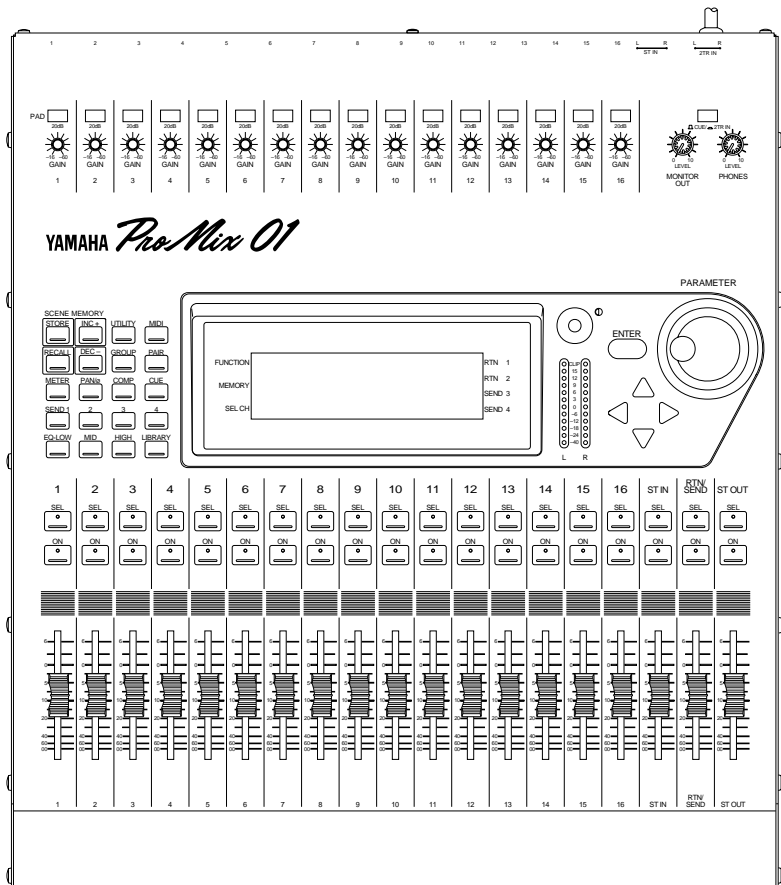


YAMAHA

Pro Mix 01

User's Guide
Manuel de référence
Bedienungsanleitung
Manual de uso



FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. IMPORTANT: When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. NOTE: This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference

Utilize power outlets that are on different branch (circuit breaker of fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA

Dette apparat overholder det gældende EF-direktiv vedtrørende radiostøj.

Cet appareil est conforme aux prescriptions de la directive communautaire 87/308/CEE.

Diese Geräte entsprechen der EG-Richtlinie 82/499/EWG und/oder 87/308/EWG.

This product complies with the radio frequency interference requirements of the Council Directive 82/499/EEC and/or 87/308/EEC.

Questo apparecchio è conforme al D.M.13 aprile 1989 (Direttiva CEE/87/308) sulla soppressione dei radiodisturbi.

Este producto está de acuerdo con los requisitos sobre interferencias de radio frecuencia fijados por el Consejo Directivo 87/308/CEE.

YAMAHA CORPORATION

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW : EARTH
BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN and YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or coloured GREEN and YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

* This applies only to products distributed by YAMAHA KEMBLE MUSIC (U.K.) LTD.

CANADA

THIS DIGITAL APPARATUS DOES NOT EXCEED THE "CLASS B" LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS SET OUT IN THE RADIO INTERFERENCE REGULATION OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS.

LE PRESENT APPAREIL NUMERIQUE N'EMET PAS DE BRUITS RADIOELECTRIQUES DEPASSANT LES LIMITES APPLICABLES AUX APPAREILS NUMERIQUES DE LA "CLASSE B" PRESCRITES DANS LE REGLEMENT SUR LE BROUILLAGE RADIOELECTRIQUE EDICTE PAR LE MINISTERE DES COMMUNICATIONS DU CANADA.

* This applies only to products distributed by YAMAHA CANADA MUSIC LTD.

Litiumbatter!
Bör endast bytas av servicepersonal.
Explosionsfara vid felaktig hantering.

VAROITUS!
Lithiumparisto, Räjähdyksvaara.
Pariston saa vaihtaa ainoastaan aian ammattimies.

ADVARSEL!
Lithiumbatter!
Eksplussionsfare. Udskiftning må kun foretages af en sagkyndig, -og som beskrevet i servicemanualen.

CONNEXIONS DES MICROPHONES ET DE LEURS CÂBLES

POUR ÉVITER TOUT ENDOMMAGEMENT, S'ASSURER DE BRANCHER UNIQUEMENT DES MICROPHONES ET DES CÂBLES DE MICROPHONES CONCUS SELON LA NORME IEC268-15A.

MICROPHONE CABLES AND MICROPHONES CONNECTION

TO PREVENT HAZARD OR DAMAGE, ENSURE THAT ONLY MICROPHONE CABLES AND MICROPHONES DESIGNED TO THE IEC268-15A STANDARD ARE CONNECTED.

Brief Contents

1	Touring ProMix 01	1
2	User Interface	11
3	Mixer Functions	17
4	Auxiliaries and Effects	29
5	CUE	49
6	Groups and Pairs	55
7	Scene Memories	61
8	Dynamics Processors	67
9	MIDI	79
10	Other Functions	89
	Troubleshooting	93
	Appendix	95
	Glossary	109
	Index	113
	Additions	Add-1
	MIDI Data Format	Add-16

Full Contents

1	Touring ProMix 01	1
	Top Panel	2
	Rear Panel	5
	ProMix 01 Block Diagram	8
	An Analog Mixer Analogy	9
2	User Interface	11
	About the User Interface	12
	LCD Display	12
	Cursor Buttons	13
	PARAMETER Wheel	13
	ENTER Button	13
	SEL Buttons	14
	LCD Functions	15
3	Mixer Functions	17
	Phantom Power	18
	Pad	18
	Gain	18
	Metering	19
	Phase	20
	EQ	21
	EQ Library	22
	EQ Presets	23
	Faders	25
	ON Buttons	25
	Pan and Balance	26
	Stereo Output Balance	26
	Stereo-Pair Pans	27
	Stereo Width	27
4	Auxiliaries and Effects	29
	About Auxiliaries	30
	About Effects	30
	Preset Effects Programs	30
	Stereo Input Channel and Sends	31
	Applying Effects	31
	Sending a Channel Signal	32
	SEND1 and SEND2 Pre or Post	32
	Returning the Processed Signal	33
	Recalling Effects Programs	34
	Editing Effects Programs	35

	Storing Effects Programs	36
	Preset Effects Program Parameters	37
	SEND3 and SEND4	45
	SEND3 and SEND4 Pre or Post	45
	SEND3-4 Stereo Pair	46
	SEND3-4 Channel Pans & Balance	47
	SEND3-4 Output Balance	47
	SEND3-4 Block Diagram	48
5	CUE	49
	About CUE	50
	CUE Modes	50
	Group CUE	50
	Setting the CUE Mode	51
	CUE Signal Sources	51
	CUE/2TR IN Switch	51
	CUE LCD Function Info	52
6	Groups and Pairs	55
	Grouping Faders	56
	Listening to Groups	56
	Group Block Diagram	57
	Pairing Channels	58
	Pair Block Diagram	59
7	Scene Memories	61
	What are Scene Memories?	62
	What's Stored in a Scene Memory?	62
	What is the Edit Buffer?	62
	Mix Scene 00	62
	Storing Mix Scenes	63
	Recalling Mix Scenes	64
	Protecting Scene Memories	65
8	Dynamics Processors	67
	ProMix 01 Dynamics Processors	68
	Preset Dynamics Programs	68
	Processor Types	68
	Patching in a Processor	72
	Dynamics Processor Meters	73
	Pre-Fader or Post-Fader Patches	74
	Recalling a Dynamics Program	75
	Editing a Dynamics Program	76
	Storing a Dynamics Program	77
	Preset Dynamics Processor Parameters	78

9	MIDI	79
	MIDI and ProMix 01	80
	MIDI Setup	81
	Program Change	82
	Control Change	83
	Bulk Dump/Request	85
	Local ON/OFF	86
	Memory Control Change Out	87
10	Other Functions	89
	Using the Oscillator	90
	Checking the Battery	91
	ProMix 01 Initialization	92
	Fader Calibration	92
	Troubleshooting	93
	Appendix	95
	LCD Function Map	96
	Button Protector	97
	Data Types	98
	Error Messages	100
	ProMix 01 Compatible Products	104
	General Specifications	105
	Input Specifications	106
	Output Specifications	106
	Digital OUT & MIDI Specifications	107
	Digital Out Channel Status	107
	Glossary	109
	Index	113
	Additions	Add-1
	ProMix 01 Level Diagram	Add-1
	ProMix 01 Dimensions	Add-2
	Optional Rack-Mount Ears	Add-3
	Optional Wooden Side Panels	Add-3
	Mix Scene to Program Change Assignment Table ..	Add-4
	Control Change to Parameter Assignment Table ..	Add-5

MIDI Data Format	Add-16
1 General Items	Add-16
2 Transmission/Reception	Add-16
3 Transmission Condition	Add-18
4 Receive Condition	Add-18
5 Bulk Dump Request Format	Add-19
Button Number Table	Add-28

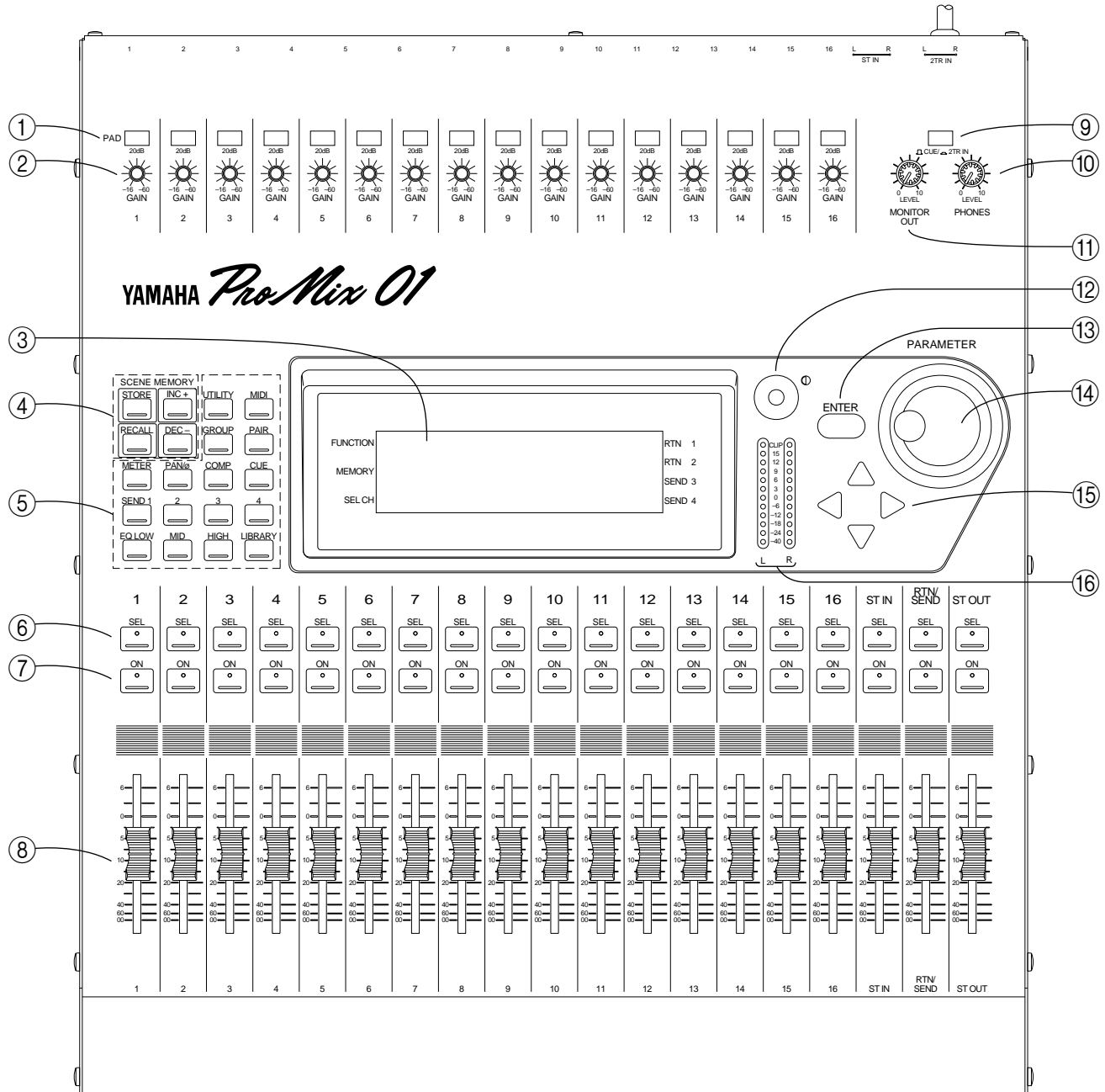
1

Touring ProMix 01

In this chapter...

Top Panel	2
Rear Panel	5
ProMix 01 Block Diagram	8
An Analog Mixer Analogy	9

Top Panel



1. PAD switches

These switch the input Pad, which attenuates the input signal by 20 dB. See “Pad” on page 18 for more details.

2. GAIN controls

These control the gain of the input preamp. See “Gain” on page 18 for more details.

3. LCD

This is a 240 x 64 dot backlit graphic LCD and it displays the LCD functions and their parameter values graphically and numerically.

4. SCENE MEMORY buttons

These buttons are used to select, store, and recall mix scenes. See “Scene Memories” on page 61 for more details.

5. Function buttons

These buttons access the various LCD functions. The name of the currently selected LCD function is shown in the FUNCTION area on the LCD.

6. SEL buttons

The SEL buttons are used to select channels. Input channel and stereo input channel [SEL] buttons select their respective channels. The RTN/SEND [SEL] button, however, is used to select SEND3, SEND4, RTN1, and RTN2. Pressing it repeatedly cycles through the four options. The currently selected RTN/SEND channel is indicated by the highlighted arrow at the right side of the LCD. When a channel is selected, its [SEL] button LED lights up.

7. ON buttons

These buttons are used to turn channels ON and OFF. Input channel and stereo input channel [ON] buttons turn their respective channels ON and OFF. The RTN/SEND [ON] button, however, is used to turn SEND3, SEND4, RTN1, and RTN2 ON and OFF. You must, therefore, use the RTN/SEND [SEL] button to select the RTN/SEND channel that you want to turn ON or OFF beforehand. When a channel is ON, its [ON] button LED lights up. When a channel is turned OFF, the LED goes OFF.

8. Faders

These are multifunction controls, which means they are used to control more than one signal. They're motorized, too, which means that they position themselves automatically when, for example, a mix scene is recalled, a number of faders are grouped, or an automated mix via MIDI is played back. See “Faders” on page 25 for more details.

9. CUE/2TR IN switch

This switch determines the signal source for the monitor output and phones. CUE selects the Cue bus, and 2TR IN selects the 2TR IN connection.

10.PHONES LEVEL control

This is used to adjust the headphone output level.

11.MONITOR OUT LEVEL control

This is used to adjust the monitor output level.

12.LCD Contrast control

This is used to adjust the LCD contrast. Set it so that the LCD appears clear and easy to read. You may need to adjust it again when ProMix 01 warms up or when the LCD is viewed from a different height or angle.

13.ENTER button

The exact operation of this button depends on the selected LCD function. Essentially, it performs two operations. First, to enter/confirm settings made using the PARAMETER wheel. Second, to set parameters that have only two options. For example, EQ ON/OFF and Peak Hold ON/OFF.

14.PARAMETER wheel

This is used to adjust parameter values. Turn it clockwise to increase a value, and counterclockwise to decrease it.

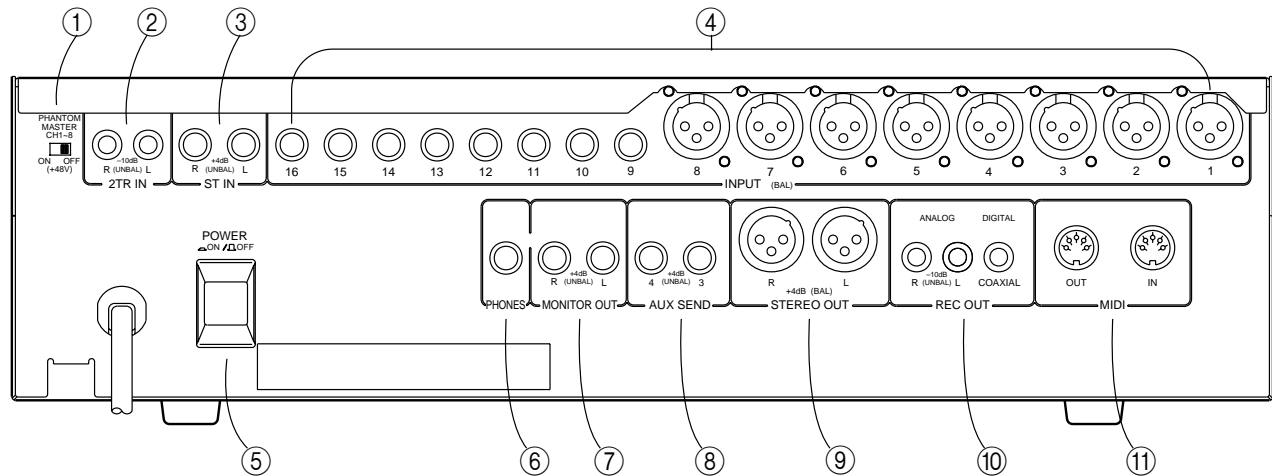
15.Cursor buttons

These are used to select parameters and options on the LCD.

16.Stereo output meters

These 12-segment LED meters display the stereo output levels. See “Metering” on page 19 for more details.

Rear Panel



1. PHANTOM MASTER switch

This switch is used to turn the +48V DC phantom power ON and OFF. Phantom power is switched simultaneously for input channels 1 through 8.

2. 2TR IN

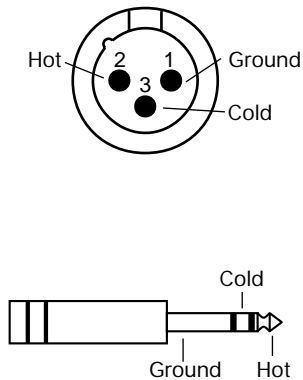
These are RCA/phono jacks with a -10 dB nominal input level. Signals input here are fed through to the CUE/2TR IN switch and are monitored via the monitor out and headphones. The outputs of a 2-track master recorder can be connected here for confidence monitoring and playback.

Note: When no plugs are inserted into the ST IN phone jacks, the 2TR IN signals are fed through to the stereo input channel. This means that you can apply EQ, etc., to the 2TR IN signals. When plugs are inserted into the ST IN phone jacks, however, this connection is broken.

3. ST IN

These are unbalanced 1/4" phone jacks with a +4dB nominal input level. Signals input here are fed through to the stereo input channel. The outputs of an external effects processor, or other device with stereo line-level outputs can be connected here.

When no plugs are inserted, the 2TR IN signals are fed through to the stereo input channel (see above note).



4. INPUT (BAL)

Input channels 1 through 8 have balanced XLR-3-31 type connectors for connecting microphones. The nominal input level is -60dB to $+4\text{dB}$. They are wired according to the IEC 268 standard: Pin 1–ground, pin 2–hot (+), and pin 3–cold (–). Phantom powering is available for condenser type microphones, and it is set using the PHANTOM MASTER switch.

Input channels 9 through 16 have balanced phone jack connectors. The nominal input level is -60dB to $+4\text{dB}$. Wiring is sleeve–ground, tip–hot (+), and ring–cold (–). They can be used with balanced or unbalanced plugs.

Besides connector type and phantom power, the input circuits for inputs 1 through 16 are the same. So with an adaptor cable, inputs 9 through 16 can also be used with balanced microphones.

Note: Make sure that the balanced devices you connect to the INPUTs also use pin 2–hot, pin 3–cold wiring. If they’re wired differently, undesirable phase shifts may occur. Refer to their user manuals for details.

5. POWER switch

This is a push-type power switch. It’s recessed to prevent accidental operation. Press once to power ON; press again to power OFF.

6. PHONES

This is a stereo (TRS) 1/4" phone jack. A pair of stereo headphones can be connected here for monitoring. The phones output signal source is the same as that of the monitor output. The headphone level is set using the PHONES LEVEL control.

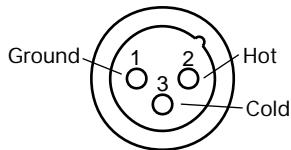
7. MONITOR OUT

These are unbalanced 1/4" phone jacks with a $+4\text{dB}$ nominal output level. They output the monitor signals, and can be connected to the inputs on a monitor amplifier. The monitor signal source is determined by the CUE/2TR IN switch and CUE modes. The output level is set using the MONITOR OUT LEVEL control.

8. AUX SEND

These are unbalanced 1/4" phone jacks with a $+4\text{dB}$ nominal output level. They output the SEND3 and SEND4 signals, and can be used to feed external effects processors, foldback amplifiers, or multitrack recording equipment.

SEND3 and SEND4 can be configured as a stereo pair. In this case, an additional pan control on each input channel and a balance control on the stereo input channel allows input signals to be panned between these outputs. See “SEND3-4 Stereo Pair” on page 46 for more details.



9. STEREO OUT

These are balanced XLR-3-32 type connectors with a +4dB nominal output level. They are wired pin 1–ground, pin 2–hot (+), and pin 3–cold (–). They output the main stereo signals and can be connected to power amplifiers in sound reinforcement applications.

Note: When the STEREO OUT XLRs are used with unbalanced connectors, their maximum output level is reduced by 6dB. This means that the STEREO OUT signal actually clips when the 12dB LED lights up, which is 8dB before the CLIP LED.

10. REC OUT

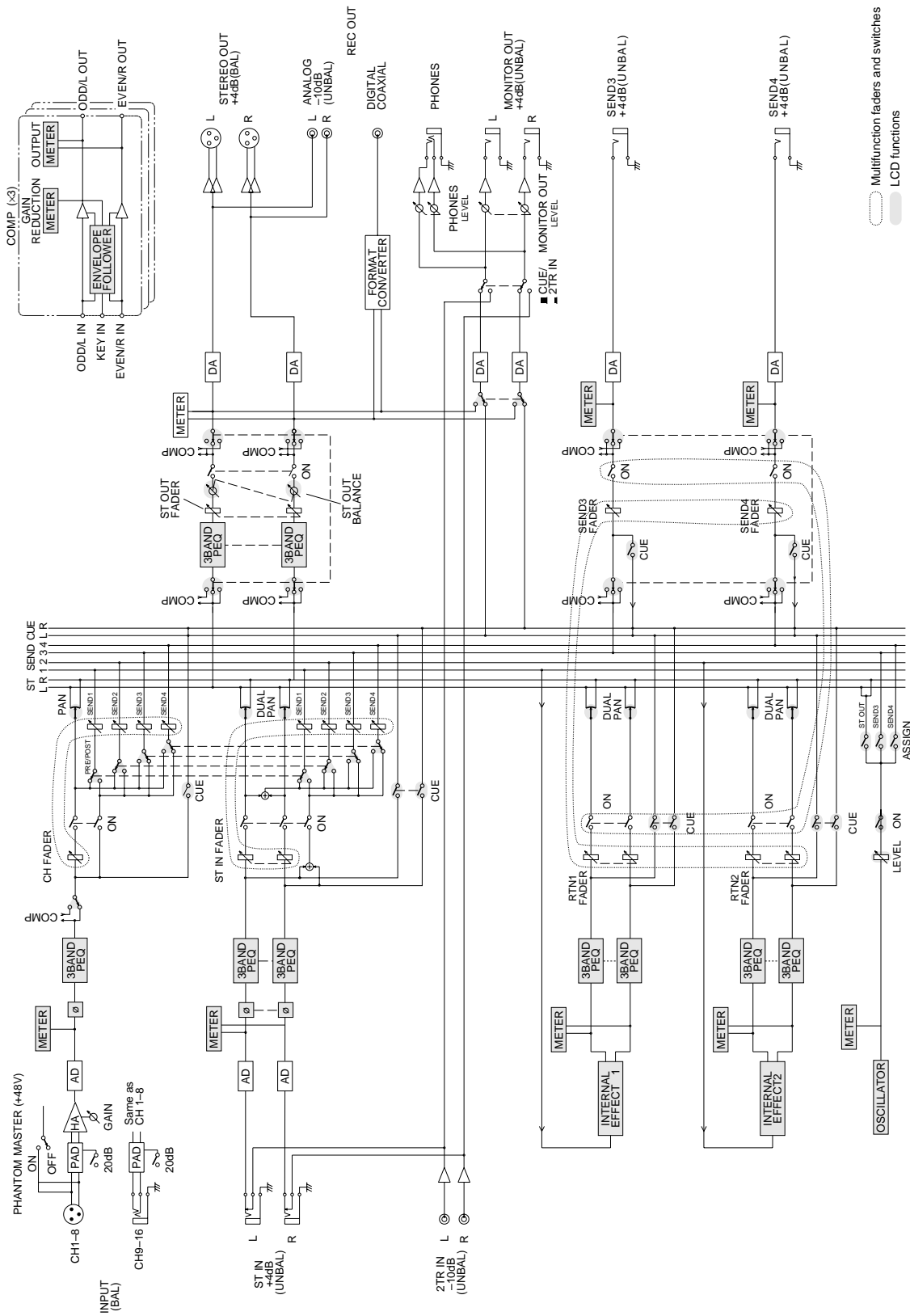
The ANALOG outputs are RCA/phono jacks with a –10dB nominal output level. They output the main stereo signals for recording, and can be connected to cassette and other analog recorders. They can also be used instead of the XLR STEREO OUTs to connect ProMix 01 to your home hi-fi system.

The DIGITAL COAXIAL output is an RCA/phono jack. It outputs the main stereo signals for recording, and can be connected to DAT, MD, and DCC digital recorders via a 75 ohm coaxial cable. The digital output format is IEC958 (Consumer).

11. MIDI

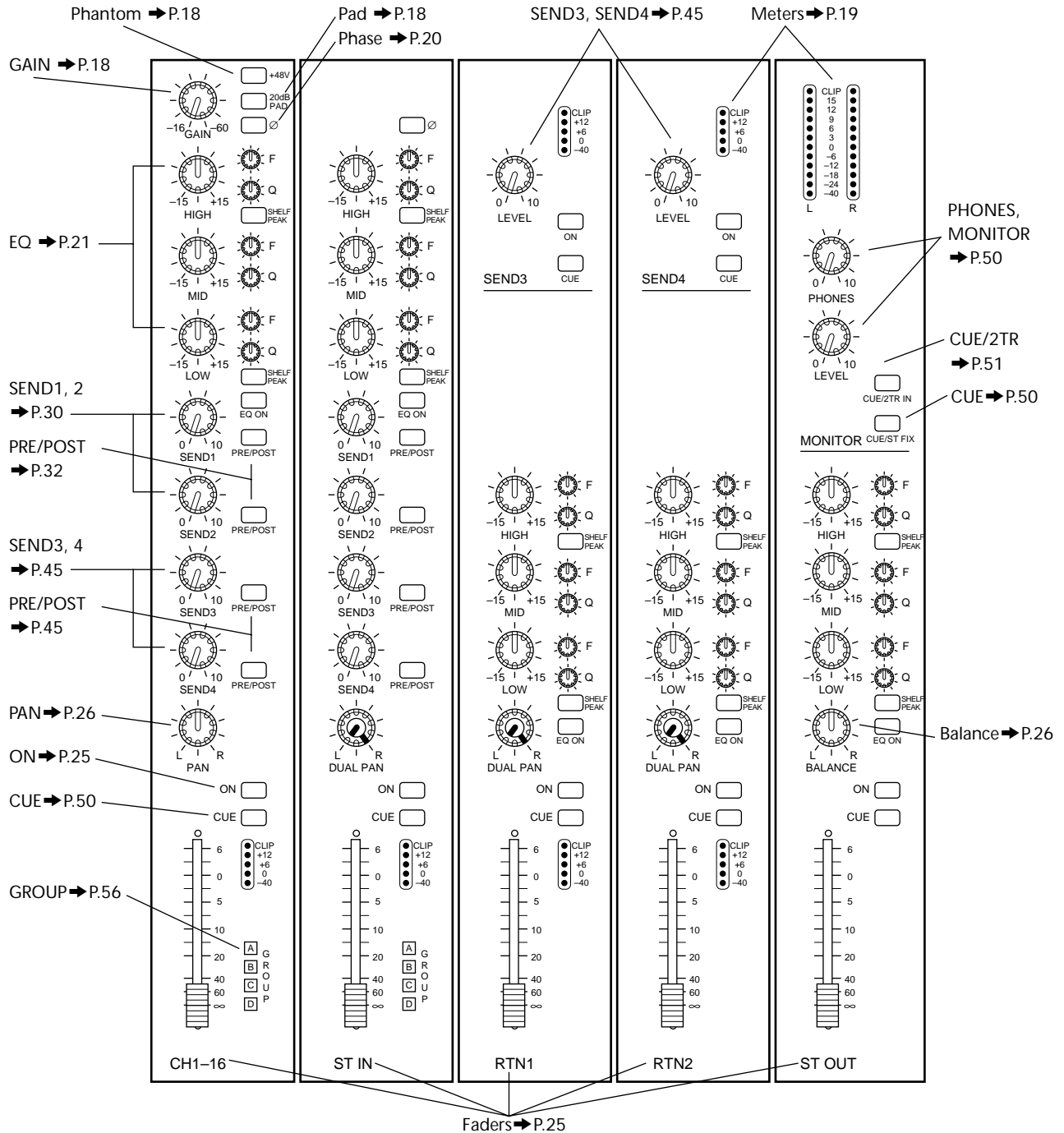
These are standard MIDI IN and OUT connections. They can be used to connect a controlling computer or MIDI sequencer for automated control. They can also be used for control of other ProMix 01s in a multiple system. See “MIDI” on page 79.

ProMix 01 Block Diagram



An Analog Mixer Analogy

If ProMix 01 had an analog mixer interface, it might look something like this. If you're familiar with analog mixers, you may find this illustration reassuring, and the cross references will certainly help you locate information quickly. Remember that ProMix 01 offers a lot more than what's shown below, i.e., scene memories, full MIDI control, two internal effects, three dynamics processors...



2

User Interface

In this chapter...

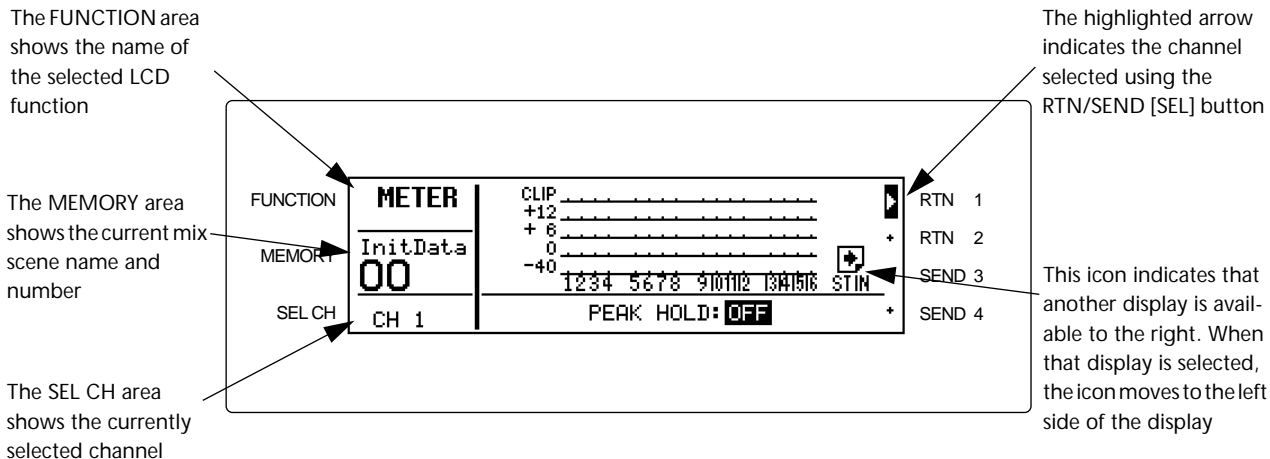
About the User Interface	12
LCD Display	12
Cursor Buttons	13
PARAMETER Wheel	13
ENTER Button	13
SEL Buttons	14
LCD Functions	15

About the User Interface

ProMix 01 user interface is straightforward and easy to use. It consists of a large backlit LCD display, four cursor buttons, a detented PARAMETER wheel, ENTER button, and the channel [SEL] buttons. Each of these are explained in detail in the following sections. Functions without dedicated controls are organized into LCD functions, which are selected using the function buttons to the left of the LCD.

LCD Display

The large backlit 240 x 64 dot graphic LCD display provides clear indication of mix settings and operating status. As well as showing parameter values numerically, faders and rotary controls are represented graphically, so you can actually see pan positions and fader positions. In addition, EQ curves are displayed graphically and signal levels are metered. The following illustration shows information that is always displayed and explains what it means.

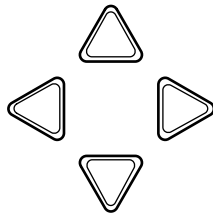


The following table shows what can appear in the FUNCTION, MEMORY, and SEL CH areas of the LCD.

LCD Area	Displayed
FUNCTION	UTILITY, MIDI, SCENE MEMORY, GROUP, PAIR, METER, PAN/Ø, COMP, CUE, SEND1, SEND2, SEND3, SEND4, SEND3-4, EQ, LIBRARY
MEMORY	Name and number of the current mix scene: 00 to 50
SEL CH	CH1-CH16, ST IN, RTN1, RTN2, SEND3, SEND4, SEND3-4, ST OUT

Cursor Buttons

The cursor buttons are used to select parameters and options on the LCD. The selected parameter or option appears highlighted.





Highlighted → **STORE** **RECALL** **EDIT**

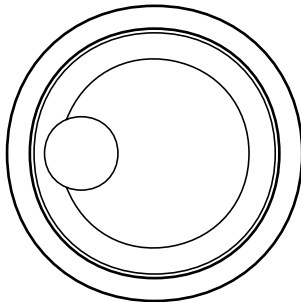
The [◀] and [▶] cursor buttons move the cursor left and right, and the [▲] and [▼] cursor buttons move the cursor up and down.

Cursor buttons are also used to position the cursor in a name when naming mix scenes, user effects programs, user EQ programs, and user dynamics programs. They are also used to select LCD functions listed on the UTILITY and MIDI LCD function menus.

When a display left or right icon appears at the left or right side of the display, indicating that another display is available, the [◀] and [▶] cursor buttons are used to select the display.

Display left-right icons. →  

PARAMETER Wheel



The PARAMETER wheel is used to adjust the parameter selected using the cursor buttons. Its detented action gives it a positive feel, allowing quick and accurate parameter adjustments. Turning it clockwise increases the selected parameter value, or turns the parameter ON. Turning it counterclockwise decreases the selected parameter value, or turns the parameter OFF. The faster you turn it, the faster the parameter value changes.

