigning controllers to parameters, you can assign control surface buttons—and button or key release messages—to key commands.

To assign a control surface button to a key command

1. Choose Logic Pro > Preferences > Key Commands to open the Key Commands window.



2. In the Command list, click the disclosure triangle next to the category whose commands you want to reveal, then select the key command you want to assign. You can also search for the key command in the Search field.
3. Click the Learn New Assignment button.
4. Press the (control surface) button that you want to assign to the key command. This sends a MIDI message to Logic Pro.

   The name of the controller appears in the Assignments field.
5. You can repeat steps 2 to 4 to make additional assignments, if you like.
6. When you finish, click the Close button to exit the window.

To assign a button or key release message to a key command

1. Choose Logic Pro > Preferences > Key Commands to open the Key Commands window.
2. In the Command list, click the disclosure triangle to reveal the commands for a category, then select the key command you want to assign (or use the Search field).
3. Press and hold down the (control surface) button or key that you want to assign to the key command.
4. Click the Learn New Assignment button.
5. Release the button or key.

   The name of the button or key appears in the Assignments field.
6. When you finish, click the Close button to exit the window.

To delete a key command assignment

1. In the Key Commands window, select the key command (with an assignment that you want to delete) in the Command list.
2. Select the assignment for the key command in the Assignments field.
3. Press the Delete key.

Controller Assignments Storage

The current controller assignments and all Control Surfaces preferences are stored in the *~/Library/Preferences/com.apple.logic.pro.cs* file.

You do not need to explicitly save controller assignments or related preferences and settings. These are automatically stored (in the location mentioned above) when you quit Logic Pro.

Mackie Control

3

You can fully control Logic Pro with a Mackie Control, and can extend its functionality with several expansion devices, such as the XT and C4 units.

The information in this chapter applies to the Mackie Control Universal, the original Mackie Control, the Logic Control, and the Mackie (or Logic) Control Extender (XT). The term *Mackie Control* is used for all of these devices throughout the chapter.

The controls of the Mackie Control are physically grouped into different areas, called *zones*. Each zone is clearly labeled, and distinguished by different shades of gray on the device. The Mackie Control features and functions described in the following sections are organized by these zones.

This chapter covers the following:

Setting Up Your Mackie Control in Logic Pro

When you open Logic Pro, it automatically detects any powered Mackie Control unit that is connected to your system. You can use the Mackie Control immediately—with the default settings—or you can customize its settings, as described in Basic Control Surface Setup, and Customizing Controller Assignments.

Once set up, you can use the Mackie Control to control Logic Pro in the following ways, or perhaps take an alternate approach that best meets your working preferences.

- With your project open in the Arrange window, select the channel strips you want to control by pressing the Fader Bank buttons on the Mackie Control.

  See Mackie Control: Fader Bank Zone for more information.

- Select the parameters you want to edit, and whether you want to edit multiple channels (Mixer view) or a single channel (Channel view), using the Assignment buttons.

  See Mackie Control: Assignment Zone for more information.

- Start playback, and move the playhead to the position where you want to work, using the Mackie Control transport buttons and Jog Wheel.

  See Mackie Control: Transport Zone and Mackie Control: Jog/Scrub Wheel Zone for more information.

- Edit the project with the channel strip controls.

  See Mackie Control: Channel Strip Controls for more information.

Mackie Control: Display Zone

The display zone, located along the top of the Mackie Control, features four displays. Each shows different information:

- Main Liquid Crystal Display (LCD)
- Assignment display
- Time display
- Solo LED

Mackie Control: Main Liquid Crystal Display (LCD)

The main LCD is divided into eight sections (or columns), each with two lines of text. Each section displays information for the channel strip controls directly below it. Depending on the parameters you are editing and whether Mixer view or Channel view is active, the information displayed on the main LCD changes. In general, the upper row of each section displays the (abbreviated) track (or channel) name, and the lower row displays the (abbreviated) parameter name and its value.

In some modes, a long parameter name (or other text) appears briefly onscreen while you are moving the corresponding control. You can set the display and duration of long parameter names in the Control Surfaces preferences. For information on setting preferences, see Basic Control Surface Setup.

Note: On the LCD, 8-bit ASCII characters such as curly quotes and umlauts are replaced with the best-possible 7-bit ASCII equivalent.

Mackie Control: Assignment Display

The Assignment display (also referred to as the *mode display*), to the right of the main LCD, shows a two-digit abbreviation for the current assignment status. A period (.) appears at the bottom-right corner of the display when Channel view is active.

Mackie Control: Time Display

The Time display, to the right of the Assignment display, shows the current playhead position, either in musical time divisions (BEATS) or in SMPTE time code format (SMPTE). A small LED to the left of the display indicates the current display format.

- When the format is set to Beats, the four segments of the Time display show the current playhead position as bars, beats, beat subdivisions, and ticks.
- When the format is set to SMPTE, the four segments of the Time display show the current playhead position as hours, minutes, seconds, and frames.

You can switch between formats by pressing the SMPTE/BEATS button directly below the display. You can also set the default format with the Clock Display parameter in the Control Surfaces Setup window. Information on this (and other configuration options) is found in Configuring Your Control Surface Setup.

Mackie Control: Solo LED

The Solo LED (labeled as *Rude Solo* on the Mackie Control), located at the right edge of the display zone, is lit when a channel strip is set to solo, or when Solo mode is turned on. It is a helpful reminder in situations where you have soloed a channel strip, and then switched the fader bank, resulting in the Solo LED (of the soloed channel strip) being hidden on the control surface.

Mackie Control: Display Buttons

These buttons, located just below the left edge of the Time display, affect what you see in the main LCD and Time display.

NAME/VALUE

Press the NAME/VALUE button to switch between the two parameter display formats (either the parameter name or value is shown) on the main LCD.

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

- *Vertical:* In this mode, the last character of each channel (in both LCD rows) is overlaid by a vertical bar which shows the channel level. The text characters reappear when the level meter is not visible.
- *Horizontal with Peak Hold:* In this mode, the lower row of the LCD is replaced by horizontal channel level bars. Peak Hold appears as a hollow box, which disappears after a few seconds. Signal overloads (clipping) are indicated by an asterisk, which remains on the LCD display until cleared (see below).
- *Off:* In this mode, no level meter bars are displayed in the main LCD.

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

Pressing the NAME/VALUE button while holding down the CONTROL button clears any overload (clipping) indicators in the Logic Pro Mixer, and in the LCD of the Mackie Control (if the Horizontal with Peak Hold mode is active).

Pressing the NAME/VALUE button while holding down the CMD/ALT or OPTION button activates Control Surface Group Settings mode. This mode lets you edit the following control surface group settings, some of which are not accessible with a single button:

Control	Action
V-POT 5	Sets the track name display format. • *Name:* Displays the track name only. • *No: Name:* Displays the track number and name.
V-POT 6	Switches Channel view to Lock mode. • *Off:* The standard mode, where selecting a channel strip makes it the active (currently being edited) channel strip. • *On:* Locks the active channel strip. Selection of another channel strip has no impact on the channel strip being edited. When you switch from On to Off, the channel strip is also updated.
V-POT 7	Switches the LCD display format. • *Name:* The upper line of the LCD displays global info, and the lower line displays parameter names. • *Value:* The upper line of the LCD displays parameter names, and the lower line displays parameter values. Functionally, this is identical to pressing the NAME/VALUE button.
V-POT 8	Switches the Clock display format. • *Beats:* Clock is displayed in bars, beats, beat subdivisions, and ticks. • *SMPTE:* Clock is displayed in SMPTE format. Functionally, this is identical to pressing the SMPTE/BEATS button.

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

SMPTE/BEATS
Press the SMPTE/BEATS button, located just below the SMPTE/BEATS LEDs, to switch between the two time formats (SMPTE time or beats). For more information, see Mackie Control: Time Display.

Mackie Control: Channel Strip Controls

Directly below the main LCD display are eight sets of channel strip controls. You can use these to control Logic Pro channel strip parameters, plug-in parameters, and other Logic Pro functions. Each channel strip of both the Mackie Control and XT units includes the following controls, which are described in the following sections:

- V-Pot rotary encoder with button. See Mackie Control: V-Pot.
- REC/RDY button and LED. See Mackie Control: REC/RDY Button.
- Signal LED. See Mackie Control: Signal LED.
- SOLO button and LED. See Mackie Control: Solo LED.
- MUTE button and LED. See Mackie Control: MUTE Button.
- SELECT button and LED. See Mackie Control: SELECT Button.
- Touch-sensitive motorized fader. See Mackie Control: Touch-Sensitive Motorized Faders.

Mackie Control: V-Pot

The V-Pot is a rotary encoder, with an integrated button (accessed by pressing down on the top of the encoder). You can use the V-Pot to adjust the channel's send level and pan/balance (in Channel view), or to adjust effect or instrument plug-in parameters. The V-Pot can also be used to scroll through and choose items such as plug-ins, software instruments, and more from menus, and to determine send destinations. The faster you turn the V-Pot, the quicker it changes values, scrolls through menus, and so on.

The top of each V-Pot has an integrated push button, which typically sets a default parameter value (if a parameter has more than two possible values) or switches between two parameter values (on/off). The button can also be used to activate a function you have selected with the V-Pot. For example, you can turn the V-Pot to scroll through a list of effect plug-ins for one of the channel Insert slots. Once the effect you want is displayed in the main LCD, press the top of the V-Pot to select and insert the effect, and open the plug-in window. The button is also sometimes used to switch to a special assignment mode.

When a value or name (such as a plug-in) has been preselected, but not confirmed or instantiated, the value (or name) flashes on the main LCD until you press the V-Pot button.

The current value of the parameter you are adjusting with the V-Pot is displayed on the main LCD (depending on the Name/Value setting), and is also indicated by the ring of LEDs encircling the V-Pot. The way that parameter values are displayed on the LED ring varies depending on the type of parameter being displayed.

Holding down the CMD/ALT button sets the V-Pots to high-resolution (fine) mode, for parameters where this mode applies.

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

Mackie Control: REC/RDY Button

Pressing the REC/RDY button arms the channel strip for recording. If the channel is currently armed, pressing the REC/RDY button disarms it. Each REC/RDY button features a red LED, which is illuminated when the channel is armed for recording.

Holding down the OPTION button while pressing the REC/RDY button of *any* channel disarms *all* channel strips.

Mackie Control: Signal LED

The Signal LED indicates the presence of an outgoing MIDI or audio signal. During recording, it indicates the presence of an incoming signal.

Mackie Control: SOLO Button

Pressing the SOLO button solos the channel strip, which equates to muting all unsoloed channels. Each SOLO button features an amber LED which is illuminated when the channel strip is soloed. The Rude Solo LED (on the right edge of the display zone) is also lit whenever *any* channel is soloed.

Holding down the OPTION button while pressing *any* channel SOLO button disables solo for *all* channel strips.

In the Send Destination/Level view (see Mackie Control: SEND Button), the SOLO button controls the Pre/Post mode selection for both Mixer view and Channel view.

Mackie Control: MUTE Button

Pressing the MUTE button silences the channel. Each MUTE button features a red LED which is lit when the channel is muted.

Holding down the OPTION button while pressing *any* channel strip MUTE button unmutes *all* muted channel strips.

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

Mackie Control: SELECT Button

Pressing the SELECT button chooses (activates) the channel for channel-based editing or assignment commands. Each SELECT button features a green LED which is lit when the channel is selected.

Holding down the SHIFT button while pressing a channel's SELECT button sets the channel volume to unity level (0 dB).

Note: While holding down the SHIFT button, the SELECT button LED indicates if the channel volume is set to 0 dB.

Holding down the OPTION button while pressing the SELECT button of *any* channel creates a new track—assigned to the same channel strip as the selected track—and switches to Arrange view.

Holding down the SHIFT and OPTION buttons while pressing a channel's SELECT button creates a new track with the next channel strip (the one following the selected track), and switches to Arrange view.

Mackie Control: Touch-Sensitive Motorized Faders

The motorized fader of each channel strip is generally used to control the channel level, just like a volume fader on a mixing console. You can, however, also assign the fader to control other parameters by using "Flip" mode.

Flip mode is activated by pressing the FLIP button, just above the MASTER fader. When Flip mode is activated, you can control the parameter which is currently assigned to the channel's V-Pot with the fader. This allows more precise control of pans, aux returns, MIDI track parameters, EQs, effects, software instrument, or other channel parameters.

You can switch between channels being controlled with the eight faders, by pressing one of the CHANNEL or FADER BANK buttons. See Mackie Control: CHANNEL LEFT and CHANNEL RIGHT Buttons and Mackie Control: BANK LEFT and BANK RIGHT Buttons.

The behavior of the faders changes in different modes, as outlined below:

- *In Flip mode:* Duplicates or swaps parameters with the V-Pot on the same channel.
- *In Surround Angle/Diversity view:* Adjusts surround diversity.
- *In EQ Frequency/Gain view:* Adjusts the gain of the selected EQ band.
- *In Send Destination/Level Mixer view:* Adjusts the send level of the selected send.
- *In Send Destination/Level Channel view:* Adjusts the send level of the send on the *selected* channel strip.

Mackie Control: Master Fader

The Master fader controls the level of the primary master channel strip in the Logic Pro Mixer. This raises or lowers the level of all output channel strips, without changing their relative levels.

When no master channel strip exists in the project, the Mackie Control Master fader is mapped to output channel strip 1–2.

If you use multiple audio systems simultaneously, the Master fader only controls the master channel strip of the *first* device (matching the order shown in the Audio Preferences window).

Mackie Control: Assignment Zone

Directly below the Assignment LED are six ASSIGNMENT buttons.

Press one of the ASSIGNMENT buttons to select the type of parameter that you want to control or edit with the channel strip V-Pots, faders, and switches. The corresponding LED is lit to indicate the currently active assignment, and the Assignment display shows a two-digit abbreviation of the assignment type.

The ASSIGNMENT buttons work in both Single and All views. View modes are discussed in Control Surface Group Parameters.

Mackie Control: Assignment Modes

Each ASSIGNMENT button has two views: Mixer view and Channel view. These views provide two ways to edit parameters in your project.

- *Mixer view:* Displays, and allows you to edit, a single parameter in multiple channels.
- *Channel view:* Displays, and allows you to edit, multiple parameters for a single channel. The mode display shows a period (.) in the lower-right corner when Channel view is active.

Pressing an ASSIGNMENT button once selects it, and switches to the Mixer view, except when switching between Instrument Edit view and Plug-in Edit view. In this case, the mode remains in Channel view.

Note: For each of the ASSIGNMENT buttons, the parameters you can edit will change, depending on the active view mode.

The NAME/VALUE button also affects what is shown on the main LCD when in the Mixer and Channel views. For more information, see Mackie Control: Function Key Zone.

Mackie Control: TRACK Button

Pressing the TRACK button selects Channel view, and assigns the channel strip controls to edit channel strip parameters.

- Press the TRACK button once to edit a single parameter in multiple channel strips, and to activate Mixer view.
- Press the TRACK button again to edit multiple parameters for a single channel strip, and switch to Channel view.

Mixer View

Mixer view allows you to edit a single parameter in multiple channel strips: volume, pan, input format, input assignment, output assignment, or automation mode. When you switch to Mixer view, the parameter being edited is briefly displayed on the right side of the main LCD. The mode display shows “tr” (for track), and the upper row of the LCD shows track names.

Press NAME/VALUE to display parameter values on the lower row of the LCD. These are shown when you turn a V-Pot, or press its button.

You can manipulate the following controls for editing in Mixer view.

- Turning the V-Pots changes the associated channel strip parameter.
- Pressing the button on a V-Pot sets the parameter to its default value.
- The Cursor Left/Cursor Right buttons switch to the next or previous channel strip parameter. The selected parameter is displayed briefly in the upper row of the LCD.

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

Channel View

Channel view allows you to edit the most important channel strip parameters for a single channel strip: volume, pan, instrument, Insert slot 1 assignment, Insert slot 2 assignment, Send 1 level, Send 2 level, and Send 3 level. When you switch to Channel view, the mode display shows “tr.”, and the upper row of the LCD shows the name of the channel strip.

Press NAME/VALUE to show parameter names in the upper row, and parameter values in the lower row.

The following table lists what each V-Pot edits in Channel view mode:

Control	Action
V-Pot 1	Edits volume. The current value is shown in the lower row of the LCD.
V-Pot 2	Edits pan. The current value appears in the lower row of the LCD.
V-Pot 3	For software instrument tracks, turn to choose the instrument. Press the V-Pot 3 button to confirm your choice, insert the instrument, and open the plug-in window.

Control	Action
V-Pot 4	For audio and software instrument tracks, turn to choose the plug-in used on Insert slot 1. Press the V-Pot 4 button to confirm your choice, insert the effect, and open the plug-in window.
V-Pot 5	For audio and software instrument tracks, turn to choose the plug-in used on Insert slot 2. Press the V-Pot 4 button to confirm your choice, insert the effect, and open the plug-in window.
V-Pot 6	Edits the send level of Send 1.
V-Pot 7	Edits the send level of Send 2.
V-Pot 8	Edits the send level of Send 3.

Holding down SHIFT while pressing one of the MUTE or V-Pot buttons switches between mute and bypass.

Control	Action
V-Pot 1 or Mute 1	Mutes (or unmutes) the channel strip.
V-Pot 2 or Mute 2	Mutes (or unmutes) the channel strip.
V-Pot 3 or Mute 3	For software instrument tracks, mutes (or unmutes) the software instrument used on the channel strip.
V-Pot 4 or Mute 4	For audio and software instrument tracks, bypasses the effect plug-in used in Insert slot 1.
V-Pot 5 or Mute 5	For audio and software instrument tracks, bypasses the effect plug-in used in Insert slot 2.
V-Pot 6 or Mute 6	Mutes (or unmutes) Send 1.
V-Pot 7 or Mute 7	Mutes (or unmutes) Send 2.
V-Pot 8 or Mute 8	Mutes (or unmutes) Send 3.

Track Shortcut Menu

Hold the TRACK button to display the Track shortcut menu on the LCD. When this menu is active, the mode display shows “t_ “ (for Track shortcuts). Press one of the V-Pot or Function buttons to make the following changes.

Control	Action
V-Pot 1 or F1	Switches to Mixer view, and selects volume as the parameter edited by the V-Pot.
V-Pot 2 or F2	Switches to Mixer view, and selects pan as the parameter edited by the V-Pot.
V-Pot 3 or F3	Switches to Mixer view, and selects input format as the parameter edited by the V-Pot.
V-Pot 4 or F4	Switches to Mixer view, and selects the input assignment as the parameter edited by the V-Pot.

Control	Action
V-Pot 5 or F5	Switches to Mixer view, and selects the output assignment as the parameter edited by the V-Pot.
V-Pot 6 or F6	Switches to Mixer view, and selects the automation mode as the parameter edited by the V-Pot.
V-Pot 7 or F7	Switches to Mixer view, switches Logic Pro to Arrange view, and selects the automation parameter selected in the Arrange window.
V-Pot 8 or F8	Switches to Channel Strip Setup view.

Channel Strip Setup View

Hold the TRACK button to display the Track shortcut menu on the LCD, and press V-Pot 8 or press F8 to enter Channel Strip Setup view. In this mode, you can edit the following (less frequently used) parameters for the selected channel strip.

Control	Action
V-Pot 1	Edits the channel strip format (mono, stereo, left, right, surround).
V-Pot 2	Edits the Spread parameter.
V-Pot 3	Selects the channel strip input assignment. Confirm by pressing V-Pot 6.
V-Pot 4	Selects the channel strip output assignment. Confirm by pressing V-Pot 7.
V-Pot 5	Edits the automation mode.
V-Pot 6	Edits group membership. You can only choose one group or Off. To make a channel strip a member of multiple groups, use Group Edit mode.

Mackie Control: PAN/SURROUND Button

Pressing the PAN/SURROUND button activates Pan/Surround Mixer view. Press the button repeatedly to switch between Pan/Surround Mixer and Pan/Surround Channel views.

Pan/Surround Mixer View

Pan/Surround Mixer view allows you to edit one pan/surround parameter for all channel strips: Angle or Pan (on non-surround channel strips), Diversity, LFE, Spread (on surround channel strips). The parameter being edited is displayed briefly when switching to this mode. Regardless of the selected (and active) surround parameter, *non-surround* channel strips always display the standard Pan control.

In a project containing both surround and non-surround channel strips, you can edit a specified surround parameter for surround channel strips, while the V-Pots of non-surround channel strips edit pan position, as usual.

- The mode display shows “Pn” (for Pan).
- The upper row of the LCD shows channel strip names.

- Turning the V-Pots changes the current pan/surround parameter.
- The Surround Angle parameter rotates between 0 and 359 degrees, avoiding any angle limits.
- Pressing the button on a V-Pot sets the parameter to its default value.
- Cursor Left/Cursor Right switches to the next or previous surround parameter. The selected parameter appears briefly in the upper row of the LCD.

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

Pan/Surround Channel View

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

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

Control	Action
V-Pot 1	Edits angle (or pan on non-surround channel strips).
V-Pot 2	Edits diversity.
V-Pot 3	Edits LFE level.
V-Pot 4	Edits spread.
V-Pot 5	Edits Surround X.
V-Pot 6	Edits Surround Y.

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

Alternate Mode Options

Hold down the PAN/SURROUND button to display a submenu on the LCD. The V-Pots and function keys allow you to make the following changes.

Control	Action
V-Pot 1 or F1	Switches to Pan/Surround Mixer view and selects Angle.
V-Pot 2 or F2	Switches to Pan/Surround Mixer view and selects Diversity.
V-Pot 3 or F3	Switches to Pan/Surround Mixer view and selects LFE level.
V-Pot 4 or F4	Switches to Pan/Surround Mixer view and selects Spread.
V-Pot 5	—
V-Pot 6 or F5	Switches to Pan/Surround Channel view.

Control	Action
V-Pot 7 or F6	Switches to Surround Angle/Diversity Mixer view. • The mode display shows “Ad” (Angle/Diversity). • The upper LCD row shows channel strip names. • The lower LCD row shows the surround angle currently assigned to each channel strip. • Turning a V-Pot changes the surround angle (or adjusts pan position on non-surround channel strips). • Pressing a V-Pot sets the surround angle to its default value. • The faders edit surround diversity.
V-Pot 8 or F7	Switches to Surround X/Y Mixer view. • The mode display shows “XY”. • The upper LCD row shows channel strip names. • The lower LCD row shows the surround X value currently assigned to each channel strip. • Turning a V-Pot changes the surround X value (or adjusts pan position on non-surround channel strips). • Pressing a V-Pot sets surround X to its default value. • The faders edit surround Y.

Note: 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. If you try to set a Y value that is invalid, the X coordinate is automatically adjusted to a valid position, and vice versa. As an example, moving Y to +1000 will result in an X coordinate value of 0.

When only one coordinate value is edited, the other coordinate value defaults to the setting of the most recently selected channel strip. This helps you to create linear movements.

Mackie Control: EQ Button

Pressing the EQ button activates EQ Mixer view. Pressing the button repeatedly switches between EQ Mixer view and EQ Channel view.

Note: If no Channel or Linear Phase EQ is present on the selected channel strip, a Channel EQ is inserted automatically when you enter EQ Channel view.

EQ Mixer View

EQ Mixer view allows you to edit one equalizer parameter for all channel strips: Frequency, Gain, Q, or EQ bypass. The EQ band number, and parameter being edited, are displayed briefly when you switch to this mode.

- The mode display shows E1 to E8, indicating the selected EQ band.
- The upper LCD row shows channel strip names.

- Turning the V-Pots changes the current EQ parameter.
- Pressing a V-Pot button sets the parameter to its default value.
- Cursor Up/Cursor Down switches to the next or previous EQ band.
- Cursor Left/Cursor Right switches to the next or previous EQ parameter. The selected parameter is displayed briefly in the upper LCD row.
- Pressing a MUTE button while holding down the SHIFT button switches the current EQ band's Bypass status.
- When Flip mode is turned on, the MUTE buttons display, and switch, the current EQ band's Bypass status.

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

EQ Channel View

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

- The mode display shows EQ (EQ channel strip).
- The upper row of the LCD shows the name of the channel strip, EQs, the page number, and total number of pages (for example: "Page 1/2").

Control	Action
V-Pot 1	Edits the frequency of odd-numbered EQ bands.
V-Pot 2	Edits the gain of odd-numbered EQ bands.
V-Pot 3	Edits the Q-factor of odd-numbered EQ bands.
V-Pot 4	Switches the bypass status of odd-numbered EQ bands.
V-Pot 5	Edits the frequency of even-numbered EQ bands.
V-Pot 6	Edits the gain of even-numbered EQ bands.
V-Pot 7	Edits the Q-factor of even-numbered EQ bands.
V-Pot 8	Switches the bypass status of even-numbered EQ bands.

The Cursor Left and Cursor Right buttons switch to the next or previous EQ band. The LCD displays two EQ bands. If you have one or more connected Mackie Control (XT) units, each XT can display two EQ bands—up to a total of eight bands.

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

Alternate EQ Edit Mode Options

Holding down the EQ button gives you access to a further submenu in the LCD. The mode display shows E_ or E_., depending on whether you are in EQ Mixer or EQ Channel View mode.

Control	Action
V-Pot 1 or F1	Switches to EQ Mixer view and selects frequency.
V-Pot 2 or F2	Switches to EQ Mixer view and selects gain.
V-Pot 3 or F3	Switches to EQ Mixer view and selects Q.
V-Pot 4 or F4	Switches to EQ Mixer view and selects bypass.
V-Pot 6 or F6	Switches to EQ Channel view.
V-Pot 7 or F7	Switches to Frequency/Gain Mixer view. In this mode, you can edit the frequency and gain parameters of a specific EQ band (1 to 8) for all channel strips. • The mode display shows F1 to F8, indicating the selected EQ band. • The upper LCD row shows channel strip names. • The lower LCD row shows the frequency of the selected EQ band. • Turning a V-Pot changes EQ frequency. • Pressing a V-Pot sets the EQ frequency to its default value. • Use the Mute buttons to bypass the EQ. • Use the faders to adjust the EQ gain.
V-Pot 8 or F8	Switches to Frequency/Gain Channel view. In this mode, you can edit the frequency and gain parameters for all EQ bands of the selected channel strip. Each pair of channel strips corresponds to one EQ band. • The mode display shows 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: The faders form a frequency response curve in this mode, if the EQ bands have ascending frequency values.

Tip: You can edit another channel strip's EQ without leaving this view by simply selecting the channel strip in Logic Pro, or by pressing the appropriate SELECT button on the Mackie Control.

Mackie Control: SEND Button

Pressing the SEND button activates Send Mixer view. Pressing the button repeatedly switches between Send Mixer view and Send Channel view.

Send Mixer View

Send Mixer view allows you to edit one send parameter for all channel strips: Destination, Level, Position, or Mute. The Send slot number, and the parameter being edited, are displayed briefly on the LCD when switching to this mode.

- The mode display shows S1 to S8, indicating the selected Send slot.
- The upper LCD row shows channel strip names.
- Turning the V-Pots changes the current send parameter.

- Pressing a V-Pot confirms the preselected send destination, and sets the other send parameters to their defaults.
- Cursor Up/Cursor Down switches to the next or previous Send slot.
- Cursor Left/Cursor Right switches to the next or previous send parameter. The selected parameter appears briefly in the upper LCD row.
- Pressing a MUTE button while holding down the SHIFT button switches the current send's mute status.
- When Flip mode is turned on, 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.

Send Channel View

Send Channel view allows you to edit all send parameters for the selected channel strip. The mode display shows "SE." (for send channel strip). The upper row of the LCD shows the name of the channel strip, the text "Sends," the page number, and total number of pages—"Page 1/4," for example.

Control	Action
V-Pot 1	Edits the destination of odd-numbered sends.
V-Pot 2	Edits the level of odd-numbered sends.
V-Pot 3	Edits the position (pre/post) of odd-numbered sends.
V-Pot 4	Sets the mute status of odd-numbered sends.
V-Pot 5	Edits the destination of even-numbered sends.
V-Pot 6	Edits the level of even-numbered sends.
V-Pot 7	Edits the position (pre/post) of even-numbered sends.
V-Pot 8	Sets the mute status of even-numbered sends.

The Cursor Left and Cursor Right buttons shift between pages. The number of sends that can be displayed simultaneously depends on the number of Mackie Control XTs you have.

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

Alternate Send Edit Mode Options

Holding down the SEND button gives you access to a further submenu in the LCD. The mode display shows S_ or S_., depending on whether you are in Send Mixer view or Send Channel view.

Control	Action
V-Pot 1 or F1	Switches to Send Mixer view and selects destination.
V-Pot 2 or F2	Switches to Send Mixer view and selects send level.

Control	Action
V-Pot 3 or F3	Switches to Send Mixer view and selects position.
V-Pot 4 or F4	Switches to Send Mixer view and selects mute.
V-Pot 5 or F5	Switches to Send Channel view.
V-Pot 6 or F6	Switches to Send Channel Strip 2 view: This mode is similar to Send Channel view, but parameters are arranged in a slightly different way. You can control one parameter for all Send slots used in the selected channel strip. • The mode display shows "SE." (Send channel strip). • The upper LCD row shows the name of the channel strip, the text "Sends," the page number, and total number of pages. • V-Pots 1 to 8 edit the displayed parameter. • The horizontal cursor buttons shift between pages. The number of parameters that can be displayed simultaneously depends on the number of Mackie Control XTs you have.
V-Pot 7 or F7	Switches to Destination/Level Mixer view. In this mode, you can control one Send slot for all channel strips. Each channel strip corresponds to the channel strip name shown in the upper LCD row. • The mode display shows d1 to d8, indicating the selected send. • The upper LCD row shows channel strip names. • The lower LCD row shows the destination of the selected send. • Turning a V-Pot preselects the send destination. • Pressing a V-Pot confirms the preselected send destination. • The SOLO buttons edit send position—a lit SOLO LED indicates Pre Fader mode. • The MUTE buttons set the send mute status. • The faders edit the send level.
V-Pot 8 or F8	Switches to Destination/Level Channel view. You can control all Send slots for the selected channel strip in this mode. Each channel strip corresponds to the (embossed) send number shown below the LCD. • The mode display shows "dL." • Turning a V-Pot preselects the corresponding send destination. • Pressing a V-Pot confirms a preselected send destination. • The Solo buttons edit send position—a lit Solo LED indicates Pre Fader mode. • The MUTE buttons set the send mute status. • The faders edit the send gain.

If one or more sends are activated on multiple channels, you can switch between them while in the Channel View modes, by simply pressing the SELECT button of the desired channel.

Mackie Control: PLUG-IN Button

Pressing the PLUG-IN button activates Plug-in Mixer view. Pressing the button repeatedly switches between Plug-in Mixer view and Plug-in Channel 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. For more information, see Instrument Edit View.

Plug-in Mixer View

In this mode, you can view and edit the plug-ins associated with a particular Insert slot for all channels.

- The mode display shows P1 to P9, or 10 to 16, indicating the selected Insert slot number.

Note: If a software instrument channel is selected, the display shows P1 to P9 and 10 to 15.

- The upper row of the LCD shows channel strip names.
- The lower row of the LCD shows the currently selected plug-in for the active Insert slot. Muted plug-ins are shown with an asterisk (*) that precedes the plug-in name.
- Turning the V-Pots preselects a new plug-in. The plug-in name flashes until confirmed by pressing the V-Pot button.
- Turning another channel's V-Pot cancels any earlier preselection, and starts preselection on the newly selected channel strip.
- Pressing a V-Pot button:
  - Confirms or activates the preselected plug-in (assuming that you've made your preselection by turning the V-Pot).
  - Opens a plug-in window, if none is opened. If a plug-in window is open, and Link mode is turned on, the selection of another plug-in replaces the existing plug-in window.
  - Switches to Plug-in Edit view.
- The Cursor Up/Cursor Down buttons change the currently displayed plug-in Insert slot (1 to 15).
- Pressing a V-Pot or MUTE button while the SHIFT button is held down mutes or unmutes the plug-in.

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

To remove a plug-in

- Preselect the "--" value (by turning the V-Pot fully counterclockwise), then press the V-Pot button of the appropriate Insert slot.

The Mackie Control does not switch to Plug-in Edit view, and no plug-in window opens when the "--" value is chosen. If a plug-in window is open, it closes (if Link mode is inactive).

Plug-in Channel View

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

- The mode display shows the text "PL."
- The upper LCD row shows Ins1Pl through Ins8Pl.
- The lower LCD row shows the plug-in that 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 preselects a new plug-in. The plug-in name flashes until activated.
- Turning another channel's V-Pot cancels any previous preselection and starts preselection on the newly selected channel strip.
- Pressing a V-Pot button:
  - Activates the preselected plug-in (assuming that you've made your preselection by turning the V-Pot).
  - Opens a plug-in window if none is opened. (If a plug-in window is open and Link mode is turned on, the selection of another plug-in replaces the existing plug-in.)
  - Switches to Plug-in Edit view.
- Pressing a V-Pot button while the SHIFT button is held down mutes/unmutes the plug-in.

To remove a plug-in

- Preselect the "--" value (by turning the V-Pot fully counterclockwise), then press the V-Pot linked to the appropriate Insert slot.

The Mackie Control does not switch to Plug-in Edit view, and no plug-in window opens. If one was previously opened, it closes (if Link mode is inactive).

Plug-in Edit View

You can view and edit plug-in parameters in this mode.

- The mode display shows P1. to P8., indicating the number of the selected plug-in Insert slot.
- Depending on the NAME/VALUE button, the LCD display changes between the two modes in the following ways:
  - *Name:* The upper LCD row shows the channel strip'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 corresponding V-Pot (the one below the parameter name).
  - *Value:* The upper LCD row shows the name of the parameter which can be edited via the corresponding V-Pot. The lower LCD row shows the current value of the parameter. If there is sufficient onscreen space, the unit type will be added; for example, Hz or dB.

- Turning the V-Pots changes parameter values.
- Pressing a V-Pot button sets the parameter to its default value, except when the parameter only has two values (on/off, for example). In this case, pressing the V-Pot button switches between these values.
- The Cursor Left/Cursor Right buttons switch to the next or previous parameter page.

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

When using the cursor buttons to switch between parameters, the parameters change in groups of eight (unless the parameters on the last page do not make a complete group of eight). For example, if a plug-in has 19 parameters, and the Mackie Control is controlling parameters 1 to 8:

- Pressing the Cursor Right button shifts to parameters 9 to 16.
- Pressing the Cursor Right button again shifts to parameters 12 to 19.
- Pressing the Cursor Left 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.

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

If you have a control surface group consisting of several Mackie Control and XT units, the parameters are distributed across their displays. The number of parameters shown depends on the Multiple Controls per Parameter settings in the Logic Pro > Preferences > Control Surfaces > Preferences. See Setting Control Surfaces Preferences for details.

Note: When you exit Plug-in Edit view, the plug-in window closes.

Compatibility

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

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

Contact the plug-in manufacturer to obtain a version that supports this feature.

Mackie Control: INSTRUMENT Button

Pressing the INSTRUMENT button activates Instrument Mixer view, unless the Mackie Control is currently in Plug-in Edit view. In this case, pressing the INSTRUMENT button switches to Instrument Edit view.

If you can't see the software instrument channel strips, use the BANK or CHANNEL buttons in the Fader Bank zone, or switch to All view by pressing the INSTRUMENT button. (This assumes that you have created at least one or more software instrument tracks.)