The PARAMETER wheel is also used to scroll through mix scenes, effects programs, EQ programs, and dynamics processor programs. When naming mix scenes, user effects programs, user EQ programs, and user dynamics programs, the PARAMETER wheel is used scroll through the available characters.

ENTER Button



The [ENTER] button is used to confirm settings made using the PARAMETER wheel and to toggle two-option parameters such as EQ ON/OFF and Effect ON/OFF. It is also used to access LCD functions listed on the UTILITY and MIDI LCD function menus.

SEL Buttons



The [SEL] buttons are used in conjunction with the LCD functions. To perform an action on a channel, first select it using a [SEL] button, then choose a function using the function buttons to the left of the LCD. This form of editing is similar to computer word processing. First, you select your text, then execute a function.

The input channel, stereo input channel, and stereo output [SEL] buttons select their respective channels. The RTN/SEND [SEL] button, on the other hand, is used to select RTN1, RTN2, SEND3, and SEND4. Pressing it repeatedly cycles through the options in the following order:

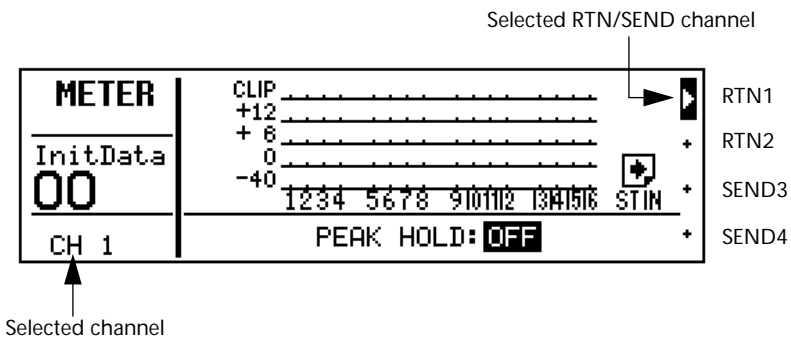
RTN1—>RTN2—>SEND3—>SEND4—>

When SEND3 and SEND4 are used as a stereo pair, SEND3 and SEND4 are selected together. The order then becomes:

RTN1—>RTN2—>SEND3-4—>

RTN1, RTN2, SEND3, and SEND4 are selected automatically when the corresponding [SEND] button is pressed. For example, pressing [SEND1] selects RTN1 and pressing [SEND3] selects SEND3.

When a channel is selected, its [SEL] button LED lights up and its name appears in the SEL CH area of the LCD. Stereo-pair channels are selected together. The channel currently selected by the RTN/SEND [SEL] button is indicated by the highlighted arrow head at the right side of the LCD.



LCD Functions

ProMix 01 functions without dedicated controls are organized into LCD functions. They are selected using the function buttons to the left of the LCD. The name of the selected LCD function appears in the FUNCTION area of the display.

The following table lists all LCD functions and explains what they do.

LCD Function	Description
UTILITY	Lists the utility functions: OSCILLATOR, SEND3, 4 CONFIGURATION, OUTPUT COMP PATCH POINT, MEMORY PROTECT, and BATTERY CHECK.
MIDI	Lists the MIDI functions: MIDI SETUP, PROGRAM CHANGE ASSIGN, CONTROL CHANGE ASSIGN, BULK DUMP/REQUEST, LOCAL ON/OFF, and MEMORY CONTROL CHANGE OUT.
SCENE MEMORY	Store and recall mix scenes.
GROUP	Set up the four fader groups.
PAIR	Set up channel pairs.
METER	Meter CH1–16, ST IN, RTN1, RTN2, SEND3, and SEND4 levels. There are two displays.
PAN/Ø	Set pan, balance, and phase. There are three displays.
COMP	Store, recall, and edit COMP1, COMP2, COMP3.
CUE	Set the CUE mode and display channel information.
SEND1	Store, recall, and edit effects programs for internal Effect 1.
SEND2	Store, recall, and edit effects programs for internal Effect 2.
SEND3	Set up SEND3.
SEND4	Set up SEND4.
SEND3-4	This LCD function appears instead of SEND3 and SEND4 in SEND3-4 stereo mode. There are two displays. The second display contains the channel-to-SEND3-4 pan controls.
EQ	Set the EQ.
LIBRARY	Store and recall EQ programs.

3

Mixer Functions

In this chapter...

Phantom Power	18
Pad	18
Gain	18
Metering	19
Phase	20
EQ	21
EQ Library	22
EQ Presets	23
Faders	25
ON Buttons	25
Pan and Balance	26
Stereo Output Balance	26
Stereo-Pair Pans	27
Stereo Width	27

Phantom Power

Phantom power provides a +48V DC power source for condenser type microphones. It is applied to XLR input channels 1 through 8. The PHANTOM MASTER switch on the rear panel is used to turn it ON and OFF. Phantom power is applied simultaneously to all eight inputs. It cannot be set for individual inputs.

With phantom power set to ON, non-phantom powered microphones, dynamic microphones, and balanced line-level sources can still be connected to inputs 1 through 8. However, be careful with unbalanced sources.



Pad

The Pad function attenuates input signals by 20dB. This is useful when inputting high level signals that overload the input preamp. By increasing the effective range of the GAIN control, high-level signals can be adjusted accurately. Pad can be set individually for the 16 input channels. The PAD switch at the top of each channel is used to turn it ON and OFF: switch up for OFF, down for ON.



Gain

The GAIN controls are used to optimize the input channel signal levels. Use them with the METER LCD function, which shows the input signal levels. Ideally the level should be set relatively high and it's OK for it to reach CLIP *occasionally*. If CLIP is reached often, however, back off the GAIN control a little, otherwise signal distortion may occur. The GAIN control should be set with some care, because if it is set too low, the S/N performance will suffer, and if it is set too high, unpleasant signal clipping and distortion may occur.

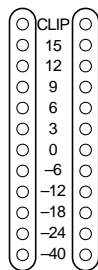
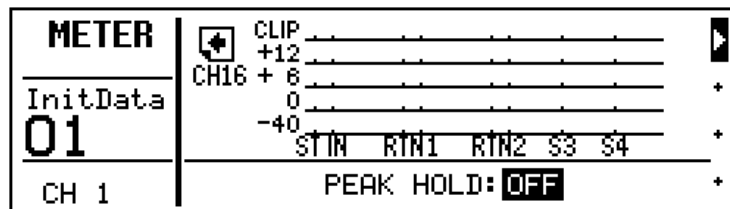
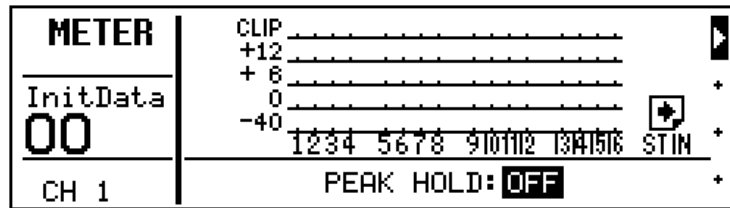


Metering

1. Press [METER].
The METER LCD function appears.
2. To turn the Peak Hold function ON and OFF, press [ENTER] or use the PARAMETER wheel.
3. Use the [◀] [▶] cursor buttons or press [ENTER] to switch between the two METER displays.

ProMix 01 features comprehensive signal level metering. Input channels, the stereo input channel, RTN1, RTN2, SEND3, and SEND4 are all metered using the METER LCD function. The stereo output is metered using the dedicated 12-segment LED meters. Peak hold is available for all meters.

The METER LCD function consists of two displays. One shows the 16 input channels. The other, the stereo input (ST IN), RTN1, RTN2, SEND3, and SEND4. Both displays are shown below.



L R

Stereo output meters

The Peak Hold function can be turned ON and OFF on either display. Peak hold levels are cancelled when Peak Hold is turned OFF or another LCD function is selected. The stereo output meter peak hold is not affected when other LCD functions are selected.

Note: It's OK for signal levels to reach CLIP occasionally. If CLIP is reached often, however, back off the GAIN control a little, otherwise signal distortion may occur.

The following table lists the meter signal source points.

Signal	Source Point
Input channel	Post GAIN and A/D converter—pre phase and EQ
Stereo input channel (ST IN)	Post GAIN and A/D converter—pre phase and EQ
Stereo output	Post fader and balance—pre D/A converter
RTN1, RTN2	Post internal effect—pre EQ and fader
SEND3, SEND4	Post fader—pre D/A converter

Note: When the STEREO OUT XLRs are used with unbalanced connectors, their maximum output level is reduced by 6dB. This means that the STEREO OUT signal actually clips when the 15dB LED lights up, which is 5dB before the CLIP LED.

When the stereo output meter's 0dB LED lights up, the DIGITAL REC OUT still has 20dB of headroom.

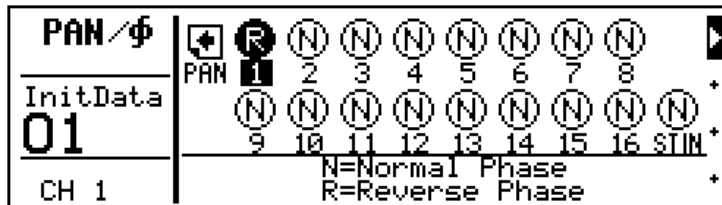
1. Select a channel using the [SEL] buttons.
2. Press [PAN/Ø].
The PHASE LCD function appears. If the PAN display appears, press [PAN/Ø] again.
3. To change the phase, press [ENTER] or use the PARAMETER wheel.

Other channels can be selected using the [SEL] buttons or cursor buttons.

Phase

The Phase function reverses the polarity of the hot and cold feeds in a balanced input (i.e. pins 2 and 3). The phase can be set for the input channels and stereo input channel. It can be used to compensate for incorrectly wired cables and connectors. It is also useful, for example, when a snare drum is miked top and bottom. In this case the bottom microphone signal needs to be phase reversed.

Shown below is the PHASE LCD function.

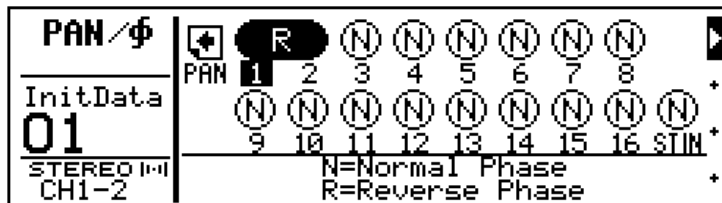


The parameters are:

N — normal phase.

R — reverse phase.

Stereo-pair channels are controlled together, as shown below.



EQ

1. Select a channel using the [SEL] buttons.
2. Press [EQ LOW], [MID], or [HIGH].

The EQ LCD function appears.

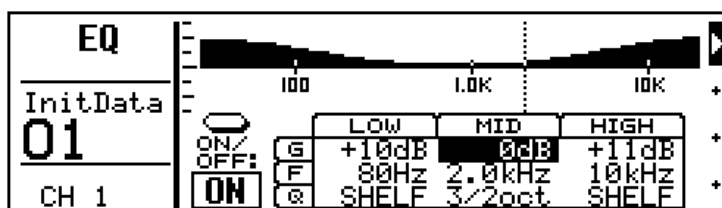
3. Press [EQ LOW], [MID], or [HIGH] repeatedly to select the parameters for each band.

You can also use the cursor buttons to select parameters.

4. To turn the EQ ON or OFF, press [ENTER] or select the ON/OFF parameter and use the PARAMETER wheel.

ProMix 01 EQ is three-band fully parametric, with variable Q, frequency, gain, and ON/OFF parameters. Initially the EQ is configured as a conventional three-band EQ, with shelving-type low and high and peaking-type mid. However, high and low can also be configured as peaking types. EQ can be applied to the inputs channels, stereo input channel, RTN1, RTN2, and stereo output. Stereo-pair input channels are controlled together.

Shown below is the EQ LCD function. The top-half shows the EQ response curve, the bottom-half, the EQ parameters. The vertical dotted line indicates the frequency of the selected band.



EQ parameters are:

	LOW	MID	HIGH	
Q	1/6, 1/4, 1/3, 1/2, 3/4, 1, 3/2, 2, 3 oct, SHELF	1/6, 1/4, 1/3, 1/2, 3/4, 1, 3/2, 2, 3 oct	1/6, 1/4, 1/3, 1/2, 3/4, 1, 3/2, 2, 3 oct, SHELF	9 steps
F	32 Hz-1 kHz	32 Hz-18 kHz	1 kHz-18 kHz	1/6 octave steps
G	±15 dB	±15 dB	±15 dB	1 dB steps

Q is stated in musically intuitive octave values. The following table compares octave values with conventional decimal Q values.

Octave	Q
1/6	8.65
1/4	5.76
1/3	4.32
1/2	2.87
3/4	1.90
1	1.41
3/2	0.92
2	0.67
3	0.40

Recalling EQ Programs

1. Select a channel using the [SEL] buttons.
2. Press [LIBRARY].

The LIBRARY LCD function appears.

3. Use the PARAMETER wheel to select an EQ program.
4. Press [ENTER] to recall.

The EQ program is recalled.

Storing EQ Programs

1. Select STORE.
2. Use the PARAMETER wheel to select an EQ program.
3. Press [ENTER].

The LIBRARY NAME LCD function appears.

4. Use the [◀] [▶] cursor buttons and PARAMETER wheel to name the program.

If you want to cancel the store operation, select CANCEL and press [ENTER].

5. Press [ENTER] to store.

The EQ program is stored.

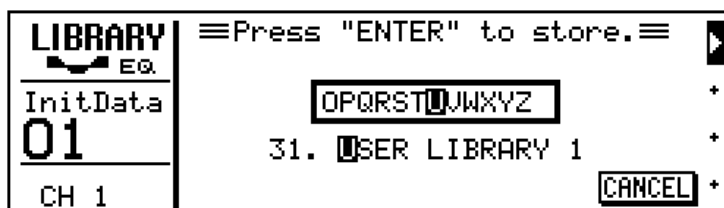
EQ Library

The EQ library is used to store EQ settings. Settings are stored as EQ programs, and there are 30 preset programs (1–30) and 20 user programs (31–50) for you to store your own EQ settings. When STORE is selected on the LIBRARY LCD function, user program 31, the first user program, is selected automatically. You cannot select preset programs 1 through 30 while the STORE option is selected. User EQ programs can be named for easy identification.

Shown below is the LIBRARY LCD function. The response curve of the selected EQ program is shown to the right. Library programs are listed in the center and the name of the EQ program last recalled or stored is highlighted. Also there is an equal symbol (=) between the program's name and number, not a period like the other programs. The PARAMETER wheel is used to scroll through the program list. When another program is selected, its name flashes. If it is recalled, it stops flashing, appears highlighted, and the period between its name and number changes to an equal symbol (=).



Shown below is the MEMORY NAME LCD function. The selected character in the name is highlighted. Available characters scroll through the box in the center. Use the cursor buttons to position the cursor in the name and the PARAMETER wheel to scroll through the characters.



EQ program names can be up to 15 characters long and the following characters are available.

```

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
(<)>[]{}<>#%&'()*+,-*/\=_|,.;:!"'`^~
0123456789

```

Spaces are available between the above character rows.

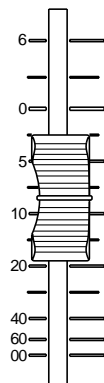
! The preset EQ programs provide a good starting point and reference for making adjustments.

EQ Presets

Program #	Program Name	Description		Parameter		
				Low	Mid	High
1	RESET	Reset the EQ (G = 0dB, F and Q = their initial values...same as mix scene 00).	G	0dB	0dB	0dB
			F	80Hz	2.0kHz	10kHz
			Q	SHELF	3/2oct	SHELF
2	LOUDNESS	Same as loudness function on a hi-fi amp. Improves listening at low volume levels.	G	+5dB	+3dB	0dB
			F	80Hz	200Hz	10kHz
			Q	SHELF	2oct	SHELF
3	EQ DISCO	Low and high boost for disco and dance.	G	+5dB	-4dB	+4dB
			F	90Hz	700Hz	12kHz
			Q	3oct	1/6oct	3oct
4	EQ POPS	Mid and high range emphasis for pop music.	G	0dB	+2dB	+2dB
			F	100Hz	2.8kHz	10kHz
			Q	SHELF	3oct	3oct
5	EQ ROCK	Low and high range emphasis for rock music.	G	+4dB	+2dB	+4dB
			F	80Hz	2.5kHz	12kHz
			Q	1oct	1oct	SHELF
6	EQ LIVE	Low, Mid, and high emphasis for a live sound.	G	+3dB	+1dB	+2dB
			F	125Hz	700Hz	12kHz
			Q	SHELF	2oct	SHELF
7	TIGHT DRUMS	Tight EQ for pop music drums.	G	+5dB	-5dB	+4dB
			F	80Hz	400Hz	2.5kHz
			Q	3/4oct	1/3oct	3/2oct
8	LOUD DRUMS	Loud EQ for rock drums.	G	+5dB	+2dB	+1dB
			F	110Hz	2.0kHz	12kHz
			Q	SHELF	3/2oct	3oct
9	KICK DRUM	Kick drum EQ that emphasizes beater attack and drum shell echo.	G	+8dB	-7dB	+5dB
			F	80Hz	400Hz	2.5kHz
			Q	3/4oct	1/6oct	1/3oct
10	SNARE 1	Tight and clean snare.	G	+2dB	+1dB	+3dB
			F	200Hz	1.4kHz	5.6kHz
			Q	SHELF	3/2oct	3oct
11	SNARE 2	Big snare sound.	G	+5dB	-6dB	+5dB
			F	200Hz	700Hz	3.2kHz
			Q	3/4oct	1/6oct	3oct
12	CYMBALS	Cymbal EQ that emphasizes stick hit and bell ride.	G	+2dB	0dB	+4dB
			F	200Hz	2.0kHz	12kHz
			Q	SHELF	3/2oct	SHELF
13	HI-HATS	Tight EQ for hi-hats.	G	-3dB	-2dB	+3dB
			F	80Hz	250Hz	8.0kHz
			Q	SHELF	1/6oct	SHELF
14	TOMS	Tom-tom EQ that emphasizes echo and attack.	G	+4dB	-1dB	+3dB
			F	200Hz	900Hz	4.0kHz
			Q	SHELF	3/2oct	3oct
15	E.BASS	Electric bass EQ for a clear bottom end and a greater sense of pitch.	G	+5dB	-1dB	+4dB
			F	90Hz	450Hz	2.5kHz
			Q	1oct	1/4oct	1oct

Program #	Program Name	Description		Parameter		
				Low	Mid	High
16	WOOD BASS	Wooden bass EQ with low range emphasis.	G	+2dB	+1dB	+2dB
			F	80Hz	315Hz	2.2kHz
			Q	3oct	3/2oct	SHELF
17	ACOUSTIC GUITAR	Acoustic guitar EQ with high range emphasis.	G	+2dB	+3dB	+4dB
			F	180hz	4.0kHz	7.0kHz
			Q	2oct	2oct	SHELF
18	TRUMPET	EQ for sustaining trumpet.	G	+1dB	+1dB	+4dB
			F	360Hz	1.4kHz	5.6kHz
			Q	3oct	1oct	2oct
19	SAXOPHONE	EQ for sustaining saxophone.	G	+3dB	+1dB	+3dB
			F	315Hz	900Hz	3.6kHz
			Q	2oct	1/4oct	SHELF
20	PIANO	EQ for a natural piano sound.	G	+2dB	+1dB	+1dB
			F	140Hz	2.0kHz	5.0kHz
			Q	SHELF	2oct	3oct
21	MALE VOCAL	Male vocal EQ with low and mid range emphasis.	G	+3dB	+1dB	+2dB
			F	280Hz	1.8kHz	5.0kHz
			Q	3oct	3/4oct	SHELF
22	FEMALE VOCAL	Female vocal EQ with mid and high emphasis.	G	-1dB	+1dB	+2dB
			F	220Hz	2.0kHz	7.0kHz
			Q	SHELF	3oct	3oct
23	CHORUS	EQ for male, female, or mixed chorus.	G	+1dB	+2dB	+5dB
			F	280Hz	1.4kHz	5.6kHz
			Q	3oct	3/2oct	SHELF
24	MALE ANNOUNCER	Male announcer EQ providing clarity.	G	-3dB	+2dB	-4dB
			F	100Hz	4.5kHz	7.0kHz
			Q	1oct	3oct	SHELF
25	FEMALE ANNOUNCER	Female announcer EQ with mid range emphasis.	G	-3dB	+3dB	-1dB
			F	200Hz	2.0kHz	8.0kHz
			Q	SHELF	1oct	SHELF
26	TELEPHONE VOICE	Telephone voice EQ. Low and high range cut.	G	-15dB	+12dB	-10dB
			F	500Hz	1.1kHz	9.0kHz
			Q	SHELF	2oct	3/4oct
27	NOTCH 4kHz	Notch filter tuned to 4kHz for reducing acoustic feedback.	G	0dB	0dB	-10dB
			F	80Hz	2.0kHz	4.0kHz
			Q	SHELF	3/2oct	1/6oct
28	HUM REDUCE 50Hz	Notch filters for 50Hz mains-born hum reduction.	G	-9dB	-10dB	0dB
			F	50Hz	160Hz	10kHz
			Q	1/6oct	1/6oct	SHELF
29	HUM REDUCE 60Hz	Notch filters for 60Hz mains-born hum reduction.	G	-9dB	-10dB	0dB
			F	60Hz	180Hz	10kHz
			Q	1/6oct	1/6oct	SHELF
30	W. NOISE REDUCE	High range cut for reducing analog tape noise.	G	0dB	0dB	-13dB
			F	80Hz	2.0kHz	16kHz
			Q	SHELF	3/2oct	SHELF

Faders



ProMix 01 faders are motorized, which means that they can position themselves automatically. So all faders in a group or stereo pair move automatically when you move any fader in that group or stereo pair. Fader positions are stored in mix scenes, so when a mix scene is recalled the faders move automatically to their new positions. Fader positions are stored when ProMix 01 is powered OFF. So even if faders have been moved, they return automatically to their previous positions when ProMix 01 is powered ON again.

The faders are multifunction controls, which means they are used to control more than one signal. The signal controlled by a fader at any given time depends on the selected LCD function. The following table shows how it works. Essentially, faders work as conventional mixer faders unless the SEND1, SEND2, SEND3, or SEND4 LCD function is selected. In this case, they work as channel-to-send level controls. The current LCD function is shown in the FUNCTION area on the display. When a SEND LCD function is selected, a flashing fader icon appears. When there's no flashing fader icon, you know the faders are working as channel-to-mix level controls.

	All LCD functions except—>	SEND1	SEND2	SEND3	SEND4
Channel 1 fader }	Channel 1—Fader }	Channel 1—SEND1 }	Channel 1—SEND2 }	Channel 1—SEND3 }	Channel 1—SEND4 }
Channel 16 fader	Channel 16—Fader	Channel 16—SEND1	Channel 16—SEND2	Channel 16—SEND3	Channel 16—SEND4
ST IN fader	ST IN—Fader	ST IN—SEND1	ST IN—SEND2	ST IN—SEND3	ST IN—SEND4
RTN/SEND fader	Selected RTN/SEND channel	RTN1 (Internal Effect1 return)	RTN2 (Internal Effect2 return)	SEND3 (master send level)	SEND4 (master send level)
ST OUT fader	Stereo Output (main stereo outputs)				

Note: Fader travel is divided into 128 steps. If a fader is on the border between steps, it may, in rare circumstances, move one step on its own. Probably due to a temperature change. In this case, the EDIT indicator appears and the corresponding Control Change message is output.

ON Buttons

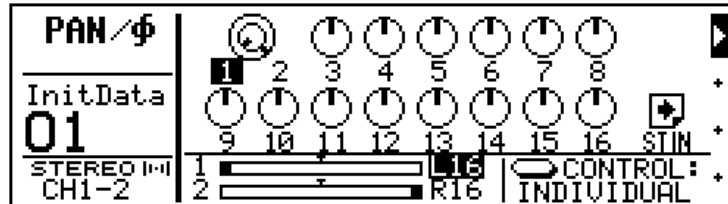


The [ON] buttons are used to turn channels ON and OFF. The input channel, stereo input channel, and stereo output [ON] buttons turn their respective channels ON and OFF. The RTN/SEND [ON] button, on the other hand, is used to turn RTN1, RTN2, SEND3, and SEND4 ON and OFF. Therefore, you must use the RTN/SEND [SEL] button to select the channel that you want to turn ON and OFF beforehand.

When a channel is turned ON, its [ON] button LED lights up. When it's turned off, the LED goes off. Stereo-pair channels are turned ON and OFF together.

Stereo-Pair Pans

When input channels are paired, their pan controls appear as one dual-concentric control (i.e. one control inside the other), as shown below. Horizontal bars, at the bottom of the display, show the pan positions and values of the selected channel pair. When channels are paired using ST RESET, the odd channel is automatically panned hard-left and the even channel, hard-right. See “Pairing Channels” on page 58.



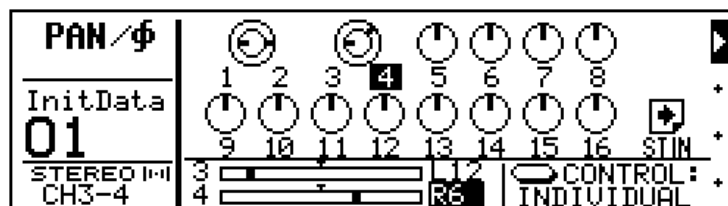
GANG and INDIVIDUAL modes provide simultaneous and individual pan adjustment, respectively. The current mode is shown at the bottom right of the display and can be set by pressing [ENTER]. It can also be set by selecting the GANG or INDIVIDUAL parameter with the cursor buttons and then using the PARAMETER wheel.

Stereo Width

In INDIVIDUAL mode, the width of a stereo signal can be set. When the pan controls are set hard-left and hard-right, the stereo width is 100%. With both pans set to center the stereo width is 0%. Setting the controls to a position in between allows you to set the stereo width from 0% to 100%. To maintain a central balance, however, you must set both controls to the same left and right values. For example, L5–R5, or L10–R10.

Switching back to GANG mode allows you to reposition the stereo signal within the stereo field. Note that this is not stereo balance, which is the individual adjustment of the left and right signal levels.

The following display shows paired input channels 1 and 2 with a reduced stereo width. Input channels 3 and 4 also have a reduced stereo width and have been repositioned in the stereo field using GANG mode.



4

Auxiliaries and Effects

In this chapter...

About Auxiliaries	30
About Effects	30
Preset Effects Programs	30
Stereo Input Channel and Sends	31
Applying Effects	31
Sending a Channel Signal	32
SEND1 and SEND2 Pre or Post	32
Returning the Processed Signal	33
Recalling Effects Programs	34
Editing Effects Programs	35
Storing Effects Programs	36
Preset Effects Program Parameters	37
SEND3 and SEND4	45
SEND3 and SEND4 Pre or Post	45
SEND3-4 Stereo Pair	46
SEND3-4 Channel Pans & Balance	47
SEND3-4 Output Balance	47
SEND3-4 Block Diagram	48

About Auxiliaries

ProMix 01 has four auxiliary sends: SEND1, SEND2, SEND3, and SEND4. And two auxiliary returns: RTN1 and RTN2. Auxiliary sends can be configured pre-fader or post-fader. SEND1 and SEND2 are used to feed the internal effects processors: Effect1 and Effect2. RTN1 and RTN2 are used to return the processed signals.

SEND3 and SEND4 can be used to feed external effects processors, foldback amplifiers, or multitrack recording equipment. When SEND3 or SEND4 is used to feed an external effects processor, the processed signal can be returned via the stereo input channel or an unused input channel. SEND3 and SEND4 can also be used as a stereo pair. See “SEND3-4 Stereo Pair” on page 46 for more details.

About Effects

ProMix 01 features two stereo internal multi-effects processors: Effect1 and Effect2. These are fed by SEND1 and SEND2, and the processed signals are returned via RTN1 and RTN2, respectively. Effects can be applied to input channels and the stereo input channel. Effects are organized into programs. There are 30 preset effects programs (1–30) and 10 user effects programs (31–40) for you to store your own settings.

Preset Effects Programs

These are the preset effects programs.

1	Reverb Hall 1	16	Chorus->Delay L-C-R
2	Reverb Hall 2	17	Delay->Chorus
3	Reverb Room 1	18	Karaoke Echo 1
4	Reverb Room 2	19	Karaoke Echo 2
5	Reverb Stage	20	Stereo Pitch Change
6	Reverb Plate	21	Vocal Doubler
7	Rev Ambience 1	22	Funny Pitch
8	Rev Ambience 2	23	Chorus
9	Rev Live Room 1	24	Broad Chorus
10	Rev Live Room 2	25	Symphonic
11	Reverb Vocal	26	Flange
12	Chorus->Reverb	27	Super Flange
13	Flange->Reverb	28	Phasing
14	Delay L-C-R	29	Tremolo
15	Mono Delay->Chorus	30	Auto Pan

See “Preset Effects Program Parameters” on page 37 for a detailed listing of the preset effects program parameters.

Stereo Input Channel and Sends

Input channels 1 through 16 handle only a single signal. The stereo input channel, however, handles two signals: left and right. So before feeding the stereo input signal to the SEND1, SEND2, SEND3, and SEND4 send level controls, the left and right signals are summed to form a mono L+R mix.

When SEND3 and SEND4 are used as a stereo pair, however, only the stereo input signals feeding SEND1 and SEND2 are summed. For SEND3-4, the left signal is fed to SEND3 and the right signal is fed to SEND4. The stereo input-to-SEND3-4 left and right signals can be balanced using the ST IN balance control on the SEND3-4 pan display. See “SEND3-4 Stereo Pair” on page 46 for more details about the SEND3-4 stereo pair.

Applying Effects

There are three steps to applying effects:

1. Send a channel signal via SEND1 or SEND2 (set the level).
2. Return the processed signal via RTN1 or RTN2 (EQ, level, pan).
3. Set up Effect1 or Effect2 (recall, edit, and store).

These steps are explained fully in the following sections.

1. Press [SEND1] or [SEND2].

The SEND1 or SEND2 LCD function appears. If you didn't exit after your last effect edit, the EFFECTEDITLCD function appears instead.

The channel faders are now controlling channel-to-send levels and the RTN/SEND fader, the corresponding return (RTN1 or RTN2).

2. Raise the channel fader.

0dB is a good fader position to start with. You can always readjust later.

For post-fader sends you must set the normal fader too.

The LCD meters display the stereo effects return levels.

3. Raise the RTN/SEND fader.

The processed signal is fed back into the stereo mix.

Effects returns can be EQ'd and panned. See "Returning the Processed Signal" on page 33.

Sending a Channel Signal

Sending a channel signal via SEND1 or SEND2 is the first step to using effects. There are no master send level controls, so you only need to set the channel send levels.

Shown below is the SEND1 LCD function. The SEND2 LCD function is essentially the same. Level meters for the stereo effects return signals are on the right. Meter signals are sourced after the effects. Ideally the level should be set relatively high and it's OK to reach CLIP occasionally. If CLIP is reached often, however, reduce the send level a little, otherwise signal distortion may occur.



SEND1 and SEND2 Pre or Post

SEND1 and SEND2 can be configured as pre-fader or post-fader, and the current setting is shown at the bottom right of the display. This setting affects all channels, so if SEND1 is set to PRE, all channel SEND1s are pre-fader. Initially, SEND1 and SEND2 are configured as post-fader, the usual setting for effects sends.

This setting can be changed by selecting the SEND: parameter and pressing [ENTER] to toggle between POST and PRE.

POST — the send signal is sourced after the channel fader. This means that the send signal is also affected by the normal channel fader. So you must have that fader raised as well. The idea being that the channel-to-mix and channel-to-effects signal levels can be controlled together. With the former supplying the dry, unaffected signal and the latter supplying the wet, affected signal. This is useful when, for example, you fade-out a channel, since the channel-to-mix and channel-to-effects signals are reduced together.

PRE — the send signal is sourced before the channel fader. This means that the send signal is unaffected by the normal channel fader and its level can be set independently.

Returning the Processed Signal

Returning the processed signal via RTN1 or RTN2 is the second step to using effects. As explained in the “Sending a Channel Signal” procedure on page 32, the processed signal can be returned into the mix just by raising the RTN/SEND fader. However, RTN1 and RTN2 also feature the following functions.

Meters — See “Sending a Channel Signal” on page 32.

Faders — these are used to set the level of processed signal that is fed into the mix. When the SEND1 LCD function is selected, the RTN/SEND fader is automatically set to RTN1. Likewise, when the SEND2 LCD function is selected, it is automatically set to RTN2. The RTN/SEND [SEL] button can also be used to select RTN1 and RTN2.

EQ — RTN1 and RTN2 feature the same three-band parametric EQ as that of the input channels. The EQ Library can also be used. See “EQ” on page 21 and “EQ Library” on page 22.

CUE — RTN1 and RTN2 signals can be monitored in stereo (pre-ON/OFF switch) using CUE. See “CUE” on page 49 for more details.

ON/OFF — RTN1 and RTN2 signals can be turned ON and OFF using the RTN/SEND [ON] button. When the SEND1 LCD function is selected, the RTN/SEND [ON] button is automatically set to RTN1. Likewise, when the SEND2 LCD function is selected, it is automatically set to RTN2. The RTN/SEND [SEL] button can also be used to select RTN1 and RTN2. See “ON Buttons” on page 25 for more details.

Pan — RTN1 and RTN2 pan controls appear on the PAN LCD function. See “Pan and Balance” on page 26 for more details.

1. Press [SEND1] or [SEND2].
The SEND1 or SEND2 LCD function appears. If you didn't exit after your last effect edit, the EFFECTEDIT LCD function appears instead.
2. Select RECALL.
3. Use the PARAMETER wheel to select a program.
4. Press [ENTER] to recall.
The effects program is recalled.

Recalling Effects Programs

There are 30 preset effects programs (1–30) and 10 user effects programs (31–40).

Shown below is the SEND1 LCD function. The SEND2 LCD function is essentially the same. The flashing fader icon in the FUNCTION area of the display indicates that the faders are now controlling channel-to-send levels. Effects programs are listed in the center and the name of the current effects program is highlighted. Also there is an equal symbol (=) between the program's name and number, not a period like the other programs. The PARAMETER wheel is used to scroll through the program list. When another program is selected, its name flashes. If it is recalled, it stops flashing, appears highlighted, and the period between its name and number changes to an equal symbol (=).



! Remember that when a SEND button is pressed the faders control channel-to-send levels. To return the faders to normal operation, select an LCD function other than a SEND.

Effects and Mix Scenes

Effects settings are stored in mix scenes, so you can instantly change effects just by recalling a mix scene. If you are using a controlling computer or MIDI sequencer, you can also record effects setting adjustments as MIDI Control Change messages. Your effects adjustments can then be replayed automatically. See “Control Change” on page 83 for more details. Note that mix scenes store only the current program names, numbers, and parameter settings for Effect1 and Effect2. They do not store the entire effects library of 40 programs.

Editing Effects Programs

1. Press [SEND1] or [SEND2].

The *SEND1* or *SEND2* LCD function appears. If you didn't exit after your last effect edit, the *EFFECT EDIT LCD* function appears instead.

2. Select EDIT.

3. Press [ENTER].

The *EFFECT EDIT LCD* function appears.

4. Use the [▲] [▼] cursor buttons to select parameters and the PARAMETER wheel to set them.

You can go to another LCD function and return to the *EFFECT EDIT LCD* function at any time.

5. When you've finished editing, select EXIT and press [ENTER], or simply press [ENTER] twice.

To name and store the program, see "Storing Effects Programs" on page 36.

You can edit all effects programs, however, you can store only to user effects locations. So if you edit a preset program, you must store it as a user program.

A typical Edit display is shown below. The name and number of the effects program are shown at the top, and the effects parameters are shown in the center. The cursor buttons are used to scroll through the parameters and the PARAMETER wheel is used to set them.

SEND1	1. REVERB HALL 1	CLIP	_____
		+12	_____
		+6	_____
		0	_____
		-40	_____
		RTN1	L R
InitData	[1]Rev. Time= 2.8s		
01	[2]High Ratio= 0.8		
	[3]Diffusion= 6		
CH 1	(FADER = SEND1)	EXIT	+

See "Preset Effects Program Parameters" on page 37 for a detailed listing of effects parameters, their ranges, and preset settings.

Storing Effects Programs

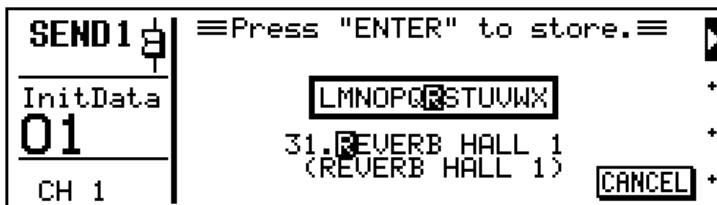
- Press [SEND1] or [SEND2].
The SEND1 or SEND2 LCD function appears. If you didn't exit after your last effect edit, the EFFECTEDIT LCD function appears instead.
- Select STORE and press [ENTER].
The PROGRAM NAME display appears.
- Use the [◀] [▶] cursor buttons and PARAMETER wheel to name the effects program.
If you want to cancel the store operation, select CANCEL and press [ENTER].
- Press [STORE] to store.
The effects program is stored.

There are 10 user effects programs (31–40) for you to store your own effects settings. When STORE is selected on the SEND LCD function, user program 31, the first user location, is selected automatically. You cannot select preset programs 1 through 30 while the STORE option is selected. User programs can be named for easy identification.

Shown below is the SEND1 LCD function. The SEND2 LCD function is essentially the same. Effects programs are listed in the center and the name of the effects program last recalled or stored is highlighted. Also there is an equal symbol (=) between the program's name and number, not a period like the other programs. The PARAMETER wheel is used to scroll through the program list. When another program is selected, its name flashes. If it is stored, it stops flashing, appears highlighted, and the period between its name and number changes to an equal symbol (=).



Shown below is the PROGRAM NAME LCD function that appears when [ENTER] is pressed in step 2. The type of effects used in the program is shown in parenthesis. The program name and number are shown above that. The selected character in the name is highlighted. Available characters scroll through the box in the center. Use the cursor buttons to position the cursor in the name, and the PARAMETER wheel to scroll through the characters.



! By recalling a program and storing it to another user location, you can copy and reorganize your effects programs.

Effects program names can be up to 15 characters long and the following characters are available.

```

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
()[]{}<>#%&@!/?+-*\/\=_|.,:;'"^_`
0123456789

```

Spaces are available between the above character rows.

Preset Effects Program Parameters

Program 1—REVERB HALL 1

Simulates the reverb of a large concert hall.

Parameter	Setting	Range	Description
Rev.time	2.8s	0.3–30.0s	Reverb time.
High Ratio	0.8	0.1–1.0	High frequency decay ratio.
Diffusion	6	0–10	Reverb diffusion.
Ini.Dly	40.0ms	0.1–200.0ms	Initial delay between the direct sound and early reverb reflections.
LPF	7.0kHz	1.0kHz–16.0kHz, THRU	Low pass filter cutoff frequency.
HPF	THRU	THRU, 32Hz–8kHz	High pass filter cutoff frequency.

Program 2—REVERB HALL 2

This is a variation of program 1.

Parameter	Setting	Range	Description
Rev.time	3.2s	Same as program 1	Same as program 1
High Ratio	0.7		
Diffusion	8		
Ini.Dly	38.0ms		
LPF	6.3kHz		
HPF	THRU		

Program 3—REVERB ROOM 1

Simulates the reverb of a concrete-walled room that produces a lot of echo. Use it to add a live atmosphere to drum sounds.

Parameter	Setting	Range	Description
Rev.time	1.4s	Same as program 1	Same as program 1
High Ratio	0.8		
Diffusion	7		
Ini.Dly	5.0ms		
LPF	THRU		
HPF	280Hz		

Program 4—REVERB ROOM 2

This is a variation of program 3.

Parameter	Setting	Range	Description
Rev.time	1.8s	Same as program 1	Same as program 1
High Ratio	0.6		
Diffusion	6		
Ini.Dly	17.0ms		
LPF	9.0kHz		
HPF	80Hz		

Program 5—REVERB STAGE

Similar to REVERB HALL, but brighter. You can create a live atmosphere by applying a little of this effect to the mix.

Parameter	Setting	Range	Description
Rev.time	3.4s	Same as program 1	Same as program 1
High Ratio	0.9		
Diffusion	8		
Ini.Dly	45.0ms		
LPF	THRU		
HPF	70Hz		

Program 6—REVERB PLATE

Simulates the reverb effect of a steel plate reverb system. Good with most sounds, especially vocals, drums, and percussion.

Parameter	Setting	Range	Description
Rev.time	2.4s	Same as program 1	Same as program 1
High Ratio	0.7		
Diffusion	8		
Ini.Dly	16.0ms		
LPF	8.0kHz		
HPF	THRU		

Program 7—REV AMBIENCE 1

Simulates the close ambient reverb of an instrument. Good with vocals, chorus, and percussion.

Parameter	Setting	Range	Description
Rev.time	1.2s	Same as program 1	Same as program 1
High Ratio	1.0		
Diffusion	8		
Ini.Dly	19.0ms		
LPF	9.0kHz		
HPF	45Hz		

Program 8—REV AMBIENCE 2

A variation of program 7.

Parameter	Setting	Range	Description
Rev.time	0.8s	Same as program 1	Same as program 1
High Ratio	0.6		
Diffusion	8		
Ini.Dly	0.1ms		
LPF	THRU		
HPF	56Hz		

Program 9—REV LIVE ROOM 1

Simulates the reverb of a live room. Reverb reflections are stronger than those of REVERB ROOM.

Parameter	Setting	Range	Description
Rev.time	2.4s	Same as program 1	Same as program 1
High Ratio	0.8		
Diffusion	7		
Ini.Dly	0.1ms		
LPF	7.0kHz		
HPF	THRU		

Program 10—REV LIVE ROOM 2

A variation of program 9.

Parameter	Setting	Range	Description
Rev.time	2.2s	Same as program 1	Same as program 1
High Ratio	0.5		
Diffusion	6		
Ini.Dly	12.0ms		
LPF	4.0kHz		
HPF	THRU		

Program 11—REVERB VOCAL

A reverb simulation ideal for vocals and chorus.

Parameter	Setting	Range	Description
Rev.time	1.9s	Same as program 1	Same as program 1
High Ratio	0.5		
Diffusion	6		
Ini.Dly	16.0ms		
LPF	12.0kHz		
HPF	100Hz		

Program 12—CHORUS->REVERB

Stereo chorus followed by reverb.

Parameter	Setting	Range	Description
Mod.Freq	0.8Hz	0.1–20.0Hz	Modulation speed.
Mod.Depth	40%	0–100%	Modulation depth. The amount of modulation.
Mod.Dly	1.3ms	0.0–24.0ms	Modulation delay. The delay time before modulation starts.
Rev.time	2.4s	0.3–30.0s	Reverb time.
High Ratio	0.7	0.1–1.0	High-frequency decay ratio.
Diffusion	7	0–10	Reverb diffusion.
Ini.Dly	30.0ms	0.1–139.0ms	Initial delay between the direct sound and early reverb reflections.
LPF	6.3kHz	1.0kHz–16.0kHz, THRU	Low pass filter cutoff frequency.
HPF	THRU	THRU, 32Hz–8kHz	High pass filter cutoff frequency.
Rev.Depth	24%	0–100%	Reverb depth. The amount of reverb.

Program 13—FLANGE->REVERB

Stereo flange followed by reverb.

Parameter	Setting	Range	Description
Mod.Freq	1.4Hz	0.1–20.0Hz	Flange modulation speed.
Mod.Depth	22%	0–100%	Flange modulation depth. The amount of modulation.
FB.Gain	+45%	–99...+99%	Feedback gain. The amount of processed signal fed back into the flanger.
Mod.Dly	13.0ms	0.0–15.5ms	Flange modulation delay. The delay time before modulation starts.
Rev.time	2.4s	0.3–30.0s	Reverb time.
Diffusion	8	0–10	Reverb diffusion.
Ini.Dly	26.0ms	0.1–160.0ms	Reverb initial delay between the direct sound and early reverb reflections.
LPF	4.5kHz	1.0kHz–16.0kHz, THRU	Reverb low pass filter cutoff frequency.
HPF	45Hz	THRU, 32Hz–8kHz	Reverb high pass filter cutoff frequency.
Rev.Depth	30%	0–100%	Reverb depth. The amount of reverb.

Program 14—DELAY L-C-R

A three-part delay with independent delay time parameters for left, right, and center.

Parameter	Setting	Range	Description
Dly(L)	250.0ms	0.1–661.0ms	Left channel delay time.
Dly(R)	500.0ms	0.1–661.0ms	Right channel delay time.
Dly(C)	125.0ms	0.1–661.0ms	Center channel delay time.
Level(C)	70	0–100	Center delay volume level.
FB.Dly	500.0ms	0.1–661.0ms	Feedback delay. The delay time before feedback starts.
FB.Gain	+40%	–99...+99%	Feedback gain. The amount of delayed signal fed back into the delay.
High Ratio	0.8	0.1–1.0	Feedback high-frequency decay ratio.

Program 15—MONODLY->CHORUS

Mono delay followed by stereo chorus.

Parameter	Setting	Range	Description
Delay	400.0ms	0.1–618.0ms	Delay time.
FB.Gain	+32%	–99...+99%	Delay feedback gain. The amount of delayed signal fed back into the delay.
High Ratio	0.6	0.1–1.0	Delay feedback high-frequency decay ratio.
Mod.Freq	0.4Hz	0.1–20.0Hz	Chorus modulation speed.
Mod.Depth	10%	0–100%	Chorus modulation depth. The amount of modulation.
Mod.Dly	0.1ms	0.0–24.0ms	Chorus modulation delay. The delay time before modulation starts.

Program 16—CHORUS->DLY LCR

Stereo chorus followed by a three-part (L-C-R) delay with feedback.

Parameter	Setting	Range	Description
Mod.Freq	0.8Hz	0.1–20.0Hz	Chorus modulation speed.
Mod.Depth	24%	0–100%	Chorus modulation depth. The amount of modulation.
Mod.Dly	5.9ms	0.0–24.0ms	Chorus modulation delay. The delay time before modulation starts.
Dly(L)	26.4ms	0.1–618.0ms	Left channel delay time.
Dly(R)	33.2ms	0.1–618.0ms	Right channel delay time.
Dly(C)	13.1ms	0.1–618.0ms	Center channel delay time.
Level(C)	60	0–100	Center delay volume level.
FB.Dly	40.5ms	0.1–618.0ms	Feedback delay. The delay time before feedback starts.
FB.Gain	–48%	–99...+99%	Feedback gain. The amount of delayed signal fed back into the delay.
High Ratio	0.1	0.1–1.0	Feedback high-frequency decay ratio.

Program 17—DELAY->CHORUS

Two-stage delay followed by stereo chorus.

Parameter	Setting	Range	Description
Dly(1)	250.0ms	0.1–618.0ms	Delay 1 delay time.
Dly(2)	500.0ms	0.1–618.0ms	Delay 2 delay time.
FB.Dly	500.0ms	0.1–618.0ms	Feedback delay. The delay time before feedback starts.
FB.Gain	+33%	–99...+99%	Feedback gain. The amount of delayed signal fed back into the delay.
High Ratio	0.7	0.1–1.0	Feedback high-frequency decay ratio.
Mod.Freq	1.2Hz	0.1–20.0Hz	Chorus modulation speed.
Mod.Depth	25%	0–100%	Chorus modulation depth. The amount of modulation.
Mod.Dly	10.0ms	0.0–24.0ms	Chorus modulation delay. The delay time before modulation starts.

Program 18—KARAOKE ECHO 1

Typical karaoke type echo.

Parameter	Setting	Range	Description
Dly(L)	220.0ms	0.1–322.0ms	Left channel delay.
FB.Gain(L)	+40%	–99...+99%	Left channel feedback gain. The amount of delayed signal fed back.
Dly(R)	223.0ms	0.1–322.0ms	Right channel delay.
FB.Gain(R)	+40%	–99...+99%	Right channel feedback gain. The amount of delayed signal fed back.
High Ratio	0.4	0.1–1.0	Feedback high-frequency decay ratio.

Program 19—KARAOKE ECHO 2

A variation of program 18.

Parameter	Setting	Range	Description
Dly(L)	220.0ms	Same as program 18	Same as program 18
FB.Gain(L)	+44%		
Dly(R)	180.0ms		
FB.Gain(R)	–55%		
High Ratio	0.2		

Program 20—ST.PITCH CHANGE

Two-part stereo pitch shifter. Each part has independent pan parameter for stereo effects.

Parameter	Setting	Range	Description
Pitch	0	-12...+12	Coarse pitch setting for pitch changers 1 and 2.
Fine(1)	+10	-50...+50	Fine pitch for pitch changer 1.
Fine(2)	-10	-50...+50	Fine pitch for pitch changer 2.
Out.Lvl(1)	+100	-100...+100	Output volume level for pitch changer 1.
Out.Lvl(2)	+100	-100...+100	Output volume level for pitch changer 2.
Pan(1)	L100	L100-R100	Pitch changer 1 panpot.
Pan(2)	R100	L100-R100	Pitch changer 2 panpot.
FB.Gain(1)	+28%	-99...+99%	Pitch changer 1 feedback gain. The amount of processed signal fed back.
FB.Gain(2)	-28%	-99...+99%	Pitch changer 2 feedback gain. The amount of processed signal fed back.
FB.Dly	25.0ms	0.1-223.0ms	Feedback delay. The delay time before feedback starts.

Program 21—VOCAL DOUBLER

Vocal-doubling pitch shift. Good with guitar glissando.

Parameter	Setting	Range	Description
Pitch	0	Same as program 20	Same as program 20
Fine(1)	+8		
Fine(2)	-8		
Out.Lvl(1)	+100		
Out.Lvl(2)	+100		
Pan(1)	L6		
Pan(2)	R6		
FB.Gain(1)	+20%		
FB.Gain(2)	-20%		
FB.Dly	50.0ms		

Program 22—FUNNY PITCH

Funny voice pitch shift for weird sounds.

Parameter	Setting	Range	Description
Pitch	-2	Same as program 20	Same as program 20
Fine(1)	+8		
Fine(2)	-8		
Out.Lvl(1)	+100		
Out.Lvl(2)	+100		
Pan(1)	L90		
Pan(2)	R90		
FB.Gain(1)	+90%		
FB.Gain(2)	-90%		
FB.Dly	4.0ms		

Program 23—CHORUS

A stereo chorus. Produces a rich thickening effect. Good with guitar, bass, and strings.

Parameter	Setting	Range	Description
Mod.Freq	0.6Hz	0.1–20.0Hz	Modulation speed.
AM Depth	49%	0–100%	Amplitude modulation depth. The amount of amplitude modulation.
PM Depth	35%	0–100%	Pitch modulation depth. The amount of pitch modulation.
Mod.Dly	12.1ms	–99...+99%	Modulation delay. The delay time before modulation starts.

Program 24—BROAD CHORUS

A variation of program 23 with a wider chorus effect.

Parameter	Setting	Range	Description
Mod.Freq	0.5Hz	Same as program 23	Same as program 23
AM Depth	64%		
PM Depth	90%		
Mod.Dly	38.0ms		

Program 25—SYMPHONIC

Produces a rich and grand chorus effect, bigger than chorus alone.

Parameter	Setting	Range	Description
Mod.Freq	0.6Hz	0.1–20.0Hz	Modulation speed.
Mod.Depth	8%	0–100%	Modulation depth. The amount of modulation.
Mod.Dly	2.4ms	0.0–40.0ms	Modulation delay. The delay time before modulation starts.

Program 26—FLANGE

Stereo flanger. Produces a *swishing, tunneling* effect. Good with guitar, bass, piano, cymbals, and other rich harmonic sounds.

Parameter	Setting	Range	Description
Mod.Freq	1.2Hz	0.1–20.0Hz	Modulation speed.
Mod.Depth	25%	0–100%	Modulation depth. The amount of modulation.
FB.Gain	+45%	–99...+99%	Feedback gain. The amount of processed signal fed back into the flanger.
Mod.Dly	14.6ms	0.0–15.0ms	Modulation delay. The delay time before modulation starts.

Program 27—SUPER FLANGE

A variation of program 26 with extra flange.

Parameter	Setting	Range	Description
Mod.Freq	0.2Hz	Same as program 26	Same as program 26
Mod.Depth	80%		
FB.Gain	+83%		
Mod.Dly	0.4ms		

Program 28—PHASING

Stereo phaser. Similar to flange, but different. Good with guitar, strings, and other rich harmonic sounds.

Parameter	Setting	Range	Description
Mod.Freq	0.5Hz	0.1–20.0Hz	Modulation speed.
Mod.Depth	58%	0–100%	Modulation depth. The amount of modulation.
FB.Gain	+47%	–99...+99%	Feedback gain. The amount of processed signal fed back into the phaser.
Phase Ofst	24	0–100	Phase offset. The amount that the signal phase is offset.

Program 29—TREMOLO

Stereo tremolo. Just like that of the classic guitar amps. Good with guitars.

Parameter	Setting	Range	Description
Mod.Freq	2.8Hz	0.1–20.0Hz	Modulation speed.
AM Depth	86%	0–100%	Amplitude modulation depth. The amount of amplitude modulation.
PM Depth	0%	0–100%	Pitch modulation depth. The amount of pitch modulation.

Program 30—AUTO PAN

Auto pan. Automatic panning across the stereo image. Helps to maintain interest in repetitive phrases.

Parameter	Setting	Range	Description
Mod.Freq	0.8Hz	0.1–20.0Hz	Modulation speed.
L/R Depth	98%	0–100%	Pan depth between the left and right channels.
F/R Depth	15%	0–100%	Pan depth from front to rear.
Direction	L←→R	L←→R, Turn L, Turn R	Auto pan direction. L←→R: from left to right, right to left, left to right, and so on. Turn L: from left to right. Always turning direction at the left. Turn R: from right to left. Always turning direction at the right.

SEND3 and SEND4

1. Press [SEND3] or [SEND4].

The SEND3 or SEND4 LCD function appears.

The channel faders are now controlling channel-to-send levels and the RTN/SEND fader, the corresponding send (SEND3 or SEND4).

2. Raise the channel fader.

0dB is a good fader position to start with. You can always readjust later.

For post-fader sends you must set the normal fader too.

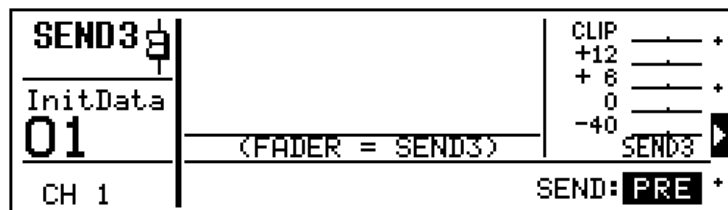
3. Raise the RTN/SEND fader.

The send signal is output and its level is metered on the LCD.

SEND3 and SEND4 can be used to feed external effects processors, foldback amplifiers, or multitrack recording equipment. When used to feed an external effects processor, the processed signal can be returned via the stereo input channel or an unused input channel. Input channel and stereo input channels signals can be fed to SEND3 and SEND4.

The master send level is set using the RTN/SEND fader. When the SEND3 LCD function is selected, the RTN/SEND fader is automatically set to SEND3. Likewise, when the SEND4 LCD function is selected, it is automatically set to SEND4. The RTN/SEND [SEL] button can also be used to select SEND3 and SEND4.

Shown below is the SEND3 LCD function. The SEND4 LCD function is essentially the same. A level meter for the send signal is on the right. The meter signal is sourced after the RTN/SEND fader. Ideally the level should be set relatively high and it's OK to reach CLIP occasionally. If CLIP is reached often, however, reduce the send level a little, otherwise signal distortion may occur.



SEND3 and SEND4 Pre or Post

SEND3 and SEND4 can be configured pre-fader or post-fader, and the current setting is shown at the bottom right of the display. This setting affects all channels, so if SEND3 is set to PRE, all channel SEND3s are pre-fader. Initially, SEND3 and SEND4 are configured pre-fader, the usual setting for foldback sends.

This setting can be toggled between PRE and POST by pressing [ENTER] or turning the PARAMETER wheel.

PRE — the send signal is sourced before the channel fader. So it's unaffected by the normal channel fader. This means that the channel-to-mix and channel-to-foldback levels can be set independently.

POST — the send signal is sourced after the channel fader. This means that the send signal is also affected by the normal channel fader. So you must have that fader raised as well. This setting is used mainly for effects sends. See “SEND1 and SEND2 Pre or Post” on page 32 for more details.

SEND3-4 Stereo Pair

1. Press [UTILITY].
The UTILITY menu appears.
2. Select SEND3, 4 CONFIGURATION and press [ENTER].
The SEND3, 4 CONFIGURATION LCD function appears.
3. To change the mode, press [ENTER] or use the PARAMETER wheel.
4. Select the SEND3-4 MODE parameter, then press [ENTER] or use the PARAMETER wheel to set it.
5. To exit this function and return to the UTILITY menu, select EXIT and press [ENTER], or just press [UTILITY].
The UTILITY menu reappears.

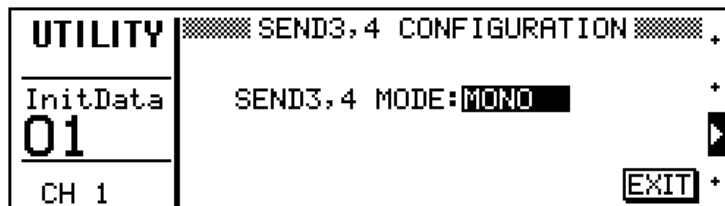
SEND3 and SEND4 can be linked for use as a stereo pair. In this way they can, essentially, be used as another pair of stereo outputs, allowing for another stereo mix to be set up. This is called SEND3-4 Stereo mode. Independent, or normal operation is called Mono mode.

In Stereo mode, the SEND3 and SEND4 LCD functions are combined into the SEND3-4 LCD function. This LCD function can be selected by pressing either [SEND3] or [SEND4]. When either button is pressed, the RTN/SEND fader is automatically set to SEND3-4.

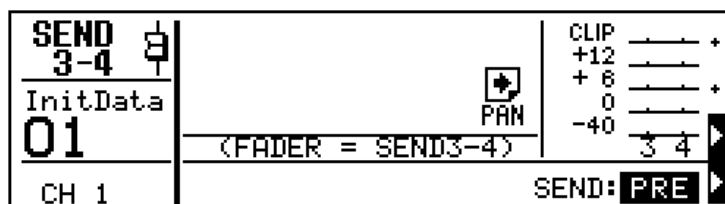
When set to Stereo, the following changes occur:

- For individual input channels, the SEND3 and SEND4 send level controls become a single send level control, and a SEND3-4 pan control appears (set to center) on the SEND3-4 PAN display.
- For stereo-pair input channels, the SEND3 and SEND4 send level controls become single send level controls, and a SEND3-4 pan control appears on the SEND3-4 PAN display. Odd channels are panned hard-left (i.e. to SEND3) and even channels are panned hard-right (i.e. to SEND4).
- For the stereo input channel, the left signal feeds SEND3 bus and the right signal feeds SEND4 bus. Levels are controlled together. A balance control appears on the SEND3-4 PAN display.
- SEND3 and SEND4 dynamics processor patches are cancelled.
- The SEND3-4 output comp patch point is set to the SEND3 setting.
- The SEND3-4 fader level is set to the SEND3 setting.
- SEND3-4 ON/OFF and PRE/POST are set to the SEND3 settings.

Shown below is the SEND3, 4 CONFIGURATION LCD function that is used to select the Stereo and Mono modes.

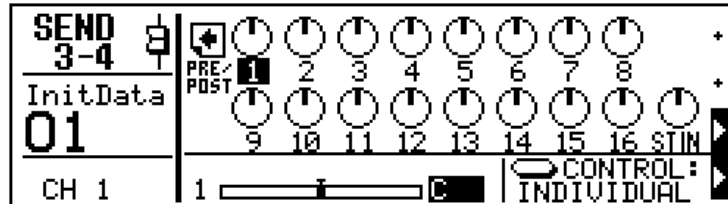


Shown below is the SEND3-4 LCD function. The right-arrow icon indicates that the SEND3-4 pan display is available to the right.



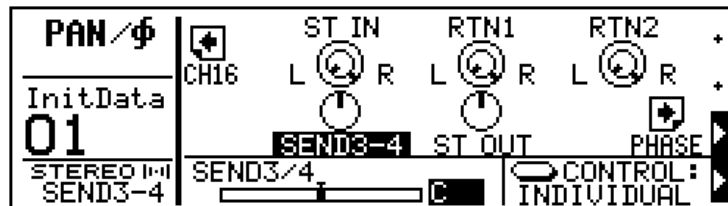
SEND3-4 Channel Pans & Balance

In SEND3-4 Stereo mode, a SEND3-4 pan control is available on each input channel and a SEND3-4 balance control is available on the stereo input channel (ST IN). These controls appear on the SEND3-4 LCD function, shown below. After pressing either [SEND3] or [SEND4], press the [▶] cursor button to access the SEND3-4 pan display. Alternatively, press the [SEND3] or [SEND4] button again. See “Pan and Balance” on page 26 for operation details.



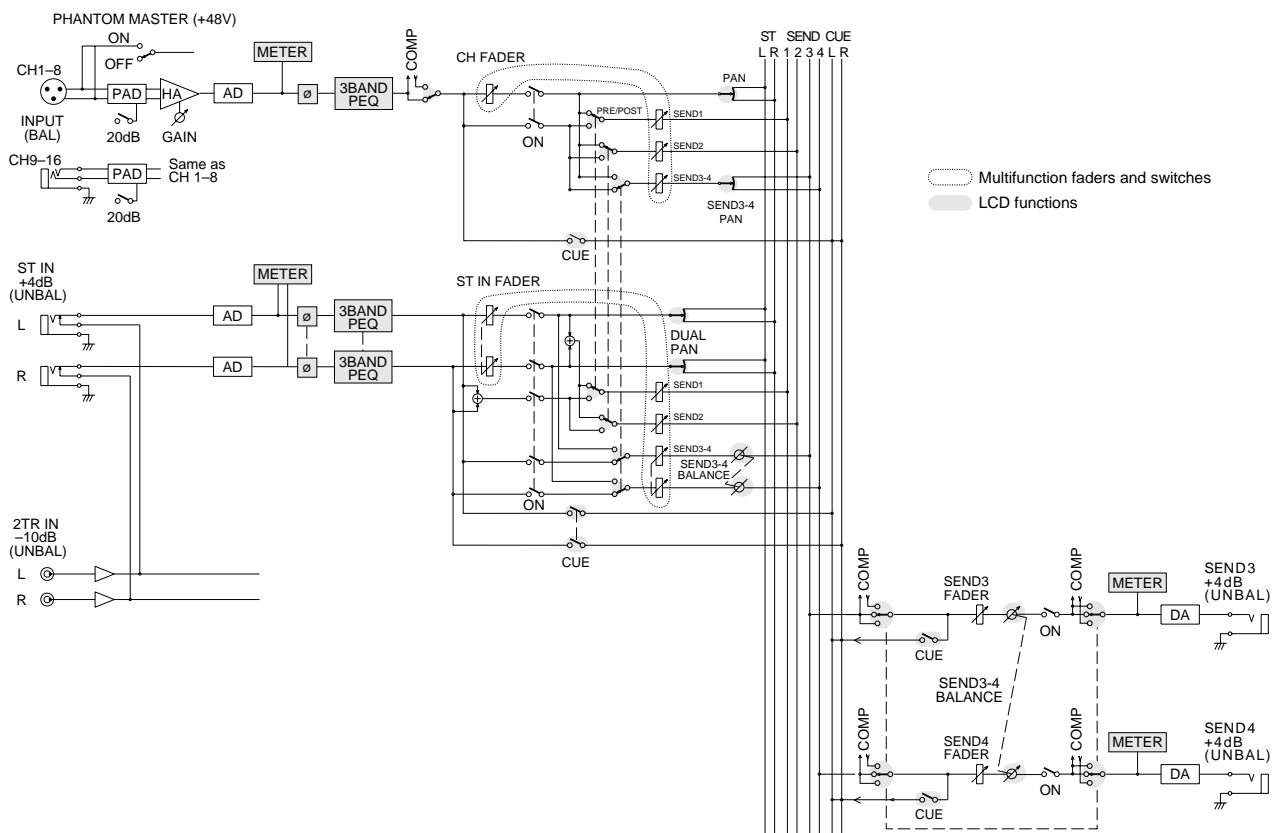
SEND3-4 Output Balance

In Stereo mode, the stereo SEND3-4 output balance can be set. This control appears on the PAN LCD function, shown below. This balance control operates the same as the stereo output balance control. See “Stereo Output Balance” on page 26 for more details.



SEND3-4 Block Diagram

This block diagram shows what happens when SEND3 and SEND4 are configured as a stereo pair: Input channel SEND3 and SEND4 controls become a single control, and a SEND3-4 pan control appears. On the stereo input channel, a SEND3-4 balance control appears. The left signal feeds SEND3 and the right signal feeds SEND4. Levels are controlled together. On the SEND3-4 outputs, a SEND3-4 output balance control appears. See “SEND3 and SEND4” on page 45 for more details.



5

CUE

In this chapter...

About CUE	50
CUE Modes	50
Group CUE	50
Setting the CUE Mode	51
CUE Signal Sources	51
CUE/2TR IN Switch	51
CUE LCD Function Info	52

About CUE

ProMix 01 CUE provides comprehensive monitoring of virtually all inputs and outputs. The CUE signal is output to the MONITOR OUTPUT and PHONES. Output levels are controlled using the MONITOR OUT LEVEL control and PHONES LEVEL control, respectively.

CUE Modes

There are three CUE modes: MIX, LAST CUE, and ST FIX. The following table shows how they work in relation to the LCD functions.

CUE MODE	Selected LCD Function		
	CUE	GROUP	Others
MIX	MIX	GROUP	LAST CUE
LAST CUE	LAST CUE		
ST FIX	ST FIX		

MIX — this mode can be used only when the CUE LCD function is selected. When this mode is selected, the message “Select a channel to CUE” appears and the selected channel’s [SEL] button LED goes OFF. The [SEL] buttons can then be used to add channels to the CUE mix. Stereo-pair channels are cued together. This mode is equivalent to the CUE function on a conventional mixer.

LAST CUE — in this mode, the currently selected channel is cued. Stereo-pair channels are cued together. This mode is active when LCD functions other than GROUP are selected.

ST FIX — in this mode, CUE follows the main stereo output (i.e. it’s fixed to ST OUT). It is not affected when either the CUE or GROUP LCD function is selected.

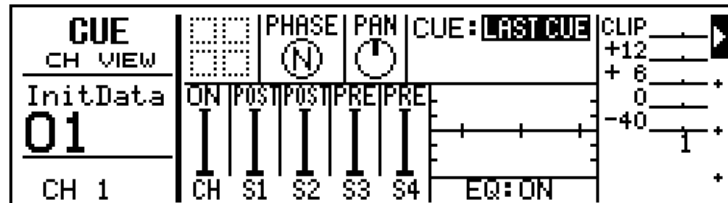
Group CUE

When the GROUP LCD function is selected, you can listen to a post-fader mix of all channels in the selected group via CUE. This makes it easy to balance faders in a group. It works only when the CUE mode is set to MIX or LAST CUE, not when it’s set to ST FIX. When another LCD function is selected, CUE returns to normal operation.

Setting the CUE Mode

1. Press [CUE].
The CUE LCD function appears.
2. Use the PARAMETER wheel to select a CUE mode.
The name of the CUE mode appears highlighted.
3. Press [ENTER] to activate the selected mode.
The name of the CUE mode appears highlighted.

CUE modes are set on the CUE LCD function, shown below. The name of the current CUE mode is highlighted. The PARAMETER wheel is used to select modes. When another mode is selected, its name flashes. If it is activated by pressing [ENTER], it stops flashing, appears highlighted, and becomes the current CUE mode.



CUE Signal Sources

The following table shows where the various CUE signals are sourced.

Channels	CUE Modes	GROUP LCD Function
	MIX & LAST CUE	
CH1-16 mono	Mono/pre-fader	Mono/post-fader, pre-pan
CH1-16 stereo pair	Mono/pre-fader (L+R mix)	Mono/post-fader, pre-pan (L+R mix)
Stereo input	Stereo/pre-fader	Stereo/post-fader, pre-pan
RTN1, RTN2	Stereo/pre-fader	n/a
SEND3, SEND4	Mono/pre-fader	n/a
SEND3-4	Stereo/pre-fader	n/a
Stereo output	Stereo/pre-fader	n/a

n/a: not applicable.

CUE/2TR IN Switch

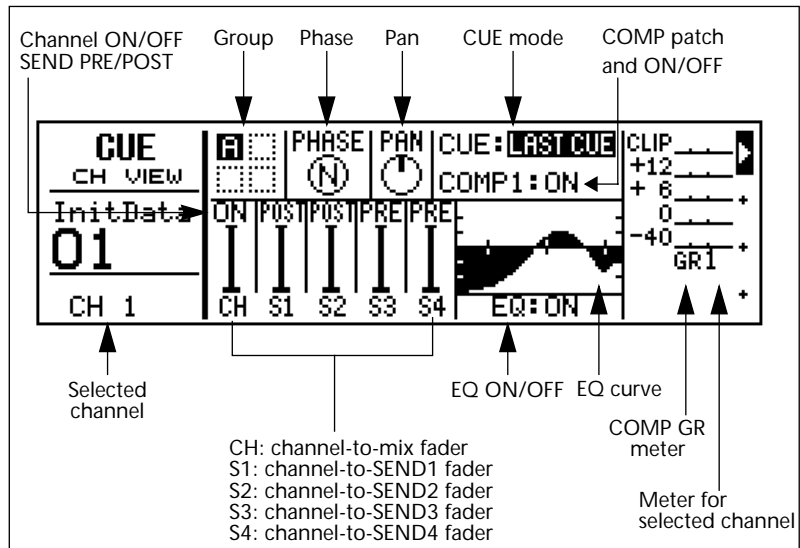
This switch determines the signal source for the monitor output and phones. CUE selects the CUE bus; 2TR IN selects the 2 TR IN inputs. CUE is used for normal mixing operations. 2TR IN, for 2-track playback and confidence monitoring.