Instrument Mixer View

In this mode, you can view and edit the Instrument slots of all channels.

- The mode display shows "In" (for instrument).
- The upper LCD row shows channel strip names.
- The lower LCD row shows the currently selected instrument. Muted instrument names are preceded by an asterisk (*).
- Turning the V-Pots preselects a new instrument. The preselected instrument name flashes until activated.
- Turning another channel's V-Pot cancels any previous preselection, and starts preselection on the newly chosen channel strip.
- Pressing a V-Pot button:
  - Activates the preselected instrument plug-in (assuming that you've made your preselection by turning the V-Pot).
  - Opens a plug-in window, if none is opened. If a plug-in window is open, and Link mode is turned on, the selection of another instrument plug-in replaces the existing one.
  - Switches to Instrument Edit view.
- Pressing a V-Pot or MUTE button while holding down the SHIFT button mutes/unmutes the instrument.

To remove an instrument

1. Preselect the "--" value (by turning the V-Pot fully counterclockwise).
2. Press the V-Pot button.

Mackie Control does not switch to Instrument Edit view, and no plug-in window opens. If a plug-in window is open, it closes.

Instrument Edit View

You can view and edit instrument parameters in this mode.

- The mode display shows "In."
- Depending on the state of the NAME/VALUE button, the LCD changes in the following ways:
  - *Name:* The upper LCD row shows the channel strip 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.

- *Value:* The upper LCD row shows the name of the parameter that can be edited with the V-Pot below. 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; for example, Hz or dB.

- Turning a V-Pot changes the corresponding parameter.
- Pressing a V-Pot button sets the parameter to its default value, except when the parameter only has two values (on/off, for example). In this case, pressing the V-Pot button switches between these values.

Compatibility

Mackie Control can edit all instruments that can be automated, regardless of the type of plug-in you are using (Logic Pro native, Audio Units).

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

Contact the plug-in manufacturer to obtain a version that supports this feature.

Mackie Control: Fader Bank Zone

This Mackie Control zone contains two sets of left and right buttons (for switching between individual or grouped channels) as well as the FLIP and GLOBAL VIEW buttons.

Mackie Control: BANK LEFT and BANK RIGHT Buttons

The Mackie Control provides eight sets of channel strip controls, allowing you to edit eight corresponding channels. The BANK LEFT and BANK RIGHT buttons let you move between "banks" of eight channel strips. For example, if you are editing channel strips 1–8, pressing the BANK RIGHT button moves to channel strips 9–16. Pressing BANK RIGHT again moves to channel strips 17–24. Pressing BANK LEFT returns to channel strips 9–16, then to 1–8 with one more button press.

If you are using a control surface group, the BANK LEFT and BANK RIGHT buttons shift the active channel strips by the total number of channels in the control surface group. For example, if you have a Mackie Control and two Mackie Control XT units, the view shifts by 24 channels—the total number of channels in the control surface group.

The BANK buttons always change channel strips in groups of eight, unless the last channel strips do not make a complete group of eight. For example, if a project has 19 channel strips, and the Mackie Control is controlling channel strips 1 to 8:

- Pressing the BANK RIGHT button shifts to channel strips 9 to 16.
- Pressing the BANK RIGHT button again shifts to channel strips 12 to 19.
- Pressing the BANK LEFT button shifts back to channel strips 9 to 16, not 4 to 11.

This way, you always revert to the channel strips you expect to find, and are comfortable with.

Notes on Using the FADER BANKS Buttons

When holding down the OPTION button, pressing the BANK or CHANNEL LEFT button jumps to the first set of channel strips in the project. Pressing the BANK or CHANNEL RIGHT button jumps to the last set of channel strips in the project. For example, if your project has 64 channel strips, pressing BANK or CHANNEL LEFT jumps to channel strips 1 through 8, and pressing BANK or CHANNEL RIGHT jumps to channel strips 57 through 64.

For views where one type of channel strip is displayed (such as audio, instruments, or busses), Logic Pro remembers the last group of eight channel strips shown in the view, and returns to it when you switch back from another view. For example, if you start in a view with audio channel strips 4 through 11 visible, switch to an instruments view, scroll to instruments 6 through 13, and then switch back to the audio channel view, you will return to audio channel strips 4 through 11 (not 6 through 13). Switching to the Instrument Channel view displays instruments 6 through 13.

Mackie Control: CHANNEL LEFT and CHANNEL RIGHT Buttons

Using the CHANNEL LEFT and CHANNEL RIGHT buttons, you can move up or down by a single channel strip. Pressing the CHANNEL RIGHT button shifts (the active channel strips) up by a single channel strip, while pressing CHANNEL LEFT shifts them down by a single channel strip. For example, if you are viewing channel strips 1 to 8 and press the CHANNEL RIGHT button, channel strips 2 to 9 are displayed.

Notes on Using the FADER BANKS Buttons

When holding down the OPTION button, pressing the BANK or CHANNEL LEFT button jumps to the first set of channel strips in the project. Pressing the BANK or CHANNEL RIGHT button jumps to the last set of channel strips in the project. For example, if your project has 64 channel strips, pressing BANK or CHANNEL LEFT jumps to channel strips 1 through 8, and pressing BANK or CHANNEL RIGHT jumps to channel strips 57 through 64.

For views where one type of channel strip is displayed (such as audio, instruments, or busses), Logic Pro remembers the last group of eight channel strips shown in the view, and returns to it when you switch back from another view. For example, if you start in a view with audio channel strips 4 through 11 visible, switch to an instruments view, scroll to instruments 6 through 13, and then switch back to the audio channel view, you will return to audio channel strips 4 through 11 (not 6 through 13). Switching to the Instrument Channel view displays instruments 6 through 13.

Mackie Control: FLIP Button

Press the FLIP button (alone, or in combination with a modifier key) to activate or deactivate one of the following modes: Flip, Swap, or Zero.

Flip Mode

Pressing the FLIP button activates Flip mode. In Flip mode, the current assignments of the eight V-Pots are mirrored by the eight channel faders, so that both control the same parameter. Turning one of the V-Pots causes the corresponding fader to move, and vice versa. When you activate Flip mode, the LED next to the FLIP button illuminates. Pressing the FLIP button again turns off Flip mode.

Flip mode offers the following advantages:

- You can edit any type of parameter with a fader, which allows more precise editing control.
- Unlike the V-Pots, the faders are touch-sensitive. This allows you to overwrite existing controller automation movements with a constant value.

Swap Mode

Holding down the SHIFT button while pressing the FLIP button activates Swap mode. In Swap mode, the encoder assignments are *swapped* with the fader assignments, so that the faders control the parameter previously assigned to the V-Pots, and vice versa. The LED next to the FLIP button flashes when Swap mode is active.

When Swap mode is active, pressing FLIP again reverts to Flip mode. Holding down the SHIFT button and pressing FLIP turns off Swap mode, and returns the V-Pot and fader assignments to the state they were in before you activated Flip or Swap mode.

Zero Mode

Holding down the CONTROL button while pressing the FLIP button activates Zero mode. In Zero mode, the faders are set to the zero position and do not move. This is useful in situations where the Mackie Control is located close to microphones, and you want to make sure that you don't capture the mechanical noise of the faders moving.

When Zero mode is active, pressing FLIP again reverts to Flip mode. Holding down the CONTROL button while pressing FLIP turns off Zero mode, and reactivates the faders.

Mackie Control: Global View Button

The GLOBAL VIEW button is used in conjunction with the buttons in the Global View zone. These are discussed in Mackie Control: Global View Zone.

Mackie Control: Function Key Zone

The Function Key zone, located below the Time display and the display buttons, features eight function key buttons, labeled F1 through F8. The eight function key buttons are assigned as follows:

Function key	Action
F1 to F8	Recalls screensets 1 through 8.

Holding down the SHIFT button while pressing one of the function keys opens one of the following windows (or closes it, if currently open):

Function key	Action
F1	Arrange window
F2	Mixer
F3	Event List
F4	Score Editor
F5	Hyper Editor
F6	Piano Roll Editor
F7	Transport window
F8	Audio Bin

Holding down the CMD/ALT button while pressing one of the function keys activates one of the following common commands:

Function key	Action
F1	Cut
F2	Copy
F3	Paste
F4	Clear
F5	Select All
F6	Select All Following
F7	Select Similar Regions/Events
F8	Select Inside Locators

In modal dialogs, pressing one of the function keys is equivalent to using the computer keyboard number keys:

Function key	Action
F1	1
F2	2

Function key	Action
F3	3
F4	4
F5	5
F6	6
F7	7
F8	8
The buttons located directly below the function keys complete the numeric input functions:	
MIDI Tracks button	9
Inputs button	0

In some other modes, the function keys perform other actions, such as shortcuts to markers. For more information, see Mackie Control: Marker Button. Also see the tables in Mackie Control: Assignment Overview.

Mackie Control: Global View Zone

You can use the eight buttons in the Global View zone to display (and edit) specific types of channel strips. Pressing any of the buttons in the Global View zone activates All View mode; when this mode is active, the green LED to the right of the GLOBAL VIEW button is illuminated.

When you press one of the buttons in the Global View zone, the corresponding type of channel strip appears in the main LCD. You can edit each channel strip with the corresponding channel strip controls. Pressing multiple buttons (Audio Tracks, Instruments, and Aux, for example) displays all channels of the selected types.

To view (and edit) multiple All View channel strips

- While holding down any button in the Global View zone, press another button to add this channel strip type to those currently displayed. If a channel strip type is already displayed, pressing its button removes it from the display.

  As an example, to display both the audio and output channel strips, hold down the AUDIO TRACKS button, then press the OUTPUTS button.

Mackie Control: Modifier Buttons

The four Modifier buttons correspond to the modifier keys on your computer keyboard (but function independently from them). You can use these buttons, along with the appropriate key on your computer keyboard (or with the mouse), in place of using the corresponding modifier key. This also applies to modified Mackie Control commands.

A generic description of each button follows:

- *SHIFT:* Provides an alternate function or meaning for a button.
- *OPTION:* The function applies to all channel strips. For relative value changes, sets the value to its minimum, default, or maximum, depending on whether you're increasing or decreasing it.
- *CONTROL:* While held down, the group clutch is engaged, and channel strip groups are temporarily disabled.
- *CMD/ALT:* Allows fine-tuning, or another variation, of the function.

Mackie Control: Automation Buttons

The Automation buttons activate the corresponding automation modes in Logic Pro: Read/Off, Touch, Latch, and Write. You use the Automation buttons in conjunction with the channel strip SELECT buttons, as follows:

To set the automation mode for a channel

1. Press the SELECT button on the channel strip that you want to automate.
2. Press the appropriate Automation mode button.
3. Move the channel strip's fader, turn the V-Pot, or use the Solo or Mute button.

The automation modes are outlined below:

- *READ/OFF:* If no automation mode is active, pressing the READ/OFF button switches between Read mode and Off.
  - *Read:* The fader reads (follows) any existing automation data, but does not record any new automation data.
  - *Off:* Automation is off. The fader neither sends nor receives automation data. Existing automation data is not changed. The fader still adjusts the volume or pan position as usual, when moved.
- *TOUCH:* Writes new data when the fader is touched or the V-Pot is turned during playback. Any existing automation data (of the current fader type) is replaced with new data, for as long as the control is active (while the fader is being touched or the V-Pot is being turned).

- *LATCH:* Similar to Touch mode, but the control remains active, even when the fader is no longer being touched, or the V-Pot is not being turned. When you release the fader, the current fader value replaces all existing automation data, for as long as the sequencer is in playback (or record) mode. Press STOP to prevent existing automation data from being overwritten.
- *WRITE:* Overwrites *all* existing automation data, or creates new automation data if none exists. Only use this option if you want to destroy all existing automation data.

Pressing one of the Automation buttons while holding down the OPTION button assigns the selected automation mode to *all* channels. When an automation mode has been assigned to all channels, the corresponding automation mode button LED illuminates whenever you hold down the OPTION button.

Important: This behavior is slightly different for the Off automation mode. When holding down the OPTION button and pressing Read/Off, the LEDs for the other Automation buttons are unlit, but this does not necessarily indicate that all channel strips are in Off mode—they could still be set to other modes. To ensure that you have set all channel strips to Off mode, press Read/Off twice while holding down the OPTION button. The Read/Off button LED turns on, then off.

Mackie Control: GROUP Button

Pressing the GROUP button activates Group Edit mode, allowing you to edit various Mixer group parameters.

In Group Edit mode:

- The upper row of the LCD displays channel strip names.
- The lower row of the LCD displays group parameters.
- The Assignment display shows the currently displayed group—G1, for example.
- The Time display shows the group name. (If the name is longer than ten characters, the last ten characters are displayed.)
- You can switch between group parameters with the V-Pot buttons.
- The Cursor Up and Cursor Down buttons select the previous or next group.
- The Cursor Left and Cursor Right buttons shift the group parameter display.
- The SELECT buttons determine group membership. Pressing a SELECT button adds the channel strip to the group (or removes it from the group, if already a member). An illuminated SELECT button LED indicates active group membership.
- The LED next to the GROUP button is illuminated.

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

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

Pressing the GROUP button while holding down the SHIFT button creates a new group, opens the Group window, and activates Group Edit mode.

Pressing the GROUP button while holding down the TRACK button switches to Mixer view, with the channel strip group parameter shown. It displays the group that the selected channel strip belongs to. Multiple group membership is displayed as in the Mixer window. Turning a V-Pot changes group membership.

Note: You can only select one group (or Off) with this function.

Mackie Control: Utilities Buttons

The four Utilities buttons activate common Logic Pro functions: Save, Undo, Cancel, and Enter.

SAVE Button

Press the SAVE button to save the current project file. The first time you save a project, a Save dialog appears on your computer screen. Enter a name and location for the file, then click the Save button in the dialog.

The main LCD displays this message: "There is a file select dialog on the screen." The Position/Time display shows "ALERT." All LEDs are unlit. Once the Save operation has been confirmed in Logic Pro, the Mackie Control returns all controls to their previous state (before you pressed the SAVE button).

Once you have named a project and saved it, further presses of the SAVE button store the current project state without presenting a Save dialog onscreen, or showing any alerts on the LCD. This allows you to quickly save incremental changes you make as your project develops.

The SAVE LED is illuminated as soon as you make (saveable) changes to your project.

Holding down the OPTION button while pressing SAVE opens the Save As dialog on the computer screen. This allows you to rename a project, or save it in a different location.

UNDO Button

Pressing the UNDO button undoes the last undoable action. As Logic Pro supports a nearly unlimited number of undo/redo steps, the green UNDO LED illuminates to indicate that Redo is available, not to indicate an undoable step. The LCD provides a warning that performing a reversible editing step will 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 Button
When an alert appears on your computer screen, you can cancel (or abort) it by pressing the CANCEL button. For information about alerts, see Modal Dialog Display.

Pressing the CANCEL button when no alert is visible onscreen does the following:

- Opens the Toolbox at the current onscreen position of the pointer.
- Alternately, it will perform any function currently assigned to the computer keyboard's Esc (Escape) key.
- If the Mackie Control is currently showing the contents of a folder track, pressing the CANCEL button exits the folder.
- The CANCEL button also lets you invalidate a (blinking) parameter value preselection.

ENTER Button
When an alert appears on your computer screen, pressing the ENTER button activates the default button in the alert. For information about alerts, see Modal Dialog Display.

If there is no alert onscreen, and the selected track is a folder track, pressing the ENTER button opens the folder.

Mackie Control: Transport Zone

The Transport zone features five buttons for the standard transport functions (Rewind, Fast Forward, Stop, Play, and Record).

The Transport zone also incorporates seven small, circular buttons for different recording and playback modes.

You can use these buttons independently, or in conjunction with one another, to navigate and edit your projects. Each button has a dedicated LED that indicates its current status.

Mackie Control: REWIND Button

The REWIND button lets you rewind through your project. Pressing the REWIND button repeatedly while rewinding accelerates the rewind speed. Pressing the FAST FWD button repeatedly while rewinding slows down, stops, and eventually reverses the shuttle direction. Pressing the STOP button halts the rewind process at the current playhead position. Turning the Jog/Scrub Wheel also exits rewind shuttle mode.

When one of the Marker modes is activated, pressing the REWIND button moves the playhead to the previous marker.

When one of the Nudge modes is activated, the REWIND button moves the selected regions or events backward by the value defined in Large Nudge mode.

Mackie Control: FAST FWD Button

The FAST FWD button lets you fast forward through your project. Pressing FAST FWD repeatedly while fast forwarding accelerates the shuttle speed. Pressing the REWIND button repeatedly while fast forwarding slows down, stops, and eventually reverses the shuttle direction. Pressing the STOP button halts the fast forward process. Turning the Jog/Scrub Wheel also exits forward shuttle mode.

When one of the Marker modes is active, pressing the FAST FWD button moves the playhead to the next marker.

When one of the Nudge modes is active, pressing the FAST FWD button moves the selected regions or events forward by the value defined in Large Nudge mode.

Tip: You can combine markers with cycle areas by pressing the respective buttons on the Mackie Control. This, in conjunction with navigation between markers (using the REWIND and FAST FWD buttons), moves the playhead, and automatically sets a cycle area between adjacent markers. Try this, and other options, with various button combinations.

Mackie Control: STOP Button

Pressing the STOP button stops project playback (or recording, if active), and stops all other Transport functions. Pressing the STOP button a second time returns the playhead to the project start point, or the beginning of the nearest cycle area, if Cycle mode is active. Pressing STOP repeatedly switches between these two functions.

Mackie Control: PLAY Button

Pressing PLAY starts playback from the current playhead position. Pressing PLAY repeatedly jumps to the beginning of the nearest cycle area, if Cycle mode is active.

Pressing SHIFT and PLAY simultaneously works as a Pause command.

Mackie Control: RECORD Button

Pressing RECORD activates recording on the selected MIDI, audio, or software instrument channel strip (if it is armed for recording).

It is possible that the *first* time you arm an audio channel strip (by pressing the REC/RDY button for the channel), a Save dialog will appear on your computer screen. Enter a filename (and a save location) in the dialog, then press Save. The Mackie Control LCD display shows “There is a file select dialog on the screen.” The Position/Time display shows “ALERT.” All LEDs are unlit.

Once you enter the filename (and press Save), all controls on the Mackie Control return to their previous state.

After the default audio filename has been entered, you can freely select and arm any audio channel strip, and then press the RECORD button. No alert messages and file save dialogs will appear onscreen.

Tip: To minimize the appearance of the dialog, save your project with Assets before you start recording. Saving your project this way bypasses the need to define filenames, and makes handling faster and easier when using Logic Pro with the Mackie Control.

Mackie Control: Marker Button

Pressing the MARKER button activates one of the three marker modes: Small Marker mode, Large Marker mode, and Temporary Marker mode. You can use these modes to create or delete markers, and jump to markers in your project.

Note: The Marker and Nudge modes are mutually exclusive; activating one deactivates the other.

Small Marker Mode

Pressing the MARKER button activates Small Marker mode. In this mode, pressing the FAST FWD or REWIND button moves the playhead to the next or previous marker. Pressing the MARKER button again reverts to the default behavior of the FAST FWD and REWIND buttons. (See Mackie Control: REWIND Button and Mackie Control: FAST FWD Button.)

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

Large Marker Mode

Pressing the MARKER button while holding down the SHIFT button displays three create options on the LCD, assigned to the three rightmost V-Pot buttons.

Once markers have been created, press the V-Pot button listed below to create or delete a marker at the current playhead position.

Control	Action
V-Pot 1 to 5	Displays the first five markers by name. Pressing a V-Pot button moves the playhead to the corresponding marker. When the playhead position is inside a marker, the lower line displays INSIDE, and the V-Pot LED ring is lit.
V-Pot 6	Cr w/o—Creates a marker, without rounding to the nearest bar.
V-Pot 7	Create—Creates a marker, rounded to the nearest bar.
V-Pot 8	Delete—Deletes the marker above the current playhead position.

A recommended workflow for creating or deleting markers is to use the Jog/Scrub Wheel. Turn the wheel to move the playhead to the desired project position, and then press the appropriate V-Pot to create or delete a marker.

- For coarse placement, use the wheel to move the playhead.

- For fine placement, press the SCRUB button, then use the wheel to precisely position the playhead. (This technique is only appropriate if creating or deleting an unrounded marker.)

For more information about using the Jog/Scrub Wheel, see Mackie Control: Jog/Scrub Wheel Zone.

Large Marker mode is terminated by pressing the MARKER button again.

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-Pot buttons. This action executes the marker function and then leaves Marker mode as soon as you release the MARKER button.

- When in this mode with the MARKER button held down, pressing the function keys F1 to F8 moves the playhead to the first eight markers (if created). For example, to navigate to marker 3, press and hold down the MARKER button and press F3.
- To jump between markers, with (or without) the MARKER button held down, simply press the FAST FWD or REWIND button.

Mackie Control: NUDGE Button

The NUDGE button allows you to move (nudge) selected audio or MIDI regions (or events) in Small, Large, or Temporary Nudge mode.

Note: The Marker and Nudge modes are mutually exclusive; activating one deactivates the other.

Small Nudge Mode

Pressing the NUDGE button reassigns the behavior of the FAST FWD and REWIND buttons; pressing either FAST FWD or REWIND nudges the selected regions or events by the value defined in Large Nudge mode. Pressing the NUDGE button a second time reverts to the default behavior of the FAST FWD and REWIND buttons. (See Mackie Control: REWIND Button and Mackie Control: FAST FWD Button.)

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 the SHIFT button displays eight functions on the LCD, and assigns them to the corresponding V-Pot buttons. These functions allow you to move the selected region or events by various amounts, or to a specific position.

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 the selection of regions or events is open, or no regions or events are selected.

The functions are as follows:

Control	Label	Action
V-Pot 1	Nudge	Selects the nudge value used by the REWIND and FAST FWD buttons. These buttons move the selected objects backward/forward by the defined value.
V-Pot 2	Pickup	Moves to the current playhead position.
V-Pot 3	Bar	Moves by one bar.
V-Pot 4	Beat	Moves by the current project denominator value (beats).
V-Pot 5	Division	Moves by the current project division value.
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 arrow keys, allowing easy selection of a region or event.

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

Pressing the NUDGE button a second time turns off Large Nudge mode.

Temporary Nudge Mode

To use Nudge temporarily (for one or two small moves), hold down the NUDGE button and use one or more of the V-Pots. This action executes the selected function, and then exits Temporary Nudge mode as soon as you release the NUDGE button.

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

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

Function button	Action
F1	Sets Ticks.
F2	Sets Division.
F3	Sets Beat.
F4	Sets Bar.
F5	Sets Frames.
F6	Sets Half Frames.

Mackie Control: CYCLE Button

This button activates and deactivates Cycle mode. By default, the cycle area falls between the first two markers.

Subsequent markers can act as left and 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 (as indicated by the LED), press the REWIND or FAST FWD button.

To set the left or right locator to the current playhead position

- Hold down the CYCLE button and press REWIND or FAST FWD. This also activates Cycle mode.

To quickly define a new cycle area

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

Cycle View

Pressing the SHIFT and CYCLE buttons activates Cycle View mode. The mode display shows "Cy."

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

Control	Action
Turning V-Pot 1	Shows and edits the current cycle status (off or on); you can also use the CYCLE button.
Turning V-Pot 2	BySel—sets the current cycle area by the selection made in the Arrange window (selected audio or MIDI region).
Turning V-Pot 3	Move—moves the current cycle by a bar with each click of the V-Pot.
Pressing V-Pot 5	Picks up the current playhead 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-Pot 7	Picks up the current playhead 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).

Mackie Control: DROP Button

The DROP button lets you activate and deactivate Autopunch mode.

To navigate between punch in areas

1. Press the MARKER button.
2. Press the DROP button, and when active (as indicated by the lit LED), press the FAST FWD or REWIND button.

To set the punch in or punch out locator to the current playhead position

- Hold down the DROP button and press FAST FWD or REWIND. This also activates Autopunch mode.

To quickly define a new punch in area

1. Navigate to the desired punch in locator position with the Jog/Scrub Wheel.
2. Press the DROP and REWIND buttons.
3. Navigate to the desired punch out locator position with the Jog/Scrub Wheel.
4. Press the DROP and FAST FWD buttons.

Punch View

Pressing the SHIFT and DROP buttons activates Punch view. The mode display shows "Pu."

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

Note: Changing a punch locator value with the Mackie Control automatically activates Autopunch mode in Logic.

Control	Action
Turning V-Pot 1	Shows and edits the current Autopunch status (off or on); you can also use the DROP button.
Turning V-Pot 3	Move—moves the current punch area by a bar with each click of the V-Pot.
Pressing V-Pot 5	Picks up the current playhead position for the punch in locator.
Turning V-Pot 5	Changes the punch in locator in bars.
Turning V-Pot 6	Changes the punch in locator in beats (denominator steps).
Pressing V-Pot 7	Picks up the current playhead position for the punch out locator.
Turning V-Pot 7	Changes the punch out locator in bars.
Turning V-Pot 8	Changes the punch out locator in beats (denominator steps).

Mackie Control: Replace, Click, and Solo Buttons

The REPLACE button activates or deactivates Replace mode.

The CLICK button activates or deactivates the (MIDI or Klopfgeist) metronome click. There are independent click settings for play and record. To access the click settings, choose File > Project Settings > Metronome.

Press the SHIFT and CLICK buttons to activate or deactivate both External Sync mode and transmission of MMC.

The SOLO button behaves as per the Solo key command. Individual channels can be soloed with the 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 channel strip is soloed. The RUDE SOLO LED—just to the right of the Position/Time display—is lit whenever *any* channel strip is soloed.

Press the SHIFT and SOLO buttons to activate Solo Lock mode.

Mackie Control: Cursor Key Zone

This zone contains five buttons, located to the left of the Jog/Shuttle Wheel, which serve a number of purposes. The four cursor buttons—Up, Down, Left, and Right—encircle the central ZOOM button.

Mackie Control: Normal Operation

When the ZOOM button is not active (its LED is unlit), the four cursor buttons select the current parameter, shift the current parameter page or Send/EQ/Insert slot, depending on the current V-Pot assignment.

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

When the CMD/ALT button is held down, the Cursor Left and Cursor Right buttons shift the parameter display by one parameter, rather than one page.

In view modes that don't require page or slot shifts, the cursor buttons emulate the computer keyboard's arrow keys. As an example, the left and right buttons select channel strips when in Mixer view.

In Large and Temporary Nudge modes, the Cursor Left and Cursor Right buttons emulate the computer keyboard's arrow keys, allowing easy region or event selection.

Mackie Control: Zoom Mode

Pressing the ZOOM button activates Zoom mode. The cursor buttons are then used to change the vertical or horizontal zoom factor of the window with key focus.

In the Arrange window:

- OPTION and Cursor Up or Cursor 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.

Mackie Control: Computer Arrow Key Emulation

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

When SHIFT and ZOOM are pressed, the cursor buttons enter Permanent Cursor Key mode—they mimic the computer arrow keys without the need to hold down the SHIFT button. The ZOOM button LED flashes when in this mode.

You can deactivate this mode by pressing the ZOOM button.

Mackie Control: Jog/Scrub Wheel Zone

The Jog/Scrub Wheel and SCRUB button can be used to navigate through the project, 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 playhead.
- *Scrub mode on:* The Jog/Scrub Wheel performs scrubbing, which allows you to hear the data of the selected (or soloed) tracks while scrolling or moving through the project.

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

  Note: You can also use the SCRUB button for Pause functionality.
- *SHUTTLE mode:* The Jog/Scrub Wheel shuttles the playhead—turning it increases or decreases the speed at which the playhead moves. The SCRUB button LED flashes when in Shuttle mode.

Mackie Control: Programmable User Modes

The Mackie Control provides six programmable user modes, which you can use for your own assignments. You can activate each of these modes by holding down the SHIFT button along with one of the Assignment buttons, as follows:

- TRACK + SHIFT = User mode 1.
- PAN/SURROUND + SHIFT = User mode 2.
- EQ + SHIFT = User mode 3.
- SEND + SHIFT = User mode 4.
- PLUG-IN + SHIFT = User mode 5.
- INSTRUMENT + SHIFT = User mode 6.

The Assignment displays shows the users modes as u1, u2, and so on.

To create an assignment in one of the user modes

1. Activate the user mode you want to use by holding down the SHIFT button and pressing one of the Assignment buttons, as listed above.
2. In Logic Pro, use the Learn process to create one or more assignments, as described in Assigning Controllers to Logic Pro Parameters.

Mackie Control: Connecting Foot Switches

You can connect a momentary foot pedal—with either positive or negative polarity—to the foot switch sockets. By default, foot switches control the following functions:

- 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 MASTER fader level. Only use an expression pedal with this socket.

The polarity of the foot switches is determined by the Mackie Control when powered up. You should first connect the foot switches, then turn on the Mackie Control.

Mackie Control: Assignment Overview

Each of the following sections outline how Mackie Control interface elements are assigned to Logic functions.

- Mackie Control: Display Buttons
- Mackie Control: Channel Strip Controls (1 Through 8)
- Mackie Control: ASSIGNMENT Buttons
- Mackie Control: Function Key Buttons
- Mackie Control: GLOBAL VIEW Buttons
- Mackie Control: MODIFIER Buttons (While Held Down)
- Mackie Control: AUTOMATION Buttons
- Mackie Control: UTILITIES Buttons
- Mackie Control: TRANSPORT Buttons
- Mackie Control: Cursor Keys
- Mackie Control: Jog/Scrub Wheel
- Mackie Control: External Inputs

Mackie Control: DISPLAY Buttons

The following table outlines the display controls and their functions:

Button	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.
	CMD/ALT	Enter control surface group settings mode.
SMPTE/BEATS	—	Switch between SMPTE and beat format in clock display.

Mackie Control: Channel Strip Controls (1 Through 8)

The following table outlines the channel strip controls and their functions:

Control	Modifier	Function/Comments
Turning V-Pot	—	Modify parameter displayed in LCD.
	OPTION	Set parameter to minimum, default, or maximum value.
	CMD/ALT	Modify parameter at high resolution.
Pressing V-Pot button	—	Set parameter displayed on LCD to default value, or switch between two possible values.
	Flashing preselection:	
	—	Enter the preselected value.
	Menu options:	
	—	Enter whatever option is visible in display.
	If track is folder:	
	—	Enter folder.
REC/RDY button	—	Activate/deactivate Record Enable button of track.
	OPTION	Disable Record Enable button for all tracks.
SOLO button	—	Activate/deactivate Solo button of track's channel strip.
	OPTION	Disable Solo button for all channel strips.
	In Send Destination/Level Mixer view:	
	—	Switch pre/post status of selected send.
	In Send Destination/Level Channel view:	

Control	Modifier	Function/Comments
	—	Switch between pre/post fader mode of send on selected channel strip.
MUTE button	—	Activate/deactivate Mute button of track's channel strip.
	OPTION	Disable Mute button for all channel strips.
	In Mixer view:	
	SHIFT	Activate/deactivate mute/bypass of the shown parameter.
	In EQ Mixer view:	
	SHIFT	Activate/deactivate bypass of the current EQ band.
	In EQ Frequency/Gain view:	
	—	Activate/deactivate bypass of selected EQ band.
	In Send Mixer view:	
	SHIFT	Activate/deactivate bypass of selected send.
	In Send Destination/Level Mixer view:	
	—	Activate/deactivate bypass of selected send.
	In Send Destination/Level Channel view:	
	—	Activate/deactivate mute of send on selected channel strip.
	In Plug-in Mixer view:	
	SHIFT	Activate/deactivate bypass of plug-in.
	In Instrument Mixer view:	
	SHIFT	Activate/deactivate bypass of instrument.
SELECT button	—	Select channel strip.
	SHIFT	Set channel strip volume to unity level (0 dB).
	OPTION	Creates a new track with the same assignment as the selected track and switches to Arrange view.
	SHIFT+OPTION	Create a new track with the next channel strip (following the selected track) and switches to Arrange view.
Fader	—	Adjust volume.
	In Flip mode "Duplicate":	

Control	Modifier	Function/Comments
	—	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 Mixer view:	
	—	Adjust send level of selected send.
	In Send Destination/Level Channel view:	
	—	Adjust send level of send on selected channel strip.

Mackie Control: ASSIGNMENT Buttons

Hold down to show a shortcut menu on the LCD. Functions or commands are assigned to V-Pots. Release the chosen Assignment button to switch V-Pots to Multi Channel or Channel views. The table outlines both the standard use of Assignment buttons, and when used in conjunction with a modifier button.

Button	Modifier	Function/Comments
TRACK	—	Channel strip parameters
TRACK	SHIFT	User mode 1
PAN/SURROUND	—	Pan/Surround parameters
PAN/SURROUND	SHIFT	User mode 2
EQ	—	EQ parameters
EQ	SHIFT	User mode 3
SEND	—	Send parameters
SEND	SHIFT	User mode 4
PLUG-IN	—	Plug-in selection or Plug-in Edit mode
PLUG-IN	SHIFT	User mode 5
INSTRUMENT	—	Instrument selection or Instrument Edit mode
INSTRUMENT	SHIFT	User mode 6

Button	Modifier	Function/Comments
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 Arrange view and All view.
	SHIFT	Switch between Arrange view and Tracks view.

Mackie Control: Function Key Buttons

The following table outlines the function key controls and their functions:

Button	Modifier	Function/Comments
F1	—	Recall screenset 1.
	SHIFT	Open or close Arrange window.
	CMD/ALT	Cut
	TRACK	Switch to Mixer view-Volume.
	PAN/SURROUND	Switch to Mixer view-Pan/surround angle.
	EQ	Switch to Mixer view-Bypass.
	SEND	Switch to Mixer 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 or close Mixer window.
	CMD/ALT	Copy
	TRACK	Switch to Mixer view-Pan.
	PAN/SURROUND	Switch to Mixer view-Pan/surround radius.
	EQ	Switch to Mixer view-EQ Type.
	SEND	Switch to Mixer view-Level.
	MARKER	Create marker with rounding.
	NUDGE	Nudge value: Format
In modal dialog:		F2 key is equivalent to computer keyboard 2 key.

Button	Modifier	Function/Comments
F3	—	Recall screenset 3.
	SHIFT	Open or close Event Editor.
	CMD/ALT	Paste
	TRACK	Switch to Mixer view-Channel Strip mode.
	PAN/SURROUND	Switch to Mixer view-Pan/surround LFE.
	EQ	Switch to Mixer view-Frequency.
	SEND	Switch to Mixer 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 or close Score Editor.
	CMD/ALT	Clear
	TRACK	Switch to Mixer view-Input.
	PAN/SURROUND	Switch to Mixer view-Pan/surround mode.
	EQ	Switch to Mixer view-Gain.
	SEND	Switch to Mixer view-Mute.
	NUDGE	Nudge value: Bar
In modal dialog:		F4 key is equivalent to computer keyboard 4 key.
F5	—	Recall screenset 5.
	SHIFT	Open or close Hyper Editor.
	CMD/ALT	Select All
	TRACK	Switch to Mixer view-Output.
	PAN/SURROUND	Switch to Channel view.
	EQ	Switch to Mixer view-Q Factor.
	SEND	Switch to Channel view.
	NUDGE	Nudge value: Frame
In modal dialog:		F5 key is equivalent to computer keyboard 5 key.
F6	—	Recall screenset 6.
	SHIFT	Open or close Piano Roll Editor.
	CMD/ALT	Select All Following.
	TRACK	Switch to Mixer view-Automation.
	PAN/SURROUND	Switch to Angle/Diversity view.
	EQ	Switch to Channel view.