CUE LCD Function Info

As well as being used to set the CUE mode, the CUE LCD function displays various information about the currently selected channel. The exact information shown depends on the type of channel selected. CUE displays for each type of channel are shown below.

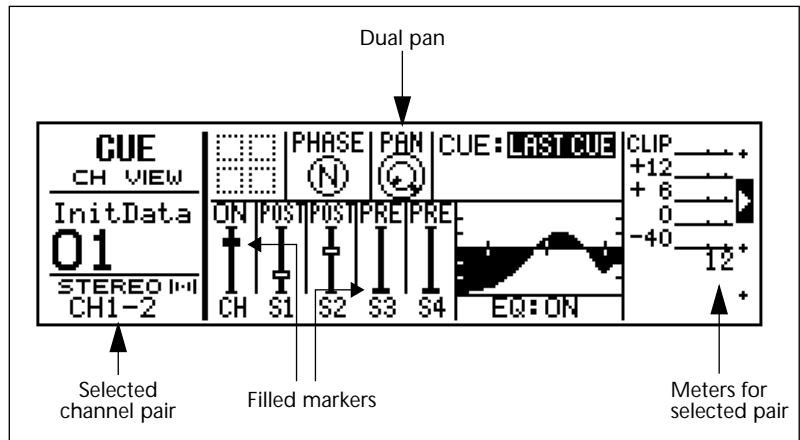
Input Channel

This is the CUE LCD function when an input channel is selected.



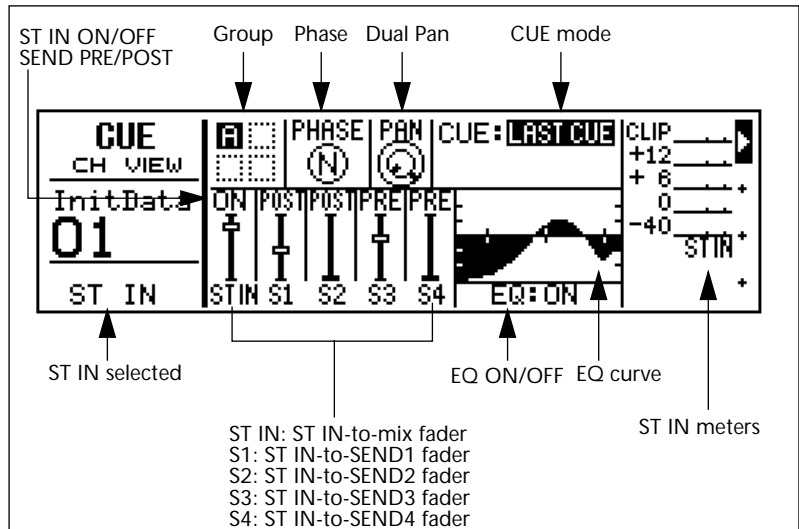
Stereo-Pair Input Channels

This is the CUE LCD function when stereo-pair input channels are selected. It is, essentially, the same as the one above apart from the differences indicated. This example display also shows how the fader knob marker is filled when a fader is set at the 0dB position. Markers are also filled when faders are set at minimum (∞).



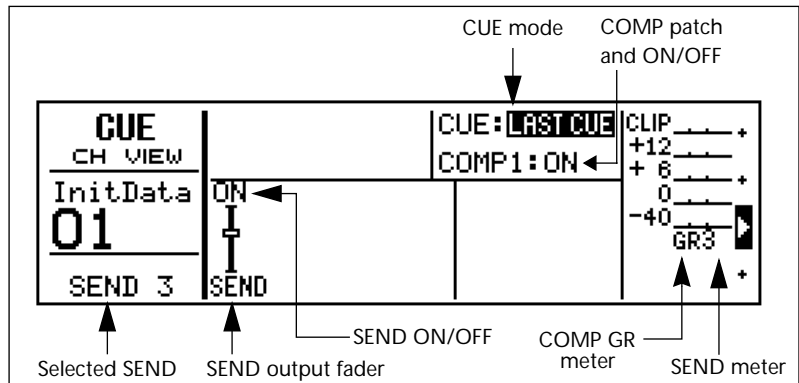
Stereo Input Channel

This is the CUE LCD function for the stereo input channel.



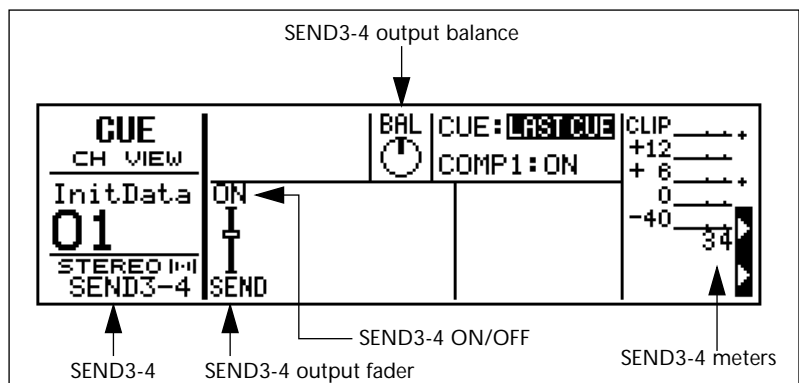
SEND3, SEND4

This is the CUE LCD function for SEND3 and SEND4.



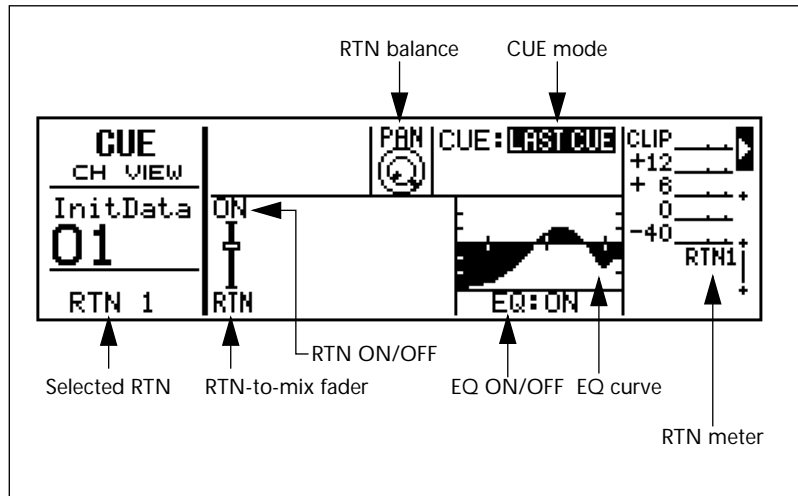
SEND3-4 (Stereo Pair)

This is the CUE LCD function for SEND3-4 as a stereo pair.



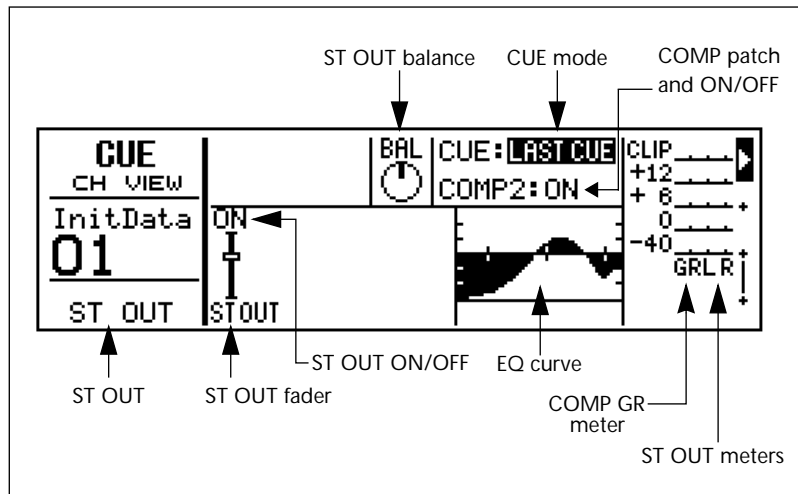
RTN1, RTN2

This is the CUE LCD function for RTN1 and RTN2.



Stereo Output

This is the CUE LCD function for the stereo output.



6

Groups and Pairs

In this chapter...

Grouping Faders	56
Listening to Groups	56
Group Block Diagram	57
Pairing Channels	58
Pair Block Diagram	59

1. Press [GROUP].

The GROUP LCD function appears.

2. Use the [▲] [▼] cursor buttons to select groups.

3. Use the [SEL] buttons to add and remove channels to and from groups.

Stereo-pair channels are added and removed together.

4. To adjust an individual fader in a group, press [ENTER] to turn BAL ADJ ON, adjust the fader, then press [ENTER] again.

All faders move when one fader in a group is adjusted.

! The quickest way to select groups is to repeatedly press the [GROUP] button.

Grouping Faders

Faders can be grouped for multiple fader control using one fader. This makes it easy to control several faders simultaneously. The input channel and stereo input channel faders can be used in groups. There are four groups available: A, B, C, and D.

Note: Only faders feeding the stereo bus are grouped. When faders are used to adjust channel-to-send levels, grouping is not active.

Shown below is the FADER GROUP LCD function. Channel numbers are listed along the top, and group letters to the left side. The selected group is highlighted and its name is shown at the bottom of the display. A dot appears when a channel is added to a group and disappears when it is removed.

GROUP	GRP 1234 5678 9101112 13141516 S1	
FADER	[A] ●●●● ●●●● ●●●● ●●●●	BAL ADJ: +
InitData	B ···· ···· ···· ····	OFF +
01	C ···· ···· ···· ····	
	D ···· ···· ···· ····	
CH 4	SEL = GROUP A +	

Move only one fader in a group at a time. If you try to adjust more, the first one adjusted should have priority, but you may upset their relative positions.

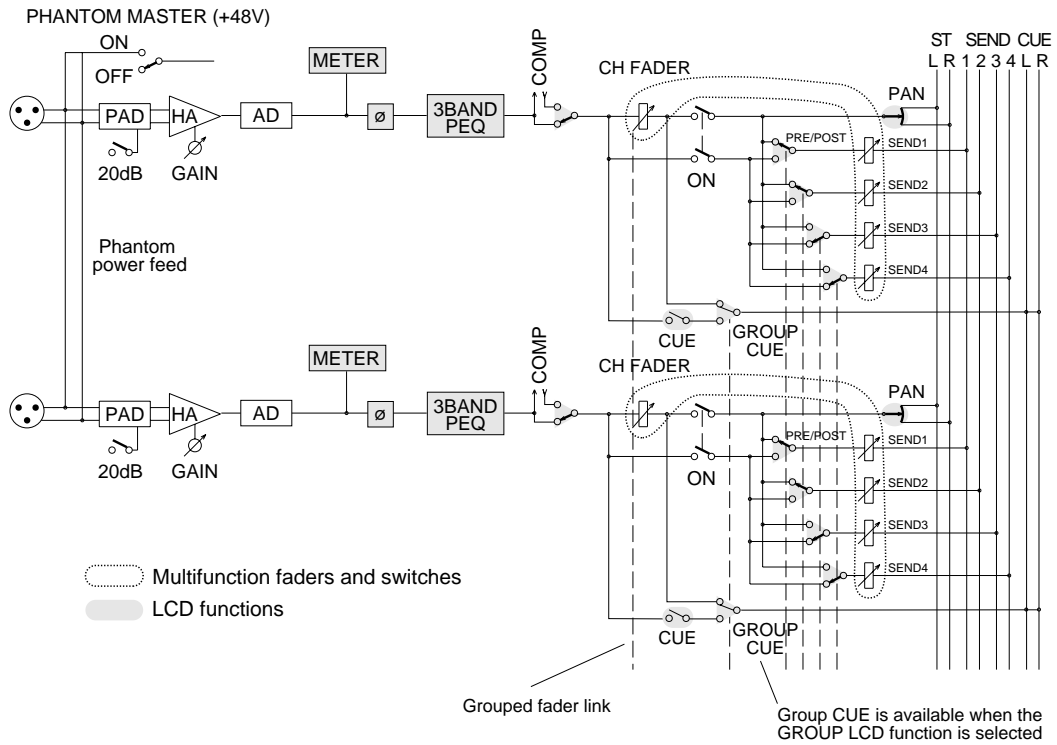
You can temporarily disable a group to make adjusts to individual faders using the Balance Adjust function. When disabled (i.e. the Balance Adjust function is ON), the [SEL] buttons of the channels in the group flash.

Listening to Groups

When the GROUP LCD function is selected, you can listen to a post-fader mix of all channels in the selected group via CUE. This makes it easy to balance faders in a group. It works only when the CUE mode is set to MIX or LAST CUE, not when it's set to ST FIX. When another LCD function is selected, CUE returns to normal operation.

Group Block Diagram

This block diagram shows what happens when channels are grouped. Faders are linked for simultaneous control and the group CUE function is active. See “Listening to Groups” on page 56 for details about group CUE. Note that fader grouping works only for channel-to-mix faders, not channel-to-send faders.



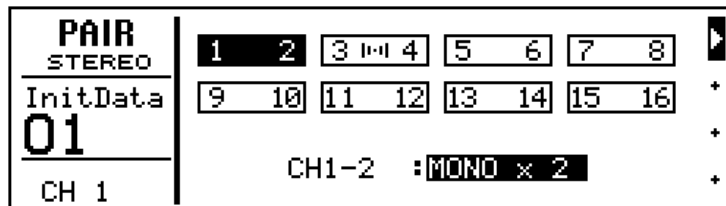
Pairing Channels

1. Press [PAIR].
The PAIR LCD function appears.
2. Press a [SEL] button or use the cursor buttons to select a channel pair.
3. Use the PARAMETER wheel to select an option.
4. Press [ENTER] to activate.

Adjacent input channels can be paired for stereo operation. This makes it easy to work with stereo input signals, because you only have to adjust one channel to control both left and right signals. Up to eight stereo pairs are available. The following parameters are linked:

PHASE, EQ, COMP patch, ON/OFF, fader, CUE, SEND1, SEND2, SEND3, and SEND4.

Shown below is the PAIR LCD function. The eight channel pairs are shown in boxes, and the selected pair is highlighted. When channels are paired, a stereo symbol appears in the corresponding box. The selected channels and available options are shown under the boxes. The currently set option is highlighted and the other options flash when selected.



For mono channels (**1 2**) the options are:

MONO x 2 — this indicates that the channels are not paired.

ST (1->2) — this copies the settings of the odd input channel to the even input channel and sets them as a stereo pair.

ST (2->1) — this copies the settings of the even input channel to the odd input channel and sets them as a stereo pair.

ST (RESET) — this resets both channels and sets them as a stereo pair. Odd channels are panned hard-left and even channels, hard-right.

For stereo-pair channels (**1 2**) the options are:

STEREO — this indicates that the channels are paired.

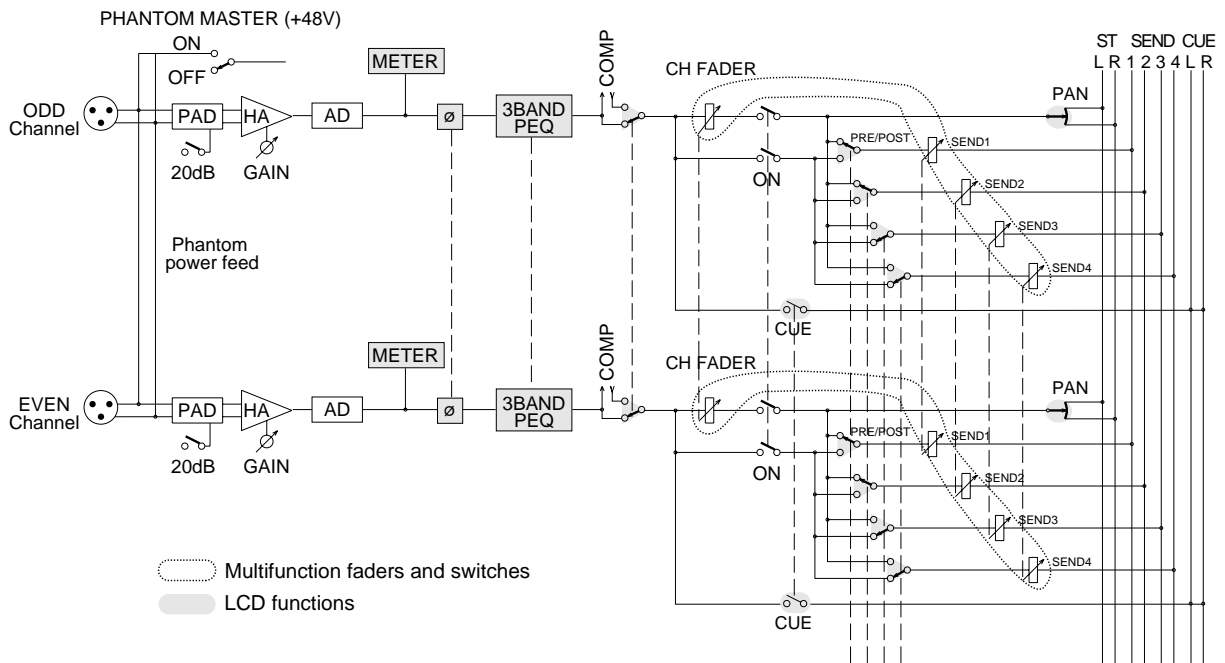
ST (RESET) — this option maintains the stereo pair, but resets both channels. Odd channels are panned hard-left and even channels, hard-right.

MONO x 2 — this option cancels the stereo pair and leaves channel settings as they are.

Note: When channels using a dynamics processor are paired, the patch is cancelled. A message appears to warn you of this. When grouped channels are paired, they are removed from the group.

Pair Block Diagram

This block diagram shows what happens when adjacent input channels are paired: PHASE, EQ, COMP patch, faders, ON/OFF, CUE, SEND1, SEND2, SEND3, and SEND4 are linked for simultaneous control. The dotted lines show which channel functions are linked. The send PRE/POST switches are always linked.

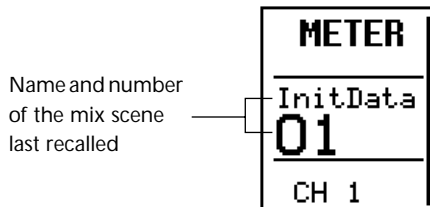


7

Scene Memories

In this chapter...

What are Scene Memories?	62
What's Stored in a Scene Memory?	62
What is the Edit Buffer?	62
Mix Scene 00	62
Storing Mix Scenes	63
Recalling Mix Scenes	64
Protecting Scene Memories	65



What are Scene Memories?

Scene memories are memory locations used to store mix scenes. A mix scene consists of all ProMix 01 mix settings. Up to 50 mix scenes can be stored and each can be named for easy identification. They can be stored and recalled manually using the [STORE] and [RECALL] buttons. They can be recalled using MIDI Program Changes from a computer, MIDI sequencer, or MIDI footswitch. See “Program Change” on page 82 for more details. Mix scenes can also be saved to a MIDI data file. See “Bulk Dump/Request” on page 85.

The name and number of the mix scene recalled last are always shown at the left side of the display.

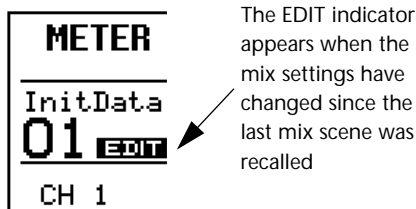
What’s Stored in a Scene Memory?

Virtually all ProMix 01 mix settings are stored in a scene memory. For a full listing, see “Mix Scene Data” on page 98. Settings that are not stored consist mainly of analog controls and switches. They are: pad switches, gain controls, MONITOR OUT LEVEL control, PHONES LEVEL control, CUE/2TR IN switch, LCD contrast, and PHANTOM MASTER switch. MIDI setup and assignment table data is not stored.

What is the Edit Buffer?

The Edit Buffer is an internal memory area that stores the current mix settings. When a mix scene is stored, the Edit Buffer mix settings are written to the selected scene memory. When a mix scene is recalled, the mix settings of the selected scene memory are written back to the Edit Buffer. The Edit Buffer mix settings can also be saved to a MIDI data recorder. See “Bulk Dump/Request” on page 85.

When a parameter is adjusted after a mix scene has been recalled, the EDIT indicator appears in the Memory area of the display. This indicates that the current mix settings (i.e. those in the Edit Buffer) do not match those of the mix scene recalled last.



Mix Scene 00

Mix scene 00 is a little different to mix scenes 1 through 50. It is a read-only memory and contains the initial ProMix 01 settings. You can recall it, but you cannot store it. When you want to reset all mix settings to their initial values, recall mix scene 00.

Storing Mix Scenes

1. Press [STORE].
The MEMORY STORE LCD function appears.
2. Use the [INC+] [DEC-] buttons to select a mix scene.
3. Use the [◀] [▶] cursor buttons and PARAMETER wheel to name the mix scene.
If you want to cancel the store operation, select CANCEL and press [ENTER].
4. Press [STORE].

The mix scene is stored and its number appears in the MEMORY area of the display.

There are 50 scene memories, so you can store up to 50 mix scenes. More can be saved to a MIDI data file. See “Bulk Dump/Request” on page 85. Mix scenes can be named for easy identification.

Note: When a mix scene is stored, all data in the selected scene memory is overwritten. Be careful not to overwrite an important mix scene.

Shown below is the MEMORY STORE LCD function. Mix scenes are listed in the center and the name of the mix scene last recalled or stored is highlighted. Also there is an equal symbol (=) between the program’s name and number, not a period like the other programs. The PARAMETER wheel is used to scroll through the list. When another mix scene is selected, its name flashes. If it is stored, it stops flashing, appears highlighted, and the period between its name and number changes to an equal symbol (=).



Mix scene names can be up to eight characters long. The selected character in the name is highlighted. Available characters scroll through the box in the center. Use the cursor buttons to position the cursor in the name, and the PARAMETER wheel to scroll through the characters. The following characters are available.

```

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
()[]{}<>#%&!/?+*/\=_|,.;:~`^_
0123456789
    
```

Spaces are available between the above character rows.

Note: When storing mix scenes, make sure there are no mix settings in the Edit Buffer that you do not want to store. Maybe some settings have been adjusted accidentally or by someone else. If you are not sure about the Edit Buffer’s exact contents, first recall the last mix scene, make the adjustments that you really want, and then store. You may want to store the current mix settings to an unused scene memory, just in case.

! By recalling a mix scene and then storing it to another location, you can copy and reorganize your mix scenes.

! When recalling mix scenes, be aware that volume levels may change suddenly as channels are switched ON and faders moved. Nobody likes sudden surprises or speaker damage!

Recalling Mix Scenes

1. Press [RECALL].

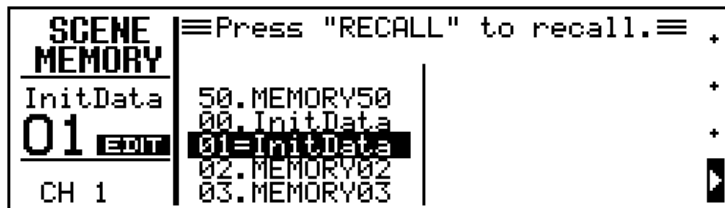
The MEMORY RECALL LCD function appears. You can also go to the MEMORY LCD function by pressing the [INC+] [DEC-] buttons.

2. Use the [INC+] [DEC-] buttons or the PARAMETER wheel to select a mix scene.
3. Press [RECALL] to recall.

The mix scene is recalled and its name and number appear in the MEMORY area of the display.

Mix scenes are recalled using the [RECALL] button. They can also be recalled using MIDI Program Changes. See “Program Change” on page 82.

Shown below is the MEMORY RECALL LCD function that appears when [RECALL] is pressed. Mix scenes are listed in the center and the name of the mix scene last recalled or stored is highlighted. Also there is an equal symbol (=) between the program’s name and number, not a period like the other programs. When another mix scene is selected, its name flashes. If it is recalled, it stops flashing, appears highlighted, and the period between its name and number changes to an equal symbol (=).



Note: When you recall a mix scene, all mix settings in the Edit Buffer (current mix scene) are overwritten. So you may want to store the Edit Buffer to an unused scene memory before recalling, just in case.

Protecting Scene Memories

1. Press [UTILITY].

The UTILITY menu appears.

2. Select MEMORY PROTECT and press [ENTER].

The MEMORY PROTECT LCD function appears.

3. Select Scene Memories 01–25 or 26–50, then press [ENTER] or use the PARAMETER wheel to turn protect ON and OFF.

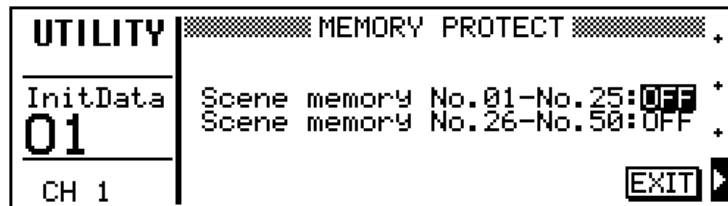
4. To exit this function and return to the UTILITY menu, select EXIT and press [ENTER], or just press [UTILITY].

The UTILITY menu reappears.

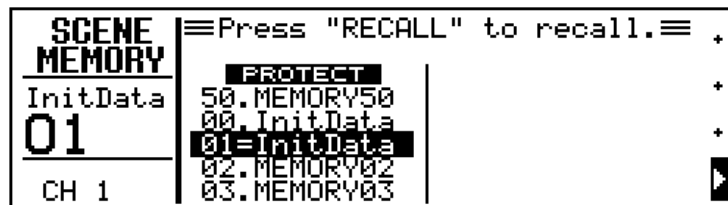
You can protect stored mix scenes against accidental overwriting using this Memory Protect function. This is useful when you've set up many mix scenes for repeated use, or when non-experienced users operate ProMix 01.

With Memory Protect set to ON, mix scenes cannot be stored using the [STORE] button. And mix scene data received as MIDI Bulk Dump is ignored. Scene memories are divided into two groups, 01–25 and 26–50, and protection can be set separately for each group.

Shown below is the MEMORY PROTECT LCD function.



When MEMORY PROTECT is set to ON, the word PROTECT appears on the MEMORY LCD function when a mix scene in the protected group is selected, as shown below.



8

Dynamics Processors

In this chapter...

ProMix 01 Dynamics Processors	68
Preset Dynamics Programs	68
Processor Types	68
Patching in a Processor	72
Dynamics Processor Meters	73
Pre-Fader or Post-Fader Patches	74
Recalling a Dynamics Program	75
Editing a Dynamics Program	76
Storing a Dynamics Program	77
Preset Dynamics Processor Parameters	78

ProMix 01 Dynamics Processors

ProMix 01 features three stereo dynamics processors, for compression, limiting, gating, and ducking. They can be patched into input channels, SEND3, SEND4, and the stereo outputs. Processor settings are organized as programs, and there are 10 preset programs (1–10) and 10 user programs (11–20) for you to store your own settings.

Preset Dynamics Programs

These are the preset dynamics programs.

1	Total Comp	6	Comp Heavy2
2	Radio Comp	7	Gate Fast
3	Comp Fast	8	Gate Slow
4	Comp Slow	9	Ducking
5	Comp Heavy1	10	BGM Ducking

See “Preset Dynamics Processor Parameters” on page 78 for a detailed listing of the preset dynamics program parameters.

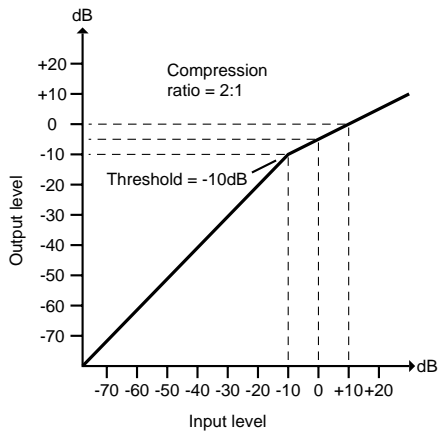
Processor Types

Dynamics processors are generally used to correct or control signal levels. However, they can also be used creatively to shape a sound’s volume envelope. The four types of dynamics processor and their general applications are explained below.

Compressor

Vocalists that tend to move toward and away from the microphone while singing produce fluctuating signal levels; sometimes loud, sometimes soft. Likewise, acoustic instruments with a large dynamic range produce sound levels from *pianissimo* (very soft) through to *fortissimo* (very loud). In these situations, it is often difficult to set an average fader level that will allow a voice or instrument to be heard clearly throughout a song or piece of music.

This is where the compressor comes in with automatic level control. By automatically reducing high levels, thus effectively reducing the dynamic range, the compressor makes it much easier to control signals and set appropriate fader levels. Reducing the dynamic range also means that recording levels can be set higher, therefore improving S/N performance. To provide a more consistent signal level and to squeeze more out of the dynamic range offered by AM and FM broadcasting, radio and TV stations often compress their audio output. Typical radio compressor settings are provided by preset program #2 (RADIO COMP).



Compressor parameters are:

Threshold (-40...+18dB) — This determines the level of input signal required to trigger the compressor. Signals at a level below the threshold pass through unaffected. Signals at and above the threshold level are compressed by the amount specified using the Ratio parameter. The trigger signal is sourced using the KEY IN parameter.

Ratio (1:1–∞:1) — This determines the amount of compression. That is, the change in output signal level relative to change in input signal level. For a 2:1 ratio, for example, a 10dB change in input level (above the threshold) results in a 5dB change in output level. For a 5:1 ratio, a 10dB change in input level (above the threshold) results in a 2dB change in output level.

Compression ratios commonly used for vocals, piano, and bass range from 2:1 to 6:1. A stereo mix maybe compressed 2:1 to add punch and provide a more consistent volume level.

Attack (0–120ms) This determines how soon the signal is compressed once the compressor has been triggered. With a fast attack time, the signal is compressed almost immediately. With a slow attack time, however, the initial transient of a sound passes through unaffected. Attack times from 1–5ms are a good place to start.

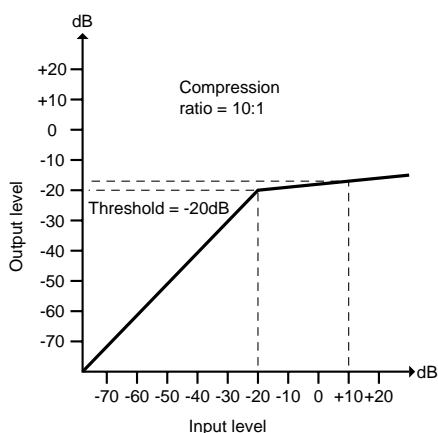
Release (0.1–6.0s) — This determines how soon the compressor returns to its normal gain once the trigger signal level drops below the threshold. If the release time is too short, the gain will recover too quickly causing level pumping (i.e. noticeable gain fluctuations). If it is set too long, the compressor may not have time to recover before the next high level signal appears, and it will be compressed incorrectly. Release times from 0.1–0.5s are a good place to start.

Out Gain (-18...+18dB) — This sets the compressor's output signal level. Compression tends to reduce the average signal level. Out Gain can be used to counter this level reduction and set an appropriate level for the next stage in the audio path.

Limiter

A limiter is essentially a compressor with a high ratio setting. Compression ratios above 10:1 are considered to limit signals rather than compress them. When an input signal exceeds the specified threshold level, its level is automatically reduced to the threshold level. This means that the limiter's output level never actually exceeds the threshold level. Limiters are often used to prevent signals from overloading amplifiers and tape recorders. A limiter with a relatively high threshold, for example, could be patched into the stereo outputs to prevent amplifier and speaker overload.

Limiter parameters are the same as those for the compressor.



Gate

A gate, or noise gate is essentially an audio switch used to mute signals below a set threshold level. It can be used to cut background noise picked up by open microphones, noise and hiss from guitar valve amps and effects pedals, and leakage between drum microphones. It also has many creative uses too. For example, gating a drum sound with a short decay time tightens up the sound. Also, patching a gate into a droning bass synth channel and then triggering it from the kick drum channel allows the bass synth through only when the kick drum is struck, adding extra wallop on the beat.

Gate parameters are:

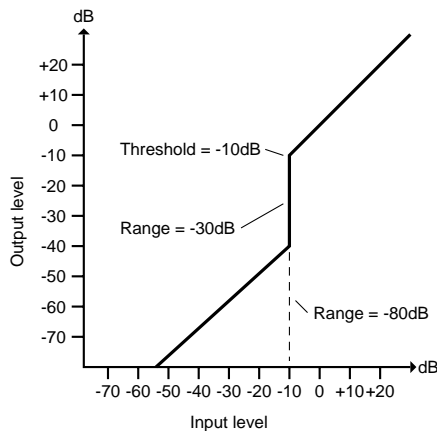
Threshold (–50...+10dB) — This determines the level at which the gate closes, cutting off the signal. Signals above the threshold level pass through unaffected. Signals at or below the threshold, however, cause the gate to close. The trigger signal is sourced using the KEY IN parameter.

Attack (0–120ms) — This determines how fast the gate opens when the signal exceeds the threshold level. Slow attack times can be used to remove the initial transient edge of percussive sounds. Too slow an attack time makes some sounds appear backwards.

Hold (3–341ms) — This determines how long the gate stays open once the trigger signal has fallen below the threshold level.

Decay (85ms–10.9s) — This determines how fast the gate closes once the hold time has expired. A longer decay time produces a more natural gating effect, allowing the natural decay of an instrument to pass through. With a maximum decay time of 10.9 seconds, you could even use this for fade-outs.

Range (–80dB...0dB) — This determines the level to which the gate closes. Think of it as a brick holding a garden gate open so that a certain amount of signal always flows through. For a setting of –80dB, the gate closes completely when the input signal falls below the threshold. For a setting of –30dB, however, the gate only closes so far. For a setting of 0dB, the gate has no effect. When signals are gated abruptly, the sudden disappearance can sometimes sound odd. This parameter causes the gate to reduce the signal level rather than cut it completely.



Ducking

Ducking is commonly used for voice-over applications, where the background music level is reduced automatically when an announcer speaks. Ducking is achieved by triggering a compressor with a different sound source. For example, a ducker is patched into the background music channel, and the KEY IN signal is sourced from the announcer's microphone channel. When the announcer's microphone level exceeds the specified threshold, the background music level is reduced automatically, allowing the announcer to be heard clearly. The same technique can also be used for vocals in a mix. For example, ducking backing sounds such as rhythm guitar and synth pad during vocal phrases allows the vocals to be heard clearly. This can also be used to bring solo instruments up in a mix.

Ducking parameters are:

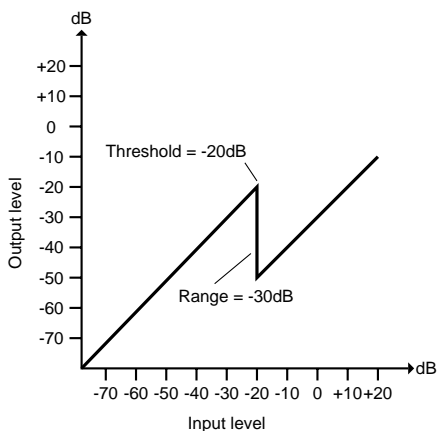
Threshold (-50...+10dB) — This determines the level of trigger signal (KEY IN) required to activate ducking. Trigger signal levels below the threshold do not activate ducking. Trigger signals at and above the threshold level, however, activate ducking, and the signal level is reduced to a level set by the Range parameter. The trigger signal is sourced using the KEY IN parameter.

Attack (0–120ms) — This determines how soon the signal is ducked once the ducker has been triggered. With a fast attack time, the signal is ducked almost immediately. With a slow attack time, however, ducking appears to fade the signal. Too fast an attack time may sound abrupt.

Hold (3–341ms) — This determines how long ducking remains active once the trigger signal has fallen below the threshold level.

Decay (85ms–10.9s) — This determines how soon the ducker returns to its normal gain once the trigger signal level drops below the threshold.

Range (-80...0dB) — This determines the level to which the signal is ducked. For a setting of -80dB, the signal is virtually cutoff. For a setting of -30dB, however, the signal is ducked by 30dB. For a setting of 0dB, the ducker has no effect.



1. Press [COMP] repeatedly to select a processor: 1, 2, or 3.

The COMP LCD function appears. If you didn't exit after your last COMP edit, the COMP EDIT LCD function appears instead.

2. Use the cursor buttons to select the ON/OFF, PATCH, and KEYIN parameters and the PARAMETER wheel to set them.
3. You must press [ENTER] to activate the PATCH and KEYIN parameters.

Patching in a Processor

Dynamics processors can be patched into the input channels, SEND3, SEND4, and stereo output. The SEND3, SEND4, and stereo outputs patches can be configured to pre-fader or post-fader. See “Pre-Fader or Post-Fader Patches” on page 74. Although a stereo dynamics processor can be used in mono (i.e. on a single channel), it cannot be used as two independent mono processors.

Shown below is the COMP LCD function. Dynamics setup parameters appear in the top part of the display. Programs are listed in the center.



The parameters are:

ON/OFF — this is used to turn a dynamics processor ON and OFF.

PATCH — this is used to patch a dynamics processor into a channel. The current setting is highlighted. Other settings flash when selected. Settings are activated by pressing [ENTER]. Stereo-pair channels are patched together.

Note: Patch points that are in use by the other dynamics processors are not available.

The options are:

PATCH	Patch Point	
OFF	No patch	
CH1-CH16	An input channel: post-EQ, pre-fader	
SEND3	SEND3	Can be pre-fader or post-fader. See “Pre-Fader or Post-Fader Patches” on page 74.
SEND4	SEND4	
STEREO	Stereo output	

KEY IN — this is used to select the processor trigger source. (i.e. the signal that triggers, or activates the processor). The current setting is highlighted. Other settings flash when selected. Settings are activated by pressing [ENTER].

The options are:

KEY IN	Source
SELF	Same as PATCH
CH1-CH16	An input channel: post-EQ, pre-fader
SEND3	SEND3
SEND4	SEND4
ST-L	Stereo output left channel
ST-R	Stereo output right channel

Can be pre-fader or post-fader. See "Pre-Fader or Post-Fader Patches" on page 74.

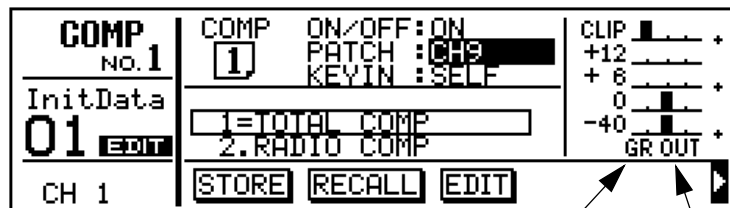
IN — this parameter appears only when PATCH is set to STEREO. It determines whether a dynamics processor is patched into just the left/odd channel (L), right/even channel (R), or both (BOTH).

Note: The ON/OFF, PATCH, KEY IN, and IN parameters are not stored in dynamics programs. They are, however, stored in mix scenes.

Dynamics Processor Meters

The amount of processor gain reduction (GR) and the output signal levels are metered on the COMP LCD function, as shown below. Gain reduction is the amount by which a signal's level is reduced. The output signal levels work from bottom-to-top as conventional level meters. The GR level meter, however, works from top-to-bottom.

For compression, limiting, and ducking, the GR meter operates when the processor is active (i.e. has been triggered by the KEY IN signal) and it shows the amount of signal level reduction. For a gate, however, the processor is active when the input signal is below the threshold. So the GR meter operates when the input signal is below the threshold and also when there is no input signal.



Gain reduction

Output levels

1. Press [UTILITY].

The UTILITY menu appears.

2. Select OUTPUT COMP PATCH POINT and press [ENTER].

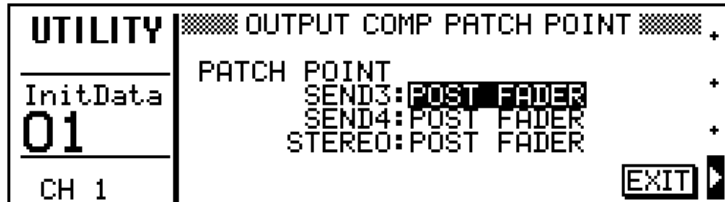
The OUTPUT COMP PATCH POINT LCD function appears.

3. Use the cursor buttons to select parameters and the [ENTER] button or PARAMETER wheel to set them.
4. To exit this function and return to the UTILITY menu, select EXIT and press [ENTER], or just press [UTILITY].

The UTILITY menu reappears.

Pre-Fader or Post-Fader Patches

SEND3, SEND4, and stereo output dynamics processor patch points can be configured pre-fader or post-fader. These settings are made on the OUTPUT COMP PATCH POINT LCD function, shown below. Initially, they are all configured post-fader.



Recalling a Dynamics Program

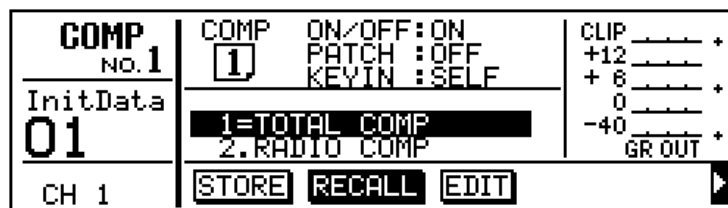
1. Press [COMP] repeatedly to select a processor: 1, 2, or 3.

The COMP LCD function appears. If you didn't exit after your last COMP edit, the COMP EDIT LCD function appears instead.

2. Select RECALL.
3. Use the PARAMETER wheel to select a program.
4. Press [ENTER] to recall.

The program is recalled.

There are 10 preset programs (1–10) and 10 user programs (11–20). Shown below is the COMP LCD function. Setup parameters appear in the top part of the display. Programs are listed in the center and the name of the program last recalled or stored is highlighted. Also there is an equal symbol (=) between the program's name and number, not a period like the other programs. The PARAMETER wheel is used to scroll through the program list. When another program is selected, its name flashes. If it is recalled, it stops flashing, appears highlighted, and the period between its name and number changes to an equal symbol (=).



Dynamics Processors and Mix Scenes

Dynamics processor settings are stored in mix scenes, so you can instantly change processors just by recalling a mix scene. If you are using a controlling computer or MIDI sequencer, you can also record processor setting adjustments as MIDI Control Change messages. Your adjustments can then be replayed automatically. See “Control Change” on page 83 for more details. Note that mix scenes store only the current program names, numbers, and parameter settings for COMP1, COMP2, and COMP3. They do not store the entire dynamics processor library of 20 programs.

1. Press [COMP] repeatedly to select a processor: 1, 2, or 3.

The COMP LCD function appears. If you didn't exit after your last COMP edit, the COMP EDIT LCD function appears instead.

2. Select EDIT and press [ENTER].

The COMP EDIT LCD function appears.

3. Use the [▲] [▼] cursor buttons to select parameters and the PARAMETER wheel to set them.

You can go to another LCD function and return to the COMP EDIT LCD function at any time.

4. When you've finished editing, select EXIT and press [ENTER], or simply press [ENTER] twice.

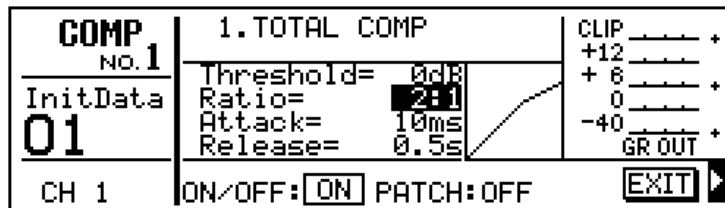
To name and store the program, see "Storing a Dynamics Program" on page 77.

Editing a Dynamics Program

You can edit all dynamics programs, however, you can store only to user locations. So if you edit a preset program, you must store it as a user program.

A typical edit display is shown below. The name and number of the program are shown at the top, and the dynamics parameters are shown in the center. The cursor buttons are used to scroll through the parameters and the PARAMETER wheel is used to set them. The gain graph to the right of the parameter list shows how the output signal level (vertical) changes relative to the input signal level (horizontal). This is affected by the Threshold, Ratio, and Range parameters.

The ON/OFF parameter at the bottom of the display allows you to turn the selected dynamics processor ON and OFF. This parameter is the same as the ON/OFF parameter that appears on the COMP LCD function. The PATCH parameter indicates which channel the selected dynamics processor is patched to. This parameter is set on the COMP LCD function.



See "Preset Dynamics Processor Parameters" on page 78 for a detailed listing of dynamics parameters, their ranges, and the preset program settings.

Storing a Dynamics Program

1. Press [COMP] repeatedly to select a processor: 1, 2, or 3.

The COMP LCD function appears. If you didn't exit after your last COMP edit, the COMP EDIT LCD function appears instead.

2. Select STORE.
3. Use the PARAMETER wheel to select a program and press [ENTER].

The COMP NAME LCD function appears.

4. Use the [◀] [▶] cursor buttons and PARAMETER wheel to name the program.

If you want to cancel the store operation, select CANCEL and press [ENTER].

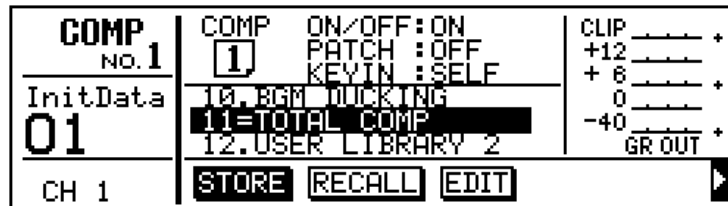
5. Press [STORE] to store.

The program is stored.

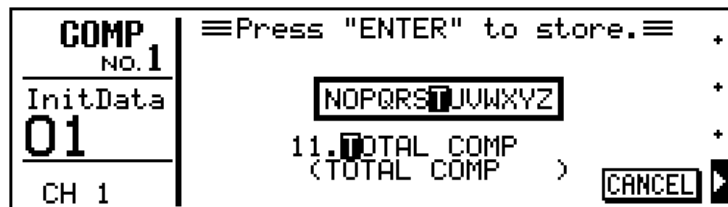
! By recalling a program and then storing it to another location, you can copy and reorganize your dynamics programs.

There are 10 user dynamics programs (11–20) for you to store your own settings. When STORE is selected on the COMP LCD function, user program 11, the first user program, is selected automatically. You cannot select preset programs 1 through 10 while the STORE option is selected. User programs can be named for easy identification.

Shown below is the COMP LCD function. Dynamics setup parameters appear in the top part of the display. Programs are listed in the center and the name of the program last recalled or stored is highlighted. Also there is an equal symbol (=) between the program's name and number, not a period like the other programs. The PARAMETER wheel is used to scroll through the program list. When another program is selected, its name flashes. If it is stored, it stops flashing, appears highlighted, and the period between its name and number changes to an equal symbol (=).



Shown below is the COMP NAME LCD function that appears when [ENTER] is pressed in step 2. The type of dynamics processor used in the program is shown in parenthesis. The program name and number are shown above that. The selected character in the name is highlighted. Available characters scroll through the box in the center. Use the cursor buttons to position the cursor in the name, and the PARAMETER wheel to scroll through the characters.



Dynamics program names can be up to 15 characters long and the following characters are available.

```

ABCDEFGHIJKLMNPOQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
(< > [ ] ( ) < > # $ % & @ ! ? + - * / \ = _ | , ; ' " ^ ~
0 1 2 3 4 5 6 7 8 9

```

Spaces are available between the above character rows.

Preset Dynamics Processor Parameters

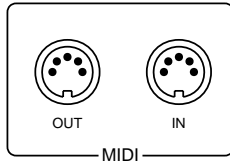
Type	Program #	Program Name	Description	Parameters				
				Threshold	Ratio	Attack	Release	Out Gain
				-40...+18dB	1:1-∞:1	0-120ms	0.1-6.0s	-18...+18dB
Comp	1	TOTAL COMP	Typical mix compression for adding punch and definition.	0dB	2:1	50ms	3.0s	+1dB
	2	RADIO COMP	Typical FM radio compression.	+6dB	4:1	18ms	5.0s	+3dB
	3	COMP FAST	Fast attack compression to catch all signal transients.	+2dB	4:1	5ms	2.5s	+3dB
	4	COMP SLOW	Slow attack compression to allow signal transients to pass through unaffected.	-2dB	4:1	70ms	5.0s	+1dB
	5	COMP HEAVY1	Strong signal limiting.	-3dB	10:1	14ms	0.5s	+2dB
	6	COMP HEAVY2	Medium signal limiting.	0dB	6:1	18ms	1.5s	+3dB
				Threshold	Attack	Hold	Decay	Range
				-50...+10dB	0-120ms	3-341ms	85ms-10.9s	0...-80dB
Gate	7	GATE FAST	Quick close noise gate.	-6dB	1ms	101ms	1.3s	-20dB
	8	GATE SLOW	Slow close noise gate.	-2dB	5ms	315ms	8.2s	-25dB
				Threshold	Attack	Hold	Decay	Range
				-50...+10dB	0-120ms	3-341ms	85ms-10.9s	0...-80dB
Duck	9	DUCKING	Typical signal ducking	-8dB	9ms	296ms	6.5s	-9dB
	10	BGM DUCKING	Ducking for background music voice-overs.	-18dB	9ms	341ms	10.9s	-14dB

9

MIDI

In this chapter...

MIDI and ProMix 01	80
MIDI Setup	81
Program Change	82
Control Change	83
Bulk Dump/Request	85
Local ON/OFF	86
Memory Control Change Out	87



MIDI and ProMix 01

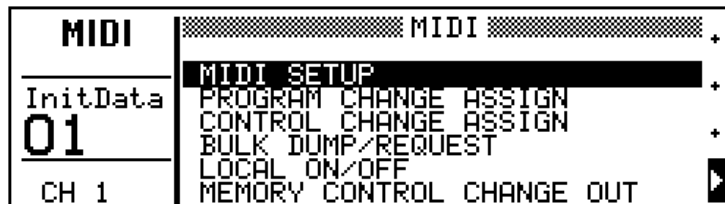
The true power of ProMix 01 can be realized with MIDI. Used in conjunction with a controlling computer or MIDI sequencer, mix scenes can be recalled automatically, providing *snapshot* mix automation. In addition, all mix parameters can be controlled in real time, providing *dynamic* mix automation. Various data, including mix scenes and the Edit Buffer, can be stored to a computer or MIDI data file. ProMix 01 uses the following MIDI messages:

- Program Change — to recall mix scenes.
- Control Change — to control mix parameters in real time.
- Bulk Dump (System Exclusive) — to store data.

MIDI connections are made using standard MIDI IN and OUT type connectors. Although there is no dedicated MIDI THRU connection, the same result can be achieved using the ECHO function, which appears on the MIDI SETUP LCD function. When set to ON, Program Change and Control Change messages received at MIDI IN are fed directly through to MIDI OUT.

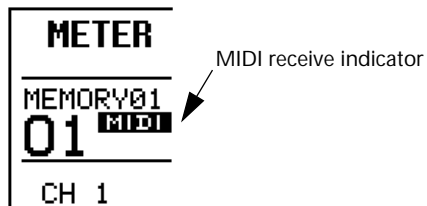
MIDI Menu

MIDI LCD functions are accessed through the MIDI menu, shown below. The MIDI menu appears when the [MIDI] button is pressed. There are six MIDI related LCD functions available. These are explained in the following sections.



MIDI Indicator

When ProMix 01 is receiving MIDI data, the MIDI indicator appears in the Memory area of the display.



MIDI Setup

1. Press [MIDI].

The MIDI menu appears.

2. Select MIDI SETUP and press [ENTER].

The MIDI SETUP LCD function appears.

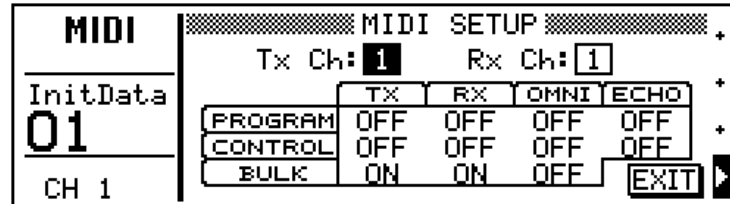
3. Use the cursor buttons to select parameters and the PARAMETER wheel to set them.

Tx, Rx, OMNI, and ECHO parameters can also be set using [ENTER].

4. To exit this function and return to the MIDI menu, select EXIT and press [ENTER], or just press [MIDI].

The MIDI menu reappears.

The MIDI SETUP LCD function shown below is used to set basic MIDI parameters.



The parameters are:

Tx Ch — this determines which MIDI Channel ProMix 01 uses to transmit Program Change, Control Change, and Bulk Dump messages. MIDI Channels 1 through 16 can be selected.

Rx Ch — this determines which MIDI Channel ProMix 01 uses to receive Program Change, Control Change, and Bulk Dump messages. MIDI Channels 1 through 16 can be selected.

Note: In Channel mode, Control Changes are transmitted and received on several MIDI Channels. See “Control Change” on page 83.

The following parameters can be set independently for Program Change (PROGRAM), Control Change (CONTROL), and Bulk Dump (BULK).

Tx — this determines whether ProMix 01 transmits MIDI data. When set to ON, MIDI data is transmitted as normal. When set to OFF, no MIDI data is transmitted.

Rx — this determines whether ProMix 01 receives MIDI data. When set to ON, MIDI data is received as normal. When set to OFF, received MIDI data is ignored.

OMNI — this determines whether ProMix 01 receives MIDI data on all MIDI Channels. When set to OFF, MIDI data is received on the MIDI Channels specified using Rx Ch. When set to ON, however, MIDI data is received on all MIDI Channels, regardless of Rx Ch settings.

ECHO — this determines whether MIDI data received at MIDI IN is echoed through to MIDI OUT. When set to OFF, data is not echoed. When set to ON, it is echoed.

Program Change

1. Press [MIDI].
The MIDI menu appears.
2. Select PROGRAM CHANGE ASSIGN and press [ENTER].
The PROGRAM CHANGE ASSIGN LCD function appears.
3. Use the cursor buttons to select Program Changes (PGM) and the PARAMETER wheel to assign mix scenes (MEM).
4. To exit this function and return to the MIDI menu, select EXIT and press [ENTER], or just press [MIDI].
The MIDI menu reappears.

! Remember to set the relevant parameters on the MIDI SETUP LCD function before trying to transmit or receive Program Changes.

MIDI Program Change messages are used to recall ProMix 01 mix scenes, providing *snapshot* mix automation. When a mix scene is recalled using the [RECALL] button, a Program Change message is output. This allows for simultaneous mix scene recall on multiple ProMix 01s. It can also be used to recall data on other MIDI devices. Such as an effects program on an external effects processor, or a voice on a synthesizer. Recalling mix scene #10, for example, could be used to recall voice #10 on a synthesizer. Mix scenes can also be recalled by transmitting Program Change messages from other MIDI devices. For example, most synthesizers are set to transmit a Program Change message when a voice is selected. This could be used to recall the corresponding mix scene on ProMix 01. So with just one button press, your mixer, synthesizer, and other MIDI devices are instantly ready for the next song. You can also use a MIDI footswitch.

Program Change messages really come into their own when used with a controlling computer or MIDI sequencer. For example, with your MIDI sequencer in record, [RECALL] button presses are recorded along with your song data. During playback, mix scenes are then recalled automatically. You can also edit and enter Program Changes in songs using your sequencer's edit functions.

Initially, mix scenes 1 through 50 are assigned to Program Changes 1 through 50. Mix scene 00 is assigned to Program Change 128. You can, however, change these assignments using the PROGRAM CHANGE ASSIGN LCD function. A Mix scene to Program Change Assignment table is provided in the Additions section of this *User's Guide*.

Shown below is the PROGRAM CHANGE ASSIGN LCD function. Program Changes are listed in three columns. The mix scene (MEM) assigned to the selected Program Change (PGM) is highlighted. "--" means no assign.

MIDI		PROGRAM CHANGE ASSIGN								
InitData		PGM	MEM	PGM	MEM	PGM	MEM	PGM	MEM	
01		1 =	01	2 =	02	3 =	03			
		4 =	04	5 =	[05]	6 =	[06]			
		7 =	07	8 =	08	9 =	09			
CH 1		[RESET] [EXIT]								

To reset these assignments to their initial values, select RESET and press [ENTER]. An "Are you sure" message appears. Select YES to reset, NO to cancel, then press [ENTER] again.

Mix scene to Program Change assignments can be stored using MIDI Bulk Dump. See "Bulk Dump/Request" on page 85.

Control Change

1. Press [MIDI].
The MIDI menu appears.
2. Select CONTROL CHANGE ASSIGN and press [ENTER].
The CONTROL CHANGE ASSIGN LCD function appears.
3. With the cursor in the No./NAME column, use the PARAMETER wheel to scroll through the ProMix 01 parameters.
4. Use the cursor buttons to select the Bank and Control Change (No.) columns and the PARAMETER wheel to set them.
5. When the Bank or Control Change (No.) column is selected, the [▲][▼] cursor buttons can be used to select ProMix 01 parameters.
6. To exit this function and return to the MIDI menu, select EXIT and press [ENTER], or just press [MIDI].
The MIDI menu reappears.

In conjunction with a controlling computer or MIDI sequencer, MIDI Control Change messages are used to control ProMix 01 mix parameters in real time, providing *dynamic* mix automation. When a ProMix 01 mix setting is adjusted, a Control Change message is output. If this message is recorded to computer or MIDI sequencer, during playback your mix adjustments can be replayed automatically.

ProMix 01 mix settings can also be controlled by transmitting Control Changes from other MIDI devices, using, for example, the assignable sliders on a synthesizer. This allows you to control ProMix 01 from your synthesizer, or any other device that transmits Control Changes.

There are 531 controllable mix parameters, 0 through 530, and 1,536 Control Changes, divided into 16 banks of 96. All parameters are initially assigned to Control Changes. However, you can change these using the CONTROL CHANGE ASSIGN LCD function. The Control Change to Parameter Assignment table in the Additions section of this *User's Guide* lists the initial assignments.

Shown below is the CONTROL CHANGE ASSIGN LCD function. The PARAMETER wheel is used to scroll through the parameters, and the selected parameter is highlighted. In the Control Change Bank and No. columns, "--" means no assign.

MIDI		CONTROL CHANGE ASSIGN			
NO.	NAME	BANK	NO.		
InitData	0 CH 1 Level	0	0		
01	1 CH 2 Level	[0]	[1]		
	2 CH 3 Level	0	2		
CH 1	MODE: CHANNEL		RESET	EXIT	

The MODE option sets the mode: Channel or Register.

Channel — each bank of Control Changes uses a separate MIDI Channel. The MIDI Channel used depends on the Tx Ch parameter on the MIDI SETUP LCD function and is determined as follows:

$$\text{MIDI Channel} = \text{Tx Ch} + \text{bank number}$$

! Remember to set the relevant parameters on the MIDI SETUP LCD function before trying to transmit or receive Control Changes.

So, for example, when Tx Ch is set to 1, bank 0 data uses MIDI Channel 1 (1 + 0 = 1) and bank 5 data uses MIDI Channel 6 (5 + 1 = 6). When Tx Ch is set to 7, bank 0 data uses MIDI Channel 7 (7 + 0 = 7) and bank 5 data uses MIDI Channel 12 (5 + 7 = 12). If the result is higher than 16, start again from 1. For example, a value of 19 is MIDI Channel 3.

The Control Change (CONTROL) OMNI parameter on the MIDI SETUP LCD function is ignored in Channel mode.

Register — all Control Changes use the Tx Ch MIDI Channel, and Control Change #98 (Non-Registered Parameter LSB) is used to specify banks.

To reset the Control Change assignments to their initial values, select RESET and press [ENTER]. An “Are your sure” message appears. Select YES to reset, NO to cancel, then press [ENTER] again.

If several parameters are assigned to the same Control Change in the same bank, the lowest numbered parameter is controlled when that Control Change is received. When any one of the parameters is adjusted, the assigned Control Change is output as normal.

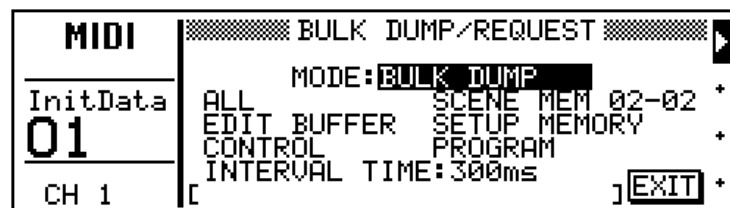
Bulk Dump/Request

1. Press [MIDI].
The MIDI menu appears.
2. Select BULK DUMP REQUEST and press [ENTER].
The BULK DUMP REQUEST LCD function appears.
3. Select MODE and press [ENTER] or use the PARAMETER wheel to select BULK DUMP or BULK REQUEST.
4. Use the cursor buttons to select a data type. Use the PARAMETER wheel to select mix scenes.
5. Press [ENTER] to execute the dump or request.
A message appears showing dump or request status.
6. To exit this function and return to the MIDI menu, select EXIT and press [ENTER], or just press [MIDI].
The MIDI menu reappears.

! Remember to set the relevant BULK parameters on the MIDI SETUP LCD function before trying to transmit or receive Bulk Dump data.

The BULK DUMP/REQUEST LCD function has two operating modes: Bulk Dump and Bulk Request. Bulk Dump outputs the selected data as MIDI Bulk Dump data. This is used to store ProMix 01 data to a controlling computer, MIDI sequencer, or MIDI data filer. Bulk Request, on the other hand, outputs a Bulk Request message requesting the selected data. The controlling computer that receives this message responds by transmitting the requested data. The Dump and Request functions can also be used to exchange data between ProMix 01s in a multiple system.

Shown below is the BULK DUMP/REQUEST LCD function.



The parameters are:

MODE — this determines the mode: Bulk Dump or Bulk Request. When Bulk Dump is selected, the selected data is output as MIDI Bulk Dump. When Bulk Request is selected, a Bulk Request message requesting the selected data is output.

ALL — this is all ProMix 01 data.

SCENE — this is mix scene data. You can select all mix scenes (01–50), just one (10–10), or a range (05–15).

EDIT BUFFER — this is the Edit Buffer data. For more details about this and other data types, see “Data Types” on page 98.

SETUP MEMORY — this is the Setup Memory data.

CONTROL — this is the Control Change to Parameter Assignment table data.

PROGRAM — this is the Mix Scene to Program Change Assignment table data.

INTERVAL TIME — this determines the interval between MIDI data blocks. MIDI devices with a relatively small MIDI buffer sometimes require longer intervals. Refer to your MIDI device’s user manuals to see what interval is recommended. For data transfer between ProMix 01s, use the 300ms setting.

While Bulk Dump or Bulk Request is in progress, the name of the data being output or requested is shown at the bottom of the display.

To cancel Bulk Dump, press a cursor button or select another LCD function.

1. Press [MIDI].
The MIDI menu appears.
2. Select LOCAL ON/OFF and press [ENTER].
The LOCAL ON/OFF LCD function appears.
3. Press [ENTER] or use the PARAMETER wheel to turn LOCAL ON/OFF ON and OFF.
4. Use the cursor buttons to select the LOCAL ON/OFF parameter and the [ENTER] button to set it.
5. To exit this function and return to the MIDI menu, select EXIT and press [ENTER], or just press [MIDI].

The MIDI menu reappears.

! Make sure that PROGRAM Tx and CONTROL Tx are set to ON. Otherwise, Control Change and Program Change messages are not output. Go to the MIDI SETUP LCD function.

Local ON/OFF

The LOCAL ON/OFF LCD function allows you to use the ProMix 01 faders and CH1–16 [SEL] buttons to control another ProMix 01, or a MIDI device that responds to MIDI Control Change and Program Change messages. This is similar to the Local ON/OFF function of a synthesizer, where the keyboard is disconnected from the tone generator so that both parts can be used independently. Using the ProMix 01 faders you could, for example, control parameters on a synthesizer or effects processor. The ProMix 01 [SEL] buttons could be used to select voices, programs, patches, etc., on a MIDI device.

Shown below is the LOCAL ON/OFF LCD function. Faders are listed in two boxed rows. Each box contains the fader's number and its current position, specified as a hexadecimal MIDI value.

MIDI		LOCAL ON/OFF							
InitData		LOCAL ON/OFF: ON							
01		1	2	3	4	5	6	7	8
		00	00	00	00	00	00	00	00
CH 1		9	10	11	12	13	14	15	16
		00	00	00	00	00	00	00	00
		EXIT							

LOCAL ON/OFF — this turns the Local function ON and OFF. When set to ON, the faders and [SEL] buttons control the ProMix 01 as normal. When set to OFF, the faders and [SEL] buttons do not control the ProMix 01 (i.e. Edit Buffer). When a fader is moved, a Control Change message is output, and when a CH1–16 [SEL] button is pressed, a Program Change message is output. The message “Program Change Transmitted” appears when a [SEL] button is pressed. The ST IN, RTN/SEND, and ST OUT faders are set to minimum automatically.

When Local is set to OFF, ProMix 01 can still be controlled by another device using Control Change messages. The Control Change to Parameter Assignment table in the Additions section of this *User's Guide* lists the initial parameter assignments.

Note: *Local OFF is effective only when the MIDI LOCAL ON/OFF LCD function is selected. When another LCD function is selected, the faders and [SEL] buttons control the ProMix 01 as normal.*

Once the LOCAL ON/OFF parameter has been set to OFF, you can toggle between Local Off mode and normal operation very quickly. Simply press a function button to go to another LCD function. Then, to return to Local Off mode, just press the [MIDI] button.

When ProMix 01 is powered ON, Local ON/OFF is set to ON automatically.

Memory Control Change Out

1. Press [MIDI].
The MIDI menu appears.
2. Select MEMORY CONTROL CHANGE OUT and press [ENTER].
The MEMORY CONTROL CHANGE OUT LCD function appears.
3. Use the cursor buttons to select parameters and the PARAMETER wheel and [ENTER] button to set them.

4. Select OUTPUT:EXECUTE and press [ENTER].

The selected data is output and the message "EXECUTING" appears. The message changes to "...DONE" when finished.

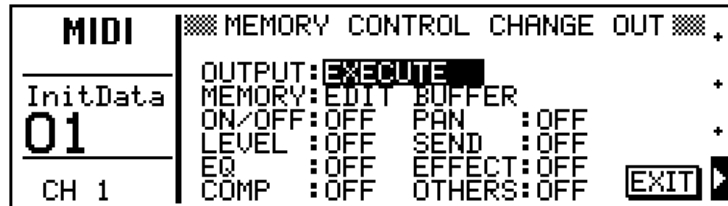
5. To exit this function and return to the MIDI menu, select EXIT and press [ENTER], or just press [MIDI].

The MIDI menu reappears.

! Make sure that Control Tx is set to ON before trying to output mix scene data. Go to the MIDI SETUP LCD function.

The MEMORY CONTROL CHANGE OUT LCD function allows you to selectively output mix scene data as MIDI Control Change messages. This can be used to selectively update mix scene data on another ProMix 01 or a controlling computer.

Shown below is the MEMORY CONTROL CHANGE OUT LCD function.



OUTPUT: EXECUTE — this executes Control Change Out.

The following data types can be selected:

MEMORY	This selects the mix scene whose data is output. You can also select the Edit Buffer (i.e. current mix settings).
ON/OFF	CH1-16, ST IN, RTN1, RTN2, SEND3, SEND4, ST OUT ON/OFF (# 22-43).
LEVEL	CH1-16, ST IN, RTN1, RTN2, SEND3, SEND4, ST OUT level (#0-21).
EQ	CH1-16, ST IN, RTN1, RTN2, ST OUT EQ ON/OFF (#196-215). CH1-16, ST IN, RTN1, RTN2, ST OUT EQ F/G/Q (#216-395).
COMP	COMP1-3 ON/OFF (#458-460).
	COMP1-3 # (#446-448).
	COMP1-3 PATCH Channel (#449-451).
	COMP1-3 KEYIN Channel (#452-454).
	COMP1-3 KEYIN Mode (#455-457).
PAN	COMP1-3 Parameter 1-(5) (#461-475). The number of parameters depends on the program selected.
	CH1-16, ST IN L-R, RTN1 L-R, RTN2 L-R, SEND3, SEND4, ST OUT Pan, Balance (# 44-67). CH1-16, ST IN SEND3-4 Pan, Balance (# 140-156).
SEND	SEND1, SEND2, SEND3, SEND4 Pre/Post (# 136-139).
	CH1-16, ST IN, SEND1, SEND2, SEND3, SEND4 Level (# 68-135).
EFFECT	Effect1, Effect2 Type (# 404-405).
	Effect1, Effect2 Parameter 1-(10) (# 406-445). The number of parameters depends on the program selected.
OTHERS	CH1-16, ST IN Phase Normal/Reverse (# 179-195).
	CH1-16, ST IN Group (# 484-500).

The following data is output with each of the above data types: CH1-16 Stereo Pair Flag (# 396-406) and SEND3, 4 Configuration Flag (# 476).

10

Other Functions

In this chapter...

Using the Oscillator	90
Checking the Battery	91
ProMix 01 Initialization	92
Fader Calibration	92

Using the Oscillator

1. Press [UTILITY].
The UTILITY menu appears.
2. Select OSCILLATOR and press [ENTER].
The OSCILLATOR LCD function appears.
3. Assign the oscillator.
4. Turn the OSC ON.
5. Set the frequency (FREQ).
6. Set the level.
7. To exit this function and return to the UTILITY menu, select EXIT and press [ENTER], or just press [UTILITY].
The UTILITY menu reappears.

ProMix 01 features a useful sine wave oscillator that can be assigned to SEND3, SEND4, and the stereo output. Since it's digital, it is highly accurate and produces a very clean sine wave. It can also produce pink noise. You can use it when setting recording levels on multitrack, two track, cassette, and DAT recorders. It's also useful for system troubleshooting and other studio tasks.