Button	Modifier	Function/Comments
	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.
	CMD/ALT	Select Similar Regions/events.
	TRACK	Switch to Mixer view-Displayed parameter.
	PAN/SURROUND	Switch to Surround X/Y view.
	EQ	Switch to Frequency/Gain Mixer view.
	SEND	Switch to Destination/Level Mixer view.
In modal dialog:		F7 key is equivalent to computer keyboard 7 key.
F8	—	Close topmost floating window.
	SHIFT	Open or close Audio Bin.
	CMD/ALT	Select Inside Locators.
	TRACK	Switch to Channel Strip Setup view.
	EQ	Switch to Frequency/Gain Channel view.
	SEND	Switch to Destination/Level Channel view.
In modal dialog:		F8 key is equivalent to computer keyboard 8 key.

Mackie Control: GLOBAL VIEW Buttons

The following table outlines the global view controls and their functions:

Button	Modifier	Function/Comments
MIDI TRACKS	—	Switch to All view and show MIDI tracks.
	SHIFT	Set to fader bank no. 1 (channel strips 1 to 8, for example).
In modal dialog:		MIDI TRACKS button is equivalent to computer keyboard 9 key.
INPUTS	—	Switch to All view and show input channel strips.
	SHIFT	Set to fader bank no. 2 (channel strips 9 to 16, for example).
In modal dialog:		INPUTS button is equivalent to computer keyboard 0 key.
AUDIO TRACKS	—	Switch to All view and show audio channel strips.
	SHIFT	Set to fader bank no. 3 (channel strips 17 to 24, for example).

Button	Modifier	Function/Comments
In modal dialog:		AUDIO TRACKS button is equivalent to computer keyboard's Period key.
AUDIO INSTRUMENTS	—	Switch to All view and show software instrument channel strips.
	SHIFT	Set to fader bank no. 4 (channel strips 25 to 32, for example).
In modal dialog:		AUDIO INSTRUMENTS button is equivalent to computer keyboard / key.
AUX	—	Switch to All view and show aux channel strips.
	SHIFT	Set to fader bank no. 5 (channel strips 33 to 40, for example).
In modal dialog:		AUX button is equivalent to computer keyboard * key.
BUSSES	—	Switch to All view and show bus channel strips.
	SHIFT	Set to fader bank no. 6 (channel strips 41 to 48, for example).
In modal dialog:		BUSSES button is equivalent to computer keyboard - key.
OUTPUTS	—	Switch to All view and show output and master channel strips.
	SHIFT	Set to fader bank no. 7 (channel strips 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 (channel strips 57 to 64, for example).

Mackie Control: MODIFIER Buttons (While Held Down)

The following table outlines the modifier buttons and their functions:

Button	Function/Comments
SHIFT	Switch to second function.
OPTION	Apply function to all channel strips or set parameter to minimum, default, or maximum value.
CONTROL	Disable Group functions while held down.
CMD/ALT	Enable Fine mode; shift parameter page by one parameter instead of page.

Mackie Control: AUTOMATION Buttons

The following table outlines the automation controls and their functions:

Mackie 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 Mixer view, displaying group parameter.
	OPTION	Switch to Single view.

Mackie Control: UTILITIES Buttons

The following table outlines the utility controls and their functions:

Button	Modifier	Function/Comments
SAVE	—	Save project.
	OPTION	Save project as.
UNDO	—	Undo
	SHIFT	Redo
	OPTION	Open Undo History.
CANCEL	—	Leave folder.
	Flashing preselection:	
	—	Cancel preselection.
	In alerts:	
	—	Execute Cancel button.
ENTER	—	Enter folder of selected track.
	In alerts:	
	—	Execute default button.

Mackie Control: TRANSPORT Buttons

The following table outlines the transport controls and their functions:

Button	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 mode.
	SHIFT	Switch to Cycle view.
DROP	—	Activate/deactivate Autopunch mode.
	SHIFT	Switch to Punch view.
REPLACE	—	Activate/deactivate Replace mode.
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 mode and set left locator to playhead.
	DROP	Engage Autopunch mode and set punch in locator.
	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 mode and set right locator to playhead.
	DROP	Engage Autopunch and set punch out to locator.
	In Marker mode:	
	—	Go to previous marker.

Button	Modifier	Function/Comments
	In Nudge mode:	
	—	Nudge right by chosen value.
STOP	—	Stop
PLAY	—	Play
	SHIFT	Pause
RECORD	—	Record

Mackie Control: Cursor Keys

The following table outlines the cursor controls and their functions:

Mackie Control	Modifier	Function/Comments
Cursor Left/Right	If in Mixer 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.
	CMD/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 type (Cursor Right).
Cursor Up/Down	In Channel Strip EQ, Send view, or Plug-In/Instrument Editor view:	

Mackie Control	Modifier	Function/Comments
	—	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.

Mackie Control: Jog/Scrub Wheel

The following table outlines the Jog/Scrub Wheel controls and their functions:

Control	Modifier	Function
Jog Wheel	—	Move the playhead forward or back.
	CYCLE	Set the left locator to the current playhead position, advance the playhead as normal, then set the right locator to the playhead position. Further Jog Wheel turns while still holding down CYCLE advances the playhead and sets the right locator again. Tip: Rotating the Jog Wheel counterclockwise while holding down CYCLE defines a skip-cycle range.
	DROP	Set the punch in locator to the current playhead position, advance the playhead as normal, then set the punch out locator to the playhead position. Further Jog Wheel turns while still holding down DROP advances the playhead and sets the punch out locator again.
SCRUB button	—	Activate/deactivate Scrub mode.
	SHIFT	Enable Shuttle mode on the Jog Wheel (SCRUB button LED flashes).

Mackie Control: External Inputs

The following table outlines the external input controls and their functions:

Input	Modifier	Function
USER SWITCH A	—	Play/Stop
USER SWITCH B	—	Record
EXTERNAL CONTROL	—	Master Volume

M-Audio iControl

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

Use of the iControl with Logic Pro simplifies work with GarageBand projects. When you open a GarageBand project in Logic Pro, you can edit it (using the iControl) in exactly the same manner as in GarageBand. You can also take full advantage of the greater control, editing, and processing power afforded by Logic Pro.

Given the hugely expanded functionality of Logic Pro over GarageBand, some iControl buttons may not be assigned as you might expect. You can, however, easily reassign iControl buttons in the Controller Assignments window. For more information, see Customizing Controller Assignments.

This chapter covers the following:

Setting Up Your M-Audio iControl

When you connect the iControl to any of your computer's USB ports, Logic Pro automatically detects the device. If any channels are muted, soloed, or record-enabled in the current project, the LED on the corresponding channel strip control is lit to reflect the channel strip's status. If Cycle mode is active, a lit LED also indicates this.

Editing Plug-in Parameters Using the M-Audio iControl

In addition to editing volume, pan, and other channel strip functions, the iControl lets you edit any plug-in that can be automated in Logic Pro. Many Logic Pro effect and instrument plug-ins, and those of third-party manufacturers, feature dozens of parameters. You can access each of these parameters with the iControl.

If a third-party plug-in that you're using does not support remote editing, or other features mentioned in this document, contact the plug-in manufacturer to obtain an updated version.

M-Audio iControl: Assignment Buttons

You can use the buttons along the left side of the iControl, in the areas labeled *All Tracks* and *Selected Track*, to select different functions for the rotary encoders located along the right edge, in the channel strip area. In some cases, the channel strip area controls can change the functionality of the Select buttons.

Volume Button

Pressing the Volume button assigns the rotary encoders (in the channel strip area) to control volume for the eight active channels. The channel strip buttons—Select, Record Enable, Mute, and Solo—work as described in M-Audio iControl: Channel Strip Controls.

Pan Button

Pressing the Pan button assigns the rotary encoders to control the pan/balance of the eight active channels. The channel strip button functionality is as per their defaults.

Track Info Button

Pressing the Track Info button activates Channel Strip Channel view. In this mode, you can use the Select (Sel) buttons and rotary encoders to edit global parameters of the selected channel strip. The Record Enable, Mute, and Solo buttons retain their default 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.
- *Sel button 8:* Not assigned

  In Channel Strip Channel view, each of the Select buttons is lit when the respective Insert or Send slot is enabled, and unlit when the slot is bypassed.
- *Encoder 1:* If the selected channel is an audio channel strip with a Noise Gate effect, controls the Threshold parameter of the Noise Gate (if inserted in the *selected* channel strip).
- *Encoder 2:* If the selected channel is an audio channel strip with a Compressor effect, controls the Compressor's Ratio.

Note: The assignments for Encoder 1 and 2 are optimized for GarageBand Real Instrument tracks, which have a default Noise Gate and Compressor effect inserted.

- *Encoder 3:* Not assigned
- *Encoder 4:* Not assigned
- *Encoder 5:* Controls the Pan knob of the channel.
- *Encoder 6:* Controls the send level for the first send of the channel.
- *Encoder 7:* Controls the send level for the second send of the channel.
- *Encoder 8:* Controls the Volume fader of the channel.

Generator Button

If the selected channel strip is an instrument channel strip, pressing the Generator button assigns the rotary encoders to edit the sound generation parameters of the instrument. These assignments are in groups of eight parameters. The Arrow Up and Arrow Down buttons switch to the previous or next page of eight parameters. Activation of the Generator button has no effect if the selected channel strip is not a software instrument channel strip.

Effect 1 and Effect 2 Buttons

Pressing Effect 1 assigns the rotary encoders to edit the parameters of the third Insert slot of the selected channel strip. Pressing Effect 2 assigns the rotary encoders to edit the parameters of the fourth Insert slot (if a fourth Insert slot exists). The Arrow Up and Arrow Down buttons switch to the previous or next page of parameters.

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

When using the Arrow buttons to switch between parameter pages—accessed through use of the Generator, Effect 1, or Effect 2 button—the parameters change in groups of eight (unless the parameters on the last page do not make a complete group of eight). For example, if a plug-in has 19 parameters and the iControl is controlling parameters 1 to 8:

- Pressing the Arrow Up button shifts to parameters 9 to 16.
- Pressing the Arrow Up button again shifts to parameters 12 to 19.
- Pressing the Arrow Down 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.

EQ Button
Pressing the EQ button allows you to edit the EQ parameters of the selected channel strip. If a Channel or Linear Phase EQ exists on the selected channel strip, pressing the EQ button opens the EQ plug-in window. If no Channel or Linear Phase EQ exists on the selected channel strip, a Channel EQ is inserted automatically. The Arrow Up and Arrow Down buttons switch to the next or previous parameter page.

Each Assignment button has two modes—Mixer view and Channel view—that determine whether the rotary encoders (and in some cases, the Select buttons) edit separate channels or the same channel. For more information, see M-Audio iControl: Mixer View and Channel View.

M-Audio iControl: Arrow Up and Arrow Down Buttons

The iControl has channel strip controls for eight channel strips, which default to channel strips 1 to 8. To access further channel strips, press the Arrow Up button. This allows you to control channel strips 9 through 16. Press the Arrow Up button again to control channel strips 17 to 24, or press the Arrow Down button to control channel strips 1 to 8.

When using the Arrow buttons to switch between groups of channel strips, the channel strips follow groupings of eight (starting from channel strip 1) unless the last group of channel strips do not make a complete group of eight. For example, if a project has 19 channel strips, and the iControl is controlling channel strips 1 to 8:

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

Pressing the Arrow Up button while holding down the Option button jumps to the first eight channel strips in the project. Similarly, pressing the Option and Arrow Down buttons jumps to the last eight channel strips in the project. For example, if a project has 64 channel strips, pressing Option–Arrow Up jumps to channel strips 57 to 64, and pressing Option–Arrow Down jumps to channel strips 1 to 8.

Note: If the Generator, EQ, Effect 1, or Effect 2 button is lit, the functionality of the Arrow Up and Arrow Down buttons are as described in the Generator, Effect 1, and Effect 2 sections. See M-Audio iControl: Assignment Buttons for details.

M-Audio iControl: Channel Strip Controls

The right side of the iControl features eight rows of controls that you can use to edit channel strips. Each row includes Select, Record Enable, Mute, and Solo buttons plus a rotary encoder.

Select Button

Pressing a channel Select button selects the channel for channel-based editing or assignment commands. When a channel is selected, "Sel" is lit on the button.

Note: If the Track Info button is illuminated, the Select buttons behave differently. See Track Info Button for details.

Record Enable Button

Pressing a channel Record Enable button (denoted by a centered white dot) arms the associated channel strip for recording. When a channel is armed for recording, the dot is lit. Pressing the Record Enable button a second time disables recording for the channel.

To disarm all channel strips, hold down the Option button while pressing the Record Enable button of any channel.

Mute Button

Pressing a channel strip Mute button (denoted by a speaker icon) mutes the channel. The speaker icon is lit when the channel strip is muted. Pressing the Mute button a second time unmutes the channel strip.

To unmute all channel strips, hold down the Option button and press the Mute button of any channel.

Solo Button

Pressing a channel strip Solo button (denoted by a headphone icon) solos the associated channel strip in the application. The headphone icon is lit when the channel strip is soloed. Pressing the Solo button a second time exits Solo mode for the channel strip.

To hear (unsolo) all channel strips, hold down the Option button and press the Solo button of *any* channel.

Rotary Encoder

Each channel features a rotary encoder, located to the right of the Solo button. The function assigned to the encoders changes when different Assignment buttons are pressed. See M-Audio iControl: Assignment Buttons.

Pressing the Option button while turning a rotary encoder—regardless of the active assignment mode—switches between the parameter's minimum, default, and maximum values.

M-Audio iControl: Mixer View and Channel View

The rotary encoders operate in two views: *Mixer view* and *Channel view*. The view you're in determines whether the rotary encoders (and in some cases, the Select buttons) edit multiple channels, or a single channel.

- *Mixer view:* Accesses the same parameter for eight channel strips, such as pan or volume (normally a section of the Mixer window).
- *Channel view:* Accesses eight parameters of the selected channel strip.

To access Mixer or Channel view, press one of the Assignment buttons. For more information about using the Assignment buttons, see M-Audio iControl: Assignment Buttons Functions.

M-Audio iControl: Jog Wheel

You can navigate through projects with the Jog Wheel, located toward the lower-left area of the iControl, just above the transport controls. Turning the wheel clockwise moves the playhead forward. Turning it to the left moves the playhead backward.

M-Audio iControl: Transport Controls

The transport controls, at the bottom-left corner of the iControl, feature six large buttons: Record, Return to Zero, Rewind, Play, Fast Forward, and Cycle. You can use these buttons to navigate your projects, and to perform a number of recording and editing tasks.

Record Button

Press the Record button (denoted by a large white dot) to activate recording on channel strips that are currently *armed* for recording. See Record Enable Button.

Return to Zero Button

Press the Return to Zero button (denoted by a vertical line and left arrow) to move the playhead to the beginning of the project.

Rewind Button

Quickly press the Rewind button (denoted by two left arrows) to move the playhead backward by one bar. Hold down the Rewind button to continuously move the playhead backward in one-bar steps.

You can also press the Rewind and Cycle buttons simultaneously to activate Cycle mode, and set the left cycle border (left locator) to the current playhead position.

Play/Stop Button

Press the Play button (denoted by a right arrow) to start playback from the current playhead position, or to stop playback if the project is currently playing.

Fast Forward Button
Quickly press the Fast Forward button (denoted by two right arrows) to move the playhead forward by one bar. Hold down the Fast Forward button to continuously move the playhead forward in one-bar increments.

You can also press the Fast Forward and Cycle buttons simultaneously to activate Cycle mode, and set the right cycle border (right locator) to the current playhead position.

Cycle Button
Press the Cycle button (denoted by two circular arrows) to activate Cycle mode. If Cycle mode is active, pressing the Cycle button deactivates it.

You can activate Cycle mode—and set the left and right cycle locators, respectively—by using the Rewind or Fast Forward and Cycle buttons together. See M-Audio iControl: Using Locators and Cycle Mode.

M-Audio iControl: Using Locators and Cycle Mode

The left and right locators are used to mark a section of your project. These are often used in conjunction with cycle facilities, which repeatedly play back the section of your project between the locators.

To set the left and right locators, and activate Cycle mode

1. Use the Jog Wheel to move the playhead to the desired left locator position, then press both the Cycle and Rewind buttons.
2. Do one of the following:
   - Navigate to the position where you want to set the right locator with the Jog Wheel, then press the Cycle and Fast Forward buttons simultaneously.
   - Hold down the Cycle button, navigate to the position where you want to set the right locator using the Jog Wheel, then release the Cycle button.
   - Rotating the Jog Wheel counterclockwise (to the left) while holding down Cycle defines a skip-cycle range.

M-Audio iControl: Master Fader

Moving the Master fader on the iControl sets the level of the Master fader in the Logic Pro Mixer window. The Master fader changes the level of all output channels, but does not affect the relative levels of channels that precede the Master fader in the signal path. Move the fader left to decrease the master level, or to the right to increase the master level.

M-Audio iControl: Assignment Overview

The following assignment tables show all assignments for each control, both with and without the Option button (for the Assignment buttons and channel strip controls), and the Cycle button (for the Jog Wheel and transport buttons) being pressed.

- M-Audio iControl: Assignment Buttons Functions
- M-Audio iControl: Channel Strip Controls and Functions
- M-Audio iControl: Jog Wheel Controls and Functions
- M-Audio iControl: Transport Controls and Functions

M-Audio iControl: Assignment Buttons Functions

The Assignment buttons in the All Tracks and Selected Track areas define the behavior of the channel strip controls.

iControl button	Modifier	Function/Comments
Volume	—	Encoders control channel's Level fader.
Pan	—	Encoders control channel's Pan/Balance control.
Generator	—	Encoders control software instrument parameters.
Track Info	—	Encoders control channel strip 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 channel strips, or sets the parameter to its minimum, default, or maximum value.
Arrow Up/Arrow Down	—	Shift fader bank left/right by number of channel strips.
	Option	Shift fader bank to first or last group of channels in the project.

M-Audio iControl: Channel Strip Controls and Functions

The following table outlines the channel strip controls and their functions:

iControl	Modifier	Function/Comments
Encoder	—	Modifies currently selected parameter.
	Option	Sets parameter to minimum, default, or maximum value.
Record Enable	—	Activates/deactivates Record Enable button of channel strip.

iControl	Modifier	Function/Comments
	Option	Disables Record Enable buttons of all channel strips.
Solo	—	Activates/deactivates Solo button of channel strip.
	Option	Disables Solo buttons of all channel strips.
Mute	—	Activates/deactivates Mute button of channel strip.
	Option	Disables Mute buttons of all channel strips.
Sel	—	Selects channel strip, except in Channel view.

M-Audio iControl: Jog Wheel Controls and Functions

The following table outlines the Jog Wheel controls and their functions:

iControl	Modifier	Function/Comments
Jog Wheel	—	Moves playhead.
	Cycle	Sets the left locator to the current playhead position, advances the playhead as usual, then sets the right locator to the new playhead position. Further Jog Wheel turns (to the right) while holding down the Cycle button advances the playhead and resets the right locator position.

M-Audio iControl: Transport Controls and Functions

The following table outlines the transport controls and their functions:

iControl	Modifier	Function/Comments
Record	—	Record
Return to Zero	—	Go to beginning of project.
Rewind	—	Moves the playhead one bar backward. If held, continue to scroll backward.
	Cycle	Engages Cycle function, and sets left locator to playhead position.
Play	—	Play or Stop.
Fast Forward	—	Moves the playhead one bar forward. If held, continue to scroll forward.
	Cycle	Engages Cycle function, and sets right locator to playhead position.
Cycle	—	Switches Cycle mode on or off.

Euphonix MC Pro, System 5-MC, MC Control, MC Mix, and MC Transport

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Logic Pro supports the EuCon protocol developed by Euphonix. This protocol allows enhanced communication between the MC Pro, System 5-MC, MC Control, MC Mix, or MC Transport and Logic Pro.

Keep in mind the following when reading through the chapter: The term *Euphonix device* is used when describing all devices as a group. *MC Professional device* is used when speaking about the MC Pro and System 5-MC. *MC Artist device* is used when speaking about the MC Mix, MC Transport, and MC Control. For any exceptions to the above, individual device names are used.

Note: This is an addendum to the Euphonix user documentation and is limited to descriptions of features specific to Logic Pro. Refer to the Euphonix documentation for more information about the individual control surfaces.

This chapter covers the following:

Setting Up Your Euphonix Device with Logic Pro

Depending on the specific Euphonix device you have, the setup process varies. Follow the steps below to use your Euphonix device with Logic Pro.

Note: EuCon support in Logic Pro works in a different way to the support of other control surface devices. As a consequence, you cannot use the Controller Assignments window to change assignments. See the documentation provided with your Euphonix device for information on the use of parameters and device features. EuCon devices do *not* appear in the Control Surfaces Setup window.

To set up your MC Professional device for use with Logic Pro

1. Set up your device as described in the Euphonix user documentation.
2. Install the latest EuCon software on your computer. (If necessary, go to the Euphonix website to download the most recent version.)

   Note: Installing EuCon software on the MC Professional device requires the installation of two applications—one for the MC Pro device (EuConMC software), and a second for the computer (EuConWS client). Full details are in the Euphonix user documentation.
3. Open Logic Pro.

   The startup screen lets you know that Logic Pro is starting EuCon.
4. On the MC Pro, press the workstation button associated with your computer.

   The MC Pro display shows an Attaching to Logic Pro progress bar.

To set up your MC Artist device for use with Logic Pro

1. Set up your device as described in the Euphonix user documentation.
2. Install the latest EuCon software on your computer. (If necessary, go to the Euphonix website to download the most recent software version.)
3. With the EuControl application running on your computer, open Logic Pro.

   Your MC Artist device will automatically connect to the application.

Euphonix: Changing the Track Display

By default, tracks are shown in the Mixer and on the display of your Euphonix device according to the Mixer's Arrange View mode. This means that all channel strips with corresponding Arrange window tracks are displayed in the same order as in the Arrange area.

Note: Redundant tracks—where multiple tracks are routed to the same channel strip—are not accessible.

Switching the Mixer view to another mode (using the view buttons or channel strip filter buttons) does not update the Euphonix device display. You can, however, override the default behavior.

To switch the view of channel strips on Euphonix devices

- Open the Logic Pro > Preferences > Control Surfaces > Setup window, and change the Channel Strip View mode in the Control Surface Group 1 menu.

Euphonix MC Professional: Setting Up Soft Key Assignments

The "Logic Pro.xml" Application Set file—installed with the EuCon software on your MC Professional device—features a number of useful Soft Key assignments. It is possible to edit these assignments.

To change a Soft Key assignment on your MC Professional device

1. Press the Setup button in the lower-right corner of the Soft Keys section on the device.
2. Select the respective Soft Key by pressing it.
3. Choose the desired EuCon command in the menu.

Logic Pro supports the following EuCon commands:

- *Key Commands:* All Logic Pro 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; for 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 punch locators, adjust punch in or punch out locator, move markers, adjust marker lengths, nudge selected regions or events, left/right pan (surround X), and front/back pan (surround Y).
- *Project > Markers:* All markers defined in the open project are shown as a list (which only appears once you create the first marker in that project). Assigning a Soft Key to a marker displays the marker title on the Soft Key, but only if the marker title consists of six characters or fewer. A marker name with more than six characters is replaced on the Soft Key by the marker number (1, for example). With this same limitation, renaming a marker in Logic Pro also changes the associated Soft Key display. Pressing the Soft Key moves the playhead to the marker start point. The Soft Key is illuminated while the playhead is within the marker boundaries. Moving a marker disconnects the Soft Key from the marker.

  Note: Marker Soft Keys are a part of the Application Set, not the project. Don't forget to save the User Set after defining a Marker Soft Key.
- *Transport:* All transport-related key commands are found here.

Euphonix: Choosing Automation Modes

The Euphonix devices only support Read and Write automation modes. Logic Pro, however, also features Touch and Latch automation modes. When you use the Euphonix devices with Logic Pro, activating Read/Write mode activates Touch mode in Logic Pro. Latch mode cannot be activated with these devices.

To choose an automation mode on the MC Pro

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

   You can also use the Select key to switch between automation modes in Logic Pro:
   - When you set the automation mode to Off or Read, the Select key switches between these two modes.
   - When you set the automation mode to Read or Touch, the Select key switches between these modes.

To choose an automation mode on a CM408T channel strip

1. Press the Wave and Y keys simultaneously.

   The available automation modes are displayed in a pop-up menu on the CM408T display.
2. Use the fader of the channel strip to scroll through the following options:
   - *Isolate:* Automation mode is Off.
   - *Read:* Activates Read mode in Logic Pro.
   - *Write:* Activates Write mode in Logic Pro.
   - *Read/Write:* Activates Touch mode in Logic Pro.
3. Use the Y key to confirm your selection, or the N key to cancel the operation.

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

To choose an automation mode on MC Artist devices

1. Press and hold down the Shift key.

2 Press the AUTO key repeatedly until your chosen automation mode appears on the display screen. You can choose between:

- *Blank:* Automation mode is Off.
- *Read (r):* Activates Read mode in Logic Pro.
- *Write (w):* Activates Write mode in Logic Pro.
- *Read/Write (rw):* Activates Touch mode in Logic Pro.

Euphonix: Understanding the Fader Strips

The number of fader strips differs across each of the Euphonix devices. The following section outlines the behavior of some fader strip elements in Logic Pro.

Note: This section is limited to descriptions of features specific to Logic Pro. Refer to the Euphonix user documentation for information about basic fader behavior.

- *On key:* The On key provides the same function as the Mute button in Logic Pro, but behaves in a way that may not be expected.
  - The track is unmuted when the On key is lit (the Logic Pro Mute button is unlit).
  - The track is muted when the On key is unlit (the Logic Pro Mute button is lit).
- *L LED:* On MC Professional devices, when the Logic Pro channel strip being controlled by the fader belongs to an automation group, the L LED of the channel strip is illuminated.
- *"Touching fader selects track":* The "Touching fader selects track" preference of Logic Pro (Logic Pro > Preferences > Control Surfaces > Preferences) does not apply to the Euphonix devices when they are used with the EuCon protocol. This function is offered by the individual devices, using the device's "Select channel by touching fader/joystick" or "Select by Touch" General preference. This is the same as pressing the Select/Sel key.

Euphonix: Opening and Closing Plug-in Windows

Logic Pro supports the Euphonix "Open plug-ins on workstation when editing" and "Close plug-ins on workstation when exiting" preferences.

If the Link button is enabled in an open plug-in window:

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

If the Link button is disabled in an open plug-in window:

- "Open plug-ins on workstation when editing" opens a new plug-in window.

- "Close plug-ins on workstation when exiting" closes the plug-in window.

Euphonix: Getting to Know Knobsets

When using the Euphonix devices with Logic Pro, the Mixer's channel strip functions can be accessed and edited using knobsets. A knobset contains pages, each comprised of eight parameters. Knobsets are organized hierarchically.

The top-level knobset leads to the following knobsets:

- *Inserts:* Pressing the Inserts knob top displays all effect plug-ins inserted in the currently selected channel strip. (See Euphonix: Using the Inserts (Configuration) Knobset.) If a plug-in is enabled (and does not belong to the dynamic, EQ, or filter plug-in groups) either the On key is lit (MC Pro and MC Mix) or the knob's image shows a small green LED on the lower left (MC Control). To switch the bypass state, press the respective On key or knob image, or the Ins In key on the CM408T channel strip.
- *Input:* Pressing the Input knob top displays all possible channel input values for the selected channel strip. (See Euphonix: Using the Input (Configuration) Knobset.)
- *Dyn:* The Dyn knob top is not currently used to display a list, or allow editing, of dynamic plug-ins. If a dynamic plug-in is enabled, either the On key is lit (MC Pro and MC Mix) or the knob's image shows a small green LED on the lower left (MC Control). To switch the bypass state, press the respective On key or knob image, or the Dyn In key on the CM408T channel strip.
- *EQ:* Pressing the EQ knob top switches to EQ editing mode. (See Euphonix: Using the EQ Knobset.) If an EQ plug-in is enabled, either the On key is lit (MC Pro and MC Mix) or the knob's image shows a small green LED on the lower left (MC Control). To switch the bypass state, press the respective On key or knob image, or the EQ In key on the CM408T channel strip.
- *Aux or Sends:* Pressing the Aux or Sends knob top switches to send editing mode. See Euphonix: Using the Aux or Sends (Configuration) Knobset. If an Aux or Send is enabled, either the On key is lit (MC Pro and MC Mix) or the knob's image shows a small green LED on the lower left (MC Control). Pressing the respective On key or knob image switches the bypass state.
- *Pan:* Pressing the Pan knob top switches to pan/surround editing mode. (See Euphonix: Using the Pan/Surround Knobset.)
- *Group:* Pressing the Group knob top switches to group editing mode. (See Euphonix: Using the Group Knobset.)
- *Mix or Output:* Pressing the Mix or Output knob top switches to output editing mode. (See Euphonix: Using the Mix or Output Knobset.)

Euphonix: Using the Inserts (Configuration) Knobset

This knobset allows you to:

- Edit an effect plug-in (Inserts mode)
- Change or insert an effect plug-in (Inserts Configuration mode)

Note: This knobset only relates to insert effects, and not to instrument plug-ins.

Editing Effect Plug-ins

You edit effect plug-ins in Inserts mode, using the Inserts knobset.

To edit an effect plug-in

1. Press the Inserts knob top, or key, to display all effect plug-ins inserted in the currently selected channel strip. This key is labeled "*" (asterisk) on the CM408T channel strip.

   Note: If using the MC Mix, press the CHAN key to enter Channel mode.

   The effect plug-in names are displayed on the Soft Keys, the touchscreen, or the display, depending on the system you are using.

   If more than eight effect plug-ins are inserted, you can use the Page keys to display ensuing plug-ins.

2. Press the knob top that features the name of the effect plug-in you want to edit.

   The parameters are displayed in the order shown in the Controls view of the effect.

3. Turn the respective knob to change the value.

   Depending on the system you are using, for parameters with only two values, you can either press the On key, or turn the respective knob, to switch between the two values. The On key is lit when the value is 1 (or on) and unlit when the value is 0 (or off).

   Pressing a knob top sets the controlled parameter to its default value.

   If there are more than eight parameters, use the Page keys to navigate between them.

4. Press the Back key to return to the top-level knobset.

Changing or Inserting Effect Plug-ins

You change or insert effect plug-ins in Inserts Configuration mode, using the Inserts Configuration knobset.

To change or insert an effect plug-in

1. Press the Inserts knob top or key. The key is labeled "*" (asterisk) on the CM408T channel strip.

   Note: If using the MC Mix, press the CHAN key to enter Channel mode.

2. Press both Page keys simultaneously to display the Inserts Configuration knobset.

   The first eight Insert slots of the selected channel strip are displayed.

If an Insert slot already contains an effect plug-in, the On key is lit (on the MC Professional and MC Mix devices). On the MC Control, it is indicated by a small green LED in the lower left of the knob image.

3 Select the Insert slot you want by pressing the respective knob top. Press the Page keys to display Insert slots 9 to 15.

The Logic Pro Effect Plug-in menu appears. Press the Page keys to display ensuing plug-ins and to move through the effect plug-in hierarchy.

4 Choose the effect plug-in you want:

- Pressing the knob top enters a submenu or inserts a selected effect plug-in.
- Pressing the Back key navigates up one level in the menu hierarchy.

Euphonix: Using the Input (Configuration) Knobset

This knobset behaves differently, depending on the channel strip type you are working with—audio or software instrument.

On *audio channel strips*, this knobset allows you to:

- Set a channel strip's input value (Input mode)
- Set a channel strip's input format (Input Configuration mode)

On *instrument channel strips*, this knobset allows you to:

- Edit an instrument plug-in (Input mode)
- Change or insert an instrument plug-in (Input Configuration mode)

Setting an Audio Channel Strip's Input Value

You set an audio channel strip's input value in Input mode, using the Input knobset.

To set a channel strip's input value

1 Press the Input knob top, or key, to display all possible channel input values for the selected channel strip.

Note: If using the MC Mix, press the CHAN key to enter Channel mode.

The input values are displayed on the Soft Keys, the touchscreen, or the display, depending on the system you are using.

You can use the Page keys to display ensuing input values.

2 Press the knob top that features the name of the channel input value you want to set.

The currently active input value is indicated by a lit On key (on the MC Professional and MC Mix devices). On the MC Control, it is indicated by a small green LED in the lower left of the knob image.

Setting an Audio Channel Strip's Input Format

You set an audio channel strip's input format in Input Configuration mode, using the Input Configuration knobset.

To set a channel strip's input format

1. Press the Input knob top or key.

   Note: If using the MC Mix, press the CHAN key to enter Channel mode.

2. Press both Page keys simultaneously to switch to Input Configuration mode.

   The selected channel strip's input format values—Mono, Stereo, Left, Right, Surround—are displayed.

   The currently active format value is indicated by a lit On key (on the MC Professional and MC Mix devices). On the MC Control, it is indicated by a small green LED in the lower left of the knob image.

3. Press the respective knob top to choose the input format you want.

Editing Instrument Plug-ins

You edit instrument plug-ins in Input mode, using the Input knobset.

To edit an instrument plug-in

1. Press the Input knob top, or key, to display the software instrument plug-in inserted in the currently selected channel strip.

   The instrument plug-in name is displayed on the Soft Keys, the touchscreen, or the display, depending on the system you are using.

2. Press the knob top to display the instrument plug-in parameters in the order shown in the Controls view of the instrument.

3. Turn the respective knob to change the value.

   Depending on the system you are using, for parameters with only two values, you can either press the On key, or turn the respective knob, to switch between the two values. The On key is lit when the value is 1 (or on) and unlit when the value is 0 (or off).

   Pressing a knob top sets the controlled parameter to its default value.

   If the instrument plug-in features more than eight parameters, use the Page keys to navigate between pages of parameters.

4. Press the Back key to return to the top-level knobset.

Changing or Inserting Instrument Plug-ins

You change or insert instrument plug-ins in Input Configuration mode, using the Input Configuration knobset.

To change or insert an instrument

1. Press the Input knob top, or key.

2 Press both Page keys simultaneously to switch to Input Configuration mode.

The Logic Pro Instruments Plug-in menu appears. Press the Page keys to display ensuing plug-ins.

If an instrument plug-in is already inserted, the On key is lit (on the MC Professional and MC Mix devices). On the MC Control, it is indicated by a small green LED in the lower left of the knob image.

3 Choose the instrument you want:

- Pressing the knob top activates a submenu or inserts a selected instrument plug-in.
- Pressing the Back key navigates up one level in the menu hierarchy.

Euphonix: Using the EQ Knobset

This knobset allows you to edit the first Channel or Linear Phase EQ inserted in the selected channel strip.

There are two pages, each showing four EQ bands on eight knobs:

- One page contains the parameters of EQ bands 1, 2, 7, and 8.
- One page contains the parameters of EQ bands 3, 4, 5, and 6.

When no Channel or Linear Phase EQ is present on the selected channel strip, pressing the knob top labeled AddChEQ inserts a Channel EQ.

To edit an EQ plug-in

1 Press the EQ knob top, or key, to display the EQ bands of the EQ plug-in inserted in the currently selected channel strip.