Note: Before turning the oscillator ON, it's a good idea to set the SEND3, SEND4, or ST OUT faders to a minimal level. This will prevent any sudden tone burst surprises in your monitors or foldback headphones.

Shown below is the OSCILLATOR LCD function. Oscillator parameters appear to the left of the LEVEL fader, and level meters for SEND3, SEND4, and ST OUT to the right.



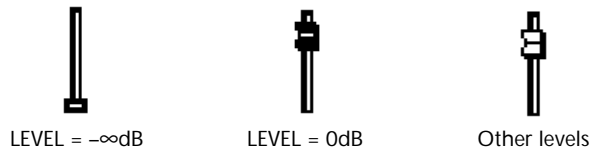
The parameters are:

ASSIGN — use these parameters to assign the oscillator to SEND3, SEND4, and the stereo output (ST OUT).

OSC — use this parameter to turn the oscillator ON and OFF. This is automatically set to OFF when another LCD function is selected.

FREQ — use this parameter to select a sine wave frequency: 100Hz, 1kHz, 10kHz, or PINK noise.

LEVEL — use this parameter to set the oscillator level. The fader graphic indicates the level setting. The fader knob changes, too.



Checking the Battery

1. Press [UTILITY].

The UTILITY menu appears.

2. Select BATTERY CHECK and press [ENTER].

The BATTERY CHECK LCD function appears.

3. To exit this function and return to the UTILITY menu, select EXIT and press [ENTER], or just press [UTILITY].

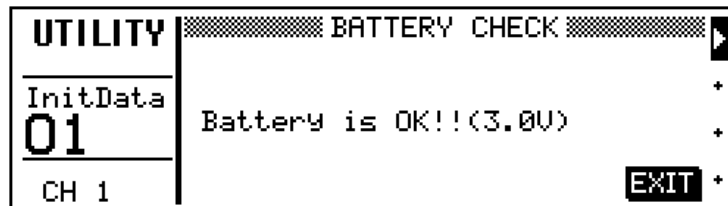
The UTILITY menu reappears.

ProMix 01 uses a long-life battery to backup its RAM memory. The battery should last for up to five years, and you can check its condition using the BATTERY CHECK function.

If the BATTERY CHECK function indicates that the battery needs replacing, please contact your Yamaha dealer.

Important: *Do not try to replace the battery yourself.*

Shown below is the BATTERY CHECK LCD function.



Possible messages are:

Battery is OK!! — battery is OK.

Warning! Low battery — battery power is getting low. Ask your Yamaha dealer to install a new battery.

Warning! No battery — no battery is installed. Ask your Yamaha dealer to install a new battery.

1. Power OFF ProMix 01.
2. Press and hold down [STORE] and [INC+].
3. Power ON ProMix 01.
The message "Initializing Memory" appears.
4. When the "Initializing Memory" message disappears, release the buttons.
When the faders return to their minimum positions, initialization is complete.

ProMix 01 Initialization

This function allows you to reset all ProMix 01 mix settings, mix scenes, user effects programs, user EQ programs, and user dynamics programs to their initial settings (i.e. their factory settings).

Note: If you want to reset just the mix settings, recall mix scene 00 instead. See "Mix Scene 00" on page 62.

Initialization consists of:

- Clearing all user RAM areas: mix scenes, user effects programs, user EQ programs, and user dynamics programs.
- Initializing the Edit Buffer (i.e. all mix settings).
- Initializing the Mix Scene to Program Change table.
- Initializing the Control Change to Parameter Assignment table.
- Copying mix scene 00 to mix scenes 1 through 50.
- Initializing the I/O ports.
- Calibrating the faders (don't worry about the noise).
- Refreshing the LCD.
- Resetting.

Fader Calibration

If ProMix 01 is not used for some time, is moved to a new location, or the faders are obstructed in some way, fader movements may become irregular. In this case the faders need calibrating. This calculates the torque required by each fader motor to drive its fader accurately and smoothly. Fader calibration takes about 30 seconds, and the message "Calibrating Faders" is shown while it's in progress.

Note: Do not touch or obstruct the faders while calibration is in progress. If you do so accidentally, calibrate the faders again.

1. Power OFF ProMix 01.
2. Press and hold down [ENTER].
3. Power ON ProMix 01.
The faders are calibrated.
When the faders return to their previous positions, calibration is complete.

Troubleshooting

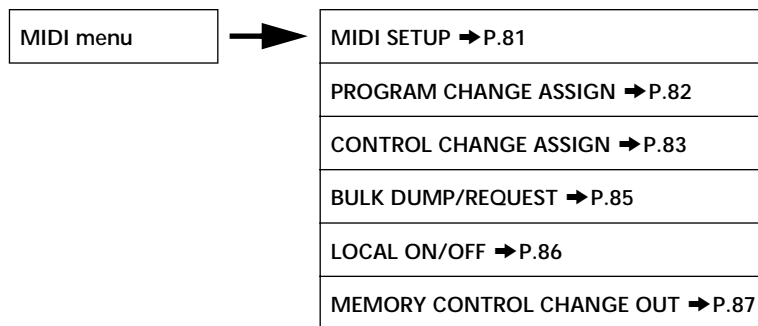
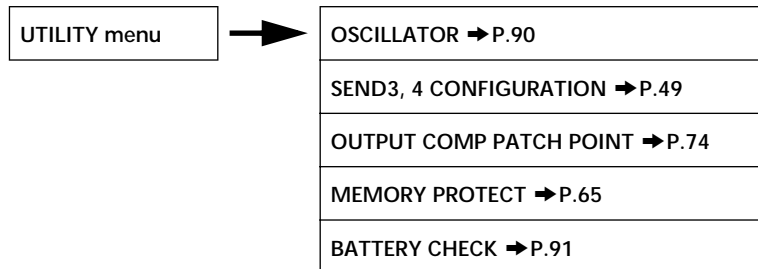
Trouble	Remedy
ProMix 01 cannot be powered ON.	Make sure that the ProMix 01 power cable is connected to an AC receptacle of the type marked on the rear panel.
	Make sure that the POWER switch is in the ON position.
	If installed, check the mains plug fuse.
The signal phase sounds odd.	Make sure that the PHASE LCD function is set correctly.
	Make sure that your balanced cables are wired correctly.
The input signal sounds distorted but the level looks OK on the METER LCD function.	For signals at a relatively high level, applying a lot of EQ boost may cause signal distortion. Since the METER LCD function meters signals before the EQ, the signal level will still look OK. To remedy this, back off the GAIN control a little or reduce the amount of EQ boost.
Configured a stereo pair, but it sounds like it's in mono.	Make sure that the odd channel is panned hard-left and the even channel hard-right. When setting up the stereo pair, use the ST RESET option to set the pans automatically.
Cannot control the channel-to-mix level using the faders.	Probably because one of the SEND LCD functions is selected. Select another LCD function to return the faders to their normal mode.
On the display it says that a fader group is ON, yet it doesn't seem to work.	This is because ON indicates that the Balance Adjust function in ON (i.e. the fader group is disabled temporarily). Switch the Balance Adjust function OFF.
The signals connected to the 2TR IN inputs appear on the stereo input channel.	This is normal when no plugs are inserted into the ST IN phone jacks. The 2TR IN signal is fed to the stereo input channel. When plugs are inserted into the ST IN phone jack inputs, however, this connection is broken.
Cannot select preset effects programs 1 through 30.	Probably because the STORE option is currently selected.
Cannot select preset EQ programs 1 through 30.	Probably because the STORE option is currently selected.
The stereo outputs are clipping even though the CLIP LED is not lighting.	When unbalanced connectors are connected to the STEREO OUT XLRs, their maximum output level is reduced by 6dB. This means that the STEREO OUT signal actually clips when the 12dB LED lights up. This is 8dB before the CLIP LED.
Cannot patch a dynamics processor into a channel.	Possibly because a dynamics processor is already patched into that channel.
Cannot monitor via CUE.	Make sure that the CUE/2TR IN switch is set to CUE, not 2TR IN.
Cannot recall mix scenes using MIDI Program Changes.	Make sure that ProMix 01 is set to receive on the correct MIDI Channel and that Program Change receive is set to ON. Go to the MIDI SETUP LCD function.
	Make sure that the Mix Scene to Program Change assignments are correct.
Cannot control mix settings using MIDI Control Changes.	Make sure that the correct mode is selected (i.e. Register or Channel) and that Control Change receive is set to ON. Go to the CONTROL CHANGE ASSIGN and MIDI SETUP LCD functions.
	Make sure that the Control Change to Parameter assignments are correct.
Fader operation seems odd.	Calibrate the faders.
Fader movement is not smooth.	Initially the faders may not move very smoothly. They will, however, get smoother as they are used. This is because they have an ageing, or run-in period. This does not affect the internal data, so ProMix 01 sonic performance is not affected.

Appendix

In this chapter...

LCD Function Map	96
Button Protector	97
Data Types	98
Error Messages	100
ProMix 01 Compatible Products	104
General Specifications	105
Input Specifications	106
Output Specifications	106
Digital OUT & MIDI Specifications	107
Digital Out Channel Status	107

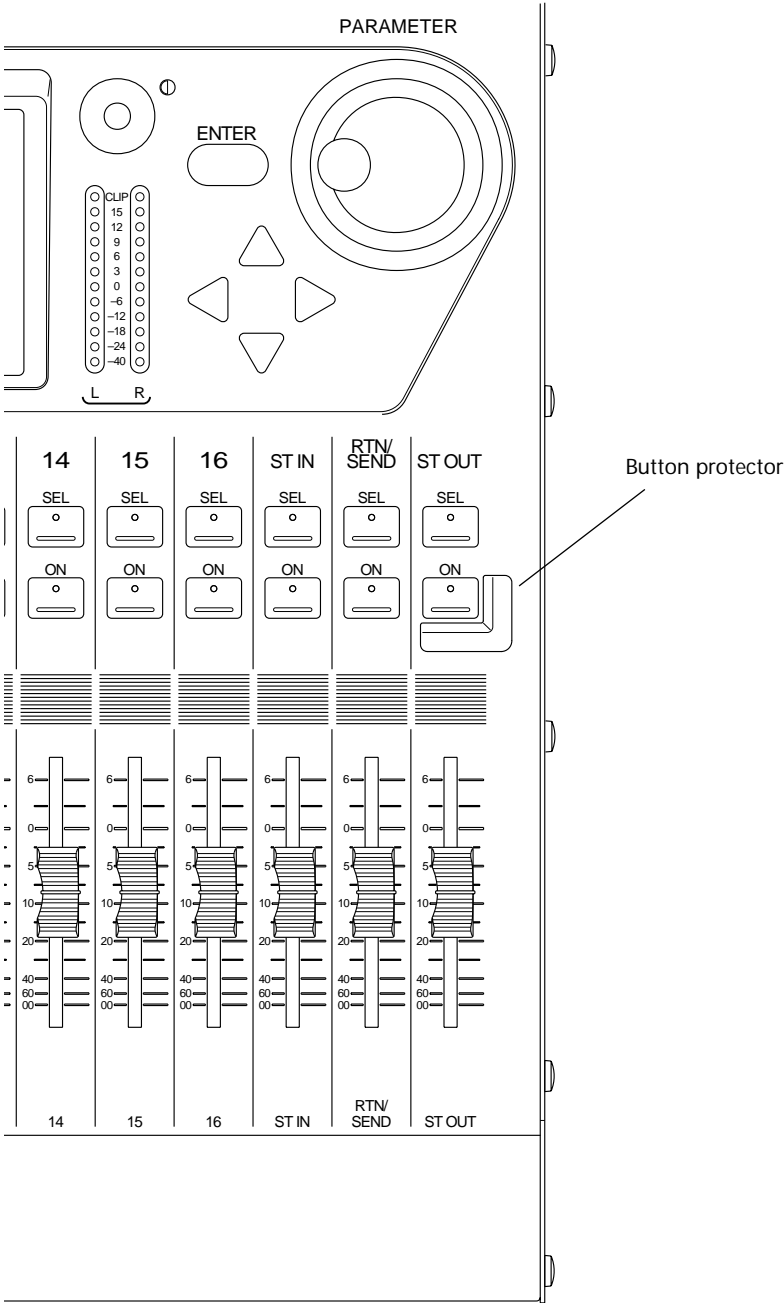
LCD Function Map



MEMORY → P.63
GROUP → P.56
PAIR → P.58
METER → P.21
PAN/∅ → P.28
COMP → P.72
CUE → P.51
SEND1 → P.34
SEND2 → P.34
SEND3 → P.48
SEND4 → P.48
SEND3-4 → P.49
EQ → P.23
LIBRARY → P.24

Button Protector

If you find that your hand accidentally presses the ST OUT [ON] button when operating the PARAMETER wheel, affix the self-adhesive Button Protector as shown below.



Data Types

Mix Scene Data

Data	Source	Details
Mix scene name		Eight characters
ON/OFF buttons	CH1–16, ST IN, SEND3, SEND4, RTN1, RTN2, ST OUT	ON/OFF
Phase settings	CH1–16, ST IN	Normal/reverse
EQ	CH1–16, ST IN, RTN1, RTN2, ST OUT	ON/OFF, frequency, gain, Q/shelf
Pan	CH1–16, ST IN, RTN1, RTN2. In SEND3-4 stereo mode: CH1–16-to-SEND3-4	33-position
Balance	ST OUT. In SEND3-4 stereo mode: SEND3-4 output, ST IN-to-SEND3-4	33-position
Fader	CH1–16, ST IN, SEND3, SEND4, RTN1, RTN2, ST OUT	128-position resolution
SEND faders	CH1–16 and ST IN to SEND1, SEND2, SEND3, SEND4	128-position resolution
SEND Pre/Post	CH1–16, ST IN (all set together)	Pre/post
Channel pairs	CH1–16	ON/OFF
Group data	A, B, C, D	CH1–16, ST IN
Effects parameters	Effect1, Effect2	Program numbers and 10 effects parameters from Effect1 and Effect2 (20 in total)
Dynamics parameters	COMP1, COMP2, COMP3	Patch point, ON/OFF, KEYIN, program numbers, and 5 parameters from each (15 in total)
SEND3, 4 config		Stereo/mono
SEND3, SEND4 and STEREO COMP PATCH POINT		Post-fader/pre-fader

Edit Buffer Data

Same as Mix Scene data.

Control Data

This is the MIDI Control Change to ProMix 01 Parameter Assignment Table. See the Additions section at the end of this *User's Guide*.


Program Data

This is the ProMix 01 Mix Scene to MIDI Program Change Assignment Table. See the Additions section at the end of this *User's Guide*.

Setup Memory Data

MIDI Data	Details
Tx channel	1-16
Rx channel	1-16
Control Change mode	Channel/register
Control Change Tx	ON/OFF
Control Change Rx	ON/OFF
Control Change OMNI	ON/OFF
Control Change ECHO	ON/OFF
Program Change Tx	ON/OFF
Program Change Rx	ON/OFF
Program Change OMNI	ON/OFF
Program Change ECHO	ON/OFF
Bulk Tx	ON/OFF
Bulk Rx	ON/OFF
Bulk OMNI	ON/OFF
MIDI Tx interval	0-1sec (100ms steps)
MIDI Local ON/OFF	ON/OFF
MIDI Local fader levels	CH1-16 fader positions
Memory Control Change Out parameters	Memory, ON/OFF, Pan, Level, Send, EQ, Effect, Comp, Others

Error Messages



ERROR! System error [1].
Please initialize memory.

ERROR! System Error[1]

A fatal error has occurred. Initialize ProMix 01. See “ProMix 01 Initialization” on page 92.

ERROR! System Error[2]

A fatal error has occurred. Initialize ProMix 01. See “ProMix 01 Initialization” on page 92.

ERROR! System Error[3]

A fatal error has occurred. Initialize ProMix 01. See “ProMix 01 Initialization” on page 92.

ERROR! System Error[4]

A fatal error has occurred. Initialize ProMix 01. See “ProMix 01 Initialization” on page 92.

ERROR! System Error[5]


A fatal error has occurred. Initialize ProMix 01. See “ProMix 01 Initialization” on page 92.

ERROR! System Error[6]

A fatal error has occurred. Initialize ProMix 01. See “ProMix 01 Initialization” on page 92.

ERROR! System Error[7]


A fatal error has occurred. Initialize ProMix 01. See “ProMix 01 Initialization” on page 92.



ERROR!
MIDI Rx buffer full.
Press "ENTER" to continue.

MIDI Rx Buffer Full Error

A MIDI receive error has occurred. Reduce the transmission data.



ERROR!
SUB->MAIN Rx
buffer full.
Press "ENTER" to continue.

SUB->MAIN CPU Receive Buffer Full Error

An error has occurred while receiving fader data from the CPU.

```

  ▲ ERROR!
  MIDI Rx Parity error.
  Press "ENTER" to continue.

```

MIDI Parity Error

A MIDI receive error has occurred. Check the transmission data and connecting cable.

```

  ▲ ERROR!
  MIDI Rx framing error.
  Press "ENTER" to continue.

```

MIDI Framing Error

A MIDI receive error has occurred. Check the transmission data and connecting cable.

```

  ▲ ERROR!
  MIDI Rx over run.
  Press "ENTER" to continue.

```

MIDI Over Run Error

A MIDI receive error has occurred. Reduce the transmission data.

```

  ▲ ERROR!
  SUB->MAIN Rx
  Parity error.
  Press "ENTER" to continue.

```

SUB->MAIN CPU Parity Error

An error has occurred while receiving fader data from the CPU.

```

  ▲ ERROR!
  SUB->MAIN Rx
  framing error.
  Press "ENTER" to continue.

```

SUB->MAIN CPU Framing Error

An error has occurred while receiving fader data from the CPU.

```

  ▲ ERROR!
  SUB->MAIN Rx over run.
  Press "ENTER" to continue.

```

SUB->MAIN Over Run Error

An error has occurred while receiving fader data from the CPU.

```

  ▲ ERROR!
  MIDI Tx buffer full.
  Press "ENTER" to continue.

```

MIDI Transmit Buffer Full Error

A MIDI receive error has occurred. Reduce the transmission data.

```

  ▲ ERROR!
  MAIN->SUB Tx
  buffer full.
  Press "ENTER" to continue.

```

MAIN->SUB CPU Transmit Buffer Full Error

An error has occurred while receiving fader data from the CPU.

```

  ▲ ERROR!
  MAIN->SUB Rx
  buffer full.
  Press "ENTER" to continue.

```

MAIN->SUB CPU Receive Buffer Full Error

An error has occurred while receiving fader data from the CPU.

```

  ▲ ERROR!
  SUB->MAIN Tx
  buffer full.
  Press "ENTER" to continue.

```

SUB->MAIN CPU Transmit Buffer Full Error

An error has occurred while receiving fader data from the CPU.

```

  ▲ ERROR!
  MAIN->SUB Rx
  Parity error.
  Press "ENTER" to continue.

```

MAIN->SUB PUT Parity Error

An error has occurred while receiving fader data from the CPU.


```

  ▲ ERROR!
  MAIN->SUB Rx
  framing error.
  Press "ENTER" to continue.

```


MAIN->SUB Framing Error

An error has occurred while receiving fader data from the CPU.

 ERROR!
MAIN->SUB Rx over run.
Press "ENTER" to continue.


MAIN->SUB Over Run Error

An error has occurred while receiving fader data from the CPU.

 WARNING!
No battery.
Press "ENTER" to continue.


WARNING! No battery.

No battery is installed. Ask your Yamaha dealer to install one.

 WARNING!
Low battery.
Press "ENTER" to continue.


WARNING! Low battery.

Battery power is getting low. Ask your Yamaha dealer to install a new battery.

 Scene memory 00
is read only.


Scene memory 00 is read only.

Mix scene 00 is read only. Select another mix scene.

 Scene memories 01-25
are Protected.


Scene memories 01-25 are protected.

Scene memories 1 through 25 are protected. To store, first turn OFF the protection on the MEMORY PROTECT LCD function.

 Scene memories 26-50
are Protected.


Scene memories 26-50 are protected.

Scene memories 26 through 50 are protected. To store, first turn OFF the protection on the MEMORY PROTECT LCD function.

 CAUTION!
COMP1 Patch will
be cancelled.

CAUTION! COMP1 patch will be cancelled.

Due to a channel mode change, the COMP1 patch has been cancelled. Re-patch COMP1 when the channel mode has been set.

 CAUTION!
COMP2 Patch will
be cancelled.


CAUTION! COMP2 patch will be cancelled.

Due to a channel mode change, the COMP2 patch has been cancelled. Re-patch COMP2 when the channel mode has been set.

 CAUTION!
COMP3 Patch will
be cancelled.


CAUTION! COMP3 patch will be cancelled.

Due to a channel mode change, the COMP3 patch has been cancelled. Re-patch COMP3 when the channel mode has been set.


 Duplicate Grouping!

Duplicate Grouping!


This channel is already assigned to a group. To make a new group, first cancel that group.

 BULK Transmit(TX) OFF!**BULK Transmit(TX) OFF!**


Set BULK TX to ON on the MIDI SETUP LCD function, then try again.

 Control Change
Transmit(TX) OFF!**Control Change Transmit(TX) OFF!**

Set CONTROL TX to ON on the MIDI SETUP LCD function, then try again.

 Parameter not assigned.**Parameter not assigned.**

A parameter not assigned to a Control Change was found when trying to transmit mix scene data. Assign the parameter to a Control change, then try again.

 This COMP is
still in use.**This COMP is still in use.**

A COMP is patched into the selected channel. Cancel the COMP patch, then try again.

 BULK transmission will
be cancelled.**BULK transmission will be cancelled.**

Bulk Dump transmission has been cancelled.

ProMix 01 Compatible Products

MFC1 MIDI Foot Controller

The MFC1 is a MIDI foot controller that can transmit MIDI Program Change messages. This could be used with ProMix 01 for recalling mix scenes. With the addition of an optional FC7 Foot Controller and footswitch, the MFC1 can also transmit MIDI Control Change messages, which could be used for real-time ProMix 01 parameter control.

QX3 MIDI Sequencer

The QX3 is a dedicated 16-track MIDI sequencer. As well as recording MIDI data from musical instruments, it can be used to record ProMix 01 Program Change and Control Change messages for automated mixdowns.

MDF2 MIDI Data Filer

The MDF2 MIDI Data Filer provides convenient MIDI data storage for ProMix 01. Data can be bulk dumped from the ProMix 01 to the MDF2 for storage, and recalled at anytime. The MDF2 also provides real-time MIDI recording and playback.

MIDI Boxes (YME8, YMM2, YMC10)

The YME8 is a 1-in, 8-out MIDI expander box. It can also be used as a 2-in, 4-out expander. This type of MIDI distribution box minimizes MIDI delays, which can occur when MIDI devices' MIDI THRU connections are used. The YMM2 is a 2-in MIDI merge box. It can, for example, be used to merge the MIDI data from two MIDI controllers for connection to a MIDI sequencer with only one MIDI input. The YMC10 is an FSK to MIDI converter box. It provides an FSK type code for tape striping. During playback it converts that code into MIDI clock pulses for a MIDI sequencer or drum machine to sync to.

DMC1000

The DMC1000 is an 8-input, 8-bus, 8-monitor digital mixing console, with 28-bit internal processing and full automation. The ProMix 01 can be used as a sub mixer to expand the number of DMC1000 channels. ProMix 01 can be connected directly to one of the DMC1000's CD/DAT format digital inputs.

General Specifications

Frequency Response		20 Hz–20 kHz +1, –3 dB (@ +4 dB into 600 Ω)
THD		Less than 0.1% (20 Hz–20 kHz @ +14 dB into 600 Ω)
Dynamic Range		105dB typ. (ST IN to ST OUT AD/DA converters)
Hum & Noise (20Hz–20kHz)* Rs = 150 ohms. Input gain max. Input pad = 0dB. Input sensitivity = –60dB.		–128dB Equivalent Input Noise
		–88dB residual stereo output noise (ST OUT = OFF)
		–88dB (92dB S/N) stereo output (ST OUT fader nominal, CH faders min.)
		–64dB (68dB S/N) (ST OUT fader nominal, 1 channel fader at nominal)
Maximum Voltage Gain		76dB input channel to stereo output
		76dB input channel to sends 3 & 4 (pre-fader)
		12dB stereo input to stereo output
		76dB input channel to monitor output (via ST bus)
Crosstalk (@1kHz)		–70dB adjacent input channels
		–70dB input to output
Sampling Frequency		48 kHz
A/D Converter		20-bit linear 64-times oversampling
D/A Converter	Stereo Out	20-bit linear 8-times oversampling
	Monitor out, SEND3, 4	18-bit linear 8-times oversampling
Processing	Internal	24-bit linear
	EQ	36-bit linear
Signal Delay		Less than 3.5ms (input channel to stereo output)
GAIN control		44dB (–60...–16dB) continuously variable
PAD		0/20dB attenuation
PAN		33-position
Parametric EQ	Low	F= 32 Hz–1 kHz; G= ±15 dB; Q=1/6, 1/4, 1/3, 1/2, 3/4, 1, 3/2, 2, 3 oct, shelving
	Mid	F= 32 Hz–18 kHz; G= ±15 dB; Q=1/6, 1/4, 1/3, 1/2, 3/4, 1, 3/2, 2, 3 oct
	High	F= 1 kHz–18 kHz; G= ±15 dB; Q=1/6, 1/4, 1/3, 1/2, 3/4, 1, 3/2, 2, 3 oct, shelving
Effects Types		Reverb, delay, chorus, symphonic, flange, pitch change, phasing, tremolo, auto pan
Compressor Types		Compressor, Gate, Ducking
Faders	Type	60 mm motorized
	Resolution	+6dB...–66dB, –∞dB (128 position)
Memories	Scenes	50
	Internal Effects	30 preset, 10 user
	EQ Presets	30 preset, 20 user
	COMP	10 preset, 10 user
LCD display		240 x 64 dot backlit graphic LCD display
Meters		2 x 12-segment LED bars
Power require-ments	US & Canada model	120V AC, 60Hz
	General model	230V AC, 50Hz
	British model	240V AC, 50Hz
Power Consumption		70 W
Weight		12.5 kg (27.6 lb)
Dimensions (W x H x D)		435 x 124.7 x 487.4 mm (17.1" x 5" x 19.2")
Free-air operating temperature range		10°C–35°C (50°F–95°F)
Supplied Accessories		Button protector
Optional Extras	Rack-Mount kit (RK01)	
	Wooden side panels (W01SP)	
	Carrying case	
	Color fader knob set (FK8R, G, B, W, Y)	

* Hum & noise measured with a 6dB/octave 12.7kHz LPF, equivalent to a 20kHz filter with infinite dB/octave attenuation.

Input Specifications

Input connection	PAD *4	GAIN	Actual load impedance	For use with nominal	Input level			Mixer connector
					Sensitivity *1	Nominal	Max. before clip	
CH INPUT CH1-CH8	0	-60	3k Ω	50-600 Ω mics & 600 Ω lines	-72dB (194 μ V)	-60dB (775 μ V)	-40dB (7.75mV)	XLR-3-31 type *2
	0	-16			-28dB (30.9mV)	-16dB (123mV)	+4dB (1.23V)	
	20				-8dB (309mV)	+4dB (1.23V)	+24dB (12.3V)	
CH INPUT CH9-CH16	0	-60	10k Ω	50-600 Ω mics & 600 Ω lines	-72dB (194 μ V)	-60dB (775 μ V)	-40dB (7.75mV)	Phone jack (TRS) *3
	0	-16			-28dB (30.9mV)	-16dB (123mV)	+4dB (1.23V)	
	20				-8dB (309mV)	+4dB (1.23V)	+24dB (12.3V)	
STEREO IN [L, R]	—	—	10k Ω	600 Ω lines	-8dB (309mV)	+4dB (1.23V)	+24dB (12.3V)	Phone jack *4
2TR IN [L, R]	—	—	10k Ω	600 Ω lines	-10dB (245mV)	-10dB (245mV)	+6dB (1.55V)	RCA/phono *5

*1. Sensitivity is the lowest input level that will produce an output of +4dB (1.23V), the nominal output level when ProMix 01 is set to maximum gain (all level controls and faders set to maximum).

*2. XLR-type connectors are balanced (1=GND, 2=HOT, 3=COLD).

*3. MIC INPUT phone jacks are balanced (Tip=HOT, Ring=COLD, Sleeve=GND).

*4. STEREO IN phone jacks are unbalanced.

*5. 2TR IN RCA/phono jacks are unbalanced.

*6. In these specifications, dB represents specific voltages. 0dB is referenced to 0.775 volts RMS.

Output Specifications

Output connection	Actual source impedance	For use with nominal	Output level		Mixer connector
			Nominal	Max. before clip	
ST OUT (L, R)	150 Ω	600 Ω lines	+4dB (1.23V)	+24dB (12.3V)	XLR-3-32 type *1
REC OUT (L, R)	600 Ω	10k Ω lines	-10dB (245mV)	+10dB (2.45V)	RCA/phono *2
MONITOR OUT (L, R)	600 Ω	10k Ω lines	+4dB (1.23V)	+20dB (7.75V)	Phone jack *2
AUX SEND (3, 4)	600 Ω	10k Ω lines	+4dB (1.23V)	+20dB (7.75V)	Phone jack *2
PHONES	100 Ω	8 Ω phones	1 mW	25 mW	Stereo phone jack *2
		40 Ω phones	3 mW	110 mW	

*1. Balanced connection (1=GND, 2=HOT, 3=COLD).

*2. Unbalanced connection.

* In these specifications, dB represents specific voltages. 0dB is referenced to 0.775 volts RMS.

Digital OUT & MIDI Specifications

Output connection	Format	Level	Mixer connector
DIGITAL OUT (COAXIAL)	S/PDIF	0.5Vpk-pk/75 Ω	RCA/phono
MIDI IN	MIDI	—	5-pin DIN
MIDI OUT	MIDI	—	5-pin DIN

Digital Out Channel Status

Format	Consumer
Category	AD converter
Copy Prohibit	No
Emphasis	No
Type	2 Channel audio signal
Clock Accuracy	Level 2 (300 ppm)

All specifications subject to change without notice.

Glossary

A/D converter — An electronic device that converts analog signals into digital signals.

Aliasing — A type of signal distortion that occurs during A/D conversion if the sampling frequency is less than twice that of the highest audio frequency. A/D converters employ aliasing filters to filter out audio frequencies higher than half the sampling frequency. *See also* Nyquist Sampling Theorem.

BGM (Background Music) — Music played in the background as a backdrop to a main event. Can be used as an accompaniment, or to create a mood.

Bulk Dump — A ProMix 01 MIDI function that allows data transfer between ProMix 01s. Data is transmitted as MIDI System Exclusive.

Bus — In an audio mixer, a common conductor used to collect and distribute signals. The ProMix 01 has the following buses: SEND1, SEND2, SEND3, SEND4, ST, and CUE.

IEC958 (Consumer) — A digital interface format that is used to transfer digital audio data between consumer type digital audio equipment such as CD players, consumer DAT recorders, DCC, and Mini Disc recorders. Two channels of digital audio (left & right) are carried in one connection, usually a phono/RCA jack type connection. This format is often called S/PDIF (Sony/Phillips Digital Interface Format). ProMix 01 DIGITAL REC OUT uses this format.

Channel mode — The mode in which each bank of MIDI Control Change messages used to control ProMix 01 parameters are transmitted on individual MIDI channels.

Confidence monitoring — Monitoring directly from a recording medium to make sure that program material is being recorded correctly. On an analog tape recorder, signals are picked up by the playback head immediately after being recorded to tape by the record head. This allows for confidence monitoring. It is not possible on a tape recorder with combined record and play heads. A DAT must have 4 heads (inside one drum) for confidence monitoring.

Control Change — A type of MIDI message that offers real-time control. Typical Control Changes include Modulation, Volume, Pan, and Portamento. All ProMix 01 mix parameters can be controlled using MIDI Control Change messages

D/A converter — An electronic device that converts digital signals into analog signals.

DSP (Digital Signal Processor) — A chip designed specifically for processing large amounts of data at high speed in real time. This type of processor is ideal for handling digital audio data.

Dynamic mix automation — Mixdown automation where mix settings are adjusted in real time.

Dynamic range — The difference between the loudest and quietest signal levels in a system. In an audio device, usually the difference between the maximum output level and the residual noise floor. In a digital system, the available dynamic range is determined by the data resolution, about 6dB per digital bit. Hence, a 16-bit system theoretically provides a 96dB dynamic range.

Edit Buffer — The internal RAM area that stores the current ProMix 01 mix settings (i.e. the current mix scene). When a mix scene is stored, the Edit Buffer data is copied to the selected scene memory. When a mix scene is recalled, the data of the selected scene memory is copied back to the Edit Buffer.

LCD function — A ProMix 01 function that does not have dedicated hardware controls. LCD function parameters are selected on the LCD display and set using the PARAMETER wheel.

LED (Light Emitting Diode) — An electronic component that lights up when an electric current is applied. ProMix 01 [SEL] and [ON] buttons and stereo output meters use LEDs.

MIDI — An acronym for Musical Instrument Digital Interface. An internationally agreed standard that allows electronic musical instruments to communicate with each other.

Mix scene — A set of mixer settings at a particular point in a song. Just like a play, a piece of music consists of various scenes, each requiring different mixer settings. Mix scenes are stored in scene memories, and can be recalled using front panel buttons or MIDI Program Changes. These messages can be sent from a computer, MIDI foot-switch, keyboard, or sequencer. *See also* Scene Memory.

Modulation — in general audio, using an LFO (low frequency oscillator) to control a signal's frequency (pitch) or amplitude (level). The LFO frequency is set using modulation frequency parameters and the amount of LFO control is set using modulation depth parameters. Delay time and auto-pan speed parameters are also modulated.

Nyquist Sampling Theorem — This theorem states that the sampling frequency of a digital audio system must be at least twice that of the highest audio frequency, otherwise waveform distortion called aliasing will occur. *See also* Aliasing.

Oversampling — Sampling an audio signal at a rate higher than the normal sampling frequency. The net effect is that noise from quantization errors is reduced.

PAM — An abbreviation for Pulse Amplitude Modulation. In the first part of the A/D conversion, pulses occurring at the sampling frequency are modulated by an analog audio signal. *See also* PCM.

Peaking — A type of EQ circuit used to cut and boost a band of frequencies. It produces a mountain-peak type response curve. The width of the frequency band is controlled by the Q parameter. Mid-band EQ is usually of the peaking type. *Compare with* Shelving.

PCM — An abbreviation for Pulse Code Modulation. In the second part of the A/D conversion, the pulses derived using PAM are converted into binary data words using PCM. *See also* PAM.

Q — The unit used to measure an EQ circuit's selectivity. For high values the frequency band is narrow. For low values, it is wide. ProMix 01 Q is stated in musically intuitive octaves.

Quantization — The PCM process where PAM pulses are approximated to the nearest binary value available. In the ProMix 01 20-bit system, pulses can be approximated to any one of 1,048,576 binary values. That's four times more than a 16-bit CD system. These approximations can result in quantization errors (i.e. noise). However, this is reduced by oversampling, as featured on ProMix 01.