Note: The MC Mix automatically switches to Channel mode.

The EQ band parameters are displayed on the Soft Keys, the touchscreen, or the display, depending on the system you are using.

You can use the Page keys to display ensuing parameters.

2 Turn the respective knob to change the parameter value.

Pressing a knob top sets the controlled parameter to its default value.

3 Press the Back key to return to the top-level knobset.

Euphonix: Understanding the Controls Available for Each EQ Band

This section outlines the addressing and control of EQ bands with the MC Professional and MC Mix devices.

- The first knob of an EQ band (the upper or left knob of the pair) controls either Frequency or Q. To switch between Frequency and Q, use the Select/SEL key if working with the MC Professional devices or the MC Mix. If using the MC Control, press the Shift key while touching the knob's image on the touchscreen. (When active, a small yellow LED lights on the upper left of the image.) Pressing the knob top sets the controlled parameter to its default value.
- The second knob of an EQ band (the lower or right knob of the pair) controls Gain (or Slope). Pressing the knob top sets the controlled parameter to its default value.
- If working with the MC Professional devices or the MC Mix, the On key switches the bypass state of the band. On the MC Control, press the knob's touchscreen image.

Euphonix: Using the Aux or Sends (Configuration) Knobset

The Aux or Sends (Configuration) knobset allows you to:

- Edit a send destination (Aux or Sends mode)
- Change or set a send destination (Aux or Sends Configuration mode)

The Select key (labeled SEL on the MC Mix) switches between Pre Fader (off—unlit) and Post Fader (on—lit) modes.

Editing Send Destinations

You edit send destinations in Aux/Sends mode, using the Aux/Sends knobset.

To edit a send destination

1. Press the Aux or Sends knob top, or key, to display all send options for the currently selected channel strip.

   Note: If using the MC Mix, press the CHAN key to enter Channel mode.

   The send options are displayed on the Soft Keys, the touchscreen, or the display, depending on the system you are using.

2. Turn the respective knob to change the send level.

   Pressing a knob top sets the controlled parameter to its default level.

3. Press the Back key to return to the top-level knobset.

Changing or Setting Send Destinations

You change or set send destinations in Aux/Sends Configuration mode, using the Aux/Sends Configuration knobset.

To change or set a send destination

1. Press the Aux or Sends knob top, or key.

Note: If using the MC Mix, press the CHAN key to enter Channel mode.

2 Press both Page keys simultaneously to switch to Send Configuration mode.

The eight Send slots of the currently selected channel strip are displayed.

3 Select the Send slot you want by pressing the respective knob top.

The first eight send destinations are displayed. You can use the Page keys to display further send destinations (busses).

4 Choose the send destination:

- Pressing the knob top changes, or sets, a selected destination.
- Pressing the Back key navigates up one level in the menu hierarchy.

Euphonix: Using the Pan/Surround Knobset

This knobset allows you to adjust a channel strip's Pan/Surround control. If the channel strip's input format is set to Surround, the knobset displays the following parameters:

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

To adjust the pan/surround control

1 Press the Pan/Surround knob top, or key, to display the Pan/Surround parameters for the currently selected channel strip.

Note: If using the MC Mix, press the CHAN key to enter Channel mode.

The parameter names are displayed on the Soft Keys, the touchscreen, or the display, depending on the system you are using.

2 Turn the respective knob to change the parameter value.

Pressing a knob top sets the controlled parameter to its default value.

3 Press the Back key to return to the top-level knobset.

Euphonix: Using the Group Knobset

This knobset allows you to edit a channel strip's group membership.

To add a channel strip to a group

1 Press the Group knob top, or key, to display the list of groups that the currently selected channel strip is assigned to. This key is labeled Grp on the CM408T channel strip.

Note: If using the MC Mix, press the CHAN key to enter Channel mode.

The groups names are displayed on the Soft Keys, the touchscreen, or the display, depending on the system you are using.

If a channel strip is associated with more than the first eight groups, you can use the Page keys to display ensuing groups.

2 Press the knob top that features the name of the group you want to associate the channel strip with.

- When you choose an inactive group number, the Group Settings window opens automatically, with the channel strip being added to the group.
- When you choose an active group number, the channel strip is added directly to the group.

  Tip: The On key can also be used to switch between active/inactive group membership for the selected channel strip.

3 Press the Back key to return to the top-level knobset.

To remove a channel strip from a group

1 Press the Group knob top, or key, to display the list of groups that the currently selected channel strip is assigned to. This key is labeled Grp on the CM408T channel strip.

Note: If using the MC Mix, press the CHAN key to enter Channel mode.

2 Press the knob top that features the name of the Group you want to remove the channel strip from.

That particular channel is removed from the group.

Tip: The On key can also be used to switch between active/inactive group membership for the selected channel strip.

3 Press the Back key to return to the top-level knobset.

Euphonix: Using the Mix or Output Knobset

This knobset allows you to change the mix or output destination of a channel strip.

To change the output destination of a channel strip

1 Press the Mix or Output knob top, or key, to display all possible mix or output values for the currently selected channel strip.

Note: If using the MC Mix, press the CHAN key to enter Channel mode.

The value names are displayed on the Soft Keys, the touchscreen, or the display, depending on the system you are using.

2 To select the output destination, do one of the following:

- Press the knob top that features the name of the mix or output value.
- Press the On key for the relevant mix or output value.

You can use the Page keys to display ensuing outputs.

The currently active output is indicated by a lit On key (on the MC Professional and MC Mix devices). On the MC Control, it is indicated by a small green LED in the lower left of the knob image.

3 Press the Back key to return to the top-level knobset.

Euphonix: Other Features Specific to Logic Pro

This section describes other features specific to Logic Pro.

- *Layouts:* Tracks assigned to channel strips can be saved as a Layout. This Layout can then be recalled at a later time. Any Layouts saved on Euphonix devices are automatically saved with the Logic Pro project.
- *Monitors and Control Room:* Logic Pro does not support EuCon monitoring control. Use the Studio Monitor Pro application.
- *Track control bar:* The track control bar of the Logic Pro Arrange area offers a special feature on the Euphonix devices: it shows *attentioned* tracks in blue.

Note: The color of the track control bar cannot be changed in the Control Surfaces Setup window.

CM Labs Motormix 6

This chapter describes how to use your CM Labs Motormix with Logic Pro.

This chapter covers the following:

Setting Up Your CM Labs Motormix

Follow the steps below to use your CM Labs Motormix control surface with Logic Pro.

To set up your CM Labs Motormix control surface in Logic Pro

1. Ensure that your Motormix unit is connected bidirectionally with the MIDI interface.
2. Choose Logic Pro > Preferences > Control Surfaces > Setup.
3. Choose Install from the Setup window's New menu.
4. Select Motormix in the Install window, click Add, then set the appropriate MIDI In and Out ports in the Setup window.

CM Labs Motormix: Assignment Overview

Assignments of CM Labs Motormix interface elements to Logic functions are covered in the following sections:

- CM Labs Motormix: Faders
- CM Labs Motormix: Right Function Buttons

CM Labs Motormix: Select Buttons

The Select buttons (buttons just below the LCD) have multiple uses, depending on the current mode.

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Mode	Assignment
Normal	Selects channel displayed in upper LCD line. Channels can be shifted to the left and right with the View left and right buttons.
Bank button LED flashing	Channel View mode: Select buttons switch between displayed channel strips: • 1: Switches to Single view. • 2: Switches to Arrange view. • 3: All view, MIDI channels • 4: All view, input channels • 5: All view, audio channels • 6: All view, instrument channels • 7: All view, aux and bus channels • 8: All view, output and master channels
WINDOW/tool button LED on	Window Select mode: Select buttons open, assign key focus, or close a particular window type. LED off: If the window is not open, the button opens it. LED on: If the window is open, but does not have key focus, the button activates it. LED flashes: If the window has key focus, the button closes it. • 1: Arrange window • 2: Mixer • 3: Event List • 4: Score Editor • 5: Hyper Editor • 6: Piano Roll Editor • 7: Transport Bar window • 8: Audio Bin
WINDOW/tool button flashes	Select Tool mode: Select buttons choose a tool. • 1: Pointer • 2: Pencil • 3: Eraser • 4: Text tool • 5: Scissors • 6: Glue tool • 7: Solo tool • 8: Mute tool

Mode	Assignment
PLAY/transport button flashes	Transport section mode • 1: Record • 2: Pause • 3: Stop • 4: Play • 5: Rewind • 6: Fast Forward • Upper LCD row displays current playhead position.
STOP/locate button flashes	Locate mode • 1: Goes to left locator. • 2: Goes to right locator. • 3: Enables or disables Cycle mode. • 4: Enables or disables Autopunch mode. • 5: Enters Marker mode (see below). • 6: Opens Marker List. • Upper LCD row displays current playhead position.
Marker mode	• 1 to 6: Select markers 1 to 6. Marker names are displayed in the upper LCD row. • 7: Creates a new marker. • 8: Deletes selected marker.
Group Edit mode	Switches between group parameters. Parameter display can be shifted by the View left and right buttons when the SHIFT button is held down.
Effect Assign mode	Enters Effect Edit mode for the selected channel.
Effect Edit mode	Enables/disables the selected parameter, or resets it to the default value.
Instrument Assign mode	Enters Instrument Edit mode for the selected (instrument) channel.
Instrument Edit mode	Enables/disables the selected parameter, or resets it to the default value.

Note: In modal dialogs, the Select buttons generate the computer keyboard character shown on the button face.

CM Labs Motormix: Rotary Pots

The following table outlines the rotary pot controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
Rotary pots 1 to 8		Control parameter chosen with the Rotary Selector, as displayed in the 7 segment display (see below).

Control	Modifier	Assignment
7 segment display		Shows current selection for rotary pots: Send/EQ 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 • Sp = Surround Spread • X = Surround X • Y = Surround Y Channel parameter editing (eff-4 LED is on): • VL = Volume • Pn or An = Pan/Surround Angle • FM = Channel input format • In = Channel input assignment • Ou = Channel output assignment • Au = Automation mode • Gr = Group membership Assignment: • d1 to d8 = Assign Send 1 to 8 destination. Effect editing (DSP/compare LED is on): • P1 to 15 = Assign Insert slot 1 to 15 to effect. • P1. to 15. = Effect parameter editing Instrument editing (DSP/compare LED is on): • IA = Assign instrument to Instrument slot. • IE. = Instrument parameter editing Group property editing (group LED is on): • G1 to 32 = group number
Rotary Selector		Selects a slot or parameter for rotary encoders, depending on the parameter types 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 or instrument. • Pan/Surround parameter when editing a Pan/Surround parameter. • Channel parameter when editing a channel parameter. • Effect/instrument parameter page when editing an effect or instrument plug-in.

Control	Modifier	Assignment
Rotary Selector push button		Switches Flip mode between Off and Duplicate (faders mirror the rotary encoder assignments).
	SHIFT	Switches the channel strip display mode between: • Page info in upper line, parameter name in lower line. • Parameter name in upper line, parameter value in lower line.

CM Labs Motormix: 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.

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Mode	Modifier	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 Fader modes 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 parameter is chosen with the rotary selector.
	SHIFT (eff-4)	Switches rotary encoders to channel parameter editing.

Note: In modal dialogs, the Multi buttons generate the computer keyboard character shown on the button face.

CM Labs Motormix: 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.

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Mode	Modifier	Assignment
record		Enables/disables Record Enable status of channel.
	SHIFT (fnctA)	Switches automation mode to Latch.
	ALL + SHIFT (fnctA)	Switches automation mode of all channels to Latch.
write		Switches automation mode to Write.
	ALL	Switches automation mode of all channels to Write.
	SHIFT (fnctB)	Switches automation mode to Read.
	ALL + SHIFT (fnctA)	Switches automation mode of all channels to Read.
burn		Switches automation mode to Touch.
	ALL	Switches automation mode of all channels to Touch.
	SHIFT (fnctC)	Switches automation mode to Off.
	ALL + SHIFT (fnctA)	Switches automation mode of all channels to Off.

Note: In modal dialogs, the Burn buttons generate the computer keyboard character shown on the button face.

CM Labs Motormix: SOLO Buttons

These buttons switch the Solo status of the displayed channel.

Note: In modal dialogs, the SOLO buttons generate the computer keyboard character shown on the button face.

CM Labs Motormix: MUTE Buttons

These buttons switch the Mute status of the displayed channel.

Note: In modal dialogs, the MUTE buttons generate the computer keyboard character shown on the button face.

CM Labs Motormix: VIEW Section

The following table outlines the view controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
Left/right buttons		In Effect and Instrument Plug-in Edit modes: shifts the parameter 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 (a group of 8 channels).
	SHIFT	In Effect and Instrument Plug-in Edit modes: 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 Channel View mode.
group		Sets Select buttons, rotary encoders, and Multi buttons to Group Edit mode.
	SHIFT	Displays channels' group assignments in the LCD. The rotary encoders allow you to change assignments.

CM Labs Motormix: Left Function Buttons

The following table outlines the left function button controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	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 Effect Assign mode. Use the Rotary Select knob to choose the Insert slot you want to edit. In Effect or Instrument Assign mode, it switches to Pan mode. In Effect Edit mode, it switches to Effect 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.

Control	Modifier	Assignment
ALL/ALT/FINE		While ALL/ALT/FINE is held down, rotary encoders are in Full mode: rotating counterclockwise sets minimum, rotating clockwise sets maximum value.
	SHIFT	While SHIFT and ALL/ALT/FINE are held down, rotary encoders are in Fine mode. Parameter changes are made in single unit (or smaller) values.
DEFAULT/bypass		Currently unassigned
	SHIFT	In Instrument Edit mode: switches bypass state of the instrument. In Effect Edit mode: switches bypass state of the effect being edited.
UNDO/save		Performs an Undo step. The LED is lit if there is a Redo step available.
	SHIFT	Saves the project. The LED is lit if the project contains unsaved changes.
SHIFT		Switches to Shift mode, where the functions indicated by the (inverted) labels below the buttons apply.

CM Labs Motormix: Faders

The faders normally control volume. When in Flip mode, however, they duplicate the rotary encoder assignments.

CM Labs Motormix: Right Function Buttons

The following table outlines the right function button controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	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
REWIND/status		Shuttle Rewind key command
	SHIFT	Opens Project Settings Synchronization window.
NEXT/configure		Moves playhead to next marker.
LAST/assign		When rotary encoders are displaying send destinations, use of LAST/assign reverts to displaying send levels. Otherwise, moves playhead to previous marker.

Control	Modifier	Assignment
	SHIFT	When rotary encoders are displaying send levels, use of LAST/assign switches them to display send destinations. When rotary encoders are in Effect Edit mode, use of LAST/assign switches them to Effect 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 Project Settings Automation 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

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This chapter describes how to use your Frontier Design TranzPort with Logic Pro.

Note: Support for the AlphaTrack control surface is available from Frontier Design.

This chapter covers the following:

Setting Up Your Frontier Design TranzPort

Follow the steps below to use your Frontier Design TranzPort control surface with Logic Pro.

To set up your Frontier Design TranzPort device in Logic Pro

1. Ensure that the software that shipped with the TranzPort is installed.
2. Make sure that the Tranz Bridge (the wireless transmitter) is connected to the computer via USB.

   When Logic Pro is opened, it installs the TranzPort automatically, and sets it to Native mode.

Frontier Design TranzPort: LCD

The LCD displays the following information:

- *Top line left:* Name of currently displayed channel
- *Top line middle:* Volume level of currently displayed channel
- *Top line right:* Pan position of currently displayed channel
- *Bottom line left:* Level meter of currently displayed channel
- *Bottom line right:* Current playhead position

Frontier Design TranzPort: Assignment Overview

The following sections outline the assignment of Frontier Design TranzPort interface elements to Logic functions.

- Frontier Design TranzPort: Channel Strip
- Frontier Design TranzPort: Master Section
- Frontier Design TranzPort: External Input

Frontier Design TranzPort: Channel Strip

The following table outlines the channel strip controls and their assignments:

Note: A SHIFT (or other modifier) shown below a button description indicates that the button has an alternate meaning, while the modifier is held down.

Control	Modifier	Assignment
<CHAN		Shifts the currently displayed channel to the left by one channel.
	SHIFT	Shifts the currently displayed channel left by eight channels.
CHAN>		Shifts the currently displayed channel right by one channel.
	SHIFT	Shifts the currently displayed channel right by eight channels.
REC		Activates/deactivates the Record Enable button of the currently displayed channel.
	SHIFT	Disables the Record Enable buttons of all channels.
SOLO		Enables/disables Solo for the currently displayed channel.
	SHIFT	Disables Solo for all channels.
MUTE		Enables/disables Mute for the currently displayed channel.
	SHIFT	Disables Mute for all channels.
ANY SOLO		Lit if any tracks, channels, or regions are soloed.
UNDO		Undo
	SHIFT	Redo

Frontier Design TranzPort: Master Section

The following table outlines the master controls and their assignments:

Note: A SHIFT (or other modifier) shown below a button description indicates that the button has an alternate meaning, while the modifier is held down.

Control	Modifier	Assignment
SHIFT		Modifier that alters the function of other controls.
IN		Moves playhead to left cycle locator.
	PUNCH	Engages Autopunch mode, and sets punch in locator to playhead position.
	LOOP	Engages Cycle mode, and sets left cycle locator to playhead position.
OUT		Goes to right cycle locator.
	PUNCH	Engages Autopunch mode, and sets punch out locator to playhead position.
	LOOP	Engages Cycle mode, and sets right cycle locator to playhead position.
PUNCH		Enables/disables Autopunch mode.
LOOP		Enables/disables Cycle mode.
PREV		Moves playhead to previous marker.
	SHIFT	Sets locators by previous marker.
ADD		Creates marker at playhead position.
	SHIFT	Deletes marker at playhead position.
NEXT		Moves playhead to next marker.
	SHIFT	Sets locators by next marker.
Jog Wheel		Depending on current Jog Wheel mode: • Moves playhead by bars. • Controls audio (and MIDI) scrubbing. • Shuttles forward or backward.
	SHIFT	Adjusts volume of the currently displayed channel.
	LOOP	Sets the left locator to the current playhead position, advances the playhead as usual, then sets the right locator to the playhead position. Further Jog Wheel use—while holding down LOOP—advances the playhead, and sets the right locator. *Tip:* Rotating the Jog Wheel counterclockwise, while holding down LOOP, defines a skip cycle range.
	DROP	Sets the punch in locator to the current playhead position, advances the playhead as usual, then sets the punch out locator to the playhead position. Further Jog Wheel use—while holding down DROP—advances the playhead, and sets the punch out locator.
REW		Shuttles backward.

Control	Modifier	Assignment
	SHIFT	Goes to last play position.
	PUNCH	Engages Autopunch mode, and sets punch in locator to playhead position.
	LOOP	Engages Cycle mode, and sets left locator to playhead position.
F FWD		Shuttles forward.
	PUNCH	Engages Autopunch mode, and sets punch out locator to playhead position.
	LOOP	Engages Cycle mode, and sets right locator to playhead position.
STOP		Stop
	SHIFT	Switches Jog Wheel between Move Playhead (by bars), Scrubbing, and Shuttle modes.
PLAY		Play
	SHIFT	Pause
RECORD		Record
	SHIFT	Save

Frontier Design TranzPort: External Input

The following table outlines the foot switch input control and its assignment.

Control	Assignment
Foot Switch	Punch In/Out

JLCooper CS-32 MiniDesk

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This chapter describes how to use your JLCooper CS-32 MiniDesk with Logic Pro.

This chapter covers the following:

Setting Up Your JLCooper CS-32 MiniDesk

Follow the steps below to use your JLCooper CS-32 MiniDesk control surface with Logic Pro.

To add JLCooper CS-32 control surfaces connected via USB

1. Install the software that comes with the CS-32.
2. Ensure that the CS-32 is in Host mode.
3. Make sure that your CS-32 units are connected to the computer via USB.

   USB units are installed automatically when you open Logic Pro.

To add JLCooper CS-32 control surfaces connected via MIDI

1. Install the software that comes with the CS-32.
2. Ensure that the CS-32 is in Host mode.
3. Make sure that your CS-32 units are connected to the computer via MIDI.
4. Choose Logic Pro > Preferences > Control Surfaces > Setup.
5. Choose Install in the Setup window's New menu.
6. Select the CS-32 from the list in the Install window.
7. Click the Scan button.

JLCooper CS-32 MiniDesk: Assignment Overview

Assignments of JLCooper CS-32 MiniDesk interface elements to Logic functions are covered in the following sections:

- JLCooper CS-32 MiniDesk: Pots
- JLCooper CS-32 MiniDesk: Channel Strips
- JLCooper CS-32 MiniDesk: Bank Button
- JLCooper CS-32 MiniDesk: F Key Section
- JLCooper CS-32 MiniDesk: Cursor Section
- JLCooper CS-32 MiniDesk: Transport Section
- JLCooper CS-32 MiniDesk: Jog Wheel Section

JLCooper CS-32 MiniDesk: Display

The display shows information on the current mode, and parameters being edited.

Display text	Meaning
--	A switching parameter (Solo, Mute, Rec/Rdy) has been disabled.
AE	Automation Enable setup: Mute buttons 1–6 display/set various automation parameters.
AS	Pots (knobs) 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.
Mu	Mute has been enabled.
P1—P9	Pots are in Effect Edit mode.
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 channel is selected, the first two characters of its name are briefly displayed.
Numbers	While editing a numerical value with a fader or pot, the current value is displayed. If there are more than two digits in the value, the last two digits are shown. Plus/minus signs (+/–) are shown if only one digit is displayed.

JLCooper CS-32 MiniDesk: Pots

As the pots are not motorized, Pickup mode is used (if turned on in the Control Surfaces preferences). In Pickup mode, the controller must reach (pick up) the current value before the value starts to change. This prevents sudden jumps of parameter values caused by playing back automation.

A pot's current value is indicated by the NULL arrow LEDs.

- The Upper arrow is lit if the pot's value is above the current value.
- The Lower arrow is lit if the pot's value is below the current value.
- Both arrow LEDs are lit when the pot has reached the current value.

The pots can operate in one of three modes, with one sub-mode in each.

Note: If a modifier button, such as SHIFT, is shown below a description, it indicates that the control has an alternate use while the modifier is held down.

Pan/Send Mode

Press F7 to enable Pan/Send mode (display shows "PA"). In this mode, the pots control the following channel parameters:

Control	Assignment
SEND A/P1	Controls Send 1 level of selected channel.
SEND B/P2	Controls Send 2 level of selected channel.
PAN/P3	Controls pan of selected channel.
SEND C/P4	Controls Send 3 level of selected channel.
SEND D/P5	Controls Send 4 level of selected channel.
SEND E/P6	Controls Send 5 level of selected channel.

While SHIFT is held down (display shows "AS"), the pots allow you to perform the following assignments:

Control	Assignment
SEND A/P1	Assigns Send 1 destination (bus) for selected channel.
SEND B/P2	Assigns Send 2 destination for selected channel.
PAN/P3	Assigns input format of selected channel.
SEND C/P4	Assigns Send 3 destination for selected channel.
SEND D/P5	Assigns Send 4 destination for selected channel.
SEND E/P6	Assigns Send 5 destination for selected channel.

Instrument Edit Mode

Press F8 to enter Instrument Edit mode (display shows "In"). The pots control (software) instrument parameters.

Note: With SHIFT held down (display shows "b1"–"b9"), you can move between banks (pages) of parameters. (See JLCooper CS-32 MiniDesk: Cursor Section.)

Effect Edit Mode

Press F9 to enter Effect Edit mode (display shows "P1"–"P9"). The pots control the parameters of the effect in the currently selected Insert slot.

Note: With SHIFT held down (display shows "b1"–"b9"), you can switch between Insert slots, and move between banks (pages) of parameters. (See JLCooper CS-32 MiniDesk: Cursor Section.)

JLCooper CS-32 MiniDesk: Channel Strips

The following table outlines the channel strip controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
PAN SELECT/TRACK SELECT		Selects channel strip (destination for the selected track).
SOLO		Enables/disables Solo.
LOCATE		Moves playhead to markers 1 to 32.
	SHIFT	LOCATE 17: Creates a new marker. LOCATE 18: Creates a new marker without rounding. LOCATE 19: Deletes the marker at the playhead position. LOCATE 25: Opens the Marker List. LOCATE 26: Opens the 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: Moves playhead to previous marker. LOCATE 32: Moves playhead 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 (level) automation. MUTE 6: Enables/disables automation of plug-in parameters.
	F2	Switches automation mode between Read and Off (display shows "Td").
	F3	Switches automation mode between Touch and Off (display shows "Tc").

Control	Modifier	Assignment
	F4	Switches automation mode between Latch and Off (display shows "Lt").
	F5	Switches automation mode between Write and Off (display shows "Wr").
ARM		Activates/deactivates Record Enable button.
Faders		Control volume. As the faders don't offer feedback, Pickup mode is used, as per the pots. See the pickup information in JLCooper CS-32 MiniDesk: Pots.

JLCooper CS-32 MiniDesk: Bank Button

The following table outlines the bank controls and their assignments:

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).

JLCooper CS-32 MiniDesk: F Key Section

The following table outlines the F key controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
SHIFT		Modifier for function of other controls. See SHIFT entries in left column.
F1		While held down, MUTE buttons 1–6 enable/disable 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 Autopunch mode.
F3		While held down, MUTE buttons set automation mode to Touch.
	SHIFT	Sets left locator by current playhead position.
F4		While held down, MUTE buttons set automation mode to Latch.
	SHIFT	Sets right locator by current playhead position.
F5		While held down, MUTE buttons set automation mode to Write.

Control	Modifier	Assignment
	SHIFT	Sets punch in locator by current playhead position.
F6		
	SHIFT	Sets punch out locator by current playhead position.
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 Effect Edit mode (display shows "P1"–"P9").

JLCooper CS-32 MiniDesk: Cursor Section

The following table outlines the cursor controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
Up		Zooms out vertically.
	SHIFT	In Effect Edit mode: moves up one Insert slot (unless top slot is selected).
Down		Zooms in vertically.
	SHIFT	In Effect Edit mode: moves down one Insert slot (unless bottom slot).
Left		Zooms out horizontally.
	SHIFT	In Instrument and Effect Edit modes: decrements current parameter bank (moves down one bank, or page, of parameters).
Right		Zooms in horizontally.
	SHIFT	In Instrument and Effect Edit modes: increments current parameter bank (moves up one bank, or page, of parameters).

JLCooper CS-32 MiniDesk: Transport Section

The following table outlines the transport controls and their assignments:

Control	Assignment
RECORD	Record
STOP	Stop
REW	Moves playhead backward by one bar.

Control	Assignment
PLAY	Play
F FWD	Moves playhead forward by one bar.

JLCooper CS-32 MiniDesk: Jog Wheel Section

The following table outlines the Jog Wheel controls and their assignments:

Control	Assignment
Jog Wheel	SCRUB off: Moves playhead (in bar increments). SCRUB on: Scrubbing of audio (and MIDI) is possible. SHUTTLE on: Shuttle mode
SCRUB	Switches Jog Wheel between Move Playhead (by bars), and Scrubbing modes.
SHUTTLE	Switches Jog Wheel between Move Playhead (by bars) and Shuttle modes.

JLCooper FaderMaster 4/100

9

This chapter describes how to use your JLCooper FaderMaster 4/100 with Logic Pro.

This chapter covers the following:

Setting Up Your JLCooper FaderMaster 4/100

Follow these steps before using your FaderMaster 4/100 control surface with Logic Pro.

- Ensure that your FaderMaster 4/100 (MIDI or USB version) has firmware version 1.03 or later installed.

  Important: If you have older firmware (see the sticker on the back of the unit), contact JLCooper.

- USB model only: Install the software that comes with the FaderMaster 4/100.
- Ensure that your FaderMaster 4/100 devices are connected to the computer via USB or MIDI. If connected via USB, installation is automatic.

To install units connected via MIDI

1. Choose Logic Pro > Preferences > Control Surfaces > Setup.
2. Choose Install from the New menu.
3. Select FaderMaster 4/100 from the list in the Install window.
4. Click the Scan button.

Note: You can combine several FaderMaster 4/100 devices to form one large virtual control surface. The meaning and functionality of the Track buttons, however, are individually switched for each device.

JLCooper FaderMaster 4/100: Assignment Overview

The following sections outline the assignment of JLCooper FaderMaster 4/100 interface elements to Logic functions.

- JLCooper FaderMaster 4/100: Global Buttons
- JLCooper FaderMaster 4/100: Channel Strip

JLCooper FaderMaster 4/100: Global Buttons

The following table outlines the global controls and their assignments:

Control	Assignment
Select	Switches Track buttons to track selection duties.
Aux	Switches Track buttons to emulate Record Enable buttons.
Solo	Switches Track buttons to emulate Solo buttons.
Mute	Switches Track Buttons to emulate Mute buttons.
Inc	Increases fader bank display to show next four channels.
Dec	Decreases fader bank display to show previous four channels.

JLCooper FaderMaster 4/100: Channel Strip

The following table outlines the channel strip controls and their assignments:

Control	Assignment
Track button	Performs currently selected function (Select, Record Enable, Solo, Mute).
Fader	Controls volume (touch-sensitive and motorized).

JLCooper MCS3

10

This chapter describes how to use your JLCooper MCS3 MIDI or USB control surface with Logic Pro.

This chapter covers the following:

Setting Up Your JLCooper MCS3

Logic Pro supports USB or MIDI versions of the JLCooper MCS3 control surface. Both USB and MIDI versions are installed automatically when you open Logic Pro. If your MCS3 is not recognized and installed correctly, follow the steps below.

To add JLCooper MCS3 control surfaces connected via USB

1. Ensure that your MCS3 USB device is correctly connected to the computer with a USB cable. Also ensure that the unit is powered.
2. Open Logic Pro, and the MCS3 will be added to the Control Surfaces Setup window.

To add JLCooper MCS3 control surfaces connected via MIDI

1. Make sure that your MCS3 units are connected to the computer via MIDI.
2. Choose Logic Pro > Preferences > Control Surfaces > Setup.
3. Choose Install in the Setup window's New menu.
4. Select the MCS3 from the list in the Install window.
5. Click the Scan button.

JLCooper MCS3: Assignment Overview

Assignments of JLCooper MCS3 interface elements to Logic functions are covered in the following sections:

- JLCooper MCS3: Cursor Controls
- JLCooper MCS3: Jog Wheel and Shuttle Ring
- JLCooper MCS3: Transport Controls

JLCooper MCS3: F1 to F6 Buttons

The following table outlines the F1 to F6 buttons and their assignments:

Control	Assignment
F1	Switches to Layer 1.
F2	Switches to Layer 2.
F3	Switches to Layer 3.
F4	Unassigned. Can be assigned to different key commands in Layers 1, 2, and 3.
F5	Unassigned. Can be assigned to different key commands in Layers 1, 2, and 3.
F6	Unassigned. Can be assigned to different key commands in Layers 1, 2, and 3.

JLCooper MCS3: W1 to W7 Buttons

The following table outlines the W1 to W7 buttons and their assignments:

Control	Assignment
W1	Unassigned. Can be assigned to different key commands in Layers 1, 2, and 3.
W2	Unassigned. Can be assigned to different key commands in Layers 1, 2, and 3.
W3	Unassigned. Can be assigned to different key commands in Layers 1, 2, and 3.
W4	Unassigned. Can be assigned to different key commands in Layers 1, 2, and 3.
W5	Unassigned. Can be assigned to different key commands in Layers 1, 2, and 3.
W6	Unassigned. Can be assigned to different key commands in Layers 1, 2, and 3.
W7	Unassigned. Can be assigned to different key commands in Layers 1, 2, and 3.

JLCooper MCS3: Cursor Controls

The following table outlines the cursor controls and their assignments:

Control	Assignment
Up Arrow	Mirrors the behavior of the computer keyboard Up Arrow key.

Control	Assignment
Down Arrow	Mirrors the behavior of the computer keyboard Down Arrow key.
Left Arrow	Mirrors the behavior of the computer keyboard Left Arrow key.
Right Arrow	Mirrors the behavior of the computer keyboard Right Arrow key.

JLCooper MCS3: Jog Wheel and Shuttle Ring

The following table outlines the Jog Wheel and Shuttle Ring controls and their assignments:

Control	Assignment
Jog Wheel	Scrubs audio and MIDI.
SHUTTLE RING	Shuttles the playhead backward when turned to the left. Shuttles the playhead forward when turned to the right.

JLCooper MCS3: Transport Controls

The following table outlines the transport controls and their assignments:

Control	Assignment
REW	Moves the playhead backward by one bar.
F FWD	Moves the playhead forward by one bar.
STOP	Stop
PLAY	Play
RECORD	Record. LED is lit when active.

Korg microKONTROL and KONTROL49

11

This chapter describes how to use your Korg microKontrol and Kontrol49 with Logic Pro.

This chapter covers the following:

Setting Up Your Korg microKONTROL and KONTROL49

Follow the steps below to use your control surface with Logic Pro.

To set up your control surface with Logic Pro

1. Ensure that your control surfaces are connected to the computer via USB.
2. Open Logic Pro.

   The devices are scanned for, and installed automatically. 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 you quit Logic Pro (or delete the control surface icon in the Control Surfaces Setup window), the microKONTROL/KONTROL49 is reset to normal (not native) operation.

Korg microKONTROL and KONTROL49: Assignment Overview

The following sections outline the assignment of Korg microKONTROL and KONTROL49 interface elements to Logic functions.

Korg microKONTROL and KONTROL49: Pads

The Pads can operate in one of eight modes, and three overlays. While pressing SCENE, you can select modes for the Pads and channel strips. Releasing SCENE without pressing a Pad does not affect the currently selected Pad or channel views.

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 assign them to key commands with the Learn function.
9	Switches channel strips to Pan mode.
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 Effect Edit mode.
14–16	Switches channel strips to User 6–8 mode. These modes have unassigned encoders. You can assign them with the Logic Pro 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 mode.
10	Enables/disables Autopunch mode.
11	Enables/disables Replace mode.
12	Enables/disables Solo.
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 channels being controlled with the eight channel strips.
9–16	Enables/disables Mute for the eight channels 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 the Record Enable button of the eight channels being controlled with the eight channel strips.
9–16	Selects one of the eight channels 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 Pro > Preferences > Control Surfaces > Learn Assignment for [function name] to assign them to key commands, for example.

Note: When in Learn mode, if a pad is pressed and released immediately, the learned assignment does not work as expected.

To successfully assign a key command

1. Enable the Learn New Assignment button in the Key Commands window.
2. Choose a key command, then press and hold down the pad, until the Learn New Assignment button switches to the "up" state.

This slightly different approach is due to messages sent by the Korg devices: when the pad is immediately released, a value range is learned. Holding the pad until Learn mode disengages results in a fixed value being learned.

Send Mode

This mode is enabled by pressing SCENE and Pad 10. In Send mode, the channel strip encoders control the send level of the selected send. The Pads remain in the currently selected mode.

- *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 the send bypass state (of the currently selected send) for the eight channel strips.
9–16	Switches the send position (pre/post fader) of the currently selected send, for the eight channel strips.

Effect Edit Mode

This mode is enabled by pressing SCENE and Pad 13. In Effect Edit mode, the channel strip encoders control the parameters of the currently selected effect. The Pads remain in the currently selected mode.