Pink noise — A type of random noise that contains an equal amount of energy per *octave*. The bands 100–200, 800–1600, and 3000–6000 all contain the same amount of energy. White noise, on the other hand, has an equal amount of energy per *frequency band*. That is, 100–200, 800–900, and 3000–3100.

Program Change — A type of MIDI message that is used to recall programs and patches. On the ProMix 01 they recall mix scenes.

RAM (Random Access Read & Write Memory) — A type of memory chip that stores data that can be edited, but requires a continuous electrical charge. ProMix 01 mix settings and mix scenes are stored in RAM. An internal backup battery provides the continuous charge. *Contrast with* ROM.

Register mode — The mode in which all MIDI Control Change messages used to control ProMix 01 parameters are transmitted on the same MIDI channel and MIDI Control Change 98 (Non Registered Parameter LSB) is used to identify banks.

ROM (Read Only Memory) — A type of memory chip that stores data that cannot be edited, but does not require a continuous electrical charge. The ProMix 01 operating system is stored in ROM. *Contrast with* RAM.

Sampling frequency — The number of times per second that an analog audio signal is sampled (measured) during A/D conversion. The value of each sample is stored as a data word. Once in the digital domain, the data usually remains at the same sampling frequency until final D/A conversion.

Scene memory — A ProMix 01 memory location used to store a mix scene. *See also* Mix scene.

Shelving — A type of EQ circuit used to cut and boost frequencies above or below a set frequency. It produces a shelf-looking response curve. High and low EQs are usually of the shelving type. ProMix 01 high and lows, however, can also be configured as peaking types.

Compare with Peaking.

Snapshot — *See* Mix scene.

S/N (Signal to Noise ratio) — In an audio system, the difference between the nominal signal level and the residual noise floor, usually expressed as a ratio in decibels.

System Exclusive — A type of MIDI message that is used to transmit data between MIDI devices exclusively. The ProMix 01 uses System Exclusive messages to transmit mix scene and setup data between ProMix 01s. *See also* Bulk Dump.

Further Reading

If you want to know more about ProMix 01 related subjects, here are a few suggested books.

- *Practical Recording Techniques*, Bruce and Jenny Bartlett, Sams, 1992. A step-by-step guide to modern recording techniques.
- *Introducing Digital Audio*, Ian R Sinclair, second edition, PC Publishing, 1992. A good all-around introduction to digital audio for experienced analog users. Second edition explains oversampling and bitstream techniques.
- *Principles of Digital Audio*, Ken C. Pohlmann, Howard W.Sams & Co, 1989. Covering all aspects of digital audio, this book is ideal for the newcomer who wants to know the basics — plus a bit more.
- *The Art of digital Audio*, John Watkinson, Focal Press (Butterworth Group), 1990. An essential read for digital audio professionals — but only for the serious!
- *The MIDI Ins, Outs & Thrus*, Jeff Rona, Hal Leonard Publishing, 1992. An excellent introduction to MIDI with many illustrations for easy understanding.
- *MIDI Systems & Control*, Francis Rumsey, second edition, Focal Press, 1994. Covers all MIDI topics in detail and looks at how MIDI can be used to control systems (i.e. digital mixers, synths).
- *Yamaha Sound Reinforcement Handbook*, Gary Davis and Ralph Jones, second edition, Hal Leonard Publishing Corporation, 1990. Although primarily concerned with sound reinforcement, many of the subjects covered also apply to ProMix 01 applications. The second edition also includes a comprehensive section on MIDI.

Index

Numerics

2TR IN
 connection 5
 operation 51
 48V phantom power 18

A

A/D converter 109
 About
 auxiliaries 30
 CUE 50
 dynamics processors 68
 effects 30
 user interface 12
 Aliasing 109
 Analog mixer analogy 9
 Attack
 compressor 69
 ducker 71
 gate 70
 AUTO PAN 44
 Auxiliaries
 about 30
 and ST IN 31

B

Backlit LCD 12
 Balance 26
 BATTERY CHECK, LCD function 91
 Battery, checking 91
 BGM 109
 BGM DUCKING 78
 Block diagram 8
 groups 57
 pairs 59
 ProMix 01 8
 SEND3-4 48
 BROAD CHORUS 43
 Bulk Dump
 interval time 85
 on/off 81
 BULK DUMP/REQUEST, LCD function 85
 Bus 109
 Button protector 97

C

Calibration, faders 92
 Channel mode 83
 CHORUS 43
 CHORUS->DLY LCR 41

CHORUS->REVERB 39
 CLIP, metering 19
 Coaxial, see Digital out
 COMP FAST 78
 COMP HEAVY1 78
 COMP HEAVY2 78
 COMP SLOW 78
 COMP, LCD function 72
 COMP, see Dynamics processors
 Compatible Yamaha products 104
 Compressor 68
 Confidence monitoring 109
 Contrast control, LCD 4
 Control Change
 assigning 83
 Channel mode 83
 memory Control Change out 87
 on/off 81
 Register mode 83
 CONTROL CHANGE ASSIGN, LCD
 function 83
 CUE
 about 50
 channel info 52
 CUE/2TR IN switch 51
 groups 50
 mode setting 51
 modes 50
 signal sources 51
 CUE, LCD function 51
 Cursor buttons 13

D

D/A converter 109
 Data types 98
 Decay
 ducker 71
 gate 70
 DELAY L-C-R 40
 DELAY->CHORUS 41
 Digital out
 channel status 107
 meter level 19
 spec 107
 DSP 109
 Ducking 71
 DUCKING, preset 78
 Dynamic automation 110
 Dynamic range 110
 Dynamics processors
 about 68
 compressor 68
 ducking 71
 editing 76
 gate 70
 limiter 69
 meters 73
 patching 72
 pre/post fader 74

preset program parameters 78
 preset programs 68
 recalling programs 75
 storing 77
 with mix scenes 75

E

ECHO on/off 81
 Edit buffer 62
 data 98
 scene memories 62
 EDIT indicator 62
 Editing
 dynamics processors 76
 effects programs 35
 Effects
 about 30
 applying 31
 editing 35
 pre/post fader sends 32
 preset program parameters 37
 recalling 34
 returning the signal 33
 sending a channel signal 32
 storing 36
 with mix scenes 34
 ENTER button 13
 EQ 21
 LCD function 21
 library 22
 preset programs 23
 Error messages 100

F

Faders
 calibration 92
 grouping 56
 using 25
 FLANGE 43
 FLANGE->REVERB 40
 Function buttons 3
 FUNCTION, LCD area 12
 FUNNY PITCH 42
 Further reading 112

G

Gain 18
 Gate 70
 GATE FAST 78
 GATE SLOW 78
 GR, gain reduction 73
 GROUP, LCD function 56
 Groups
 block diagram 57
 CUE 50

using 56

H

High EQ 21
Hold
 ducker 71
 gate 70

I

IEC268, wiring standard 6
IEC958, digital format 109
IN, dynamics processors 73
Initialization 92
Input channel, CUE info 52
Interval time, Bulk Dump 85

K

KARAOKE ECHO 1 41
KARAOKE ECHO 2 41
KEYIN, dynamics processors 73

L

Last CUE, CUE mode 50
LCD
 contrast 4
 display 12
LCD functions
 BATTERY CHECK 91
 BULK DUMP/REQUEST 85
 COMP 72
 complete list 15
 CONTROL CHANGE ASSIGN 83
 CUE 51
 EQ 21
 GROUP 56
 LIBRARY 22
 LOCAL ON/OFF 86
 map 96
 MEMORY 63
 MEMORY CONTROL CHANGE OUT 87
 MEMORY PROTECT 65
 METER 19
 MIDI SETUP 81
 OSCILLATOR 90
 OUTPUT COMP PATCH POINT 74
 PAIR 58
 PAN 26
 PROGRAM CHANGE ASSIGN 82
 SEND1, 2 32
 SEND3, 4 45
 SEND3, 4 CONFIGURATION 46
LED 110
Library, EQ 22

LIBRARY, LCD function 22
Limiter 69
Local on/off 86
LOCAL ON/OFF, LCD function 86
Low EQ 21

M

Map, LCD functions 96
MEM 82
MEMORY CONTROL CHANGE OUT, LCD function 87
MEMORY PROTECT, LCD function 65
MEMORY, LCD area 12
MEMORY, LCD function 63
METER, LCD function 19
Metering
 dynamics processors 73
 inputs and outputs 19
 peak hold 19
Mid EQ 21
MIDI
 and ProMix 01 80
 Bulk Dump 85
 Bulk Dump request 85
 connections 7
 Control Change 83
 Control Change out 87
 local on/off 86
 MIDI menu 80
 Program Change 82
 receive channel 81
 receive indicator 80
 setup 81
 transmit channel 81
MIDI SETUP, LCD function 81
Mix scenes
 data 98
 dynamics processors 75
 edit buffer 62
 EDIT indicator 62
 effects 34
 Program Change assign 82
 recalling 64
 scene 00 62
 storing 63
Mix, CUE mode 50
Modulation 110
MONITOR OUT
 connection 6
 using 50
MONO x 2, channel pairs 58
MONODLY->CHORUS 40

N

Noise gate 70
Non-registered parameter LSB 84
Normal, phase 20

Nyquist theorem 110

O

Octave, Q values 21
OMNI on/off 81
ON buttons 25
Oscillator 90
OSCILLATOR, LCD function 90
Out gain
 compressor 69
OUTPUT COMP PATCH POINT, LCD function 74
Oversampling 110

P

Pad 18
PAIR, LCD function 58
Pairs
 block diagram 59
 using 58
PAM 110
Pan 26
 stereo pairs 27
PAN, LCD function 26
PARAMETER wheel 13
Patch points, pre/post fader 74
PATCH, dynamics processors 72
Patching dynamics processors 72
PCM 111
Peak hold 19
Peaking
 setting 21
 what is it? 111
PGM 82
Phantom master switch 5
Phantom power 18
Phase 20
PHASING 44
PHONES
 connection 6
 using 50
Pink noise
 oscillator 90
 what is it? 111
Post
 dynamics patch points 74
 SEND1, 2 32
 SEND3, 4 45
POWER switch 6
Pre
 dynamics patch points 74
 SEND1, 2 32
 SEND3, 4 45
Preset effects programs 30
Presets
 dynamics program parameters 78
 dynamics programs 68

- effects program parameters 37
- effects programs 30
- EQ programs 23
- Program Change
 - assigning 82
 - on/off 81
- PROGRAM CHANGE ASSIGN, LCD
 - function 82
- ProMix 01
 - block diagram 8
 - initialization 92
 - rear panel 5
 - top panel 2
- Protecting scene memories 65

Q

- Q
 - setting 21
 - what is it? 111
- Quantization 111

R

- RADIO COMP 78
- RAM 111
- Range
 - ducker 71
 - gate 70
- Ratio, compressor 69
- Rear panel 5
- REC OUT
 - analog 7
 - digital 7
- Recalling
 - dynamics processors 75
 - effects programs 34
 - mix scenes 64
- Receive channel, MIDI 81
- Receive indicator, MIDI 80
- Register mode 83
- Release, compressor 69
- REV AMBIENCE 1 38
- REV AMBIENCE 2 38
- REV LIVE ROOM 1 39
- REV LIVE ROOM 2 39
- REVERB HALL 1 37
- REVERB HALL 2 37
- REVERB PLATE 38
- REVERB ROOM 1 37
- REVERB ROOM 2 37
- REVERB STAGE 38
- REVERB VOCAL 39
- Reverse, phase 20
- ROM 111
- RTN/SEND
 - fader select 14
- RTN1, 2
 - CUE info 54

- dual pan 26
- returning effects signals 33

S

- S/N ratio 112
- S/PDIF, see Digital out
- Sampling frequency 111
- Scene memories
 - mix scene 00 62
 - protecting 65
 - what are they? 62
 - what do they store? 62
- SCENE MEMORY buttons 3
- SEL buttons 14
- SEL CH, LCD area 12
- SEND1, 2
 - LCD function 32
 - pre/post fader 32
- SEND3, 4
 - connections 6
 - CUE info 53
 - LCD function 45
 - pre/post fade 45
 - using 45
- SEND3, 4 CONFIGURATION, LCD
 - function 46
- SEND3-4
 - block diagram 48
 - channel pan 47
 - CUE info 53
 - output balance 47
 - ST IN balance 47
 - stereo pair 46
- Setup memory data 99
- Shelving
 - setting 21
 - what is it? 112
- Snapshot 112
- Specifications
 - digital out & MIDI 107
 - general 105
 - input 106
 - output 106
- ST FIX, CUE mode 50
- ST IN
 - and sends 31
 - connection 5
 - CUE info 53
 - dual pan 26
- ST OUT
 - balance 26
 - CUE info 54
 - meters 19
- ST RESET, channel pairs 58
- ST.PITCH CHANGE 42
- Stereo pair
 - configuring 58
 - CUE info 52
 - pan 27

- Stereo width 27
- Storing
 - dynamics processors 77
 - effects programs 36
 - mix scenes 63
- SUPER FLANGE 43
- SYMPHONIC 43
- System Exclusive 112

T

- Threshold
 - compressor 69
 - ducker 71
 - gate 70
- Top panel 2
- TOTAL COMP 78
- Touring ProMix 01 1
- Transmit channel, MIDI 81
- TREMOLO 44
- Troubleshooting 93

U

- User interface 12

V

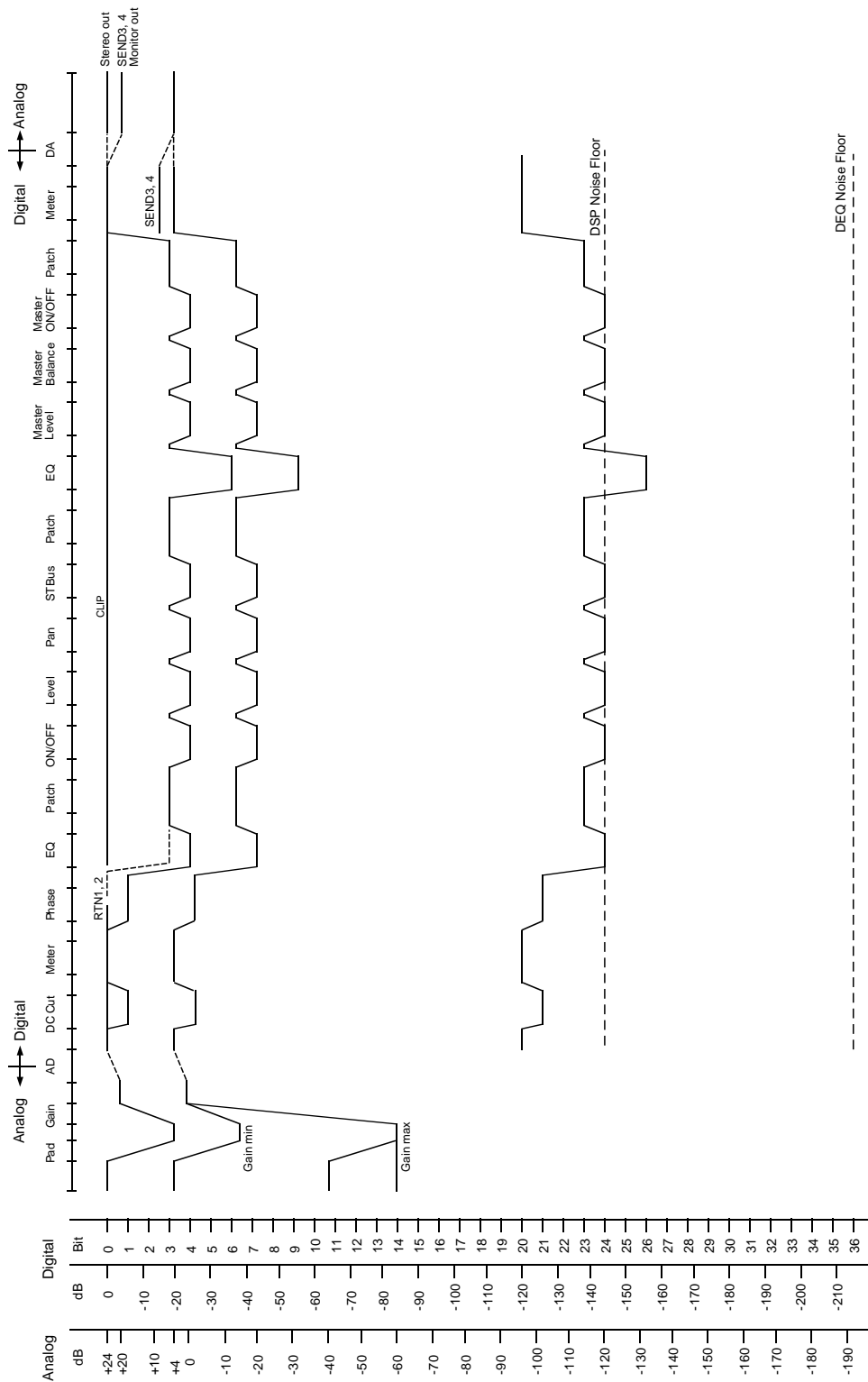
- VOCAL DOUBLER 42

W

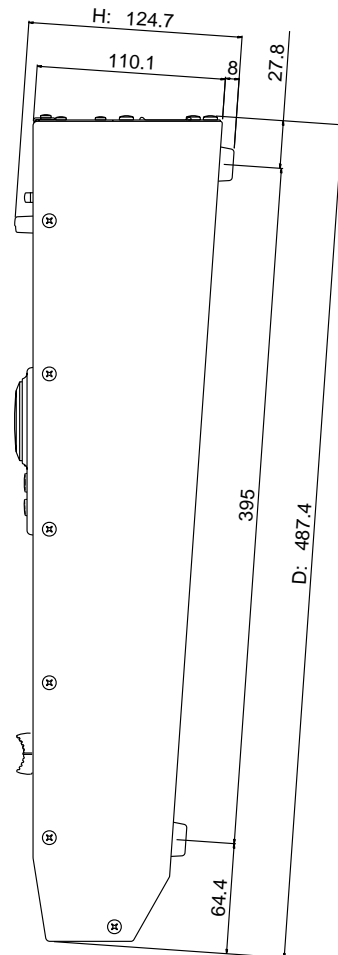
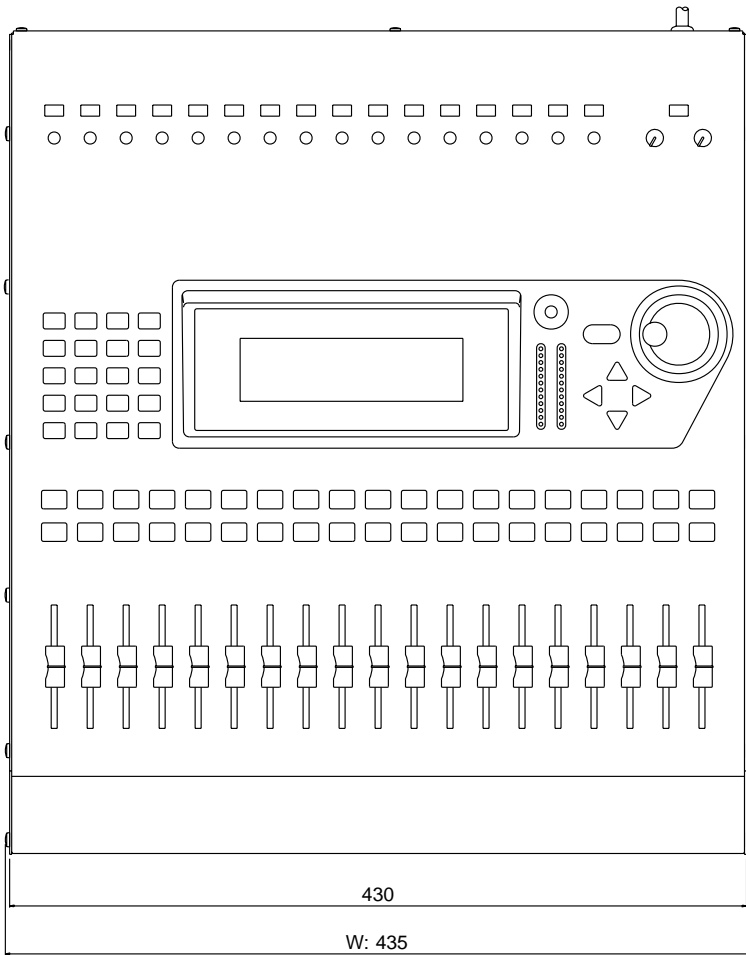
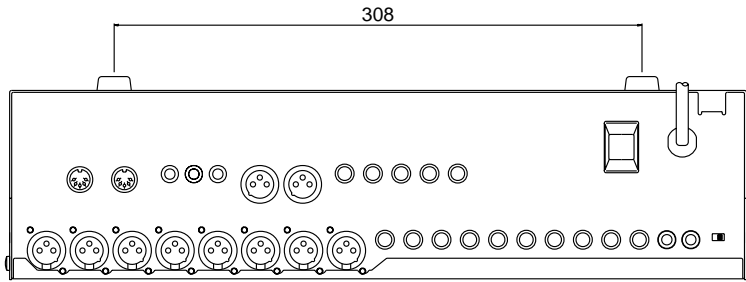
- Wiring details
 - phone jack INPUT 6
 - XLR INPUT 6
 - XLR STEREO OUT 7

Additions

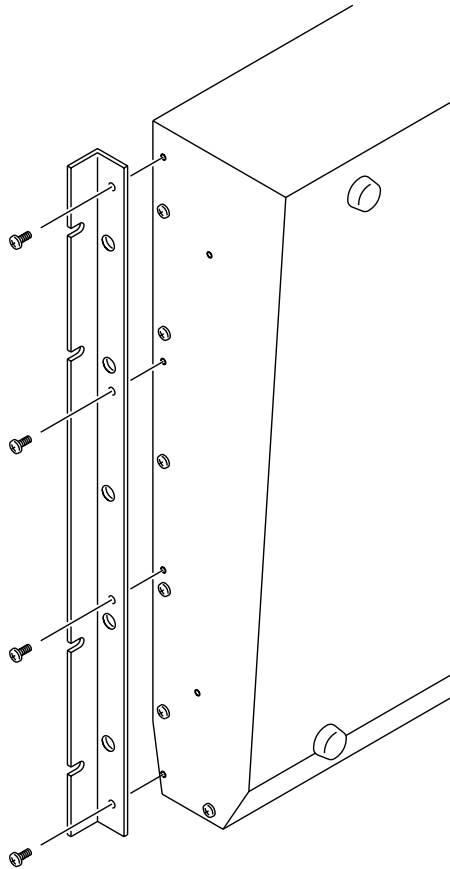
ProMix 01 Level Diagram



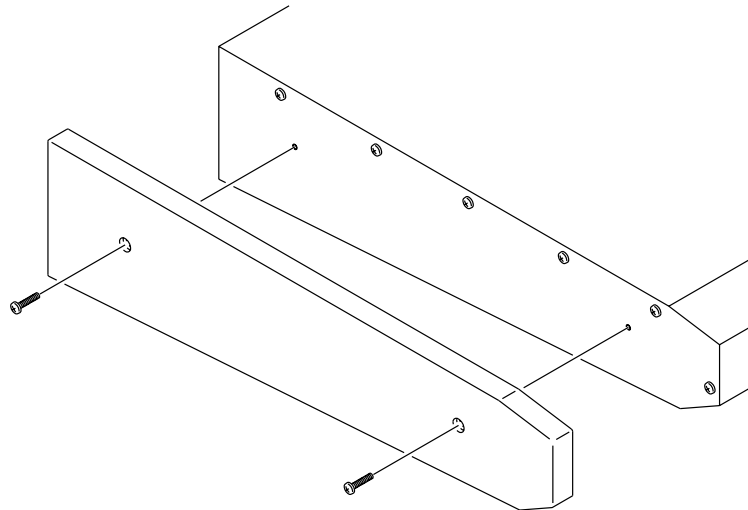
ProMix 01 Dimensions



Optional Rack-Mount Ears



Optional Wooden Side Panels



Use only the screws supplied
Utilisez uniquement les vis fournies.
Verwenden Sie ausschließlich die beiliegenden Schrauben.
Use solamente los tornillos proporcionados.

Mix Scene to Program Change Assignment Table

Program Change #	Initial Mix Scene #	User Mix Scene #
1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	
10	10	
11	11	
12	12	
13	13	
14	14	
15	15	
16	16	
17	17	
18	18	
19	19	
20	20	
21	21	
22	22	
23	23	
24	24	
25	25	
26	26	
27	27	
28	28	
29	29	
30	30	
31	31	
32	32	
33	33	
34	34	
35	35	
36	36	
37	37	
38	38	
39	39	
40	40	
41	41	
42	42	
43	43	

Program Change #	Initial Mix Scene #	User Mix Scene #
44	44	
45	45	
46	46	
47	47	
48	48	
49	49	
50	50	
51	—	
52	—	
53	—	
54	—	
55	—	
56	—	
57	—	
58	—	
59	—	
60	—	
61	—	
62	—	
63	—	
64	—	
65	—	
66	—	
67	—	
68	—	
69	—	
70	—	
71	—	
72	—	
73	—	
74	—	
75	—	
76	—	
77	—	
78	—	
79	—	
80	—	
81	—	
82	—	
83	—	
84	—	
85	—	
86	—	

Program Change #	Initial Mix Scene #	User Mix Scene #
87	—	
88	—	
89	—	
90	—	
91	—	
92	—	
93	—	
94	—	
95	—	
96	—	
97	—	
98	—	
99	—	
100	—	
101	—	
102	—	
103	—	
104	—	
105	—	
106	—	
107	—	
108	—	
109	—	
110	—	
111	—	
112	—	
113	—	
114	—	
115	—	
116	—	
117	—	
118	—	
119	—	
120	—	
121	—	
122	—	
123	—	
124	—	
125	—	
126	—	
127	—	
128	0	

Control Change to Parameter Assignment Table

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup		
	Control Change #	Bank			Control Change #	Bank	
0	0	0	Channel Input 1 Level	128			
1	1		Channel Input 2 Level				
2	2		Channel Input 3 Level				
3	3		Channel Input 4 Level				
4	4		Channel Input 5 Level				
5	5		Channel Input 6 Level				
6	6		Channel Input 7 Level				
7	7		Channel Input 8 Level				
8	8		Channel Input 9 Level				
9	9		Channel Input 10 Level				
10	10		Channel Input 11 Level				
11	11		Channel Input 12 Level				
12	12		Channel Input 13 Level				
13	13		Channel Input 14 Level				
14	14		Channel Input 15 Level				
15	15		Channel Input 16 Level				
16	16		Stereo Input Level				
17	17		Effect Return 1 Level				
18	18		Effect Return 2 Level				
19	19		Send 3 Level				
20	20		Send 4 Level				
21	21		Stereo Output Level				
22	22		Channel Input 1 On/Off	2			
23	23		Channel Input 2 On/Off				
24	24		Channel Input 3 On/Off				
25	25		Channel Input 4 On/Off				
26	26		Channel Input 5 On/Off				
27	27		Channel Input 6 On/Off				
28	28		Channel Input 7 On/Off				
29	29		Channel Input 8 On/Off				
30	30		Channel Input 9 On/Off				
31	31		Channel Input 10 On/Off				
32	32		Channel Input 11 On/Off				
33	33		Channel Input 12 On/Off				
34	34		Channel Input 13 On/Off				
35	35		Channel Input 14 On/Off				
36	36		Channel Input 15 On/Off				
37	37		Channel Input 16 On/Off				
38	38		Stereo Input On/Off				
39	39		Effect Return 1 On/Off				
40	40		Effect Return 2 On/Off				
41	41		Send 3 On/Off				
42	42		Send 4 On/Off				
43	43		Stereo Output On/Off				
44	44		Channel Input 1 Panpot		33		
45	45		Channel Input 2 Panpot				
46	46	Channel Input 3 Panpot					

Add-6

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup		
	Control Change #	Bank			Control Change #	Bank	
47	47	0	Channel Input 4 Panpot	33			
48	48		Channel Input 5 Panpot				
49	49		Channel Input 6 Panpot				
50	50		Channel Input 7 Panpot				
51	51		Channel Input 8 Panpot				
52	52		Channel Input 9 Panpot				
53	53		Channel Input 10 Panpot				
54	54		Channel Input 11 Panpot				
55	55		Channel Input 12 Panpot				
56	56		Channel Input 13 Panpot				
57	57		Channel Input 14 Panpot				
58	58		Channel Input 15 Panpot				
59	59		Channel Input 16 Panpot				
60	60		Stereo Input Lch Panpot				
61	61		Stereo Input Rch Panpot				
62	62		Effect Return 1 Lch Panpot				
63	63		Effect Return 1 Rch Panpot				
64	64		Effect Return 2 Lch Panpot				
65	65		Effect Return 2 Rch Panpot				
66	66		Send 3/4 Balance(Send 3/4 Configuration=Stereo)				
67	67		Stereo Output Balance				
68	68		Channel Input 1 to Effect Send 1 Level		128		
69	69		Channel Input 2 to Effect Send 1 Level				
70	70		Channel Input 3 to Effect Send 1 Level				
71	71		Channel Input 4 to Effect Send 1 Level				
72	72		Channel Input 5 to Effect Send 1 Level				
73	73		Channel Input 6 to Effect Send 1 Level				
74	74		Channel Input 7 to Effect Send 1 Level				
75	75		Channel Input 8 to Effect Send 1 Level				
76	76		Channel Input 9 to Effect Send 1 Level				
77	77		Channel Input 10 to Effect Send 1 Level				
78	78		Channel Input 11 to Effect Send 1 Level				
79	79		Channel Input 12 to Effect Send 1 Level				
80	80	Channel Input 13 to Effect Send 1 Level					
81	81	Channel Input 14 to Effect Send 1 Level					
82	82	Channel Input 15 to Effect Send 1 Level					
83	83	Channel Input 16 to Effect Send 1 Level					
84	84	Stereo Input to Effect Send 1 Level					
85	85	Channel Input 1 to Effect Send 2 Level					
86	86	Channel Input 2 to Effect Send 2 Level					
87	87	Channel Input 3 to Effect Send 2 Level					
88	88	Channel Input 4 to Effect Send 2 Level					
89	89	Channel Input 5 to Effect Send 2 Level					
90	90	Channel Input 6 to Effect Send 2 Level					
91	91	Channel Input 7 to Effect Send 2 Level					
92	92	Channel Input 8 to Effect Send 2 Level					
93	93	Channel Input 9 to Effect Send 2 Level					
94	94	Channel Input 10 to Effect Send 2 Level					
95	95	Channel Input 11 to Effect Send 2 Level					

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup	
	Control Change #	Bank			Control Change #	Bank
96	0	1	Channel Input 12 to Effect Send 2 Level	128		
97	1		Channel Input 13 to Effect Send 2 Level			
98	2		Channel Input 14 to Effect Send 2 Level			
99	3		Channel Input 15 to Effect Send 2 Level			
100	4		Channel Input 16 to Effect Send 2 Level			
101	5		Stereo Input to Effect Send 2 Level			
102	6		Channel Input 1 to Send 3 Level			
103	7		Channel Input 2 to Send 3 Level			
104	8		Channel Input 3 to Send 3 Level			
105	9		Channel Input 4 to Send 3 Level			
106	10		Channel Input 5 to Send 3 Level			
107	11		Channel Input 6 to Send 3 Level			
108	12		Channel Input 7 to Send 3 Level			
109	13		Channel Input 8 to Send 3 Level			
110	14		Channel Input 9 to Send 3 Level			
111	15		Channel Input 10 to Send 3 Level			
112	16		Channel Input 11 to Send 3 Level			
113	17		Channel Input 12 to Send 3 Level			
114	18		Channel Input 13 to Send 3 Level			
115	19		Channel Input 14 to Send 3 Level			
116	20		Channel Input 15 to Send 3 Level			
117	21		Channel Input 16 to Send 3 Level			
118	22		Stereo Input to Send 3 Level			
119	23		Channel Input 1 to Send 4 Level			
120	24		Channel Input 2 to Send 4 Level			
121	25		Channel Input 3 to Send 4 Level			
122	26		Channel Input 4 to Send 4 Level			
123	27		Channel Input 5 to Send 4 Level			
124	28		Channel Input 6 to Send 4 Level			
125	29		Channel Input 7 to Send 4 Level			
126	30		Channel Input 8 to Send 4 Level			
127	31		Channel Input 9 to Send 4 Level			
128	32		Channel Input 10 to Send 4 Level			
129	33	Channel Input 11 to Send 4 Level				
130	34	Channel Input 12 to Send 4 Level				
131	35	Channel Input 13 to Send 4 Level				
132	36	Channel Input 14 to Send 4 Level				
133	37	Channel Input 15 to Send 4 Level				
134	38	Channel Input 16 to Send 4 Level				
135	39	Stereo Input to Send 4 Level				
136	40	Effect Send 1 Pre/Post	2			
137	41	Effect Send 2 Pre/Post				
138	42	Send 3 Pre/Post				
139	43	Send 4 Pre/Post				
140	44	Channel Input 1 to Send3/4 Panpot(Configuration=Stereo)	33			
141	45	Channel Input 2 to Send3/4 Panpot(Configuration=Stereo)				
142	46	Channel Input 3 to Send3/4 Panpot(Configuration=Stereo)				
143	47	Channel Input 4 to Send3/4 Panpot(Configuration=Stereo)				

Add-8

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup	
	Control Change #	Bank			Control Change #	Bank
144	48	1	Channel Input 5 to Send3/4 Panpot(Configuration=Stereo)	33		
145	49		Channel Input 6 to Send3/4 Panpot(Configuration=Stereo)			
146	50		Channel Input 7 to Send3/4 Panpot(Configuration=Stereo)			
147	51		Channel Input 8 to Send3/4 Panpot(Configuration=Stereo)			
148	52		Channel Input 9 to Send3/4 Panpot(Configuration=Stereo)			
149	53		Channel Input 10 to Send3/4 Panpot(Configuration=Stereo)			
150	54		Channel Input 11 to Send3/4 Panpot(Configuration=Stereo)			
151	55		Channel Input 12 to Send3/4 Panpot(Configuration=Stereo)			
152	56		Channel Input 13 to Send3/4 Panpot(Configuration=Stereo)			
153	57		Channel Input 14 to Send3/4 Panpot(Configuration=Stereo)			
154	58		Channel Input 15 to Send3/4 Panpot(Configuration=Stereo)			
155	59		Channel Input 16 to Send3/4 Panpot(Configuration=Stereo)			
156	60		Stereo Input to Send3/4 Balance(Configuration=Stereo)			
157	--		--		Channel Input 1 to Cue On/Off	2
158	--	Channel Input 2 to Cue On/Off				
159	--	Channel Input 3 to Cue On/Off				
160	--	Channel Input 4 to Cue On/Off				
161	--	Channel Input 5 to Cue On/Off				
162	--	Channel Input 6 to Cue On/Off				
163	--	Channel Input 7 to Cue On/Off				
164	--	Channel Input 8 to Cue On/Off				
165	--	Channel Input 9 to Cue On/Off				
166	--	Channel Input 10 to Cue On/Off				
167	--	Channel Input 11 to Cue On/Off				
168	--	Channel Input 12 to Cue On/Off				
169	--	Channel Input 13 to Cue On/Off				
170	--	Channel Input 14 to Cue On/Off				
171	--	Channel Input 15 to Cue On/Off				
172	--	Channel Input 16 to Cue On/Off				
173	--	Stereo Input to Cue On/Off				
174	--	Effect Return 1 to Cue On/Off				
175	--	Effect Return 2 to Cue On/Off				
176	--	Send 3 to Cue On/Off				
177	--	Send 4 to Cue On/Off				
178	--	Stereo Output to Cue On/Off				
179	83	1	Channel Input 1 Phase			
180	84		Channel Input 2 Phase			
181	85		Channel Input 3 Phase			
182	86		Channel Input 4 Phase			
183	87		Channel Input 5 Phase			
184	88		Channel Input 6 Phase			
185	89		Channel Input 7 Phase			
186	90		Channel Input 8 Phase			
187	91		Channel Input 9 Phase			
188	92		Channel Input 10 Phase			
189	93		Channel Input 11 Phase			
190	94		Channel Input 12 Phase			
191	95		Channel Input 13 Phase			