- *Effect Edit Overlay:* Pressing SETTING while the encoders are in Effect Edit mode changes the operation of the Pads in Effect Edit mode.

Pad	Assignment
1–8	Switches the effect bypass state (of the currently selected Insert slot) for the eight channel strips.

Korg microKONTROL and KONTROL49: 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 effect parameters (the currently selected Insert slot number is indicated on the display).
Automatn	Encoders set the automation mode.
Ins. x	(SETTING held down) Main encoder chooses the Insert slot number.
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 the playhead in one of three modes. (See Pads 1–3 in Transport Mode.)

Control	Assignment
SETTING	Held down in Send mode: • Main encoder chooses the current send. • Pads have special meaning—see Send Mode. • LCDs display send destinations. • Encoders choose send destinations. Held down in Effect Edit mode: • Main encoder chooses the current Insert slot. • Pads have special meaning—see Effect Edit Mode. • LCDs display effect names for all eight channels.
MESSAGE	Enables/disables Duplicate Flip mode. When enabled, both the faders and encoders control the parameter displayed in the LCDs.
SCENE	While held down, Pads switch between Pad functions and channel views. See Korg microKONTROL and KONTROL49: Pads.
EXIT	—
HEX LOCK	Shifts fader bank to the previous eight channels. (LED is on if previous channels exist.) Shifts fader bank to the previous eight parameters in Effect Edit or Instrument Edit view.
ENTER	Shifts fader bank to the next eight channels. (LED is on if subsequent channels exist.) Shifts fader bank to the next eight parameters in Effect Edit or Instrument Edit view.
<	Octave Shift Down
>	Octave Shift Up

Korg microKONTROL and KONTROL49: 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 current name/value is displayed for a few seconds when you move an encoder or fader. When the encoders are in a Mixer view (Pan, Send, Send Setup), the background color indicates the channel automation mode: • Green: Off or Read • Yellow: Touch or Latch • Red: Write
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 Control Surfaces preferences). This means that the fader must reach ("pick up") the current parameter value before the value starts to change.

Korg microKONTROL and KONTROL49: External Input

The following table outlines the external input controls and their assignments:

Control	Assignment
Foot Switch	Starts and stops playback.
Pedal	Controls the master fader.

Mackie Baby HUI

12

This chapter describes how to use your Mackie Baby HUI with Logic Pro.

This chapter covers the following:

Setting Up Your Mackie Baby HUI

Baby HUI control surface units do not support automatic scanning. You need to manually add these devices to your setup. When you add a device in this way, you need to specify the MIDI In and Out port parameters.

To set up Mackie Baby HUI units

1. Make sure that your Baby HUI units are connected bidirectionally with the computer, using a MIDI interface.
2. Choose Logic Pro > Preferences > Control Surfaces > Setup.
3. Choose New > Install in the Setup window.
4. Select the Baby HUI in the Install window.
5. Click the Add button.
6. Select the added device in the Setup window, then assign the MIDI Input and MIDI Out parameters as appropriate.

Mackie Baby HUI: Assignment Overview

Assignments of Mackie Baby HUI interface elements to Logic functions are covered in the following sections:

- Mackie Baby HUI: Utility Section
- Mackie Baby HUI: Navigation Section
- Mackie Baby HUI: Transport Section

Mackie Baby HUI: Channel Strips

The following table outlines the channel strip controls and their assignments:

Note: If SHIFT is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
Rotary encoder		Adjusts the parameter selected in the Encoder Assignment section.
Rotary encoder push button		Selects a channel strip.
	SHIFT	Turns Record Enable button of selected channel on/off.
Signal indicator		Illuminates when a signal is present in the channel. It also indicates channel selection.
SOLO		Enables or disables Solo.
MUTE		Enables or disables Mute.
Fader		Adjusts volume.

Mackie Baby HUI: Encoder Assignment Section

The following table outlines the encoder assignment controls and their assignments:

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.

Mackie Baby HUI: Automation Section

The following table outlines the automation controls and their assignments:

Note: If SHIFT is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
BYPASS/OFF		Sets selected channel to Off automation mode.

Control	Modifier	Assignment
	SHIFT	Enables or disables playback and recording of level (volume) automation.
READ		Sets selected channel to Read automation mode.
	SHIFT	Enables or disables playback and recording of mute automation.
WRITE		Sets selected channel to Write automation mode.
	SHIFT	Enables or disables playback and recording of pan automation.
TOUCH		Sets selected channel to Touch automation mode.
	SHIFT	Enables or disables playback and recording of send level automation.

Mackie Baby HUI: Display Section

The following table outlines the display controls and their assignments:

Control	Assignment
TRANSPORT	Opens or closes the Transport bar window.
MEM–LOC	Opens or closes the Marker List.
MIXER	Opens or closes the Mixer.
EDIT	Opens or closes the Arrange window.

Mackie Baby HUI: Utility Section

The following table outlines the utility controls and their assignments:

Control	Assignment
UNDO	Undoes the last editing step.
SHIFT	Shifts to alternate use of some buttons.

Mackie Baby HUI: Navigation Section

The following table outlines the navigation controls and their assignments:

Note: If SHIFT is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
RTZ		Navigates to the left locator.
	SHIFT	Sets the punch in locator (at current playhead position).
END		Navigates to the right locator.
	SHIFT	Sets the punch out locator (at current playhead position).

Control	Modifier	Assignment
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.

Mackie Baby HUI: Transport Section

The following table outlines the transport controls and their assignments:

Control	Assignment
REWIND	Shuttles backward.
FAST FWD	Shuttles forward.
STOP	Stop
PLAY	Play
RECORD	Record

Mackie HUI

13

This chapter describes how to use your Mackie HUI with Logic Pro.

Important: There are a number of control surfaces—not mentioned in this guide—that can emulate the HUI. Such devices are not supported by Apple, nor are they guaranteed to work with Logic Pro in HUI emulation mode.

This chapter covers the following:

Setting Up Your Mackie HUI

HUI control surface devices don't support automatic scanning. You need to manually add these devices to your setup. When you add a device in this way, you need to assign the MIDI In and Out port parameters.

To set up Mackie HUI devices

1. Make sure that your HUI devices are connected bidirectionally with the computer, using a MIDI interface.
2. Choose Logic Pro > Preferences > Control Surfaces > Setup.
3. Choose New > Install in the Setup window.
4. Select HUI in the Install window.
5. Click the Add button.
6. Select the added device in the Setup window, then set the MIDI In and MIDI Out parameters as appropriate.

Tips for Setting Up Other HUI-Compatible Devices

If the unit emulates a single HUI device, proceed as if using a HUI.

If you experience problems in the DSP Edit display, install the unit as a DM2000. See Yamaha DM2000.

If the unit emulates more than one HUI, add the required number of additional devices in the Setup window. 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 want to know more about button assignments, refer to Mackie HUI: Assignment Overview, and the user manual for the device.

Mackie HUI: Assignment Overview

The following sections outline the assignment of Mackie HUI interface elements to Logic functions.

- Mackie HUI: ASSIGN Section
- Mackie HUI: Fader Bank Buttons
- Mackie HUI: WINDOW Section
- Mackie HUI: KEYBOARD SHORTCUTS Section
- Mackie HUI: Channel Strips
- Mackie HUI: DSP EDIT/ASSIGN Section
- Mackie HUI: Function Keys
- Mackie HUI: AUTO ENABLE Section
- Mackie HUI: AUTO MODE Section
- Mackie HUI: STATUS/GROUP Section
- Mackie HUI: EDIT Section
- Mackie HUI: Time Display
- Mackie HUI: LOCATE/NUMERICS Section
- Mackie HUI: Transport Section
- Mackie HUI: Cursor Buttons
- Mackie HUI: Jog Wheel
- Mackie HUI: Foot Switches

Mackie HUI: ASSIGN Section

The following table outlines the controls in the ASSIGN section and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate use while the modifier is held down.

Control	Modifier	Assignment
SEND A		Assigns Send 1 level to V-Pots, and Send 1 to 4 levels to DSP V-Pots. While SEND A is held down, the scribble strips show the current Send 1 destination (a bus number).
	SHIFT/ADD	As above, for Send 6
SEND B		As above, for Send 2
	SHIFT/ADD	As above, for Send 7
SEND C		As above, for Send 3
	SHIFT/ADD	As above, for Send 8
SEND D		As above, for Send 4
SEND E		As above, for Send 5
PAN		Assigns Pan to V-Pots, and the selected (surround) channel strip's pan/surround parameters to DSP V-Pots. You must confirm any changes made with the DSP V-Pots by pressing the corresponding V-Select button.
INPUT		Assigns channel strip input to V-Pots. While held down, the scribble strips show the current channel strip input assignment. The four DSP V-Pots control the following parameters of the selected channel strip: format, input, output, and automation mode. You must confirm any changes made with the V-Pots or DSP V-Pots by pressing the corresponding V-Select button.
OUTPUT		Assigns channel strip output to V-Pots. While held down, the scribble strips show the current channel strip output assignment. The four DSP V-Pots control the following parameters of the selected channel strip: format, input, output, and automation mode. You must confirm any changes made with the V-Pots or DSP V-Pots by pressing the corresponding V-Select button.
REC/RDY ALL		Disables Record Enable button of all channel strips.
BYPASS		Switches the INSERT buttons between Insert Select and Insert Bypass modes. See Insert entry in the Mackie HUI: Channel Strips table.
MUTE		Switches the V-Select buttons between Send Position and Send Mute modes.
SHIFT		Enables or disables Flip mode.

Control	Modifier	Assignment
SELECT-ASSIGN		Displays the V-Pot assignment as follows: Pan, Snd1 to Snd8, S1As to S8As, In, Out.
SUSPEND		—
DEFAULT		Hold this button down to switch the V-Select buttons between standard operation and setting default values.
ASSIGN		When V-Pots display a send level, the ASSIGN button switches them to Send Destination Assignment mode (choosing a bus, in other words). Press the V-Select to confirm the assignment. The DSP V-Pots display the assignments of Send slots 1–4 or Send slots 5–8. Confirm any changes by pressing the V-Select button or all changes will be lost when you leave Send Destination Assignment mode, or press the Assign button a second time.

Mackie HUI: Fader Bank Buttons

The following table outlines the fader bank controls and their assignments:

Control	Assignment
Bank Left	Shifts channel strips by one bank (a group of channel strips or parameters) to the left.
Bank Right	Shifts channel strips by one bank to the right.
Channel Left	Shifts channel strips by one channel (or parameter) to the left.
Channel Right	Shifts channel strips by one channel to the right.

Mackie HUI: WINDOW Section

The following table outlines the window controls and their assignments:

Control	Assignment
TRANSPORT	Opens or closes the Transport bar window.
EDIT	Opens or closes the Arrange window.
MIX	Opens or closes the Mixer.
ALT	Opens or closes the Sample Editor.
STATUS	Opens or closes the Audio Bin.
MEM-LOC	Opens or closes the Marker List.

Mackie HUI: KEYBOARD SHORTCUTS Section

The following table outlines the keyboard shortcut controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate use while the modifier is held down.

Control	Modifier	Assignment
UNDO		Undoes last editing operation.
	SHIFT/ADD	Redoes last editing operation.
	OPTION/ALL	Opens Undo History window.
SAVE		Saves the project.
	OPTION/ALL	Performs Save As function, allowing you to save the project with a different name.
EDIT MODE		—
EDIT TOOL		Selects the next tool. While held down, numerical buttons select a specific tool.
SHIFT/ADD		Shifts to alternate mode/use for some buttons. See descriptions of other buttons.
OPTION/ALL		While held down, value change mode is set to relative. This switches between 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.)
CMD/ALT/FINE		While held down, Value Change mode is set to Fine. All value changes work at maximum resolution. Also see descriptions of other buttons.

Mackie HUI: Channel Strips

The following table outlines the channel strip controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate use while the modifier is held down.

Control	Modifier	Assignment
Level meters		Displays momentary and peak levels.
REC/RDY		Activates or deactivates the Record Enable button.
	OPTION/ALL	Disables the Record Enable buttons of all channel strips.
INSERT		• BYPASS button OFF (see Insert Select mode in Mackie HUI: ASSIGN Section): selects channel strip for plug-in selection. • BYPASS button ON (see Insert Bypass mode in Mackie HUI: ASSIGN Section): enables/disables bypass of currently selected Insert slot.

Control	Modifier	Assignment
V-SEL		• PAN button ON: sets Pan parameter to center position 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, Channel Strip Input or Channel Strip Output Assignment mode: the V-SEL buttons confirm your selection.
V-Pot		Adjusts parameter selected in the ASSIGN section.
AUTO		Cycles through automation modes. If you hold down an automation mode button, pressing AUTO sets this mode.
SOLO		Enables or disables the Solo button.
	OPTION/ALL	Disables the Solo buttons of all channel strips.
MUTE		Enables or disables the Mute button.
	OPTION/ALL	Disables the Mute buttons of all channel strips.
Scribble strip		Displays the channel strip name or send, input, or output assignment.
SELECT		Selects the channel strip.
	SHIFT/ADD	Sets volume to unity level.
DEFAULT		Sets volume to unity level.
Fader		Adjusts volume, or duplicates the V-Pot assignment in Flip mode.

Mackie HUI: DSP EDIT/ASSIGN Section

The following table outlines the DSP controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate use while the modifier is held down.

Control	Modifier	Assignment
ASSIGN		—
COMPARE		Switches DSP display between “track name/parameter name” and “parameter name/parameter value” modes.
BYPASS		Switches the bypass state of the plug-in being edited.

Control	Modifier	Assignment
DSP Select 1 to 4		• Assignment Pan mode: DSP Select 1 resets pan or surround angle. DSP Select 2 resets surround diversity. DSP Select 3 resets surround LFE (level). DSP Select 4 resets the Spread parameter. • Assignment Send mode: Activates or deactivates Sends 1 to 4, or mutes 5 to 8. • Effect Assign mode: Confirms Insert 1 to 4 or 5 to 8 effect selection, selects this Insert slot, and enters Effect Edit mode, showing the parameters of the chosen effect. • Effect Edit mode: Sets parameter to the default value, or turns "switching" parameters on/off.
DSP V-Pots		• Assignment Pan mode: DSP V-Pot 1 controls pan or surround angle. DSP V-Pot 2 controls surround diversity. DSP V-Pot 3 controls surround LFE (level). DSP V-Pot 4 controls the Spread parameter. • Assignment Send mode: Controls Send 1 to 4, or 5 to 8 Levels. • Effect Assign mode: Assigns effects to Insert slots 1 through 4, or 5 to 8. • Effect Edit mode: Controls the selected effect parameter.
INSERT/PARAM		Switches between Effect Assign and Effect Edit modes.
SCROLL		Effect Edit mode: Shifts parameter display by the number of DSP V-Pots in the control surface group (usually four).
	CMD/ALT/FINE	Effect Edit mode: Shifts parameter display by one (parameter).

Mackie HUI: Function Keys

The following table outlines the function keys and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate use while the modifier is held down.

Control	Modifier	Assignment
F1		Clears Overload LEDs.
	SHIFT/ADD	Switches to Mixer view, and displays MIDI channel strips.
	CMD/ALT/FINE	Opens or closes Arrange window.
F2		Recalls screenset 2.
	SHIFT/ADD	Switches to Mixer view, and displays input channel strips.
	CMD/ALT/FINE	Opens or closes Mixer.
F3		Recalls screenset 3.
	SHIFT/ADD	Switches to Mixer view, and displays audio channel strips.
	SHIFT/ADD	Opens or closes Event List.
F4		Recalls screenset 4.
	SHIFT/ADD	Switches to Mixer view, and displays instrument channel strips.
	CMD/ALT/FINE	Opens or closes Score Editor.
F5		Recalls screenset 5.
	SHIFT/ADD	Switches to Mixer view, and displays aux channel strips.
	CMD/ALT/FINE	Opens or closes Hyper Editor.
F6		Recalls screenset 6.
	SHIFT/ADD	Switches to Mixer view, and displays bus channel strips.
	CMD/ALT/FINE	Opens or closes Piano Roll Editor.
F7		Switches counter display format between SMPTE and bars/beats/divisions/ticks.
	SHIFT/ADD	Switches to Mixer view, and displays the master and output channel strips.
	CMD/ALT/FINE	Opens or closes Transport bar window.
F8/ESC		Default: exits folder. Go to Marker mode: cancels dialog.
	CMD/ALT/FINE	Opens or closes the Audio Bin.

Mackie HUI: AUTO ENABLE Section

The following table outlines the global controls and their assignments:

Control	Assignment
FADER	Activates or deactivates the recording of volume automation.

Control	Assignment
PAN	Activates or deactivates the recording of pan automation.
PLUG IN	Activates or deactivates the recording of plug-in parameter automation.
MUTE	Activates or deactivates the recording of mute automation.
SEND	Activates or deactivates the recording of send level automation.
SEND MUTE	—

Mackie HUI: AUTO MODE Section

The following table outlines the automation controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate use while the modifier is held down.

Control	Modifier	Assignment
READ		Sets selected channel to Read automation mode. While held down, pressing the channel strip AUTO button sets the automation mode to Read.
	OPTION/ALL	Sets all channels to Read automation mode.
LATCH		Sets selected channel to Latch automation mode. While held down, press the channel strip AUTO button to set automation mode to Latch.
	OPTION/ALL	Sets all channels to Latch automation mode.
TRIM		—
TOUCH		Sets selected channel to Touch automation mode. While held down, press the channel strip AUTO button to set automation mode to Touch.
	OPTION/ALL	Sets all channels to Touch automation mode.
WRITE		Sets selected channel to Write automation mode. While held down, press the channel strip AUTO button to set automation mode to Write.
	OPTION/ALL	Sets all channels to Write automation mode.
OFF		Sets selected channel to Off automation mode. While held down, press the channel strip AUTO button to set automation mode to Off.
	OPTION/ALL	Sets all channels to Off automation mode.

Mackie HUI: STATUS/GROUP Section

The following table outlines the status/group controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate use while the modifier is held down.

Control	Modifier	Assignment
AUTO		While held down, the scribble strips display the automation mode of all channels.
MONITOR		—
PHASE—SHIFT		Switches to Single view.
GROUP		Enters Group Edit mode: • The upper line (in the DSP Edit section) displays the number and name of the group being edited. • DSP Select buttons 1 to 4 switch between the properties of the group being edited. 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 that you want to edit. • The SELECT buttons enable/disable group membership of the channel.
	SHIFT/ADD	Switches to Channel view.
CREATE		Creates a new group and enters Group Edit mode (see above).
	SHIFT/ADD	Switches to Mixer view.
SUSPEND		Activates or deactivates the Group Clutch.
	SHIFT/ADD	Switches to Tracks view.

Mackie HUI: EDIT Section

The following table outlines the editing controls and their assignments:

Control	Assignment
CAPTURE	—
SEPARATE	—
CUT	Cuts the selection (of regions or events).
COPY	Copies the selection.
PASTE	Pastes the Clipboard contents.
DELETE	Deletes the selection.

Mackie HUI: Time Display

The following table outlines the time display controls and their assignments:

Control	Assignment
TIME CODE	Lit if counter is displaying SMPTE time code.

Control	Assignment
FEET	Not assigned
BEATS	Lit if counter is displaying bars/beats/divisions/ticks.
Time display	Switches between a SMPTE time code or bars/beats/divisions/ticks display.
RUDE SOLO LIGHT	Flashes if any channel is soloed.

Mackie HUI: LOCATE/NUMERICS Section

The following table outlines the numeric keypad controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate use while the modifier is held down.

Control	Modifier	Assignment
CLR		Deletes current marker.
=		Creates a marker at the current playhead position.
/		Equivalent to (but independent of) computer keyboard / key.
*		Equivalent to (but independent of) computer keyboard * key.
–		Equivalent to (but independent of) computer keyboard – key.
+		Equivalent to (but independent of) computer keyboard + key.
0 to 9		• Normal: 1 to 9 recalls markers 1 to 9. • If in Go to Marker dialog: equivalent to (but independent of) computer keyboard keys 0 to 9.
	SHIFT/ADD	Switches to Mixer view, and displays: • 1: MIDI channel strips • 2: Input channel strips • 3: Audio channel strips • 4: Instrument channel strips • 5: Aux channel strips • 6: Bus channel strips • 7: Master and output channel strips

Control	Modifier	Assignment
	EDIT TOOL	Selects tool (if applicable to window with key focus): • 1: Pointer • 2: Pencil • 3: Eraser • 4: Text tool • 5: Scissors • 6: Glue • 7: Solo tool • 8: Mute tool • 9: Zoom tool
0		If in Go to Marker dialog: equivalent to computer keyboard 0 key.
.		• If *not in* Go to Marker dialog: enters Go to Marker dialog. • In *in* Go to Marker dialog: equivalent to computer keyboard Period key.
ENTER		• If *not in* Go to Marker dialog: enters folder of selected track. • If *in* Go to Marker dialog: confirms marker number that you entered.

Mackie HUI: Transport Section

The following table outlines the transport controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate use while the modifier is held down.

Control	Modifier	Assignment
AUDITION		—
PRE		Sets left locator (at current playhead position).
IN		Sets punch in locator (at current playhead position).
OUT		Sets punch out locator (at current playhead position).
POST		Sets right locator (at current playhead position).
RTZ		Moves playhead to the left locator position.
END		Moves playhead to the right locator position.
ON LINE		Switches between internal and external sync.
LOOP		Enables or disables Cycle mode.
QUICK PUNCH		Enables or disables Autopunch mode.
REWIND		Shuttles backward.

Control	Modifier	Assignment
FAST FWD		Shuttles forward.
STOP		Stops playback.
PLAY		Starts playback.
	SHIFT/ADD	Pauses playback (or recording).
RECORD		Record

Mackie HUI: Cursor Buttons

The following table outlines the cursor controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate use while the modifier is held down.

Control	Modifier	Assignment
Cursor Up		• Cursor mode: equivalent to computer keyboard Up Arrow key. • Zoom mode: zooms in vertically (in the window with key focus).
	SHIFT/ADD	Zoom mode: individual track zoom (zooms in).
	CMD/ALT/FINE	Page up.
	OPTION/ALL + CMD/ALT/FINE	Scroll to top.
Cursor Down		• Cursor mode: equivalent to computer keyboard Down Arrow key. • Zoom mode: zooms out vertically (in the window with key focus).
	SHIFT/ADD	Zoom mode: individual track zoom (zooms out).
	CMD/ALT/FINE	Page down.
	OPTION/ALL + CMD/ALT/FINE	Scroll to bottom (of window/list with key focus).
Cursor Left		• Cursor mode: equivalent to computer keyboard Left Arrow key. • Zoom mode: zooms out horizontally (in the window with key focus).
	SHIFT/ADD	Zoom mode: individual track zoom reset (of tracks of the same type).
	CMD/ALT/FINE	Page left.
	OPTION/ALL + CMD/ALT/FINE	Scroll to left border (of the window with key focus).

Control	Modifier	Assignment
Cursor Right		• Cursor mode: equivalent to computer keyboard Right Arrow key. • Zoom mode: zooms in horizontally (in the window with key focus).
	SHIFT/ADD	Zoom mode: individual track zoom reset (of all tracks, regardless of type).
	CMD/ALT/FINE	Page right.
	OPTION/ALL + CMD/ALT/FINE	Scroll to right border (of the window with key focus).
MODE		Switches between Cursor and Zoom modes.

Mackie HUI: Jog Wheel

The following table outlines the Jog Wheel controls and their assignments:

Control	Assignment
Jog Wheel	• Default: Move playhead by one bar. • Scrub button lit: Scrub mode. • Shuttle button lit: Shuttle mode.
SCRUB	Activates or deactivates Scrub mode.
SHUTTLE	Activates or deactivates Shuttle mode.

Mackie HUI: Foot Switches

The following table outlines the foot switch controls and their assignments:

Control	Assignment
Foot Switch 1	Play or Stop
Foot Switch 2	Record On/Off

Mackie C4

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This chapter describes how to use your Mackie C4 with Logic Pro.

This chapter covers the following:

Setting Up Your Mackie C4

A connected and powered Mackie C4 unit will be detected automatically when you open Logic Pro. You can use the C4 in an independent control surface group (with other control surface icons placed above or below the C4 icon), or combined in a group with one or more control surfaces (such as the Mackie Control—place the icon to the right or left of the existing icons).

Although the C4 can be used independently, it is most useful when combined with other control surfaces, particularly the Mackie Control. In this scenario, the C4 adds eight channels in Mixer view. Using the C4 in its own control surface group allows you to edit instruments and effects independently, while performing mixing and other tasks on the Mackie Control or other control surface.

Mackie C4: Using V-Pots and V-Select Buttons

The C4 provides 32 V-Pots, laid out in four horizontal rows.

- The top row (row 1) consists of V-Pots 1 to 8.
- Row 2 consists of V-Pots 9 to 16.
- Row 3 consists of V-Pots 17 to 24.

- The bottom row (row 4) consists of V-Pots 25 to 32.

Each V-Pot features an integrated V-Select button, which is activated by pressing the (V-Pot) knob top.

The function or parameter assigned to each V-Pot/V-Select button depends on the current view mode (see Mackie C4: View Modes), and chosen overlay (see Mackie C4: Assignment Buttons).

V-Pots and V-Selects 1 to 8
When no overlay is active, V-Pots 1 to 8 (the top row) normally perform in the same way as their counterparts on a Mackie Control or Mackie Control XT. See Mackie Control: Assignment Zone.

V-Pots and V-Selects 9 to 32
These V-Pots have additional functionality in different view modes.

In Mixer (multi-channel) views, the V-Pots in rows 2, 3, and 4 usually edit the parameter that follows the parameter edited on row 1. For example, in Pan/Surround Mixer view, row 1 edits the pan/surround angle, row 2 edits surround diversity, row 3 edits LFE level, and row 4 edits spread.

In Channel view, all four rows represent a group of 32 editable parameters.

In Effect and Instrument Edit views, the C4 can be split into two groups (8/24, 16/16, or 24/8 parameters). See SPLIT Button.

Mackie C4: View Modes

The C4 provides a number of view modes that display a particular parameter type on the V-Pots/V-Select buttons. See the following sections for details on each view mode:

- Mackie C4: Pan/Surround Mixer View Mode
- Mackie C4: Pan/Surround Channel View Mode
- Mackie C4: Channel Strip Mixer View Mode
- Mackie C4: EQ Mixer View Mode
- Mackie C4: EQ Channel View Mode
- Mackie C4: Send Mixer View Mode
- Mackie C4: Send Channel View Mode
- Mackie C4: Effect Assign Mixer View Mode
- Mackie C4: Effect Edit View Mode
- Mackie C4: Instrument Assign Mixer View Mode
- Mackie C4: Instrument Edit View Mode

- Mackie C4: Cycle View Mode
- Mackie C4: Punch View Mode

Mackie C4: Pan/Surround Mixer View Mode

In Pan/Surround Mixer 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, spread, 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 Mixer view

1. Hold down the CHAN STRIP button.

   The channel strip overlay labels appear on the C4 displays.

2. Press V-Select 18 (labeled Surrnd Mixer).

Mackie C4: Pan/Surround Channel View Mode

In Pan/Surround Channel 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 view

1. Hold down the CHAN STRIP button.

   The channel strip overlay labels appear on the C4 displays.

2. Press V-Select 26 (labeled Surrnd).

Mackie C4: Channel Strip Mixer View Mode

In Channel Strip Mixer view, the row order is reversed, so that the lowest row edits parameter 1.

V-Pot row 4 (bottom row) edits the currently chosen channel parameter. Row 3 edits channel parameter 2, row 2 edits channel parameter 3, and row 1 (at the top) edits channel parameter 4.

The V-Pots edit the following channel parameters in this order: volume, pan/angle, input format, input assignment, output assignment, automation mode, group, displayed automation parameter.

To edit invisible parameters

- Press the BANK Left/BANK Right or SINGLE Left/SINGLE Right buttons to change the parameter shown, and edited, in row 4.

  The parameters shown in rows 1 to 3 are adjusted accordingly.

To access Channel Strip view

1. Hold down the CHAN STRIP button.

   The channel strip overlay labels appear on the C4 displays.

2. Press V-Select 17.

Mackie C4: EQ Mixer View Mode

In EQ Mixer view:

- Row 1 sets the selected EQ band bypass state.
- Row 2 edits the selected EQ band frequency.
- Row 3 edits the selected EQ band gain/slope.
- Row 4 edits the selected EQ band Q factor.
- The SLOT UP and SLOT DOWN buttons select the EQ band (if a Channel or Linear Phase EQ is inserted in the selected channel strip).

To access EQ Mixer view

1. Hold down the CHAN STRIP button.

   The channel strip overlay labels appear on the C4 displays.

2. Press V-Select 19 (labeled EQ Mixer).

Mackie C4: EQ Channel View Mode

In EQ Channel view:

- Row 1 edits the frequency of all eight bands.
- Row 2 edits the gain/slope of all eight bands.
- Row 3 edits the Q factor of all eight bands.
- Row 4 sets the bypass state of all eight bands.

If no Channel or Linear Phase EQ is present on the selected channel, a Channel EQ is automatically inserted when you enter the EQ Channel view. The TRACK Left and TRACK Right buttons switch to the previous or next channel. If you switch to a channel with no Channel or Linear Phase EQ inserted, the C4 displays show "–", and the corresponding V-Pots do nothing.

To access EQ Channel view

1. Hold down the CHAN STRIP button.

   The channel strip overlay labels appear on the C4 displays.

2 Press V-Select 27 (labeled EQs).

Mackie C4: Send Mixer View Mode

In Send Mixer view:

- Row 1 edits the send destination of the selected Send slot (on the selected channel).
- Row 2 edits the send level.
- Row 3 edits the send position (pre/post fader).
- Row 4 mutes/unmutes the send.
- The SLOT UP/SLOT DOWN buttons select the Send slot.
- The TRACK L and TRACK R buttons shift the fader bank (to the left or right) by the number of channel strips in the control surface group.

To access Send Mixer view

1 Hold down the CHAN STRIP button.

The channel strip overlay labels appear on the C4 displays.

2 Press V-Select 20 (labeled Sends Mixer).

Mackie C4: Send Channel View Mode

In Send Channel view:

- Row 1 edits the (first) eight send destinations of the selected channel strip.
- Row 2 edits the send level of sends 1 to 8.
- Row 3 edits send positions 1 to 8 (pre/post fader).
- Row 4 mutes/unmutes sends 1 to 8.
- TRACK L and TRACK R switch to the previous or next channel.

To access Send Channel view

1 Hold down the CHAN STRIP button.

The channel strip overlay labels are shown on the C4 displays.

2 Press V-Select 28 (labeled Sends).

Mackie C4: Effect Assign Mixer View Mode

In Effect Assign Mixer view, the C4 displays the first four Insert slots of the eight selected channels.

- Turn a V-Pot to switch between effects. (This action lets you browse through the effects listed in the Effect menu, shown in Logic Pro mixer channels.)
- Press the respective V-Select to insert the chosen effect. This activates Effect Edit view, where you can directly edit effect parameters. See Mackie C4: Effect Edit View Mode for more information.

- The SLOT UP/SLOT DOWN buttons switch between Insert slots.
- TRACK L and TRACK R shift the fader bank by the number of channel strips in the control surface group.
- Holding down SHIFT and pressing a V-Select switches the bypass state of the respective Insert slot. Bypassed effects are denoted by an asterisk (*) that precedes the effect name.

To access Effect Assign Mixer view

1. Hold down the CHAN STRIP button.

   The channel strip overlay labels are shown on the C4 displays.

2. Press V-Select 21 (labeled PlugIn Mixer).

Mackie C4: Effect Edit View Mode

In Effect Edit view:

- V-Pots 1 to 32 constitute a group of 32 parameters. Splitting is possible (see SPLIT Button).
- The SLOT UP/SLOT DOWN buttons select the Insert slot.
- BANK Left/BANK Right shifts the edited parameters by one page.
  - In Split mode, the SLOT and BANK button behaviors apply to Split Upper.
  - When holding down SHIFT, the SLOT and BANK button behaviors apply to Split Lower.
- SINGLE Left/SINGLE Right shifts the edited parameters by 1.
  - In Split mode, the SINGLE button behaviors apply to Split Upper.
  - When holding down SHIFT, the SINGLE button behaviors apply to Split Lower.

To access Effect Edit view

1. Hold down the CHAN STRIP button.

   The channel strip overlay labels are shown on the C4 displays.

2. Press V-Select 21 (labeled PlugIn Mixer).
3. Insert or select an effect, and the C4 will automatically switch to Effect Edit view.

Mackie C4: Instrument Assign Mixer View Mode

In Instrument Assign Mixer view, the C4 displays the Instrument slots of the selected instrument channels.

- Turn a V-Pot to select an instrument. (This action lets you browse through the software instruments listed in the Instrument Plug-in menu, shown in Logic Pro instrument channels.)

- Press the respective V-Select to insert the chosen instrument. This enters Instrument Edit view, where you can edit instrument parameters. See Mackie C4: Instrument Edit View Mode for more information.
- The TRACK L and TRACK R buttons shift the fader bank by the number of channel strips in the control surface group.
- Holding down SHIFT and pressing a V-Select switches the bypass state of the respective Instrument slot. An asterisk (*) precedes the name of bypassed instruments.

To access Instrument Assign Mixer view

1. Hold down the CHAN STRIP button.

   The channel strip overlay labels are shown on the C4 displays.

2. Press V-Select 22 (labeled Instru Mixer).

Mackie C4: Instrument Edit View Mode

In Instrument Edit View:

- V-Pots 1 to 32 constitute a group of 32 parameters. Splitting is possible (see SPLIT Button).
- BANK Left/BANK Right shifts the edited parameters by one page.
  - In Split mode, the BANK button behaviors apply to Split Upper.
  - When holding down SHIFT, the BANK button behaviors apply to Split Lower.
- SINGLE Left/SINGLE Right shifts the edited parameters by 1.
  - In Split mode, the SINGLE button behaviors apply to Split Upper.
  - When holding down SHIFT, the SINGLE button behaviors apply to Split Lower.

To access Instrument Edit view

1. Hold down the CHAN STRIP button.

   The channel strip overlay labels are shown on the C4 displays.

2. Press V-Select 22 (labeled Instru Mixer).
3. Insert or select an instrument, which will automatically switch the C4 to Instrument Edit view.

Mackie C4: Cycle View Mode

In Cycle View mode, the V-Pots/V-Selects behave as follows:

- V-Pot/V-Select 1 (labeled Cycle) shows and edits the current Cycle mode status (off or on).
- V-Select 2 (labeled BySet) matches the cycle area to selections made in the Arrange window (selected audio or MIDI regions).

- 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 playhead 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 playhead 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).

To activate Cycle View mode

- Hold down the CHAN STRIP button, and press V-Select 31.

Mackie C4: Punch View Mode

In Punch View mode, the V-Pots/V-Selects behave as follows:

- V-Pot/V-Select 1 shows and edits the current Autopunch status (off or on).
- V-Pot 3 (labeled Move) moves the current punch in locator by a bar with each click of the V-Pot, when turned.
- V-Pot 4 moves the current punch in locator by a beat with each click of the V-Pot, when turned.
- The display shows the punch in and punch out locators above V-Pots 5 and 7.
- Pressing V-Select 5 picks up (uses) the current playhead position for the punch in locator.
- Turning V-Pot 5 changes the punch in locator position by bars.
- Turning V-Pot 6 changes the punch in locator position by beats (denominator steps).
- Pressing V-Select 7 picks up (uses) the current playhead position for the punch out locator.
- Turning V-Pot 7 changes the punch out locator position by bars.
- Turning V-Pot 8 changes the punch out locator position by beats (denominator steps).

Note: Changing a punch locator position with the C4 automatically activates Autopunch mode.

To activate Punch View mode

- Hold down the CHAN STRIP button, and press V-Select 32.

Mackie C4: Function Buttons

This section outlines the FUNCTION buttons at the lower left of the C4 control surface.

SPLIT Button
Splits the C4 rows as follows: 4/0, 1/3, 2/2, and 3/1. This is known as a *Split Edit*, and allows you to simultaneously edit two separate sections of a plug-in, or even two different plug-ins.

Split Edit is also possible across multiple C4 units. For example, with two C4 devices, pressing the SPLIT button offers the following split modes:

- 1/7 (Split Upper is top row of first C4 unit; Split Lower is bottom 3 rows of first unit and all rows of second C4 unit. LED 1/3 is lit.)
- 2/6 (Split Upper is top two rows of first C4 unit; Split Lower is bottom two rows of first unit and all rows of second C4 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 Button
Activates/deactivates Track Lock. When LOCK is enabled, selection of a different track in the Arrange window does *not* switch the current track/channel selection on the C4.

SPOT ERASE Button
Unassigned

Mackie C4: Assignment Buttons

The Assignment buttons switch between "overlay" and normal view modes. The parameters assigned to the V-Pots/V-Select buttons change accordingly when an overlay mode is activated.

MARKER Button
Switches between Marker overlay (see Mackie C4: Marker Overlay Mode) and normal view modes (see Mackie C4: View Modes).

TRACK Button
Switches between Track overlay (see Mackie C4: Track Overlay Mode) and normal view modes (see Mackie C4: View Modes).

You can access alternate Mixer View options by holding down the TRACK button. This displays a further submenu in the lower LCD, allowing you to view particular channel types:

- V-Select 25 switches to MIDI Channel view.
- V-Select 26 switches to Input Channel view.
- V-Select 27 switches to Audio Channel view.
- V-Select 28 switches to Software Instrument Channel view.
- V-Select 29 switches to Auxiliary Channel view.
- V-Select 30 switches to Bus Channel view.
- V-Select 31 switches to Output Channel view.
- V-Select 32 switches to Master Channel view.

Releasing the TRACK button without pressing a V-Select returns you to Mixer view.

CHAN STRIP Button
Switches between Channel Strip overlay (see Mackie C4: Channel Strip Overlay Mode) and normal view modes (see Mackie C4: View Modes).

You can access alternate User View options by holding down the CHAN STRIP button, which displays 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-Select buttons.
- V-Select 17 switches to Channel Strip Mixer view.
- V-Select 18 switches to Pan/Surround Mixer view.
- V-Select 19 switches to EQ Mixer view.
- V-Select 20 switches to Send Mixer view.
- V-Select 21 switches to Effect Assign Mixer view.
- V-Select 22 switches to Instrument Select Mixer view.
- V-Select 26 switches to Pan/Surround Channel view.
- V-Select 27 switches to EQ Channel view.
- V-Select 28 switches to Send Channel view.
- V-Select 31 activates the Cycle view.
- V-Select 32 activates the Drop view.

FUNCTION Button
Switches between "Function overlay" and normal view modes (see Mackie C4: View Modes). See Mackie C4: Function Overlay Mode for details on this mode.

Mackie C4: Marker Overlay Mode

The Marker overlay is active when the MARKER button light is on.

- V-Selects 1 to 30 are assigned to markers 1 to 30. The upper LCD line shows the marker name; the lower line displays INSIDE when the playhead falls within marker boundaries.
- V-Select 31 creates a new marker.
- V-Select 32 deletes the current marker.

Mackie C4: Track Overlay Mode

The Track overlay is active when the TRACK button light is on.

To select a track/channel for Split Upper

- Press V-Select 1 to 32. When a track/channel is selected for Split Upper, the bottom LCD displays the word UPPER.
- BANK Left/BANK Right shifts the fader bank by the number of channels in the control surface group.
- SINGLE Left/SINGLE Right shifts the fader bank by one channel.

To select a track/channel for Split Lower

- Press V-Select 1 to 32. If a track/channel is selected for Split Lower, the word LOWER is shown in the bottom LCD.
- BANK Left/BANK Right shifts the fader bank by the number of channels in the control surface group.
- SINGLE Left/SINGLE Right shifts the fader bank by one channel.

Mackie C4: Channel Strip Overlay Mode

The channel strip overlay is active when the CHAN STRIP button light is on.

- V-Pot/V-Select row 1 (V-Pots 1 to 8) edits the frequency and gain of EQ bands 3 to 6 (the parametric bands), provided an EQ effect is inserted in the current channel strip.
- V-Pot/V-Select row 2 (V-Pots 9 to 16) switches to Effect Edit mode for Inserts 1 to 8, provided an effect is inserted in the respective Insert slot. If no effect is inserted, turn the respective V-Pot to select an effect, then press the V-Select, to insert it.
- V-Pot/V-Select row 3 (V-Pots 17 to 24) edits Send 1 to 8 Level, provided the current channel has active sends.
- V-Pot/V-Select 25 switches to Instrument Edit mode, provided the selected channel is routed to an instrument channel, and an instrument plug-in is inserted.
- V-Pot/V-Select 26 edits the channel output destination.
- 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 sets the channel input format.

Mackie C4: Function Overlay Mode

The Function overlay is active when the FUNCTION button light is on. The table below outlines the assignment of C4 controls to Logic functions.

Control	Assignment
1 (display: Inspct)	Enables/disables the Inspector of the window with key focus.
2 (Channel Strip)	Enables/disables the Lists area display in the Arrange window.
2 (Channel Strip)-Option	Enables/disables the Media area display in the Arrange window.
3 (Delay in ms)	Activates/deactivates display of delays in milliseconds.
4 (Ruler: SMPTE)	Activates/deactivates SMPTE display of ruler.
5 (Global Track)	Activates/deactivates display of Global tracks.
6 (Arrang Grid)	Activates/deactivates display of the Arrange window grid.
7 (Event Float)	Activates/deactivates display of the Event List.
8 (Name/Value)	Switches the display mode between Name and Value (identical to the NAME/VALUE button on the Mackie Control).
9 (Track Autom.)	Enables/disables display of track automation in the Arrange window.
10 (Trk>Rg Autom.)	Performs Move Current Track Automation Data to Region key command. With the OPTION button held down (display: Trk>Ob Au All), the Move All Track Automation Data to Region key command is executed.
11 (Rg>Trk Autom.)	Performs Move Current Region Data to Track Automation function. With the OPTION button held down (display: Ob>Trk Au All), the Move All Region Control Data to Track Automation key command is executed.
12 (Clear Autom.)	Performs Delete Currently Visible Automation Data of Current Track key command. With the OPTION button held down (display: Clear Au All), the 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 Enable button of all channels.
15 (ClrAll Solo)	Switches off Solo for all channels.
16 (ClrAll Mute)	Switches off Mute for all channels.
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.

Control	Assignment
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 Select tool.
V-Pot 25 (WfZoom)	Edits the Arrange waveform zoom factor (if the Arrange window has key focus).
V-Pot 26 (V.Zoom)	Edits the vertical zoom factor of the window with key focus.
V-Pot 27 (H.Zoom)	Edits the horizontal zoom factor of the window with key focus.
V-Pot 28 (Move Cycle)	Moves the cycle locators.
V-Pot 29 (Quantz)	Chooses the Quantize value. V-Select 29 performs Quantize Selected Events for the selected regions or events.
V-Pot 30 (Division)	Chooses the division 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.

Mackie C4: 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 Pro functions behave differently when one or more modifier keys are pressed, in conjunction with another key or mouse click. This also applies to the C4 control surface.

Here is a generic description of the modifier button functions:

- SHIFT: Switches other buttons to an 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.
- CMD/ALT: While held down, parameters are edited in Fine (high-resolution) mode when a V-Pot is turned.

Mackie C4: Parameter, Track, and Slot Buttons

The buttons at the lower right of the C4 are used to access channel strips, channel strip elements, and parameters.

BANK Left and BANK Right Buttons

Shifts the parameter display by one page (a group of parameters) in particular views.

SINGLE Left and SINGLE Right Buttons
Shifts the parameter display by one parameter in particular views.

TRACK L and TRACK R Buttons
In Mixer view, TRACK L and TRACK R shifts the fader bank left or right by the number of channel strips in the control surface group. For 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 moves to the first or last group of channels in the project (or parameter pages, if in an edit mode). For example, if you are viewing the first 8 channels (of 64) in the fader bank, pressing OPTION and TRACK L or TRACK R will show the last 8 channels in the fader bank (channels 57 to 64).

In Channel view, TRACK L and TRACK R select the previous or next channel.

In Channel view, simultaneously pressing TRACK L or TRACK R and SHIFT moves to the first or last group of channels in the project (or parameter pages, if in an edit mode), but only affects the Split Lower group if Split mode is active.

SLOT UP and SLOT DOWN Buttons
Selects the desired EQ, Send, or Insert slot.

Radikal Technologies SAC-2K

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This chapter describes how to use your Radikal Technologies SAC-2K with Logic Pro.

This chapter covers the following:

Setting Up Your Radikal Technologies SAC-2K

Make sure that your control surface is connected bidirectionally with the computer, using either a MIDI interface, or the unit's USB connector. If the units are connected via USB, ensure that the appropriate MIDI driver for the device is installed. Visit the manufacturer's website to download updated drivers, if necessary.

To set up SAC-2K units

1. Choose Logic Pro > Preferences > Control Surfaces > Setup.
2. Choose Install from the New menu.
3. Select the SAC-2K in the Install window.
4. Click the Scan button.

Radikal Technologies SAC-2K: Assignment Overview

This section outlines the assignment of the Radikal Technologies SAC-2K interface elements to Logic functions.

- Radikal Technologies SAC-2K: Transport Section
- Radikal Technologies SAC-2K: Channel Edit Mode

Radikal Technologies SAC-2K: LCDs and Encoders

The following table outlines the LCDs and encoder controls, and their assignments:

Control	Assignment
Left and middle LCDs	Upper row displays the channel number when in a Mixer (multichannel) view mode. The parameter name is shown when in a (single) Channel view mode. Lower row shows the parameter value of the corresponding encoder (the one directly below the display). Level meters are shown to the right.
Right LCD	Upper row displays the name of the parameter being edited with the corresponding encoder (the one 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 shown in the LCD.
Encoder push buttons	Parameters with two values (On/Off): Switches between the two values. Parameters that access items (plug-in selection, for example): Confirms preselection. At other times, sets the parameter to its default value.

Radikal Technologies SAC-2K: Channel Strips

The following table outlines the channel strip controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate function or use while the modifier is held down.

Control	Modifier	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 Record Enable state on/off.
	SHIFT	Sets Mute/Solo buttons to Record Enable 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 Record Enable; LED displays Record Enable (armed/disarmed) status.
SELECT 1 to 8 buttons		Selects channel. Exception: In Group mode, these buttons define group membership of the channel.
Master Select button		Switches Flip mode between Off and Duplicate.

Control	Modifier	Assignment
Faders 1 to 8		Controls volume, or duplicates the parameter assigned to the encoder above (if Flip mode is enabled).
Master Fader		Controls the Master Level fader if it exists; if not, controls Output 1–2 level.
EQ button		Inserts a Channel EQ in the channel if no Channel or Linear Phase EQ is present.

Radikal Technologies SAC-2K: Mixer View Mode Section

The following table outlines the Mixer view mode controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
Pan		Switches to Mixer view (multichannel) pan editing.Encoders 9 to 12 edit Pan/Angle, Diversity, LFE, and Spread of selected channel (in Surround mode).
High, HiMid, LowMid, Low		Switches to Mixer view (multichannel) gain editing of a certain EQ band. Encoders 9 to 12 edit Frequency, Gain, Q factor, and On/Off for the selected channel. Pressing and releasing the button chooses a specific EQ band. While held down, you can use Encoder 9 to choose the EQ band that you want to edit (bands 1 to 8). The button's LED is lit when in Mixer view Gain Editing mode (of the selected channel 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)
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	Modifier	Assignment
Snd/Ins 1 to 4		• If in Send mode, switches to Mixer view (multichannel) send level editing of Sends 1 to 4. Encoders 9 to 12 edit Destination, Level, Pre/Post, and Mute of the selected channel. You must confirm the send destination by pushing the Encoder 9 button. While held down, use Encoder 9 to select the desired Send number (1 to 8). The button's LED is lit when in Mixer view Send Level Editing mode (of the selected channel Send slot). • If in Insert mode, switches to Mixer view plug-in selection for Inserts 1 to 4. Plug-in selection is confirmed by pressing the encoder's push button. While held down, use Encoder 9 to choose the desired Insert slot number (1 to 15). The button's LED is lit when in Plug-in Selection mode (of the corresponding channel Insert slot).
Audio		Switches to Mixer view, and displays audio channels.
	SHIFT	Switches to Mixer view.
MIDI		Switches to Mixer view, and displays MIDI channel strips.
	SHIFT	Switches to Arrange (Track) view, and displays the channel strips of all tracks used in the Arrange window.
Input		Switches to Mixer view, and displays input channels.
	SHIFT	Switches to Mixer view, and displays the master and output channels.
Inst		Switches to Mixer view, and displays (software) instrument channels.
	SHIFT	Switches to Mixer view, and displays aux channels.
Bus		Switches to Mixer view, and displays bus channels.
	SHIFT	Switches to Single view.
Group		Switches to Group editing mode: • Encoder 1 to 10 push buttons edit a group property. (The property is 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 LCD line, above Encoder 12. • Select buttons 1 to 8 activate/deactivate group membership of the channel.

Control	Modifier	Assignment
1 to 8		Shifts the fader bank (a group of channels or parameters) to the left by one bank.
9 to 16		Shifts the fader bank to the right by one bank.
17 to 24		Shifts the fader bank to the left by one channel.
25 to 32		Shifts the fader bank to the right by one channel.

Radikal Technologies SAC-2K: Software Navigation Section

The following table outlines the software navigation controls and their assignments:

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: Equivalent to Right Arrow key on computer keyboard. Num LED on: Equivalent to 4 on computer keyboard.
5	Num LED off: Performs Undo (of most recent editing operation). 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 (of regions or events). 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 project. 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.

Note: All buttons that are equivalents of computer keyboard keys are independent of the computer keys. Either can be reassigned.

Radikal Technologies SAC-2K: Locator Section

The locator displays the current playhead position in bars/beats format, as defined in the project settings. A period separates display segments, as the bars/beats format uses (up to) 14 characters in Logic Pro, and the SAC display is limited to 8 digits.

Radikal Technologies SAC-2K: Marker Section

The following table outlines the marker section controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
SHIFT		Shifts to secondary function of other buttons.
Scrub		Switches between three Jog Wheel modes: • LED off: Moves playhead by one bar. • LED on: Activates Scrub mode. • LED flashes: Activates Shuttle mode.
From		Sets left locator at the current playhead position.
	SHIFT	Moves the playhead to the left locator position.
Store Marker		Creates a marker at the current playhead position.
	SHIFT	Deletes the marker at the current playhead position.
To		Sets right locator at the current playhead position.
	SHIFT	Moves the playhead to the right locator position.
Recall Marker		Opens the Go to Marker dialog.
	SHIFT	Opens the Marker List.
Jog Wheel		Moves the playhead in one of three modes, depending on the state of the Scrub button (see above).

Radikal Technologies SAC-2K: Transport Section

The following table outlines the transport controls and their assignments:

Note: A modifier button, such as SHIFT, below a button description indicates that the button has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
<<		Shuttles backward.
>>		Shuttles forward.
	SHIFT	Goes to next marker.
STOP		Stops playback (or recording).

Control	Modifier	Assignment
PLAY		Starts playback.
	SHIFT	Enables/disables Cycle mode.
RECORD		Starts recording (to record-enabled tracks).
	SHIFT	Enables/disables Replace mode.

Radikal Technologies SAC-2K: Channel Edit Mode

The following table outlines the channel strip controls and their assignments:

Control	Assignment
EQs	Enters Channel view EQ Edit mode. Pressing the button repeatedly cycles through all available EQ parameter pages.
Inserts/Sends	Enters Channel view Plug-in Edit mode and edits the effect plug-in inserted into the currently chosen Insert slot (of the selected channel). Pressing the button repeatedly cycles through all available effect plug-in parameter pages.
Dynamics	—
MIDI	—
Instrument	Enters Channel view Instrument Edit mode and edits the instrument plug-in inserted into the selected (Instrument) channel. Pressing the button repeatedly cycles through all available instrument plug-in parameter pages.

Resolving Issues with Radikal Technologies SAC-2K

This section may help you to resolve a few common problems.

Track or channel 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, turn 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 has the unfortunate side effect of not initializing a number of settings required for proper communication. To resolve this issue, turn the SAC-2K power off, and then back on.

Recording Light

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The Recording Light control surface plug-in enables you to control an external light or sign, warning visitors not to enter the recording studio before or during recording. Logic Pro sends a MIDI signal to switch on the external device when a track is record-enabled or when recording starts. Logic Pro sends another MIDI signal to switch off the device when tracks are made record-safe or when recording stops.

Note: This control surface plug-in requires additional hardware that is not included with Logic Pro.

This chapter covers the following:

Setting Up the Recording Light

The Recording Light needs to be manually added to your setup.

To set up the Recording Light

1. Choose Logic Pro > Preferences > Control Surfaces > Setup.
2. Choose Install from the New menu.
3. Select the Recording Light from the list in the Install window.
4. Click the Add button.

Note: While the Recording Light can be added anywhere, it is suggested that you use it alone in a unique control surface group.

Changing Recording Light Parameters

As the Recording Light hardware is not actually a control surface, but rather a simple MIDI-controlled display device, all changes to its behavior are made in the Device Parameter area at the left of the Setup window. You can adjust most of the following parameters, if necessary:

- *Out Port:* Choose the MIDI output port from the pop-up menu.

- *Input:* Choose the MIDI input port from the pop-up menu.
- *Module:* Shows the name of the control surface plug-in (Recording Light), which cannot be changed.
- *Model:* Shows the model name of the control surface (Recording Light), which cannot be changed.
- *Version:* Shows the firmware version for some control surfaces. Not applicable to Recording Light.
- *Color:* Not applicable to Recording Light
- *MIDI Status:* Choose the type of MIDI message that is sent to the recording light device. Generally, this will be a *MIDI note on* message, but other data types can be transmitted.
- *MIDI Channel:* Specify the MIDI channel that data is sent on.
- *Data 1: Any Record Ready LED:* This value determines how the Recording Light device responds to a track being record-enabled in Logic Pro.
- *Data 1: Recording:* This value determines how the Recording Light device responds when the Record button is engaged in Logic Pro.
- *Data 2: On Value:* Choose the value for the MIDI event that is sent to turn on the Recording Light device. Typically this value is 127.

Roland SI-24

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This chapter describes how to use your Roland SI-24 with Logic Pro.

This chapter covers the following:

Setting Up Your Roland SI-24

Follow the steps below before using your control surface with Logic Pro.

To use both the audio and MIDI controller features of the SI-24

- Ensure that your SI-24 units are connected to the RPC card with the (included) cable. This connector provides both digital audio and MIDI connections.
- Make sure that the appropriate driver software is installed, and functioning correctly.

Note: The RPC card is a PCI device, and is not compatible with (most) G5, and all Intel-based Mac computers, which only offer PCIe interfacing.

To use the SI-24 as a control surface

- Connect the unit bidirectionally with two free (not used by other devices) MIDI interface ports.

  When used as a control surface, the SI-24 can be used with all Mac systems that are capable of running Logic Pro. Obviously, you will require another device for audio input and output.

To scan for your Roland SI-24 unit

1. Choose Logic Pro > Preferences > Control Surfaces > Setup.
2. Choose Install in the New menu.
3. Select Roland SI-24 in the Install window.
4. Click the Scan button.

   Logic Pro scans for, and automatically installs, your control surface.

Roland SI-24: Assignment Overview

The following sections outline the assignment of Roland SI-24 interface elements to Logic functions.

- Roland SI-24: Channel Strips
- Roland SI-24: STATUS MODE Section
- Roland SI-24: CH ASSIGN Controls
- Roland SI-24: MASTER Section
- Roland SI-24: SURROUND PAN Section
- Roland SI-24: Numeric Key Section
- Roland SI-24: Transport Section

Roland SI-24: Channel Strips

The following table outlines the channel strip controls and their assignments:

Note: A modifier button (such as SHIFT) shown below a button description indicates that the button has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
EQ ON/OFF 1 to 4		In Pan mode: • Switches the bypass state of EQ bands 1–4. • Enters EQ/Send mode. If no Channel or Linear Phase EQ is present on the selected channel, a Channel EQ is automatically inserted. In EQ/Send mode: • Switches the bypass state of EQ bands 1–4. The button LED is lit when the EQ is enabled. In Plug-in mode: • Switches between Inserts 1–4. A lit button LED indicates the selected Insert slot. • If a plug-in window is open, it will update to reflect the plug-in parameters of the selected Insert slot.
	SHIFT	In EQ/Send mode: Enables/disables Send 1–4 Mute.
EQ/SEND		Switches Channel view modes between: • EQ/Send Edit mode (LED on). • Pan Edit mode (LED off).

Control	Modifier	Assignment
PLUG-IN		Switches Channel view modes between: • Plug-in Edit mode (LED on). (Plug-in window opens.) • Pan Edit mode (LED off). Plug-in window closes when Plug-in Edit mode is exited.
	SHIFT	Switches Channel view modes between: • Instrument Edit mode (LED on). (Instrument window opens.) • Pan Edit mode (LED off). Instrument plug-in window closes when Instrument Edit mode is exited.
PAN 1 to 12		In Pan Edit mode: • Controls channel strip Pan/Balance (surround angle for channels in surround mode). In EQ/Send mode: • 1/3/5/7: Control the Gain parameter of EQ bands 1–4. • 2/4/6/8: Control the Frequency parameter of EQ bands 1–4. • 9–12: Control Send 1–4 levels. In Plug-in Edit mode: • 1–10: Edits plug-in parameter. • 11: Bypasses the plug-in. • 12: Shifts plug-in parameter page. (A page is a collection of parameters.) In Instrument mode: • 1–10: Edits Instrument parameter. • 11: Bypasses the instrument plug-in. • 12: Shifts Instrument parameter page.
	SHIFT	In EQ/Send mode: • 2/4/6/8: Control the Q-Factor of EQ bands 1–4. • 9–12: Determine Send 1–4 destinations.
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: Activates/deactivates Record Enable. In Solo mode: Enables/disables Solo. In Mute mode: Enables/disables Mute.

Control	Modifier	Assignment
Fader 1 to 12		Controls volume.

Roland SI-24: STATUS MODE Section

The following table outlines the status mode controls and their assignments:

Note: A modifier button (such as SHIFT) shown below a button description indicates that the button has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
AUTOMIX		Sets STATUS 1 to 12 buttons to Automation mode.
	SHIFT	Sets all tracks to Off, Read, Latch, or Write automation mode. Repeatedly press this button combination to cycle through automation modes.
REC/PLAY		Sets STATUS 1 to 12 buttons to Record Enable mode.
SOLO		Sets STATUS 1 to 12 buttons to Solo mode.
MUTE		Sets STATUS 1 to 12 buttons to Mute mode.

Roland SI-24: CH ASSIGN Controls

The following table outlines the channel assign controls and their assignments:

Note: A modifier button (such as SHIFT) shown below a button description indicates that the button has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
INPUT		Shows the first 12 audio input channel strips.
	SHIFT	Shows the first 12 MIDI channel strips.
OUTPUT		Shows the first 12 output channel strips: • 1: Output 1–2 (default surround assignment: front) • 2: Output 3–4 (default surround assignment: rear) • 3: Output 5 (default surround assignment: center) • 4: Output 6 (default surround assignment: LFE) • 5: Output 7–8 (digital out)
	SHIFT	Shows the first 12 audio channels.
BUS		Shows the first 12 aux channels.
	SHIFT	Shows the first 12 instrument channels.
Tr 1 to 12		Switches to Arrange view and shows the first 12 channels.

Control	Modifier	Assignment
Tr 13 to 24		Switches to Arrange view and displays channel 13 to 24.

Roland SI-24: MASTER Section

The following table outlines the master fader control and its assignment:

Control	Assignment
Master fader	Controls the master channel strip.

Roland SI-24: SURROUND PAN Section

The following table outlines the surround pan controls and their assignments:

Control	Assignment
ON/OFF	Switches selected channel output between: • Surround (LED on) • Out 1–2 (LED off) Also shows/hides the Surround Pan window.
Joystick	Surround X/Y of selected channel

Roland SI-24: Numeric Key Section

The following table outlines the numeric key controls and their assignments:

Note: A modifier button (such as SHIFT) shown below a button description indicates that the button has an alternate function or use while the modifier is held down.

Control	Modifier	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.

Control	Modifier	Assignment
0 to 9		System mode: See SI-24 user manual. Locate mode: • 1 to 9: Moves playhead to marker 1 to 9 positions. • 0: Creates marker at playhead position. Shortcut mode: • 1: Saves project. LED is lit if project has changed since last save. • 2: Performs Undo (of last editing operation). LED is on if a Redo is possible. • 3: Copies the selection (of regions or events). • 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 Autopunch mode. LED is on if Autopunch mode is enabled. • 9: Switches Arrange window to Hyper Draw volume view. • 0: Switches Arrange window to Hyper Draw pan view. Screenset mode: • 1 to 9: Recall screensets 1 to 9. • 0: Enables/disables Lock Screenset command.
	SHIFT	Locate mode: • 1 to 9: Moves playhead to marker 10 to 18 positions. • 0: Deletes marker at playhead position. Shortcut mode: • 1: Performs Save As. • 2: Performs Redo (reverses last Undo operation). • 3: Cuts selection. • 4: Pastes the Clipboard contents. Screenset mode: • 1: Opens/Closes Arrange window. • 2: Opens/Closes Mixer. • 3: Opens/Closes Event Editor. • 4: Opens/Closes Score Editor. • 5: Opens/Closes Hyper Editor. • 6: Opens/Closes Piano Roll Editor. • 7: Opens/Closes Transport window. • 8: Opens/Closes Audio Bin window. • 9: Opens/Closes Sample Editor.

Roland SI-24: Transport Section

The following table outlines the transport controls and their assignments:

Control	Assignment
PAUSE	Pause
REW	Rewinds playhead in one-bar increments.
F FWD	Advances playhead by one bar.
STOP	Stops playback.
PLAY	Starts playback.
RECORD	Starts recording.
Jog Wheel	Scrub mode off: Moves playhead in one-bar increments. Scrub mode on: Scrubs (audio and MIDI).

Tascam FW-1884

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This chapter describes how the Tascam FW-1884, the FE-8 extension, and the FW-1082 are used to control Logic Pro. The Tascam FE-8 extension can be used to expand the FW-1884 with eight additional channel strips. Up to 15 FE-8 units can be added to the FW-1884 system. The Tascam FW-1082 is a stripped-down version of the FW-1884.

Note: This is an addendum to the Tascam user documentation and is limited to descriptions of features specific to Logic Pro. Refer to the Tascam documentation for more information about the individual control surfaces.

This chapter covers the following:

Setting Up Your Tascam FW-1884, FE-8, and FW-1082 with Logic Pro

Follow the steps below to use your device with Logic Pro.

To set up your device with Logic Pro

1. Set up your device as described in the Tascam user documentation.
2. Install the latest Mac OS X driver software and firmware on your computer. Visit the Tascam website to download the most recent versions, if necessary.
3. Open Logic Pro.

   Your control surface automatically connects to the application.

Tascam FW-1884: Assignment Overview

Assignments of Tascam FW-1884 interface elements to Logic functions are covered in the following sections.

Note: The relevant devices are highlighted in the heading of each section.

- SHORTCUTS Section (FW-1884 Only)
- Channel Strips (FW-1884, FE-8, FW-1082)
- EQ Section (FW-1884 Only)
- Encoders and Controls Section (FW-1082 Only)
- MASTER Fader (FW-1884, FE-8, FW-1082)
- Automation/Clock Rate Section (FW-1884 Only)
- Mode Controls Section (FW-1082 Only)
- Master Section (FW-1884, FE-8, FW-1082)

ENCODERS Section (FW-1884, FE-8)

The following table outlines the encoder controls and their assignments:

Control	Assignment
FLIP	Switches Flip mode between Off and Swap. In Swap mode, the parameter controlled by the fader and encoder of each channel strip is swapped.
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)

The following table outlines the shortcut controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
SAVE/F1		Saves the active project. The button LED is lit when the project has been edited since the last Save operation.
REVERT/F2		Reverts to the most recently saved version of the project.
ALL SAFE/F3		Disables the Record Enable buttons of all channel strips.

Control	Modifier	Assignment
CLR SOLO/F4		Switches Solo off for all channel strips.
	SHIFT	Switches Mute off for all channel strips.
MARKERS/F5		Creates a new marker at the current playhead position.
	SHIFT	Deletes the marker at the playhead position.
LOOP/F6		Enables/disables Cycle mode.
CUT		Cuts the current selection (of regions or events) and places it on the Clipboard.
DEL		Deletes the current selection.
COPY		Copies the current selection to the Clipboard.
PASTE		Pastes the Clipboard contents to the current playhead position.
ALT/CMD		Modifier for other buttons.
UNDO		Performs an Undo of the last editing operation. The button LED is lit when a Redo is possible.
	SHIFT	Performs a Redo (reverses an Undo operation).
SHIFT		Modifier for other buttons.
CTRL		Modifier for other buttons.

Channel Strips (FW-1884, FE-8, FW-1082)

The following table outlines the channel strip controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
REC LEDs		These LEDs are lit when the corresponding channel strip is recording. The LEDs flash when the channel strip is in Record Enable mode (armed).
SEL		Selects the channel strip.
	SHIFT	Enables/disables Send bypass, when encoders are controlling a Send level.
	READ	Sets the track automation mode to Read.
	WRITE	Sets the track automation mode to Write.
	TCH	Sets the track automation mode to Touch.
	LATCH	Sets the track automation mode to Latch.
SOLO		Enables/disables the Solo state of the channel strip.

Control	Modifier	Assignment
	SHIFT	Disables the Solo state for all channel strips (driver version 1.20 or later required).
MUTE		Enables/disables the Mute state of the channel strip.
	SHIFT	Disables the Mute state for all channel strips (driver version 1.20 or later required).
Encoder		Controls the parameter chosen with the ENCODERS section.
	SET	When encoders are controlling a Send level, this combination allows you to set the send destination.
Fader		Controls the channel strip volume.

EQ Section (FW-1884 Only)

The EQ controls apply to a certain EQ band of the selected channel. A Channel or Linear Phase EQ is automatically inserted in the channel, if not already present.

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Mode	Modifier	Assignment
REC		While REC is held down, the SEL buttons activate or deactivate Record Enable for the corresponding channel strip.
GAIN		Edits the Gain of the currently selected EQ band.
	SET	Selects the channel strip input.
FREQ		Edits the Frequency parameter of the currently selected EQ band.
	SET	Selects the channel strip output.
Q		Edits the Q Factor of the currently selected EQ band.
	SET	Selects the channel strip input format.
HIGH		Selects EQ band 6.
	SHIFT	Selects EQ band 8.
	REC	Switches the bypass state of EQ band 6 (driver version 1.20 or later required).
HI-MID		Selects EQ band 5.
	SHIFT	Selects EQ band 7.
	REC	Switches the bypass state of EQ band 5 (driver version 1.20 or later required).

Mode	Modifier	Assignment
LOW-MID		Selects EQ band 4.
	SHIFT	Selects EQ band 2.
	REC	Switches the bypass state of EQ band 4 (driver version 1.20 or later required).
LOW		Selects EQ band 3.
	SHIFT	Selects EQ band 1.
	REC	Switches the bypass state of EQ band 3 (driver version 1.20 or later required).

Encoders and Controls Section (FW-1082 Only)

The three buttons at the bottom of this control surface section determine the mode of other controls:

- EQ/Pan mode: The controls apply to a certain EQ band of the selected channel.
- AUX 1–4 mode: The controls apply to Sends 1–4.
- AUX 5–8 mode: The controls apply to Sends 5–8.

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Mode	Modifier	Assignment
REC		While REC is held down, the SEL buttons activate or deactivate Record Enable for the channel strip.
EQ GAIN–AUX 1/5		• EQ/PAN mode: edits the Gain of the currently selected EQ band. • AUX 1–4 mode: controls Send 1 level. • AUX 5–8 mode: controls Send 5 level.
	SET	Selects the channel strip input.
EQ FREQ–AUX 2/6		• EQ/PAN mode: edits the Frequency of the currently selected EQ band. • AUX 1–4 mode: controls Send 2 level. • AUX 5–8 mode: controls Send 6 level.
	SET	Selects the channel strip output.
EQ Q–AUX 3/7		• EQ/PAN mode: edits the Q Factor of the currently selected EQ band. • AUX 1–4 mode: controls Send 3 level. • AUX 5–8 mode: controls Send 7 level.
	SET	Selects the channel strip input format.
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.

Mode	Modifier	Assignment
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.
	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	Switches 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 (FW-1884, FE-8, FW-1082)

This fader always controls the master volume. If no master channel exists, it controls Output 1/2.

Automation/Clock Rate Section (FW-1884 Only)

The following table outlines the automation/clock rate controls and their assignments:

Control	Assignment
READ	While READ is held down, SEL buttons are lit if a channel strip is in Read automation mode. Pressing the SEL button sets Read mode. Turning the encoder also edits the automation mode.
WRITE	While WRITE is held down, SEL buttons are lit if a channel strip is in Write automation mode. Pressing the SEL button sets Write mode. Turning the encoder also edits the automation mode.
TCH	While TCH is held down, SEL buttons are lit if a channel strip is in Touch automation mode. Pressing the SEL button sets Touch mode. Turning the encoder also edits the automation mode.
LATCH	While LATCH is held down, SEL buttons are lit if a channel strip is in Latch automation mode. Pressing the SEL button sets Latch mode. Turning the encoder also edits the automation mode.
F7	Switches encoders to editing of pan/surround parameters on selected channel strip. Surround parameters are shown as follows: angle, radius, LFE (level), Spread mode, X, Y, Center (level).
F8	Switches encoders to Channel view: EQ Edit mode for the selected channel strip. In this mode, the encoders are used to edit the EQ parameters, while the left/right cursors are used to shift the EQ parameter bank (parameter group).
F9	Switches encoders to Channel view: Plug-in Edit mode for the selected channel strip. In this mode, the left/right cursors are used to shift the plug-in parameter bank. The up/down cursors are used to choose the channel strip Insert slot for editing.
F10	Switches encoders to Channel view: Instrument Edit mode for the selected channel strip. In this mode, the left/right cursors are used to shift the instrument parameter bank.

Mode Controls Section (FW-1082 Only)

The following table outlines the mode controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
F1		Saves the active project. The button LED is lit if the project has been edited since the last Save operation.

Control	Modifier	Assignment
	SHIFT	Opens the Save As dialog.
F2		Performs an Undo of the last editing operation. The button LED is lit when a Redo is possible.
	SHIFT	Performs a Redo.
F3		Copies the current selection (of regions or events) to the Clipboard.
	SHIFT	Cuts the current selection and places it on the Clipboard.
F4		Pastes the Clipboard contents.
	SHIFT	Clears the current selection.

Master Section (FW-1884, FE-8, FW-1082)

The following table outlines the master controls and their assignments:

Note: If a modifier button, such as SHIFT, is shown below a button description, it indicates that the control has an alternate use while the modifier is held down.

Control	Modifier	Assignment
Cursor buttons		Identical to (but independent of) the computer keyboard arrow keys, except when encoders are in EQ, Plug-in, or Instrument Edit mode.
	SHIFT	Horizontally or vertically zoom in and out (of the window with key focus).
SHTL		Enables Shuttle mode for the wheel.
Wheel		Shuttle mode off: moves playhead by one bar. Shuttle mode on: shuttles playhead.
Bank LEDs		Shows currently selected fader bank. If you only have an FW-1884, a bank refers to eight channels. If you have FE-8 extensions added, a bank encompasses the total number of (physical) channel strips: 16, 24, and so on. If no LED is lit, bank 5 or higher is selected.
< BANK		Shifts fader bank down by one bank.
	SHIFT	Shifts fader bank down by one channel.
	SET	Switches to Mixer (multichannel) view (driver version 1.20 or later required).
BANK >		Shifts fader bank up by one bank.
	SHIFT	Shifts fader bank up by one channel.
	SET	Switches to Mixer view and shows all Aux and Output channels (driver version 1.20 or later required).

Control	Modifier	Assignment
<< LOCATE		Goes to previous marker.
	SET	Deletes the current marker (driver version 1.20 or later required).
LOCATE >>		Goes to next marker.
	SET	Creates a new marker at the playhead position (driver version 1.20 or later required).
NUDGE buttons		Nudges the selected event/region left or right (by the current nudge value).
	SET	Chooses the current nudge value: tick, division, denominator, bar, frame, 1/2 frame.
SET		Modifier for other buttons.
IN		Moves playhead to left locator position.
	SET	Sets left locator at current playhead position.
	SHIFT	Sets punch in locator at current playhead position.
OUT		Moves playhead to right locator position.
	SET	Sets right locator at current playhead position.
	SHIFT	Sets punch out locator at current playhead position.
REW		As per Rewind key command.
FFWD		As per Forward key command.
STOP		Stops playback.
PLAY		Starts playback.
REC		As per Record key command.

Tascam US-2400

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This chapter describes how to use your Tascam US-2400 with Logic Pro.

This chapter covers the following:

Setting Up Your Tascam US-2400

Follow the steps below to use your Tascam US-2400 with Logic Pro.

To set up the Tascam US-2400 for use with Logic Pro

1. Make sure that your US-2400 control surfaces are connected to the computer via USB.
2. Ensure that the US-2400 is in Native mode. Consult your US-2400 manual for more information on this setting.
3. Open Logic Pro.

   Your control surfaces are scanned for, and installed, automatically.

Using the US-2400 in Native or Mackie Control Emulation Mode

The US-2400 is capable of running in both Native and Mackie Control emulation modes. If the unit is set up in Mackie Control emulation mode, and the native support plug-in is installed in the Logic Pro program bundle, Logic Pro will detect a US-2400 native control surface *and* a Mackie Control, plus two Extender (XT) units.

If you want to run the US-2400 in Mackie Control mode, you should remove the US-2400 plug-in from the Logic Pro application bundle. Logic Pro will then detect a Mackie Control plus two Extender (XT) units (the appropriate setup for the US-2400 in Mackie Control emulation mode), when you scan for control surfaces.

The button layout of the Mackie Control differs from that of the Tascam US-2400. When running the Tascam US-2400 in Mackie Control mode, certain controllers are not accessible (the Joystick, for example). Given these restrictions, use of the Tascam US-2400 in Mackie Control mode is not recommended. If you choose to do so, refer to the documentation supplied with the Tascam US-2400 for details.

Tascam US-2400: Assignment Overview

The following sections outline the assignment of Tascam US-2400 interface elements to Logic functions.

- Tascam US-2400: Channel Strips
- Tascam US-2400: Encoder Details
- Tascam US-2400: Master Channel
- Tascam US-2400: Encoder Assignment Section
- Tascam US-2400: Master Section

Tascam US-2400: Channel Strips

The following table outlines the channel strip controls and their assignments:

Note: A modifier button, such as SHIFT, below a control description indicates that the control has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
Encoders		CHAN button on: see Tascam US-2400: Encoder Details. CHAN button flashing: encoders control Instrument parameters. Also see Instrument Edit View. PAN button flashing: encoders control plug-in parameters. Also see Plug-in Edit View. Other modes: encoders control the parameters of the active mode.
	F-KEY	• If you are in Instrument Edit view (CHAN button flashing), pressing the F-Key enters the Instrument Assignment view. The encoders are used to choose an instrument plug-in from the list (of available software instrument plug-ins). • If you are in Plug-in Edit view (PAN button flashing), pressing the F-Key enters the Plug-in Assignment view. The encoders are used to choose an effect plug-in from the list (of available effect plug-ins). • If you are in Send view (AUX button LED flashes) and press the F-Key, the encoders are used to assign the send destination.
SEL buttons		Selects tracks/channels.
	SHIFT	In Pan view: sets volume to Unity (0 dB). In Send views: switches the Send mode (pre/post).
	F-KEY	Activates/deactivates Record Enable button of each channel.
SOLO buttons		Enables/disables Solo.
MUTE buttons		Enables/disables Mute. In Send views with Flip mode enabled: mutes/unmutes the selected Send.
	SHIFT	In Send views: mutes/unmutes the selected Send.
Faders		Controls the volume of each channel (unless Duplicate or Swap Flip mode is active).

Tascam US-2400: Encoder Details

In CHAN mode (CHAN button on), the encoders control these parameters on the selected channel:

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.

Control	Assignment
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.
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 is inserted.
Encoder 14 (GAIN 2)	Controls the Gain parameter of band 4, if a Channel or Linear Phase is inserted.
Encoder 15 (FREQ 2)	Controls the Frequency parameter of band 4, if a Channel or Linear Phase 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 6, if a Channel or Linear Phase EQ is inserted.
Encoder 22 (Q 4)	Controls the Q factor of band 6, if a Channel or Linear Phase EQ is inserted.
Encoder 24 (PAN)	Controls Panning.

In CHAN mode, with the SHIFT button held down, the encoders control the following parameters on the selected channel:

Control	Assignment
Encoder 1 (AUX 1)	Controls Pan/Surround Angle.
Encoder 2 (AUX 2)	Controls Surround Radius.
Encoder 3 (AUX 3)	Controls Surround LFE (level).
Encoder 4 (AUX 4)	Controls Surround Spread.
Encoder 5 (AUX 5)	Controls Surround X.

Control	Assignment
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.
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 Frequency parameter 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 Pan/Balance (of mono or stereo channels).

Tascam US-2400: Master Channel

The following table outlines the master channel strip controls and their assignments:

Control		Assignment
SEL		Selects Master Output channel strip if it exists; if not, Output channel 1–2 is selected.
CLR SOLO		Disables Solo for all tracks/channels.
	SHIFT	Disables Mute for all tracks/channels.
	F-KEY	Disables the Record Enable buttons of all tracks/channels.
FLIP		Switches Flip mode between Off (LED off) and Duplicate (LED on). In this mode, the fader of each channel strip mirrors the encoder function.

Control		Assignment
	SHIFT	Sets Flip mode to Swap (LED flashing). In this mode, the parameters controlled by the fader and encoder are swapped.
	F-KEY	Sets Flip mode to Zero—fader motors are disabled (LED flashing).

Tascam US-2400: Encoder Assignment Section

The table below outlines the standard assignment of these controls:

Note: A modifier button, such as SHIFT, below a control description indicates that the control has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
CHAN		Switches encoders to Channel 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 for details.
PAN		Switches encoders to Mixer (multichannel) view of pan controls; PAN button LED is lit.
	F-KEY	Switches encoders to Plug-in Edit view; PAN button LED flashes. See Plug-in Edit View for details.
AUX 1		Switches encoders to Mixer view of Send 1 level (for all channels).
	F-KEY	Switches display of Arrange window: • If Arrange window is open, it closes. • If Arrange window is closed, it opens.
AUX 2		Switches encoders to Mixer view of Send 2 level.
	F-KEY	Switches display of Event List: • If Event List is open, it closes. • If Event List is closed, it opens.
AUX 3		Switches encoders to Mixer view of Send 3 level.
	F-KEY	Switches display of Score Editor: • If Score Editor is open, it closes. • If Score Editor is closed, it opens.
AUX 4		Switches encoders to Mixer view of Send 4 level.
	F-KEY	Switches display of Audio Bin window: • If Audio Bin window is open, it closes. • If Audio Bin window is closed, it opens.
AUX 5		Switches encoders to Mixer view of Send 5 level.

Control	Modifier	Assignment
	F-KEY	Switches display of Hyper Editor: • If Hyper Editor is open, it closes. • If Hyper Editor is closed, it opens.
AUX 6		Switches encoders to Mixer view of Send 6 level.
	F-KEY	Switches display of Piano Roll Editor: • If Piano Roll Editor is open, it closes. • If Piano Roll Editor is closed, it opens.

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 instrument being edited.

The AUX button LEDs show the currently selected parameter bank. AUX 2 LED is on if parameters 25 to 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 (chooses higher-numbered slot).
AUX 4	Enables/disables Bypass button of the plug-in being edited.
AUX 6	Decrements Insert slot (chooses lower-numbered slot).

The AUX button LEDs show the currently selected Insert slot. For example, AUX 2 LED is on if Insert slot 2 is being edited.

Tascam US-2400: Master Section

The following table outlines the master section controls and their assignments:

Note: A modifier button, such as SHIFT, below a control description indicates that the control has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
MTR		Switches encoder LED ring display between two modes: • The value of the parameter (LED off) • Level/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 "F-KEY" entries in left column).
NULL		Sets Surround x/y or Panning of selected channel to center position; LED is on if Surround X (or Panning) is centered.
	F-KEY	Resets overload display for level meters.
Jog Wheel		SCRUB off: moves playhead by bars. SCRUB on: scrubbing (of audio and MIDI). SCRUB flashing: Shuttle mode.
Joystick		Edits Surround x/y or Panning of selected channel.
SCRUB		Switches Jog Wheel between "Move Playhead by Bars" (LED off) and Scrubbing (LED on) modes.
	SHIFT	Sets Jog Wheel to Shuttle mode (LED flashes).
BANK –		Shifts fader bank to the left by one bank; LED is lit if the leftmost fader bank has not been reached.
	F-KEY	Shifts fader bank to the left by one channel.
BANK +		Shifts fader bank to the right by one bank; LED is lit if the rightmost fader bank has not been reached.
	F-KEY	Shifts fader bank to the right by one channel.
IN		Sets punch in locator at the current playhead position.
	SHIFT	Moves playhead to left cycle locator position.
	F-KEY	Sets left cycle locator at the current playhead position.
OUT		Sets punch out locator at the current playhead position.
	SHIFT	Moves playhead to right cycle locator position.
	F-KEY	Sets right cycle locator at the current playhead position.
SHIFT		Modifier key, used to switch the function of other controls (see "SHIFT" entries in left column).
REW		Shuttles backward.

Control	Modifier	Assignment
	SHIFT	Identical to (but independent of) Left Arrow key on computer keyboard.
F FWD		Shuttles forward.
	SHIFT	Identical to (but independent of) Right Arrow key on computer keyboard.
STOP		Stops playback.
	SHIFT	Identical to (but independent of) Down Arrow key on computer keyboard.
PLAY		Starts playback.
	SHIFT	Identical to (but independent of) Up Arrow key on computer keyboard.
RECORD		Enables/disables recording.

Tascam US-428 and US-224

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This chapter describes how to use your Tascam US-428 and Tascam US-224 with Logic Pro.

This chapter covers the following:

Setting Up Your Tascam US-428 or US-224

This section outlines the steps required to use your Tascam US-428 or US-224 control surface with Logic Pro.

To set up your Tascam US-428 or US-224 device in Logic Pro

1. Install the latest version of the driver software needed for the US-428 or US-224.
2. Ensure that your US-428 or US-224 units are connected to the computer via USB.
3. Open Logic Pro.

   The unit is scanned for, and installed, automatically.

Tascam US-428 and US-224: Assignment Overview

The following sections outline the assignment of Tascam US-428 and US-224 interface elements to Logic functions.

Note: The US-224 only offers four channel strips and transport controls, and lacks the EQ and Master sections (excluding the NULL button and data wheel) of the US-428. Many operations listed below are specific to the additional controls of the US-428, and cannot be performed with the US-224.

Tascam US-428 and US-224: Channel Strips

The following table outlines the channel strip controls and their assignments:

Note: A modifier button (such as NULL) shown below a control description indicates that the control has an alternate function or use while the modifier is held down.

Control	Modifier	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 Enable status.
	NULL	On if fader is higher than actual channel volume (in Logic Pro).
SELECT 1 to 8 LEDs		Displays select status (of channel).
	NULL	On if fader is lower than actual channel volume (in Logic Pro).
SELECT 1 to 8 buttons		Selects channel.
	REC	Activates/deactivates Record Enable status.
Fader 1 to 8		Controls channel volume.
	NULL	Allows you to update the fader position to match the actual volume (in Logic Pro).
Master fader		Controls Master volume fader (or Output 1 and 2, if no Master fader channel exists in the project).

Tascam US-428 and US-224: EQ Section

The following table outlines the EQ controls and their assignments:

Note: A modifier button (such as NULL) shown below a control description indicates that the control has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
Gain		Controls the Gain of the currently selected EQ band (of chosen channel).
Freq		Controls the Frequency of the currently selected EQ band (of chosen channel).
Q		Controls the Q Factor of the currently selected EQ band (of chosen channel).

Control	Modifier	Assignment
HIGH		Selects EQ band 3 (allowing use of Gain, Freq, and Q controls for this band).
	ASGN	Switches EQ band 3 bypass state.
HI-MID		Selects EQ band 4 (allowing use of Gain, Freq, and Q controls for this band).
	ASGN	Switches EQ band 4 bypass state.
LO-MID		Selects EQ band 5 (allowing use of Gain, Freq, and Q controls for this band).
	ASGN	Switches EQ band 5 bypass state.
LOW		Selects EQ band 6 (allowing use of Gain, Freq, and Q controls for this band).
	ASGN	Switches EQ band 6 bypass state.

Tascam US-428 and US-224: Master Section Controls

The following table outlines the master section controls and their assignments:

Note: A modifier button (such as NULL) shown below a control description indicates that the control has an alternate function or use while the modifier is held down.

Control	Modifier	Assignment
AUX 1		Switches data wheel between Transport/Scrub mode and Send 1 Level.
	ASGN	Switches Send 1 Mute state.
AUX 2		Switches data wheel between Transport/Scrub mode and Send 2 Level.
	ASGN	Switches Send 2 Mute state.
AUX 3		Switches data wheel between Transport/Scrub mode and Send 3 Level.
	ASGN	Switches Send 3 Mute state.
AUX 4		Switches data wheel between Transport/Scrub mode and Send 4 Level.
	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 Autopunch mode.
F3		Enables/disables Scrub mode.
PAN		Controls panning of selected channel.
	ASGN	Sets currently selected channel's input.

Control	Modifier	Assignment
NULL		Modifier for NULL mode. NULL mode allows you to update the fader positions to match the actual volume (shown in Logic Pro).
Data wheel		AUX 1 LED on: controls the Send 1 Level of the selected channel. AUX 2 LED on: controls the Send 2 Level of the selected channel. AUX 3 LED on: controls the Send 3 Level of the selected channel. AUX 4 LED on: controls the Send 4 Level of the selected channel. F3 LED on: data wheel is in Scrub mode. None of the above is lit: data wheel is in Transport mode, and moves the playhead in one-bar increments.
	ASGN	Sets currently selected channel's output.

Tascam US-428 and US-224: LOCATE Section

The following table outlines the LOCATE controls and their assignments:

Control	Assignment
<< LOCATE	Moves playhead to previous marker position.
LOCATE >>	Moves playhead to next marker position.
SET	Creates a new marker at the current playhead position.

Tascam US-428 and US-224: BANK Section

The following table outlines the BANK controls and their assignments:

Control	Assignment
< BANK	Shifts fader bank left by one bank. (A bank is a group of channels.) The LED is lit if the leftmost fader bank has not been reached.
BANK >	Shifts fader bank right by one bank. The LED is lit if the rightmost fader bank has not been reached.

Tascam US-428 and US-224: Transport Section

The following table outlines the transport controls and their assignments:

Control	Assignment
REW	Moves the playhead backward by one bar.
F FWD	Moves the playhead forward by one bar.
STOP	Stops playback.
PLAY	Starts playback.

Control	Assignment
RECORD	Begins recording.

Yamaha 01V96

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This chapter describes how to use your Yamaha 01V96 with Logic Pro.

This chapter covers the following:

Setting Up Your Yamaha 01V96

Follow the steps below before using your 01V96 with Logic Pro.

- Make sure that your 01V96 device is connected to the computer via USB.
- Make sure that the latest USB MIDI driver for the device is installed. Visit the manufacturer's website to download the most recent driver version, if necessary.

To set up your system with Logic Pro

1. On the 01V96 front panel:
   a. Press the DISPLAY ACCESS [DIO/SETUP] button repeatedly, until the Setup > MIDI/Host page is visible.
   b. Use the cursor buttons to move the first DAW parameter box in the SPECIAL FUNCTIONS section, and rotate the parameter wheel to select USB and 1–2.
   c. Press the DISPLAY ACCESS [REMOTE] button repeatedly, until the Setup > Remote page is visible.
   d. Rotate the parameter wheel to choose General DAW as the TARGET parameter.
   e. Press the LAYER [REMOTE] button.
2. In Logic Pro:

   When you open Logic Pro, the 01V96 device is installed automatically. You should see two 01V96 icons in the Setup window, aligned horizontally.

Yamaha 01V96: Assignment Overview

The following sections outline the assignment of Yamaha 01V96 interface elements to Logic functions.

- Yamaha 01V96: DISPLAY ACCESS Section
- Yamaha 01V96: FADER MODE Section
- Yamaha 01V96: Basic LCD Functions
- Yamaha 01V96: LCD Modal Display Functions
- Yamaha 01V96: SELECTED CHANNEL Section
- Yamaha 01V96: Data Entry Section
- Yamaha 01V96: Channel Strips
- Yamaha 01V96: Stereo Channel Strip Section
- Yamaha 01V96: User-Defined Keys Section

Yamaha 01V96: DISPLAY ACCESS Section

The following table outlines the DISPLAY ACCESS controls and their assignments:

Note: A modifier button (such as SHIFT/ADD) below a control description indicates that the control has an alternate function or use while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the control name.

Control	Modifier	Assignment
*DAW AUTO STATUS		While held down in Channel Display mode, the display shows the automation mode of the 16 channel strips in the current bank selection.
PAIR/GROUP		Enters Group Edit mode: • When a channel strip group is selected, channel strip membership is indicated by a lit SEL button. Use this button to enable/disable the channel strip's group membership. • Virtual encoders 1 to 4 display properties of the currently selected group. • Virtual encoder buttons 1 to 4 enable/disable properties of the currently selected group. • When INSERT/PARAM is set to PARAM, the left and right Tab Scroll buttons scroll through the group properties. When set to INSERT, the buttons scroll through the groups for editing.
	*DAW SHIFT/ADD	Switches the Mixer to the Arrange view, displaying all channel strips that correspond to tracks used in the Arrange area, along with their signal flow.
EFFECT		Opens or closes the Sample Editor.

Yamaha 01V96: FADER MODE Section

The following table outlines the FADER MODE controls and their assignments:

Note: A modifier button (such as SHIFT/ADD) below a control description indicates that the control has an alternate function or use while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the control name.

Control	Modifier	Assignment
AUX 1		In Insert Display mode: • Assigns Send 1 level of channel strips to encoders. • Assigns Send 1 level of the selected channel strip to virtual encoders. • Assigns Sends 1 to 4 of the selected channel strip to virtual encoders. Use the ENTER button to switch the bypass state of Sends 1 to 4. In Channel Display mode: • Assigns Send 1 level of channel strips to encoders and virtual encoders. • Shows current Send 1 destination assignment, when button is held down.
	*DAW SHIFT/ADD	Same as AUX 5, but for Send 6.
AUX 2		Same as AUX 1, but for Send 2.
	*DAW SHIFT/ADD	Same as AUX 5, but for Send 7.
AUX 3		Same as AUX 1, but for Send 3.
	*DAW SHIFT/ADD	Same as AUX 5, but for Send 8.
AUX 4		Same as AUX 1, but for Send 4.
AUX 5		In Insert Display mode: • Assigns Send 5 level of channel strips to encoders. • Assigns Send 5 level of the selected channel strip to virtual encoders. • Assigns Sends 5 to 8 of the selected channel strip to virtual encoders. Use the ENTER button to switch the bypass state of Sends 5 to 8. In Channel Display mode: • Assigns Send 5 level of channel strips to encoders and virtual encoders. • Shows current Send 5 destination assignment, when button is held down.

Control	Modifier	Assignment
AUX 6		Switches SEL buttons and encoder buttons between normal behavior and setting a parameter's default value. When the AUX 6 button is held down: • Pressing a channel strip's SEL button resets the channel strip's volume level. • Pressing a channel strip's encoder button resets the channel strip's pan/surround value (PAN also needs to be selected in ENCODER MODE section).
AUX 7		Assigns Pan to encoders; assigns selected channel strip's pan/surround parameters to virtual encoders.
AUX 8		Determines mode of channel strip SEL buttons: • AUX 8 indicator off: SEL button used for channel strip selection. • AUX 8 indicator on: SEL button used for Insert selection.
HOME		Enables/disables Flip mode.

Yamaha 01V96: Basic LCD Functions

The following table outlines the LCD controls and their assignments:

Note: A modifier button (such as SHIFT/ADD) below a control description indicates that the control has an alternate function or use while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the control name.

Control	Modifier	Assignment
Left/Right buttons		Plug-in Edit mode: Shifts the parameter display to show the next/previous page of parameter controls (usually four) for the selected plug-in.
	*DAW ALT/FINE	Plug-in Edit mode: Shifts the parameter display up/down by one parameter for the selected plug-in.
F1		Clears overload LEDs.
	*DAW SHIFT/ADD	Switches the Mixer to the All view, displaying all channel strips that exist in your project.
	*DAW ALT/FINE	Opens or closes a second Arrange window.

Yamaha 01V96: LCD Modal Display Functions

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 parameters, allowing you to edit effects. This mode also allows you to switch between different Insert slots, enabling each effect to be edited.

Display	Assignment
TIME CODE	Active if counter is displaying SMPTE time code.
BEATS	Active if counter is displaying bars/beats/divisions/ticks.
Counter	Displays either SMPTE time code or bars/beats/divisions/ticks.
SELECT ASSIGN	Displays the encoder assignment as follows: Pan, Snd1 to Snd8, S1As to S8As, In, Out.
COMPARE	Switches the display between "track name/parameter name" and "parameter name/parameter value" modes.
BYPASS	Switches the bypass state of plug-in currently being edited.
INSERT/PARAM	Switches between Plug-in Assign and Plug-in Edit modes.
Selecting virtual encoders 1 to 4 (Use cursor keys, and then press ENTER button.)	Pan Assignment mode: • Parameter control 1 button centers pan or surround angle. • Parameter control 2 button centers surround diversity. • Parameter control 3 button centers surround LFE level. • Parameter control 4 button resets spread. Send Assignment mode: • Enables/disables Sends 1 to 4 or 5 to 8. Plug-in Assignment mode: • Confirms the plug-in selection for Insert slots 1 to 4 or 5 to 8, and enters Plug-in Edit mode for the selected Insert slot. Plug-In Edit mode: • Sets value to default, or switches buttons with two states.
Moving virtual encoders 1 to 4 (Use cursor keys, and then rotate parameter wheel.)	Pan Assignment mode: • Parameter control 1 edits pan or surround angle. • Parameter control 2 edits surround diversity. • Parameter control 3 edits surround LFE level. • Parameter control 4 edits spread. Send Assignment mode: • Controls the Send level of Sends 1 to 4 or 5 to 8. Plug-in Assignment mode: • Chooses Insert slot 1 to 4 or 5 to 8. Plug-in Edit mode: • Sets value.

Channel Display Mode

Press the F3 button to select Channel Display mode.

Control	Assignment
Moving virtual encoders 1 to 4 (Use cursor keys, and then rotate parameter wheel.)	Adjusts parameter selected in the ENCODER MODE and AUX SELECT sections.
Selecting virtual encoders 1 to 4 (Use cursor keys, and then press ENTER button.)	When Send 1 to 8 is selected: edits send pre/post fader position, enables or disables send mute, or sets send level to default value. Send, Input, or Output Assignment mode: confirms selection.

Meter Display Mode

Press the F4 button to select Meter Display mode.

Control	Assignment
Level Meters	Display momentary and peak level.

Yamaha 01V96: SELECTED CHANNEL Section

The following table outlines the SELECTED CHANNEL controls and their assignments:

Control	Assignment
Pan control	Adjusts the pan of the currently selected channel strip.

Yamaha 01V96: Data Entry Section

The following table outlines the data entry controls and their assignments:

Note: A modifier button (such as SHIFT/ADD) below a control description indicates that the control has an alternate function or use while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the control name.

Control	Modifier	Assignment
Parameter wheel		Default: adjusts the value of the currently selected parameter.
	*DAW SHUTTLE	Switches the parameter wheel to Shuttle mode.
	*DAW SCRUB	Switches the parameter wheel to Scrub mode.
[DEC] button		Default: exits folder. In Go to Marker dialog: cancels dialog.
	*DAW ALT/FINE	Opens or closes the Audio Bin tab in the Media area.
[INC] button		Enters the selected folder.

Yamaha 01V96: Channel Strips

The following table outlines the channel strip controls and their assignments:

Note: A modifier button (such as SHIFT/ADD) below a control description indicates that the control has an alternate function or use while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the control name.

Control	Modifier	Assignment
SEL		Using *DAW AUTO OFF: • FADER MODE [AUX 8] off: selects channel. • FADER MODE [AUX 8] on: selects channel for insert assignment, allowing you to insert effects. Using the *DAW AUTO automation modes (WRITE, TOUCH, LATCH, READ): • Cycles through automation modes. Sets the selected mode when an automation mode button is held down.
	*DAW SHIFT/ADD	Resets the volume level.
SOLO		Enables/disables the Solo button.
	*DAW OPTION/ALL	Disables the Solo button of all channel strips.
ON		Enables/disables the Mute button.
	*DAW OPTION/ALL	Unmutes all channel strips.
Fader		Adjusts volume, or duplicates encoder assignment in Flip mode.

Yamaha 01V96: Stereo Channel Strip Section

The following table outlines the stereo channel strip control assignment:

Control	Assignment
SEL	Switches SEL buttons 1 to 16 between channel strip and automation mode selection. Pressing the SEL button repeatedly, when in automation mode, rotates all available automation modes.

Yamaha 01V96: User-Defined Keys Section

These keys can be assigned to the following functions:

Note: A modifier button (such as SHIFT/ADD) below a control description indicates that the control has an alternate function or use while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the control name.

Control	Modifier	Assignment
DAW WIN STATUS		Opens or closes the Audio Bin tab in the Media area.

Control	Modifier	Assignment
DAW REC/RDY 1 to 16		Enables/disables the Record Enable button of the specified channel strip.
DAW WIN TRANSPORT		Opens or closes the Transport bar 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		Enables a second function/use for some buttons.
DAW OPTION/ALL		While held down, Value Change mode is set to Full. Turning the encoder to the right sets the maximum value. Turning it to the left sets the minimum value. The encoder also stops at its default value. See description of other buttons.
DAW GROUP STATUS		Enters Group Edit mode: • When a channel strip group is selected, channel strip membership is indicated by a lit SEL button. Use this button to enable/disable the channel strip's group membership. • Virtual encoders 1 to 4 display properties of the currently selected group. • Virtual encoder buttons 1 to 4 enable/disable properties of the currently selected group. • When INSERT/PARAM is set to PARAM, the left and right Tab Scroll buttons scroll through the group properties. When set to INSERT, the buttons scroll through the groups for editing.
	DAW SHIFT/ADD	Switches the Mixer to the Arrange view, displaying all channel strips that correspond to tracks used in the Arrange area, along with their signal flow. The channel strips on your DM1000 device will also reflect the 'Arrange' Channel Strip View Mode.
DAW SUSPEND GROUP		Enables/disables the Group Clutch.
	DAW SHIFT/ADD	Switches the Mixer to the Arrange view, displaying all channel strips that correspond to tracks used in the Arrange area, along with their signal flow. The channel strips on your DM1000 device will reflect the 'Tracks' Channel Strip View Mode, and not the 'Arrange.'
DAW CREATE GROUP		Creates a new group and enters Group Edit mode (see above).
	DAW SHIFT/ADD	Switches the Mixer to the All view, displaying all channel strips that exist in your project. The channel strips on your DM1000 device will also reflect the 'All' Channel Strip View Mode.
DAW WIN MIX/EDIT		Switches between the Arrange window and the Mixer.

Control	Modifier	Assignment
DAW CHANNEL –		Shifts channel strips by one channel strip to the left.
DAW CHANNEL +		Shifts channel strips by one channel strip to the right.
DAW CTRL/CLUTCH		While held down, all groups are disabled.
DAW ALT/FINE		While held down, Value Change mode is set to Fine: value changes work at maximum resolution. Also see description of other buttons.
DAW MONI STATUS		—
DAW UNDO		Performs an Undo of the last editing operation.
	DAW SHIFT/ADD	Performs a Redo of the last Undo operation.
	DAW OPTION/ALL	Opens the Undo History window.
DAW SAVE		Saves the project.
	DAW OPTION/ALL	Performs a Save As operation, allowing you to save the project with a different name.
DAW WIN MEM-LOC		Opens or closes the Marker tab in the Lists area.
DAW EDIT TOOL		Selects the next tool. While held down, numerical buttons select a specific tool.
DAW WIN INSERT		Opens or closes the Sample Editor.
DAW REC/RDY ALL		Disables the Record Enable buttons of all channel strips.
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 the left locator at current playhead position.
DAW IN		Sets the punch in locator at current playhead position.
DAW OUT		Sets the punch out locator at current playhead position.
DAW POST		Sets the right locator at current playhead position.
DAW RTZ		Moves the playhead to the left locator position.
DAW END		Moves the playhead to the right locator position.

Control	Modifier	Assignment
DAW ONLINE		Activates or deactivates internal/external synchronization.
DAW QUICK PUNCH		Enables/disables Autopunch 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 WRITE		Sets all channel strips to Write automation mode.
	DAW OPTION/ALL	Sets selected channel strip, or channel strip group, to Touch automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Touch.”
DAW AUTO TOUCH		Sets all channel strips to Touch automation mode.
	DAW OPTION/ALL	Sets selected channel strip, or channel strip group, to Latch automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Latch.”
DAW AUTO LATCH		Sets all channel strips to Latch automation mode.
	DAW OPTION/ALL	Sets selected channel strip, or channel strip group, to Read automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Read.”
DAW AUTO READ		Sets all channel strips to Read automation mode.
	DAW OPTION/ALL	Sets all channel strips to Write automation mode.
DAW AUTO OFF		Sets selected channel strip, or channel strip group, to Off automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Off.”
	DAW OPTION/ALL	Sets all channel strips to Off automation mode.
DAW AUTO STATUS		While held down in Channel Display mode, the display shows the automation mode of the 16 channel strips in the current bank selection.

Yamaha 02R96

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This chapter describes how to use your Yamaha 02R96 with Logic Pro.

This chapter covers the following:

Setting Up Your Yamaha 02R96

Follow the steps below before using your 02R96 with Logic Pro.

- Make sure that your 02R96 device is connected to the computer via USB.
- Make sure that the latest USB MIDI driver for the device is installed. Visit the manufacturer's website to download the most recent driver version, if necessary.

To set up your system with Logic Pro

1. On the 02R96 device:
   a. Press the DISPLAY ACCESS [DIO/SETUP] button repeatedly, until the Setup > MIDI/Host page is visible.
   b. Use the cursor buttons to move to the first DAW parameter box in the SPECIAL FUNCTIONS section, and rotate the parameter wheel to select USB and 1–2.
   c. Press the DISPLAY ACCESS [DIO/SETUP] button repeatedly, until the Setup > Remote page is visible.
   d. Rotate the parameter wheel to choose General DAW as the TARGET parameter.
   e. Press the LAYER [REMOTE] button.
2. In Logic Pro:

   When you open Logic Pro, the 02R96 device is installed automatically. You should see three 02R96 (USB 1–3) icons in the Setup window, aligned horizontally.

Yamaha 02R96: Assignment Overview

The following sections outline the assignment of Yamaha 02R96 interface elements to Logic functions.

- Yamaha 02R96: DISPLAY ACCESS Section
- Yamaha 02R96: AUX SELECT Section
- Yamaha 02R96: ENCODER MODE Section
- Yamaha 02R96: FADER MODE Section
- Yamaha 02R96: EFFECT/PLUG-IN Section
- Yamaha 02R96: LCD
- Yamaha 02R96: USER-DEFINED KEYS Section
- Yamaha 02R96: Channel Strips
- Yamaha 02R96: MACHINE CONTROL Section
- Yamaha 02R96: Data Entry Section

Yamaha 02R96: DISPLAY ACCESS Section

The following table outlines the DISPLAY ACCESS control assignment:

Control	Assignment
METER	Clears overload LEDs.

Yamaha 02R96: AUX SELECT Section

The following table outlines the AUX SELECT controls and their assignments:

Control	Assignment
AUX 1	Assigns Send 1 level to encoders, and Send 1 to 4 levels to virtual encoders. While held down, the channel strip display shows the current Send 1 destination assignment.
AUX 2	Assigns Send 2 level to encoders, and Send 1 to 4 levels to virtual encoders. While held down, the channel strip display shows the current Send 2 destination assignment.
AUX 3	Assigns Send 3 level to encoders, and Send 1 to 4 levels to virtual encoders. While held down, the channel strip display shows the current Send 3 destination assignment.
AUX 4	Assigns Send 4 level to encoders, and Send 1 to 4 levels to virtual encoders. While held down, the channel strip display shows the current Send 4 destination assignment.
AUX 5	Assigns Send 5 level to encoders, and Send 5 to 8 levels to virtual encoders. While held down, the channel strip display shows the current Send 5 destination assignment.

Yamaha 02R96: ENCODER MODE Section

The following table outlines the ENCODER MODE controls and their assignments:

Control	Assignment
PAN	Assigns pan to encoders; assigns selected channel strip's pan/surround parameters to virtual encoders.
AUX	Assigns Send 1 level to encoders, and Send 1 to 4 levels to virtual encoders. While held down, the channel strip display shows the current Send 1 destination assignment.

Yamaha 02R96: FADER MODE Section

The following table outlines the FADER MODE controls and their assignments:

Control	Assignment
FADER	Enables/disables Flip mode.
AUX/MTRX	Enables/disables Flip mode.

Yamaha 02R96: EFFECT/PLUG-IN Section

The following table outlines the EFFECT/PLUG-IN controls and their assignments:

Control	Assignment
Display	Opens or closes the Sample Editor.
PLUG-INS	Switches SEL buttons and encoder buttons between normal behavior and setting a parameter's default value.
CHANNEL INSERTS	Determines mode of channel strip SEL buttons: • Indicator off: SEL button used for channel strip selection • Indicator on: SEL button used for Insert selection
2	Switches the display between "track name/parameter name" and "parameter name/parameter value" modes.
3	Switches the bypass state of plug-in currently being edited.
4	Switches between Plug-in Assign and Plug-in Edit modes.
Parameter Up & Parameter Down	Plug-in Edit mode: shifts the parameter display to show the next/previous page of parameter controls (usually four) for the selected plug-in.

Control	Assignment
Selecting virtual encoders 1 to 4 (Use cursor keys, and then press ENTER button.)	Pan Assignment mode: • Parameter control 1 button centers pan or surround angle. • Parameter control 2 button centers surround diversity. • Parameter control 3 button resets surround LFE level. • Parameter control 4 button resets spread. Send Assignment mode: • Enables/disables Sends 1 to 4 or 5 to 8. Plug-in Assignment mode: • Confirms the plug-in selection for Insert slots 1 to 4 or 5 to 8, and enters Plug-in Edit mode for the selected Insert slot. Plug-in Edit mode: • Sets value to default, or switches buttons with two states.
Moving virtual encoders 1 to 4 (Use cursor keys, and then rotate parameter wheel.)	Pan Assignment mode: • Parameter control 1 edits pan or surround angle. • Parameter control 2 edits surround diversity. • Parameter control 3 edits surround LFE. • Parameter control 4 edits spread. Send Assignment mode: • Controls the Send level of Sends 1 to 4 or 5 to 8. Plug-in Assignment mode: • Chooses Insert slot 1 to 4 or 5 to 8. Plug-in Edit mode: • Sets value.

Yamaha 02R96: 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.
- Channel view mode: Encoder values and channel strip display. Press F3 to select this mode.
- Level meters view mode: Press F4 to select this mode.

The following assignments are available in all three modes:

Display	Assignment
TIME CODE	Active if counter is displaying SMPTE time code.
BEATS	Active if counter is displaying bars/beats/divisions/ticks.
Counter	Displays SMPTE time code or bars/beats/divisions/ticks.
SELECT ASSIGN	Displays the Encoder assignment as follows: Pan, Snd1 to Snd8, S1As to S8As, In, Out.

Yamaha 02R96: USER-DEFINED KEYS Section

The following table outlines the USER-DEFINED KEY controls and their assignments:

Control	Assignment
Display	While held down, the display shows the automation mode of the channel strips in the current bank selection.
1	Switches between the Arrange window and the Mixer.
2	Enables/disables the Group Clutch.
3	Sets selected channel strip, or channel strip group, to Write automation mode.
4	Sets selected channel strip, or channel strip group, to Touch automation mode.
5	Sets selected channel strip, or channel strip group, to Latch automation mode.
6	Sets selected channel strip, or channel strip group, to Read automation mode.
8	Sets selected channel strip, or channel strip group, to Off automation mode.
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.
16	Enables/disables plug-in parameter automation playback and recording.

Yamaha 02R96: Channel Strips

The following table outlines the channel strip controls and their assignments:

Control	Assignment
Encoder	Adjusts parameter selected in the AUX SELECT section.
Encoder Select button	Pan selected: sets pan to center position. If EFFECTS/PLUG-INS [PLUG-INS] on Sends 1 to 8 is 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. When an automation mode button is held down, sets this automation mode.

Control	Assignment
SEL	If EFFECTS/PLUG-INS [CHANNEL INSERTS] off: selects channel. If EFFECTS/PLUG-INS [CHANNEL INSERTS] on: chooses channel for plug-in selection/insertion.
SOLO	Enables/disables Solo button.
ON	Enables/disables Mute button.
Fader	Adjusts volume, or duplicates Encoder in Flip mode.

Yamaha 02R96: MACHINE CONTROL Section

The following table outlines the controls in the MACHINE CONTROL section and their assignments:

Control	Assignment
display	Opens or closes the Marker tab in the Lists area.
1 to 8	Recalls markers 1 to 8.
REW	Shuttles backward.
FF	Shuttles forward.
STOP	Stop
PLAY	Play
REC	Record

Yamaha 02R96: Data Entry Section

The following table outlines the data entry controls and their assignments:

Control	Assignment
SCRUB	Enables/disables Scrub mode.
SHUTTLE	Enables/disables Shuttle mode.
Parameter Wheel	Default: adjusts the value of the currently selected parameter. Scrub: Scrub mode. Shuttle: Shuttle mode.
ENTER	Enters selected folder.
DEC	Exits folder.
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.

Control	Assignment
Cursor Right	Cursor mode: equivalent to computer keyboard Right Arrow key. Zoom mode: zooms in horizontally.

Yamaha DM1000

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This chapter describes how to use your Yamaha DM1000 with Logic Pro.

This chapter covers the following:

Setting Up Your Yamaha DM1000

Follow the steps below before using your DM1000 with Logic Pro.

- Make sure that your DM1000 device is connected to the computer via USB.
- Make sure that the latest USB MIDI driver for the device is installed. Visit the manufacturer's website to download the most recent driver version, if necessary.

To set up your system with Logic Pro

1. On the DM1000 device:
   a. Press the DISPLAY ACCESS [SETUP] button repeatedly, until the Setup > MIDI/Host page is visible.
   b. Use the cursor buttons to move to the DAW parameter box in the SPECIAL FUNCTIONS section, and rotate the parameter wheel to select USB and 1–3.
   c. Press the DISPLAY ACCESS [REMOTE] button, and then press the [F1] button. The Remote 1 page is displayed.
   d. Rotate the parameter wheel to choose General DAW as the TARGET parameter.
   e. Press the LAYER [REMOTE 1] button.
2. In Logic Pro:

   When you open Logic Pro, the DM1000 device is installed automatically. You should see two DM1000 icons in the Setup window, aligned horizontally.

Yamaha DM1000: Assignment Overview

The following sections outline the assignment of Yamaha DM1000 interface elements to Logic functions.

- Yamaha DM1000: DISPLAY ACCESS Section
- Yamaha DM1000: AUX SELECT Section
- Yamaha DM1000: ENCODER MODE Section
- Yamaha DM1000: FADER MODE Section
- Yamaha DM1000: Basic LCD Functions
- Yamaha DM1000: LCD Modal Display Functions
- Yamaha DM1000: Data Entry Section
- Yamaha DM1000: Channel Strips
- Yamaha DM1000: Stereo Channel Strip
- Yamaha DM1000: USER-DEFINED KEYS Section

Yamaha DM1000: DISPLAY ACCESS Section

The following table outlines the DISPLAY ACCESS controls and their assignments:

Note: A modifier button, such as SHIFT/ADD, shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
AUTOMIX		When AUTOMIX is held down in Channel Display mode, the display shows the automation mode of the 16 channel strips in the current bank selection.
PAIR/GROUP		Enters Group Edit mode: • When a channel strip group is selected, channel strip membership is indicated by a lit SEL button. Use this button to enable/disable the channel strip's group membership. • Virtual encoders 1 to 4 display properties of the currently selected group. • Virtual encoder buttons 1 to 4 enable/disable properties of the currently selected group. • When INSERT/PARAM is set to PARAM, the left and right Tab Scroll buttons scroll through the group properties. When set to INSERT, the buttons scroll through the groups for editing.

Control	Modifier	Assignment
	*DAW SHIFT/ADD	Switches the Mixer to the Arrange view, displaying all channel strips that correspond to tracks used in the Arrange area, along with their signal flow.
METER		Clears overload LEDs.
	*DAW SHIFT/ADD	Switches the Mixer to the All view, displaying all channel strips that exist in your project.
	*DAW ALT/FINE	Opens or closes a second Arrange window.
EFFECT		Opens or closes the Sample Editor.

Yamaha DM1000: AUX SELECT Section

The following table outlines the AUX SELECT controls and their assignments:

Note: A modifier button, such as SHIFT/ADD, shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
AUX 1		In Insert Display mode: • Assigns Send 1 level of channel strips to encoders. • Assigns Send 1 level of the selected channel strip to virtual encoders. • Assigns Sends 1 to 4 of the selected channel strip to virtual encoders. Use the ENTER button to switch the bypass state of Sends 1 to 4. In Channel Display mode: • Assigns Send 1 level of channel strips to encoders and virtual encoders. • Shows current Send 1 destination assignment, when button is held down.
	*DAW SHIFT/ADD	Same as AUX 5, but for Send 6
AUX 2		Same as AUX 1, but for Send 2
	*DAW SHIFT/ADD	Same as AUX 5, but for Send 7
AUX 3		Same as AUX 1, but for Send 3.
	*DAW SHIFT/ADD	Same as AUX 5, but for Send 8
AUX 4		Same as AUX 1, but for Send 4

Control	Modifier	Assignment
AUX 5		In Insert Display mode: • Assigns Send 5 level of channel strips to encoders. • Assigns Send 5 level of the selected channel strip to virtual encoders. • Assigns Sends 5 to 8 of the selected channel strip to virtual encoders. Use the ENTER button to switch the bypass state of Sends 5 to 8. In Channel Display mode: • Assigns Send 5 level of channel strips to encoders and virtual encoders. • Shows current Send 5 destination assignment, when button is held down.
AUX 6		Switches SEL buttons and encoder buttons between normal behavior and setting a parameter's default value. When the AUX 6 button is held down: • Pressing a channel strip's SEL button resets the channel strip's volume level. • Pressing a channel strip's encoder button resets the channel strip's pan/surround value. (PAN also needs to be selected in the ENCODER MODE section.)
AUX 8		Determines mode of channel strip SEL buttons when the STEREO section AUTO button is off: • AUX 8 indicator off: SEL button used for channel strip selection • AUX 8 indicator on: SEL button used for Insert selection

Yamaha DM1000: ENCODER MODE Section

The following table outlines the ENCODER MODE controls and their assignments:

Control	Assignment
PAN	• Assigns pan/surround control to encoders. • In Insert Display mode, assigns pan/surround parameters of the selected channel strip to virtual encoders. • In Channel Display mode, assigns pan/surround parameters of the 16 channel strips in current bank selection to virtual encoders.
AUX	• Assigns Send level control to encoders. • In Insert Display mode, assigns Send level parameter of the selected channel strip to virtual encoders. • In Channel Display mode, assigns Send level parameters of the 16 channel strips in current bank selection to virtual encoders.

Yamaha DM1000: FADER MODE Section

The following table outlines the FADER MODE control and its assignment:

Control	Assignment
FADER/AUX	Enables/disables Flip mode.

Yamaha DM1000: Basic LCD Functions

The following table outlines the LCD controls and their assignments:

Note: A modifier button, such as SHIFT/ADD, shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
Left & Right Tab Scroll buttons		Plug-in Edit mode: shifts the parameter display to show the next/previous page of parameter controls (usually four) for the selected plug-in.
	*DAW ALT/FINE	Plug-in Edit mode: shifts the parameter display up/down by one parameter for the selected plug-in.

Yamaha DM1000: LCD Modal Display Functions

The LCD display contents reflect the page selected with the F2, F3, and F4 buttons.

LCD Top Section

The following elements are common across all pages in the LCD.

Display	Assignment
TIME CODE	Active if counter is displaying SMPTE time code
BEATS	Active if counter is displaying bars/beats/divisions/ticks
Counter	Displays either SMPTE time code or bars/beats/divisions/ticks.
SELECT ASSIGN	Displays the encoder assignment as follows: Pan, Snd1 to Snd8, S1As to S8As, In, Out.

Insert Display Mode

Press the F2 button to select Insert Display mode. In this mode, the LCD displays parameters, allowing you to edit effects. This mode also allows you to switch between different Insert slots, enabling each effect to be edited.

Control	Assignment
COMPARE	Switches the display between “track name/parameter name” and “parameter name/parameter value” modes.
BYPASS	Switches the bypass state of plug-in currently being edited.

Control	Assignment
INSERT/PARAM	Switches between Plug-in Assign and Plug-in Edit modes.
Selecting virtual encoders 1 to 4 (Use cursor keys, and then press ENTER button.)	Pan Assignment mode: • Parameter control 1 button centers pan or surround angle. • Parameter control 2 button centers surround diversity. • Parameter control 3 button resets surround LFE level. • Parameter control 4 button resets spread. Send Assignment mode: • Enables/disables Sends 1 to 4 or 5 to 8. Plug-in Assignment mode: • Confirms the plug-in selection for Insert slots 1 to 4 or 5 to 8, and enters Plug-in Edit mode for the selected Insert slot. Plug-In Edit mode: • Sets value to default, or switches buttons with two states.
Moving virtual encoders 1 to 4 (Use cursor keys, and then rotate parameter wheel.)	Pan Assignment mode: • Parameter control 1 edits pan or surround angle. • Parameter control 2 edits surround diversity. • Parameter control 3 edits surround LFE level. • Parameter control 4 edits spread. Send Assignment mode: • Controls the Send level of Sends 1 to 4 or 5 to 8. Plug-in Assignment mode: • Chooses Insert slot 1 to 4 or 5 to 8. Plug-in Edit mode: • Sets value.

Channel Display Mode

Press the F3 button to select Channel Display mode. In this mode, the parameter controls, such as pan and send level, for channel strips 1 to 16 are displayed.

Control	Assignment
Selecting virtual encoders 1 to 4 (Use cursor keys, and then press ENTER button.)	When Send 1 to 8 is selected: edits Send pre/post fader position, enables or disables Send mute, or sets Send level to default value. Send, Input, or Output Assignment mode: confirms selection.
Moving virtual encoders 1 to 4 (Use cursor keys, and then rotate parameter wheel.)	Adjusts parameter selected in the ENCODER MODE and AUX SELECT sections.

Meter Display Mode

Press the F4 button to select Meter Display mode. In this mode, the level meters for channel strips 1 to 16 are displayed.

Control	Assignment
Level Meters	Display momentary and peak level.

Yamaha DM1000: Data Entry Section

The following table outlines the data entry controls and their assignments:

Note: A modifier button, such as SHIFT/ADD, shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
Parameter wheel		Default: adjusts the value of the currently selected parameter.
	* DAW SHUTTLE	Switches the parameter wheel to Shuttle mode.
	* DAW SCRUB	Switches the parameter wheel to Scrub mode.
[DEC] button		Default: exits folder. In Go to Marker dialog: cancels dialog.
	* DAW ALT/FINE	Opens or closes the Audio Bin tab in the Media area.
[INC] button		Enters the selected folder.

Yamaha DM1000: Channel Strips

The following table outlines the channel strip controls and their assignments:

Note: A modifier button, such as SHIFT/ADD, shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
Encoder		Adjusts parameter selected in the ENCODER MODE and AUX SELECT sections.
Encoder Select button		Pan selected: sets pan to center position. Send 1 to 8 selected: edits Send pre/post position, activates/deactivates Send mute, or sets Send level to default value. Send Assign, Input, or Output selected: confirms selection.

Control	Modifier	Assignment
SEL		If AUTO off: • AUX 8 off: selects channel strip. • AUX 8 on: selects channel strip for insert assignment. If AUTO on: • Cycles through automation modes. With an automation mode button held down, sets this automation mode.
	*DAW SHIFT/ADD	Resets the volume level.
SOLO		Enables/disables the Solo button.
	*DAW OPTION/ALL	Disables Solo button of all channel strips.
ON		Enables/disables the Mute button.
	*DAW OPTION/ALL	Unmutes all channel strips.
Fader		Adjusts volume, or duplicates encoder assignment in Flip mode.

Yamaha DM1000: Stereo Channel Strip

The following table outlines the stereo channel strip control and its assignment:

Control	Assignment
AUTO	Switches channel strip SEL buttons between channel and insert selection duties.

Yamaha DM1000: USER-DEFINED KEYS Section

These keys can be assigned to the following functions:

Note: A modifier button, such as SHIFT/ADD, shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
DAW WIN STATUS		Opens or closes the Audio Bin tab in the Media area.
DAW REC/RDY 1 to 16		Enables/disables the Record Enable button of the specified channel strip.
DAW WIN TRANSPORT		Opens or closes the Transport bar 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		Enables a second function/use for some buttons.

Control	Modifier	Assignment
DAW OPTION/ALL		While held down, Value Change mode is set to Full. Turning the encoder to the right sets the maximum value. Turning it to the left sets the minimum value. The encoder also stops at its default value. Also see description of other buttons.
DAW GROUP STATUS		Enters Group Edit mode: • When a channel strip group is selected, channel strip membership is indicated by a lit SEL button. Use this button to enable/disable the channel strip's group membership. • Virtual encoders 1 to 4 display properties of the currently selected group. • Virtual encoder buttons 1 to 4 enable/disable properties of the currently selected group. • When INSERT/PARAM is set to PARAM, the left and right Tab Scroll buttons scroll through the group properties. When set to INSERT, the buttons scroll through the groups for editing.
	*DAW SHIFT/ADD	Switches the Mixer to the Arrange view, displaying all channel strips that correspond to tracks used in the Arrange area, along with their signal flow. The channel strips on your DM1000 device will also reflect the 'Arrange' Channel Strip View mode.
DAW SUSPEND GRP		Enables/disables the Group Clutch.
	*DAW SHIFT/ADD	Switches the Mixer to the Arrange view, displaying all channel strips that correspond to tracks used in the Arrange area, along with their signal flow. The channel strips on your DM1000 device will reflect the 'Tracks' Channel Strip View mode, and not the 'Arrange.'
DAW CREATE GROUP		Creates a new group and enters Group Edit mode (see above).
	*DAW SHIFT/ADD	Switches the Mixer to the All view, displaying all channel strips that exist in your project. The channel strips on your DM1000 device will also reflect the 'All' Channel Strip View mode.
DAW WIN MIX/EDIT		Switches between the Arrange window and the Mixer.
DAW CHANNEL -		Shifts channel strips by one channel strip to the left.
DAW CHANNEL+		Shifts channel strips by one channel strip to the right.
DAW CTRL/CLUTCH		While held down, all groups are disabled.

Control	Modifier	Assignment
DAW ALT/FINE		While held down, Value Change mode is set to Fine: value changes work at maximum resolution. Also see description of other buttons.
DAW MONI STATUS		—
DAW UNDO		Performs an Undo of the last editing operation.
	*DAW SHIFT/ADD	Performs a Redo of the last Undo operation.
	*DAW OPTION/ALL	Opens the Undo History window.
DAW SAVE		Saves the project.
	*DAW OPTION/ALL	Performs a Save As operation, allowing you to save the project with a different name.
DAW WIN MEM-LOC		Opens or closes the Marker tab in the Lists area.
DAW EDIT TOOL		Selects the next tool. While held down, numerical buttons select a specific tool.
DAW WIN INSERT		Opens or closes the Sample Editor.
DAW REC/RDY ALL		Disables the Record Enable buttons of all channel strips.
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 the left locator at current playhead position.
DAW IN		Sets the punch in locator at current playhead position.
DAW OUT		Sets the punch out locator at current playhead position.
DAW POST		Sets the right locator at current playhead position.
DAW RTZ		Moves the playhead to the left locator position.
DAW END		Moves the playhead to the right locator position.
DAW ONLINE		Activates or deactivates internal/external synchronization.
DAW QUICK PUNCH		Enables/disables Autopunch mode.
DAW AUTO FADER		Enables/disables volume automation playback and recording.

Control	Modifier	Assignment
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 WRITE		Sets selected channel strip, or channel strip group, to Write automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Write.”
	*DAW OPTION/ALL	Sets all channel strips to Write automation mode.
DAW AUTO TOUCH		Sets selected channel strip, or channel strip group, to Touch automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Touch.”
	*DAW OPTION/ALL	Sets all channel strips to Touch automation mode.
DAW AUTO LATCH		Sets selected channel strip, or channel strip group, to Latch automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Latch.”
	*DAW OPTION/ALL	Sets all channel strips to Latch automation mode.
DAW AUTO READ		Sets selected channel strip, or channel strip group, to Read automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Read.”
	*DAW OPTION/ALL	Sets all channel strips to Read automation mode.
DAW AUTO TRIM		—
DAW AUTO OFF		Sets selected channel strip, or channel strip group, to Off automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Off.”
	*DAW OPTION/ALL	Sets all channel strips to Off automation mode.
DAW AUTO STATUS		While held down in Channel Display mode, the display shows the automation mode of the 16 channel strips in the current bank selection.

Yamaha DM2000

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This chapter describes how to use your Yamaha DM2000 with Logic Pro.

This chapter covers the following:

Setting Up Your Yamaha DM2000

Follow the steps below before using your DM2000 with Logic Pro.

- Make sure that your DM2000 device is connected to the computer via USB.
- Make sure that the latest USB MIDI driver for the device is installed. Visit the manufacturer's website to download the most recent driver version, if necessary.

To set up your system with Logic Pro

1. On the DM2000 device:
   a. Press the DISPLAY ACCESS [SETUP] button repeatedly, until the Setup > MIDI/Host page is visible.
   b. Use the cursor buttons to move to the first DAW parameter box in the SPECIAL FUNCTIONS section, and rotate the parameter wheel to select USB and 1–3.
   c. Press the DISPLAY ACCESS [REMOTE] button, and then press the [F1] button. The Remote 1 page is displayed.
   d. Rotate the parameter wheel to choose General DAW as the TARGET parameter.
   e. Press the LAYER [REMOTE 1] button.
2. In Logic Pro:

   When you open Logic Pro, the DM2000 device is installed automatically. You should see three DM2000 icons in the Setup window, aligned horizontally.

Yamaha DM2000: Assignment Overview

The following sections outline the assignment of Yamaha DM2000 interface elements to Logic functions.

- Yamaha DM2000: MATRIX SELECT Section
- Yamaha DM2000: AUX SELECT Section
- Yamaha DM2000: ENCODER MODE Section
- Yamaha DM2000: FADER MODE Section
- Yamaha DM2000: DISPLAY ACCESS Section
- Yamaha DM2000: EFFECT/PLUG-IN Section
- Yamaha DM2000: LCD
- Yamaha DM2000: TRACK ARMING Section
- Yamaha DM2000: AUTOMIX Section
- Yamaha DM2000: LOCATOR Section
- Yamaha DM2000: Transport/Cursor Section
- Yamaha DM2000: Channel Strips
- Yamaha DM2000: USER-DEFINED KEYS Section

Yamaha DM2000: MATRIX SELECT Section

The following table outlines the MATRIX SELECT controls and their assignments:

Control	Assignment
MATRIX 1	Switches SEL buttons and encoder buttons between normal behavior and setting a parameter's default value. When the AUX 6 button is held down: • Pressing a channel strip's SEL button resets the channel strip's volume level. • Pressing a channel strip's encoder button resets the channel strip's pan/surround value. (PAN also needs to be selected in the ENCODER MODE section.)
MATRIX 2	Switches the encoder 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 (indicator on) modes.

Yamaha DM2000: AUX SELECT Section

The following table outlines the AUX SELECT controls and their assignments:

Note: A modifier button (such as USER 4, preassigned to SHIFT/ADD) shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
AUX 1		In Insert Display mode: • Assigns Send 1 level of channel strips to encoders. • Assigns Send 1 level of the selected channel strip to virtual encoders. • Assigns Sends 1 to 4 of the selected channel strip to virtual encoders. Use the ENTER button to switch the bypass state of Sends 1 to 4. In Channel Display mode: • Assigns Send 1 level of channel strips to encoders and virtual encoders. Shows current Send 1 destination assignment, when button is held down.
	*USER 4	Same as AUX 5, but for Send 6
AUX 2		Same as AUX 1, but for Send 2
	*USER 4	Same as AUX 5, but for Send 7
AUX 3		Same as AUX 1, but for Send 3
	*USER 4	Same as AUX 5, but for Send 8
AUX 4		Same as AUX 1, but for Send 4
AUX 5	Para	In Insert Display mode: • Assigns Send 5 level of channel strips to encoders. • Assigns Send 5 level of the selected channel strip to virtual encoders. • Assigns Sends 5 to 8 of the selected channel strip to virtual encoders. Use the ENTER button to switch the bypass state of Sends 5 to 8. In Channel Display mode: • Assigns Send 5 level of channel strips to encoders and virtual encoders. Shows current Send 5 destination assignment, when button is held down.

Yamaha DM2000: ENCODER MODE Section

The following table outlines the ENCODER MODE controls and their assignments:

Control	Assignment
PAN	• Assigns pan/surround control to encoders. • In Insert Display mode, assigns pan/surround parameters of the selected channel strip to virtual encoders. • In Channel Display mode, assigns pan/surround parameters of the 16 channel strips in current bank selection to virtual encoders.
AUX/MTRX	• Assigns Send level control to encoders. • In Insert Display mode, assigns Send level parameter of the selected channel strip to virtual encoders. • In Channel Display mode, assigns Send level parameters of the 16 channel strips in current bank selection to virtual encoders.
ASSIGN 1	Assigns channel strip input assignment to encoders. While held down, the channel strip display shows the current channel strip input assignment.
ASSIGN 2	Assigns channel strip output assignment to encoders. While held down, the channel strip display shows the current channel strip output assignment.
ASSIGN 3	When encoders display a Send level, switches them to Send Destination assignment mode. Press the encoder button (or ASSIGN 3 again) to confirm the assignment.
ASSIGN 4	Determines mode of channel strip SEL buttons: • Indicator off: SEL button used for channel strip selection • Indicator on: SEL button used for insert selection or insert bypass, depending on MATRIX SELECT [MATRIX 4]

Yamaha DM2000: FADER MODE Section

The following table outlines the FADER MODE controls and their assignments:

Control	Assignment
FADER	Enables/disables Flip mode.
AUX/MTRX	Enables/disables Flip mode.

Yamaha DM2000: DISPLAY ACCESS Section

The following table outlines the DISPLAY ACCESS controls and their assignments:

Note: A modifier button (such as USER 4, preassigned to SHIFT/ADD) shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
METER		Clears overload LEDs.
	*USER 4	Switches the Mixer to the All view, displaying all channel strips that exist in your project.

Control	Modifier	Assignment
	*USER 13	Opens or closes a second Arrange window.

Yamaha DM2000: EFFECT/PLUG-IN Section

The following table outlines the EFFECT/PLUG-IN controls and their assignments:

Note: A modifier button (such as USER 4, preassigned to SHIFT/ADD) shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
Display		Opens or closes the Sample Editor.
6		Switches display between "track name/parameter name" and "parameter name/parameter value" modes.
7		Switches the bypass state of Insert slot that is currently being edited.
8		Switches between Plug-in Assignment and Plug-in Edit modes.
Parameter Up & Parameter Down		Plug-in Edit mode: shifts the parameter display to show the next/previous page of parameter controls (usually four) for the selected plug-in.
	*USER 13	Plug-in Edit mode: shifts the parameter display up/down by one parameter for the selected plug-in.
Selecting virtual encoders 1 to 4 (Use cursor keys, and then press ENTER button.)		Pan Assignment mode: • Parameter control 1 button centers pan or surround angle. • Parameter control 2 button centers surround diversity. • Parameter control 3 button resets surround LFE level. • Parameter control 4 button resets spread. Send Assignment mode: • Enables/disables Sends 1 to 4 or 5 to 8. Plug-in Assignment mode: • Confirms the plug-in selection for Insert slots 1 to 4 or 5 to 8, and enters Plug-in Edit mode for the selected Insert slot. Plug-In Edit mode: • Sets value to default, or switches buttons with two states.

Control	Modifier	Assignment
Moving virtual encoders 1 to 4 (Use cursor keys, and then rotate parameter wheel.)		Pan Assignment mode: • Parameter control 1 edits pan or surround angle. • Parameter control 2 edits surround diversity. • Parameter control 3 edits surround LFE level. • Parameter control 4 edits spread. Send Assignment mode: • Controls the Send level of Sends 1 to 4 or 5 to 8. Plug-in Assignment mode: • Chooses Insert slot 1 to 4 or 5 to 8. Plug-in Edit mode: • Sets value.

Yamaha DM2000: LCD

The following table outlines the LCD assignments:

Display	Assignment
TIME CODE	Active if counter is displaying SMPTE time code.
BEATS	Active if counter is displaying bars/beats/divisions/ticks.
Counter	Displays SMPTE time code or bars/beats/divisions/ticks.
SELECT ASSIGN	Displays the encoder assignment as follows: Pan, Snd1 to Snd8, S1As to S8As, In, Out.

Yamaha DM2000: TRACK ARMING Section

The following table outlines the TRACK ARMING controls and their assignments:

Note: A modifier button (such as USER 4, preassigned to SHIFT/ADD) shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
1 to 24		Enables/disables the Record Enable button of the specified channel strip.
	*USER 5	Disables the Record Enable buttons of all channel strips.
MASTER		Disables the Record Enable buttons of all channel strips.

Yamaha DM2000: AUTOMIX Section

The following table outlines the AUTOMIX controls and their assignments:

Note: A modifier button (such as USER 4, preassigned to SHIFT/ADD) shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
DISPLAY		When DISPLAY is held down in Channel Display mode, the display shows the automation mode of the channel strips in the current bank selection.
REC		Sets selected channel strip, or channel strip group, to Write automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Write.”
	*USER 5	Sets all channel strips to Write automation mode.
ABORT/UNDO		Sets selected channel strip, or channel strip group, to Touch automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Touch.”
	*USER 5	Sets all channel strips to Touch automation mode.
AUTOREC		Sets selected channel strip, or channel strip group, to Latch automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Latch.”
	*USER 5	Sets all channel strips to Latch automation mode.
RETURN		Sets selected channel strip, or channel strip group, to Read automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Read.”
	*USER 5	Sets all channel strips to Read automation mode.
TOUCH SENSE		Sets selected channel strip, or channel strip group, to Off automation mode. While held down, and with the STEREO channel strip AUTO button enabled, sets automation mode to “Off.”
	*USER 5	Sets all channel strips 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.

Yamaha DM2000: LOCATOR Section

The following table outlines the LOCATOR controls and their assignments:

Note: A modifier button (such as USER 4, preassigned to SHIFT/ADD) shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
DISPLAY		Opens or closes the Marker tab in the Lists area.
1 to 8		Recalls markers 1 to 8.
	*USER 4	Switches the Mixer to the All view, displaying all channel strips that exist in your project.
	DISPLAY HISTORY [FORWARD]	Selects tool: 1: Arrow 2: Pencil 3: Eraser 4: Text tool 5: Scissors 6: Glue tool 7: Solo tool 8: Mute tool
PRE		Sets the left locator at current playhead position.
IN		Sets the punch in locator at current playhead position.
OUT		Sets the punch out locator at current playhead position.
POST		Sets the right locator at current playhead position.
RETURN TO ZERO		Moves the playhead to the left locator position.
END		Moves the playhead to the right locator position.
ONLINE		Activates or deactivates internal/external synchronization.
QUICK PUNCH		Enables/disables Autopunch mode.

Yamaha DM2000: Transport/Cursor Section

The following table outlines the transport/cursor controls and their assignments:

Note: A modifier button (such as USER 4, preassigned to SHIFT/ADD) shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
REW		Shuttles backward.
FF		Shuttles forward.
STOP		Stop
PLAY		Play
	*USER 4	Pause
REC		Record
DISPLAYHISTORY [FORWARD]		Selects the next tool. While held down, numerical buttons select a specific tool.
SCRUB		Enables/disables Scrub mode.
SHUTTLE		Enables/disables Shuttle mode.
Parameter wheel		Default: adjusts the value of the currently selected parameter.
	*DAW SHUTTLE	Switches the parameter wheel to Shuttle mode.
	*DAW SCRUB	Switches the parameter wheel to Scrub mode.
DEC button		Default: exits folder. In Go to Marker dialog: cancels dialog.
	*USER 13	Opens or closes the Audio Bin tab in the Media area.
INC button		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.

Control	Modifier	Assignment
	*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 (of window with key focus).
ENTER		Enters the selected folder.

Yamaha DM2000: Channel Strips

The following table outlines the channel strip controls and their assignments:

Note: A modifier button (such as USER 4, preassigned to SHIFT/ADD) shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
Encoder		Adjusts parameter selected in the ENCODER MODE and AUX SELECT sections.
Encoder Select button		Pan selected: sets pan to center position. If MATRIX 1 on Send 1 to 8 is selected: edits Send pre/post position, 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 channel strip. If ENCODER MODE [ASSIGN 4] on: • BYPASS off: selects channel strip for plug-in selection. • BYPASS on: switches bypass state of currently selected Insert slot.
	*USER 4	Resets the volume level.
MATRIX SELECT 1		Resets the volume level.
SOLO		Enables/disables the Solo button.
	*USER 5	Disables Solo button of all channel strips.

Control	Modifier	Assignment
ON		Enables/disables the Mute button.
	*USER 5	Unmutes all channel strips.
Channel strip display		Displays channel strip name, or send, input, or output assignment.
Fader		Adjusts volume, or duplicates encoder assignment in Flip mode.

Yamaha DM2000: USER-DEFINED KEYS Section

The following table outlines the USER-DEFINED KEY controls and their assignments:

Note: A modifier button (such as USER 4, preassigned to SHIFT/ADD) shown below a control description indicates that the control has an alternate function while the modifier is held down. Modifier buttons that need to be assigned manually by the user are shown with an asterisk (*) that precedes the button name.

Control	Modifier	Assignment
DISPLAY		Opens or closes the Audio Bin window.
1		Opens or closes the Transport bar 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 function/use of some buttons. (See descriptions of other buttons.)
5		While held down, Value Change mode is set to Full. Turning the encoder to the right sets the maximum value. Turning it to the left sets the minimum value. The encoder also stops at its default value. Also see description of other buttons.
6		Enters Group Edit mode: • When a channel strip group is selected, channel strip membership is indicated by a lit SEL button. Use this button to enable/disable channel strip's group membership. • Virtual encoders 1 to 4 display properties of the currently selected group. • Virtual encoder buttons 1 to 4 enable/disable properties of the currently selected group. • When INSERT/PARAM is set to PARAM, the left and right Tab Scroll buttons scroll through the group properties. When set to INSERT, the buttons scroll through the groups for editing.

Control	Modifier	Assignment
	*USER 4	Switches the Mixer to the Arrange view, displaying all channel strips that correspond to tracks used in the Arrange area, along with their signal flow. The DM2000 channel strips will also reflect the 'Arrange' Channel Strip View mode.
7		Enables/disables the Group Clutch.
	*USER 4	Switches the Mixer to the Arrange view, displaying all channel strips that correspond to tracks used in the Arrange area, along with their signal flow. The DM2000 channel strips will reflect the 'Tracks' Channel Strip View mode.
8		Creates a new group and enters Group Edit mode (see above).
	*USER 4	Switches Mixer to All view, displaying all channel strips that exist in your project. The DM2000 channel strips will also reflect the 'All' Channel Strip View mode.
9		Switches between the Arrange window and the Mixer.
10		Shifts channel strips by one channel strip to the left.
11		Shifts channel strips by one channel strip to the right.
12		While held down, all groups are disabled.
13		While held down, Value Change mode is set to Fine: value changes work at maximum resolution. Also see descriptions of other buttons.
14		—
15		Performs an Undo of the last editing operation.
	*USER 4	Performs a Redo of the last Undo operation.
	*USER 5	Opens the Undo History window.
16		Saves the project.
	*USER 5	Performs Save As operation, allowing you to save the project with a different name.