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup	
	Control Change #	Bank			Control Change #	Bank
192	0	2	Channel Input 14 Phase	2		
193	1		Channel Input 15 Phase			
194	2		Channel Input 16 Phase			
195	3		Stereo Input Phase			
196	4		Channel Input 1 Equalizer On/Off			
197	5		Channel Input 2 Equalizer On/Off			
198	6		Channel Input 3 Equalizer On/Off			
199	7		Channel Input 4 Equalizer On/Off			
200	8		Channel Input 5 Equalizer On/Off			
201	9		Channel Input 6 Equalizer On/Off			
202	10		Channel Input 7 Equalizer On/Off			
203	11		Channel Input 8 Equalizer On/Off			
204	12		Channel Input 9 Equalizer On/Off			
205	13		Channel Input 10 Equalizer On/Off			
206	14		Channel Input 11 Equalizer On/Off			
207	15		Channel Input 12 Equalizer On/Off			
208	16		Channel Input 13 Equalizer On/Off			
209	17		Channel Input 14 Equalizer On/Off			
210	18		Channel Input 15 Equalizer On/Off			
211	19		Channel Input 16 Equalizer On/Off			
212	20		Stereo Input Equalizer On/Off			
213	21		Effect Return 1 Equalizer On/Off			
214	22		Effect Return 2 Equalizer On/Off			
215	23		Stereo Output Equalizer On/Off			
216	24		Channel Input 1 Low Equalizer Frequency	31		
217	25		Channel Input 2 Low Equalizer Frequency			
218	26		Channel Input 3 Low Equalizer Frequency			
219	27		Channel Input 4 Low Equalizer Frequency			
220	28		Channel Input 5 Low Equalizer Frequency			
221	29		Channel Input 6 Low Equalizer Frequency			
222	30		Channel Input 7 Low Equalizer Frequency			
223	31	Channel Input 8 Low Equalizer Frequency				
224	32	Channel Input 9 Low Equalizer Frequency				
225	33	Channel Input 10 Low Equalizer Frequency				
226	34	Channel Input 11 Low Equalizer Frequency				
227	35	Channel Input 12 Low Equalizer Frequency				
228	36	Channel Input 13 Low Equalizer Frequency				
229	37	Channel Input 14 Low Equalizer Frequency				
230	38	Channel Input 15 Low Equalizer Frequency				
231	39	Channel Input 16 Low Equalizer Frequency				
232	40	Stereo Input Low Equalizer Frequency				
233	41	Effect Return 1 Low Equalizer Frequency				
234	42	Effect Return 2 Low Equalizer Frequency				
235	43	Stereo Output Low Equalizer Frequency				
236	44	Channel Input 1 Low Equalizer Gain				
237	45	Channel Input 2 Low Equalizer Gain				
238	46	Channel Input 3 Low Equalizer Gain				
239	47	Channel Input 4 Low Equalizer Gain				

Add-10

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup		
	Control Change #	Bank			Control Change #	Bank	
240	48	2	Channel Input 5 Low Equalizer Gain	31			
241	49		Channel Input 6 Low Equalizer Gain				
242	50		Channel Input 7 Low Equalizer Gain				
243	51		Channel Input 8 Low Equalizer Gain				
244	52		Channel Input 9 Low Equalizer Gain				
245	53		Channel Input 10 Low Equalizer Gain				
246	54		Channel Input 11 Low Equalizer Gain				
247	55		Channel Input 12 Low Equalizer Gain				
248	56		Channel Input 13 Low Equalizer Gain				
249	57		Channel Input 14 Low Equalizer Gain				
250	58		Channel Input 15 Low Equalizer Gain				
251	59		Channel Input 16 Low Equalizer Gain				
252	60		Stereo Input Low Equalizer Gain				
253	61		Effect Return 1 Low Equalizer Gain				
254	62		Effect Return 2 Low Equalizer Gain				
255	63		Stereo Output Low Equalizer Gain				
256	64		Channel Input 1 Low Equalizer Q/Shelf		10		
257	65		Channel Input 2 Low Equalizer Q/Shelf				
258	66		Channel Input 3 Low Equalizer Q/Shelf				
259	67		Channel Input 4 Low Equalizer Q/Shelf				
260	68		Channel Input 5 Low Equalizer Q/Shelf				
261	69		Channel Input 6 Low Equalizer Q/Shelf				
262	70		Channel Input 7 Low Equalizer Q/Shelf				
263	71		Channel Input 8 Low Equalizer Q/Shelf				
264	72		Channel Input 9 Low Equalizer Q/Shelf				
265	73		Channel Input 10 Low Equalizer Q/Shelf				
266	74		Channel Input 11 Low Equalizer Q/Shelf				
267	75		Channel Input 12 Low Equalizer Q/Shelf				
268	76		Channel Input 13 Low Equalizer Q/Shelf				
269	77		Channel Input 14 Low Equalizer Q/Shelf				
270	78		Channel Input 15 Low Equalizer Q/Shelf				
271	79	Channel Input 16 Low Equalizer Q/Shelf					
272	80	Stereo Input Low Equalizer Q/Shelf					
273	81	Effect Return 1 Low Equalizer Q/Shelf					
274	82	Effect Return 2 Low Equalizer Q/Shelf					
275	83	Stereo Output Low Equalizer Q/Shelf					
276	84	Channel Input 1 Mid Equalizer Frequency	56				
277	85	Channel Input 2 Mid Equalizer Frequency					
278	86	Channel Input 3 Mid Equalizer Frequency					
279	87	Channel Input 4 Mid Equalizer Frequency					
280	88	Channel Input 5 Mid Equalizer Frequency					
281	89	Channel Input 6 Mid Equalizer Frequency					
282	90	Channel Input 7 Mid Equalizer Frequency					
283	91	Channel Input 8 Mid Equalizer Frequency					
284	92	Channel Input 9 Mid Equalizer Frequency					
285	93	Channel Input 10 Mid Equalizer Frequency					
286	94	Channel Input 11 Mid Equalizer Frequency					
287	95	Channel Input 12 Mid Equalizer Frequency					

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup		
	Control Change #	Bank			Control Change #	Bank	
288	0	3	Channel Input 13 Mid Equalizer Frequency	56			
289	1		Channel Input 14 Mid Equalizer Frequency				
290	2		Channel Input 15 Mid Equalizer Frequency				
291	3		Channel Input 16 Mid Equalizer Frequency				
292	4		Stereo Input Mid Equalizer Frequency				
293	5		Effect Return 1 Mid Equalizer Frequency				
294	6		Effect Return 2 Mid Equalizer Frequency				
295	7		Stereo Output Mid Equalizer Frequency				
296	8		Channel Input 1 Mid Equalizer Gain	31			
297	9		Channel Input 2 Mid Equalizer Gain				
298	10		Channel Input 3 Mid Equalizer Gain				
299	11		Channel Input 4 Mid Equalizer Gain				
300	12		Channel Input 5 Mid Equalizer Gain				
301	13		Channel Input 6 Mid Equalizer Gain				
302	14		Channel Input 7 Mid Equalizer Gain				
303	15		Channel Input 8 Mid Equalizer Gain				
304	16		Channel Input 9 Mid Equalizer Gain				
305	17		Channel Input 10 Mid Equalizer Gain				
306	18		Channel Input 11 Mid Equalizer Gain				
307	19		Channel Input 12 Mid Equalizer Gain				
308	20		Channel Input 13 Mid Equalizer Gain				
309	21		Channel Input 14 Mid Equalizer Gain				
310	22		Channel Input 15 Mid Equalizer Gain				
311	23		Channel Input 16 Mid Equalizer Gain				
312	24		Stereo Input Mid Equalizer Gain		9		
313	25		Effect Return 1 Mid Equalizer Gain				
314	26		Effect Return 2 Mid Equalizer Gain				
315	27		Stereo Output Mid Equalizer Gain				
316	28		Channel Input 1 Mid Equalizer Q				
317	29		Channel Input 2 Mid Equalizer Q				
318	30		Channel Input 3 Mid Equalizer Q				
319	31		Channel Input 4 Mid Equalizer Q				
320	32		Channel Input 5 Mid Equalizer Q				
321	23		Channel Input 6 Mid Equalizer Q				
322	24		Channel Input 7 Mid Equalizer Q				
323	25		Channel Input 8 Mid Equalizer Q				
324	26	Channel Input 9 Mid Equalizer Q					
325	27	Channel Input 10 Mid Equalizer Q					
326	38	Channel Input 11 Mid Equalizer Q					
327	39	Channel Input 12 Mid Equalizer Q					
328	40	Channel Input 13 Mid Equalizer Q					
329	41	Channel Input 14 Mid Equalizer Q					
330	42	Channel Input 15 Mid Equalizer Q					
331	43	Channel Input 16 Mid Equalizer Q					
332	44	Stereo Input Mid Equalizer Q					
333	45	Effect Return 1 Mid Equalizer Q					
334	46	Effect Return 2 Mid Equalizer Q					
335	47	Stereo Output Mid Equalizer Q					
336	48	Channel Input 1 High Equalizer Frequency	25				

Add-12

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup		
	Control Change #	Bank			Control Change #	Bank	
337	49	3	Channel Input 2 High Equalizer Frequency	26			
338	50		Channel Input 3 High Equalizer Frequency				
339	51		Channel Input 4 High Equalizer Frequency				
340	52		Channel Input 5 High Equalizer Frequency				
341	53		Channel Input 6 High Equalizer Frequency				
342	54		Channel Input 7 High Equalizer Frequency				
343	55		Channel Input 8 High Equalizer Frequency				
344	56		Channel Input 9 High Equalizer Frequency				
345	57		Channel Input 10 High Equalizer Frequency				
346	58		Channel Input 11 High Equalizer Frequency				
347	59		Channel Input 12 High Equalizer Frequency				
348	60		Channel Input 13 High Equalizer Frequency				
349	61		Channel Input 14 High Equalizer Frequency				
350	62		Channel Input 15 High Equalizer Frequency				
351	63		Channel Input 16 High Equalizer Frequency				
352	64		Stereo Input HighEqualizer Frequency				
353	65		Effect Return 1 High Equalizer Frequency				
354	66		Effect Return 2 High Equalizer Frequency				
355	67		Stereo Output High Equalizer Frequency				
356	68		Channel Input 1 High Equalizer Gain		31		
357	69		Channel Input 2 High Equalizer Gain				
358	70		Channel Input 3 High Equalizer Gain				
359	71		Channel Input 4 High Equalizer Gain				
360	72		Channel Input 5 High Equalizer Gain				
361	73		Channel Input 6 High Equalizer Gain				
362	74		Channel Input 7 High Equalizer Gain				
363	75		Channel Input 8 High Equalizer Gain				
364	76		Channel Input 9 High Equalizer Gain				
365	77		Channel Input 10 High Equalizer Gain				
366	78		Channel Input 11 High Equalizer Gain				
367	79		Channel Input 12 High Equalizer Gain				
368	80		Channel Input 13 High Equalizer Gain				
369	81		Channel Input 14 High Equalizer Gain				
370	82		Channel Input 15 High Equalizer Gain				
371	83		Channel Input 16 High Equalizer Gain				
372	84	Stereo Input High Equalizer Gain					
373	85	Effect Return 1 High Equalizer Gain					
374	86	Effect Return 2 High Equalizer Gain					
375	87	Stereo Output High Equalizer Gain					
376	88	Channel Input 1 High Equalizer Q/Shelf	10				
377	89	Channel Input 2 High Equalizer Q/Shelf					
378	90	Channel Input 3 High Equalizer Q/Shelf					
379	91	Channel Input 4 High Equalizer Q/Shelf					
380	92	Channel Input 5 High Equalizer Q/Shelf					
381	93	Channel Input 6 High Equalizer Q/Shelf					
382	94	Channel Input 7 High Equalizer Q/Shelf					
383	95	Channel Input 8 High Equalizer Q/Shelf					

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup		
	Control Change #	Bank			Control Change #	Bank	
384	0		Channel Input 9 High Equalizer Q/Shelf	10			
385	1		Channel Input 10 High Equalizer Q/Shelf				
386	2		Channel Input 11 High Equalizer Q/Shelf				
387	3		Channel Input 12 High Equalizer Q/Shelf				
388	4		Channel Input 13 High Equalizer Q/Shelf				
389	5		Channel Input 14 High Equalizer Q/Shelf				
390	6		Channel Input 15 High Equalizer Q/Shelf				
391	7		Channel Input 16 High Equalizer Q/Shelf				
392	8		Stereo Input High Equalizer Q/Shelf				
393	9		Effect Return 1 High Equalizer Q/Shelf				
394	10		Effect Return 2 High Equalizer Q/Shelf				
395	11		Stereo Output High Equalizer Q/Shelf				
396	12		4	Channel Input 1/2 Stereo Pair Flag On/Off	2		
397	13			Channel Input 3/4 Stereo Pair Flag On/Off			
398	14			Channel Input 5/6 Stereo Pair Flag On/Off			
399	15			Channel Input 7/8 Stereo Pair Flag On/Off			
400	16			Channel Input 9/10 Stereo Pair Flag On/Off			
401	17			Channel Input 11/12 Stereo Pair Flag On/Off			
402	18			Channel Input 13/14 Stereo Pair Flag On/Off			
403	19			Channel Input 15/16 Stereo Pair Flag On/Off			
404	20	Internal Effect 1 Type	40				
405	21	Internal Effect 2 Type					
406	22	4	Internal Effect 1 Parameter 1 High Byte	A			
407	23		Internal Effect 1 Parameter 1 Low Byte				
408	24		Internal Effect 1 Parameter 2 High Byte				
409	25		Internal Effect 1 Parameter 2 Low Byte				
410	26		Internal Effect 1 Parameter 3 High Byte				
411	27		Internal Effect 1 Parameter 3 Low Byte				
412	28		Internal Effect 1 Parameter 4 High Byte				
413	29		Internal Effect 1 Parameter 4 Low Byte				
414	30		Internal Effect 1 Parameter 5 High Byte				
415	31		Internal Effect 1 Parameter 5 Low Byte				
416	32		Internal Effect 1 Parameter 6 High Byte				
417	33		Internal Effect 1 Parameter 6 Low Byte				
418	34		Internal Effect 1 Parameter 7 High Byte				
419	35		Internal Effect 1 Parameter 7 Low Byte				
420	36		Internal Effect 1 Parameter 8 High Byte				
421	37		Internal Effect 1 Parameter 8 Low Byte				
422	38		Internal Effect 1 Parameter 9 High Byte				
423	39		Internal Effect 1 Parameter 9 Low Byte				
424	40		Internal Effect 1 Parameter 10 High Byte				
425	41		Internal Effect 1 Parameter 10 Low Byte				
426	42		Internal Effect 2 Parameter 1 High Byte				
427	43		Internal Effect 2 Parameter 1 Low Byte				
428	44		Internal Effect 2 Parameter 2 High Byte				
429	45		Internal Effect 2 Parameter 2 Low Byte				
430	46		Internal Effect 2 Parameter 3 High Byte				
431	47		Internal Effect 2 Parameter 3 Low Byte				
432	48		Internal Effect 2 Parameter 4 High Byte				

Add-14

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup	
	Control Change #	Bank			Control Change #	Bank
433	49	4	Internal Effect 2 Parameter 4 Low Byte	A		
434	50		Internal Effect 2 Parameter 5 High Byte			
435	51		Internal Effect 2 Parameter 5 Low Byte			
436	52		Internal Effect 2 Parameter 6 High Byte			
437	53		Internal Effect 2 Parameter 6 Low Byte			
438	54		Internal Effect 2 Parameter 7 High Byte			
439	55		Internal Effect 2 Parameter 7 Low Byte			
440	56		Internal Effect 2 Parameter 8 High Byte			
441	57		Internal Effect 2 Parameter 8 Low Byte			
442	58		Internal Effect 2 Parameter 9 High Byte			
443	59		Internal Effect 2 Parameter 9 Low Byte			
444	60		Internal Effect 2 Parameter 10 High Byte			
445	61		Internal Effect 2 Parameter 10 Low Byte			
446	62		Comp 1 Type	20		
447	63		Comp 2 Type			
448	64		Comp 3 Type			
449	65		Comp 1 Patch Point			
450	66		Comp 2 Patch Point			
451	67		Comp 3 Patch Point			
452	68		Comp 1 Keyin Channel	21		
453	69		Comp 2 Keyin Channel			
454	70		Comp 3 Keyin Channel			
455	71		Comp 1 In Mode(Both/Odd/Even)	3		
456	72		Comp 2 In Mode(Both/Odd/Even)			
457	73		Comp 3 In Mode(Both/Odd/Even)			
458	74		Comp 1 On/Off	2		
459	75		Comp 2 On/Off			
460	76		Comp 3 On/Off			
461	77		Comp 1 Parameter 1	B		
462	78		Comp 1 Parameter 2			
463	79	Comp 1 Parameter 3				
464	80	Comp 1 Parameter 4				
465	81	Comp 1 Parameter 5				
466	82	Comp 2 Parameter 1				
467	83	Comp 2 Parameter 2				
468	84	Comp 2 Parameter 3				
469	85	Comp 2 Parameter 4				
470	86	Comp 2 Parameter 5				
471	87	Comp 3 Parameter 1				
472	88	Comp 3 Parameter 2				
473	89	Comp 3 Parameter 3				
474	90	Comp 3 Parameter 4				
475	91	Comp 3 Parameter 5				
476	92	Send 3/4 Configuration Flag (Individual/Stereo)	2			
477	93	Oscillator On/Off				
478	94	Oscillator Level	128			
479	95	Oscillator Frequency	4			

A. Depends on selected effects type.

B. Depends on selected dynamics type.

Param #	Initial Setup		ProMix 01 Parameter	Data Value	User Setup	
	Control Change #	Bank			Control Change #	Bank
480	0	5	Oscillator SEND3 Assign	2		
481	1		Oscillator SEND4 Assign			
482	2		Oscillator ST OUT Assign			
483	--	--	Cue mode MIX/LAST CUE/GROUP CUE/STEREO OUT FIX	4		
484	4	5	Channel Input 1 Group No. (0: OFF, 1-4: A-D)	5		
485	5		Channel Input 2 Group No.			
486	6		Channel Input 3 Group No.			
487	7		Channel Input 4 Group No.			
488	8		Channel Input 5 Group No.			
489	9		Channel Input 6 Group No.			
490	10		Channel Input 7 Group No.			
491	11		Channel Input 8 Group No.			
492	12		Channel Input 9 Group No.			
493	13		Channel Input 10 Group No.			
494	14		Channel Input 11 Group No.			
495	15		Channel Input 12 Group No.			
496	16		Channel Input 13 Group No.			
497	17		Channel Input 14 Group No.			
498	18		Channel Input 15 Group No.			
499	19		Channel Input 16 Group No.			
500	20		Stereo Input Group No.			
501	21		Panpot Control Mode (Individual/Gang)	2		
502	22		Group Select (A/B/C/D)	4		
503	23	5	"Ch Input 1/2 Pair Execute(MONO,Odd->Even,Even->Odd,Reset)"	4		
504	24		"Ch Input 3/4 Pair Execute(MONO,Odd->Even,Even->Odd,Reset)"			
505	25		"Ch Input 5/6 Pair Execute(MONO,Odd->Even,Even->Odd,Reset)"			
506	26		"Ch Input 7/8 Pair Execute(MONO,Odd->Even,Even->Odd,Reset)"			
507	27		"Ch Input 9/10 Pair Execute(MONO,Odd->Even,Even->Odd,Reset)"			
508	28		"Ch Input 11/12 Pair Execute(MONO,Odd->Even,Even->Odd,Reset)"			
509	29		"Ch Input 13/14 Pair Execute(MONO,Odd->Even,Even->Odd,Reset)"			
510	30		"Ch Input 15/16 Pair Execute(MONO,Odd->Even,Even->Odd,Reset)"			
511	31		Stereo Master Patch Point Pre/Post	2		
512	32		Send3 Master Patch Point Pre/Post			
513	33		Send4 Master Patch Point Pre/Post			
514	34		"Send3,4 Configuration Execute(Monaural/Stereo)"			
515	35	5	MIDI Local Off Fader No.1	128		
516	36		MIDI Local Off Fader No.2			
517	37		MIDI Local Off Fader No.3			
518	38		MIDI Local Off Fader No.4			
519	39		MIDI Local Off Fader No.5			
520	40		MIDI Local Off Fader No.6			
521	41		MIDI Local Off Fader No.7			
522	42		MIDI Local Off Fader No.8			
523	43		MIDI Local Off Fader No.9			
524	44		MIDI Local Off Fader No.10			
525	45		MIDI Local Off Fader No.11			
526	46		MIDI Local Off Fader No.12			
527	47		MIDI Local Off Fader No.13			
528	48		MIDI Local Off Fader No.14			
529	49		MIDI Local Off Fader No.15			
530	50		MIDI Local Off Fader No.16			

MIDI Data Format

1 General Items

1-1 This section describes the ProMix 01 MIDI specifications.

1-2 Electrical characteristics and signal specifications conform to the MIDI Standard 1.0.

2 Transmission/Reception

ProMix 01 transmits and receives Program Change, Control Change, and System Exclusive messages. Real-time messages, Active Sensing, and MIDI Reset are received only.

2-1 Program Change

Transmission Channel number (Tx Channel No.) is used for transmission. Messages are received only when the receive Channel number (Rx Channel No.) matches, or when OMNI is set to ON.

Receiving a Program Change message recalls the scene memory assigned to that Program number. When a scene memory is recalled using the RECALL button, the corresponding Program Change message is output. Program Changes can be assigned to scene memories by the user.

2-2 Control Change

Control Change messages can be transmitted and received in Channel mode or Register mode. In Channel mode, the MIDI Channel No. is the Transmission/Receive Channel (Tx/Rx Channel No.) plus parameter Bank Number (Bank). If the resultant value exceeds 16, the remainder will be the Channel number. If all parameters are transmitted and received in this mode, many MIDI Channels are used. See <Cf1> below.

In Register mode, the Channel number uses the transmission/receive Channel number (Tx/Rx Channel No.), and the parameter Bank Number (Bank) is specified by Non-Registered Parameter Number (NRPN) 62h (98 in decimal). In this mode, only one MIDI Channel is required, and OMNI operation is available. See <Cf2> below.

The ProMix 01 parameter corresponding to the Control Change Bank number and Control Change number is adjusted.

If an assigned parameter is adjusted using the front panel controls, the corresponding Control Change message is output. Parameters can be assigned to Control Changes by the user.

<Cf1> The data format will be as follows:

When you adjust a parameter of Channel #10, Bank #2, and Control #72:
BB 48 dd (dd is data)

When you adjust a parameter of Channel #13, Bank #5, and Control #20:
B1 14 dd (dd is data)

<Cf2> The data format will be as follows:

When you adjust a parameter of Channel #10, Bank #2, and Control #72:
B9 62 02 B9 48 dd (dd is data)

For MIDI data transmission, a parameter's minimum internal data value is expressed by 00h, and the maximum value is expressed by 7fh. For example, for Panpot data the internal data value "0" is expressed by 00h, and the internal data value "32 (MAX)" is expressed by 7fh.

To derive the midway value of the internal data, the following calculation is used (MIDI midway value = 64). First, 128 (the maximum value used in MIDI) is divided by the internal Data Value (Panpot = 33) to obtain the MIDI data number equivalent to one internal data number. The internal Data Values for all parameters are given in the Control Change to Parameter Assignment tables.

ex. Panpot: $128 / 33 = 3...29$

To express the midway value of the internal data using the MIDI midway value (64), the remainder obtained from the above calculation is added to both sides of the MIDI range. If there is another remainder, "1" is added to the result.

ex. Panpot: $29 / 2 = 14...1$ $14 + 1 = 15$

Therefore, when MIDI data is x , the internal data is calculated using the following formula:

ex. Panpot: $\text{INTEGER}((x - 15) / 3)$

If the resultant value is below 0, it becomes the minimum internal data value.

If the resultant value exceeds the maximum internal data value, it becomes the maximum internal data value.

For data that consists of two bytes (Effect Parameter), 16,384 (14-bit value) is used instead of "128" (Minimum: 0000h, Maximum: 3fffh).

Usually, Control Change messages are output only when the internal data is changed. Incoming messages are processed so that they do not contradict the internal data (i.e. abnormal settings that are not acceptable to ProMix 01). However, the following are exceptions:

If the status of a stereo pair is changed, a Stereo Pair Flag Control Change is output, then the Control Change of the changed parameter is output. When ProMix 01 receives a Stereo Pair Flag Control Change, only the flag is changed. When the information about channels for a stereo pair is received afterward, the parameter of the other receive channel is also changed. Also, at the moment of operation, the parameters for both channels are changed. Therefore, the Control Change that has the same function as the pair processing on the unit is assigned to the other number. The parameters labelled "Execute" or "Ex." can prevent contradiction occurring when the message is received. Also, when the unit receives the Control Change message of this number, the parameter changed by this message will, in turn, output a control change message.

The above also applies to SEND3, 4 Configuration.

When a Control Change message to change the level of a channel in a group is received, the other channels are not affected. The group is temporarily released, the fader adjusted, then grouping is reactivated.

2-3 System Exclusive Message

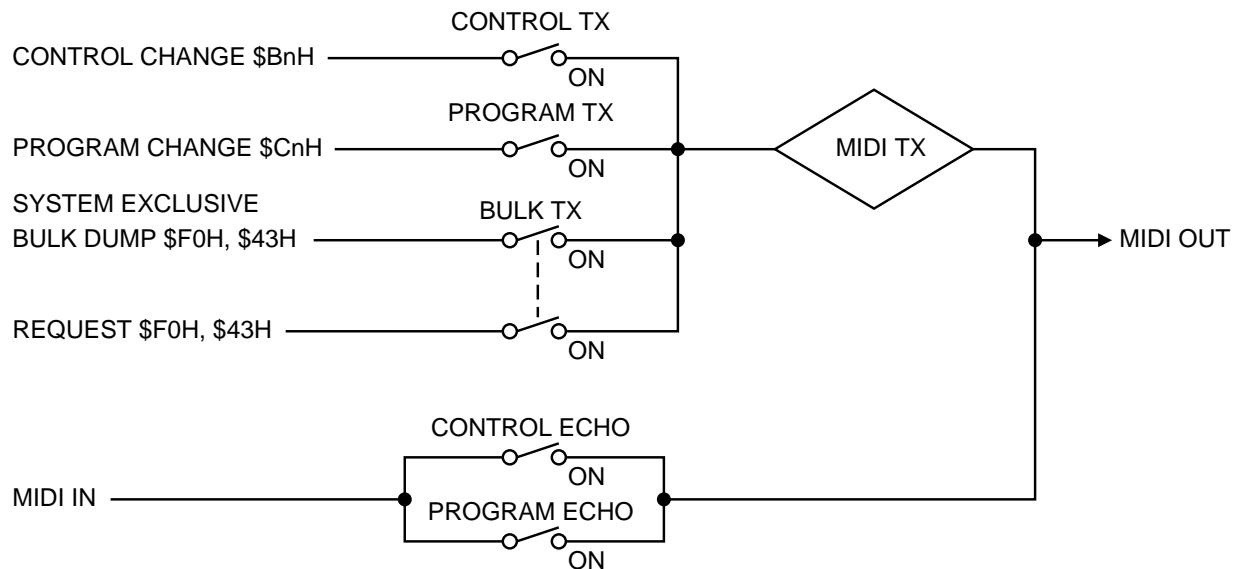
Transmission Channel number (Tx Channel No.) is used for transmission. Messages are received only when the receive Channel number (Rx Channel No.) matches, or when OMNI is set to ON.

The ProMix 01 transmits and receives scene memory contents, Program Change Assignment Table, Control Change Assignment Table, Edit Buffer contents, Setup Memory contents, Backup Memory contents, Key Remote Message, Effect User Memory contents, Compressor User Memory contents, and EQ User Library contents.

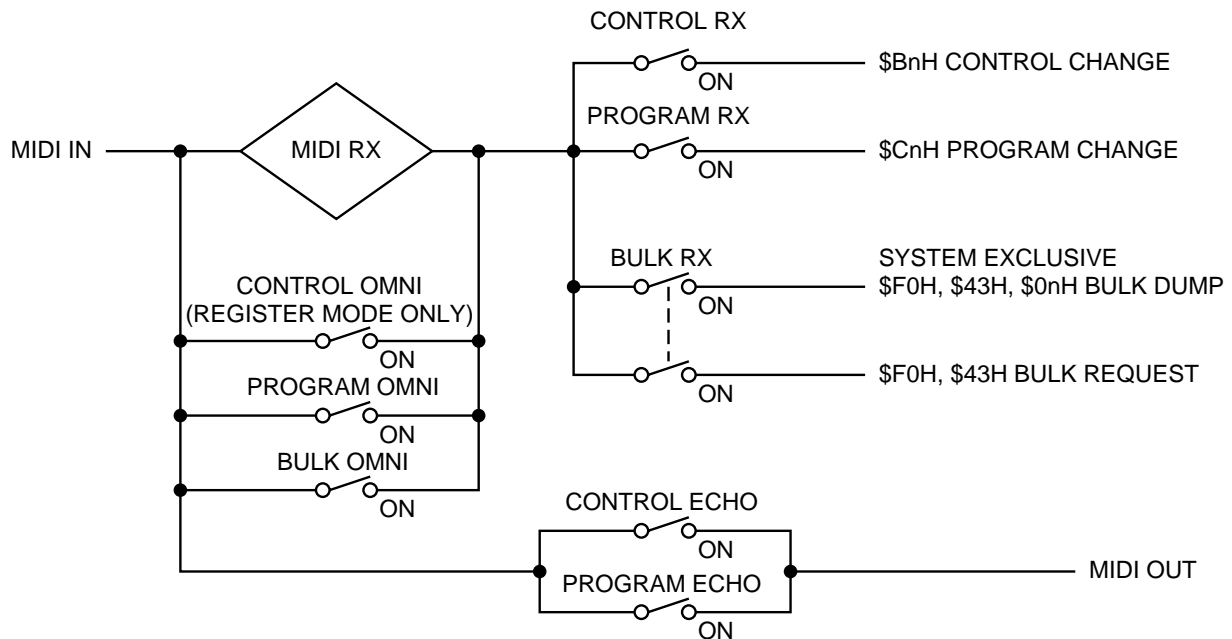
2-4 Real Time Message

Only Active Sensing (FEh), and MIDI Reset (FFh) are received. Running Status is cleared if the unit does not receive any data for more than 300 ms after receiving Active Sensing, or when MIDI Reset is received.

3 Transmission Condition



4 Receive Condition



5 Bulk Dump Request Format

5-1 One Memory Mixing Program Bulk Dump Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000xxxx	0n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00000110	06	826(408x2+10)bytes
BYTE COUNT(LOW)	00111010	3A	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01001101	4D	'M'
MEMORY NO.	0xxxxxxx	mm	"mm=1(01h)-50(32h)...Scene Memory No.," 127(7Fh)...Edit Buffer
DATA*1	0xxxxxxx	dsH	Scene Memory Data(408x2bytes)*3
	0xxxxxxx	dsL	
	:	:	
	0xxxxxxx	deH	
	0xxxxxxx	deL	
CHECK SUM*2	0xxxxxxx	ee	ee=(INVERT('L'+ 'M'+...+dsH+...+deL)+1) AND 7Fh
EOX	11110111	F7	End Of Exclusive

5-2 All Program Change Assignment Table Bulk Dump Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000xxxx	0n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00000010	02	266(128x2+10)bytes
BYTE COUNT(LOW)	00001010	0A	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01010000	50	'P'
MEMORY NO.	00100000	20	' '
DATA*1	0xxxxxxx	dsH	Program Change Table(128x2bytes)*4
	0xxxxxxx	dsL	
	:	:	
	0xxxxxxx	deH	
	0xxxxxxx	deL	
CHECK SUM*2	0xxxxxxx	ee	ee=(INVERT('L'+ 'M'+...+dsH+...+deL)+1) AND 7Fh
EOX	11110111	F7	End Of Exclusive

5-3 All Control Change Assignment Table Bulk Dump Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000xxxx	0n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00010010	12	2314(96x6x2x2+10)bytes
BYTE COUNT(LOW)	00001010	0A	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01000011	43	'C'
MEMORY NO.	00100000	20	' '
DATA*1	0xxxxxxx	dsH	Control Change Table(96x6x2x2bytes)*5
	0xxxxxxx	dsL	
	:	:	
	0xxxxxxx	deH	
	0xxxxxxx	deL	
CHECK SUM*2	0xxxxxxx	ee	ee=(INVERT('L'+ 'M'+...+dsH+...+deL)+1) AND 7Fh
EOX	11110111	F7	End Of Exclusive

5-4 Setup Memory Bulk Dump Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000xxxx	0n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00000000	00	62(26x2+10)bytes
BYTE COUNT(LOW)	00111110	3E	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01010011	53	'S'
	00100000	20	' '
DATA*1	0xxxxxxx	dsH	Setup Memory(26x2bytes)*6
	0xxxxxxx	dsL	
	:	:	
	0xxxxxxx	deH	
	0xxxxxxx	deL	
CHECK SUM*2	0xxxxxxx	ee	ee=(INVERT('L'+ 'M'+...+dsH+...+deL)+1) AND 7Fh
EOX	11110111	F7	End Of Exclusive

5-5 Backup Memory Bulk Dump Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000xxxx	0n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00000001	01	154(72x2+10)bytes
BYTE COUNT(LOW)	00011010	1A	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01000010	42	'B'
	00100000	20	' '
DATA*1	0xxxxxxx	dsH	Backup Memory(72x2bytes)*7
	0xxxxxxx	dsL	
	:	:	
	0xxxxxxx	deH	
	0xxxxxxx	deL	
CHECK SUM*2	0xxxxxxx	ee	ee=(INVERT('L'+ 'M'+...+dsH+...+deL)+1) AND 7Fh
EOX	11110111	F7	End Of Exclusive

5-6 Effect User Memory Bulk Dump Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000xxxx	0n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00000000	00	82(36x2+10)bytes
BYTE COUNT(LOW)	01010010	52	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01000101	45	'E'
MEMORY NO.	0xxxxxxx	mm	"mm=1(00h)-10(09h)...Effect User Memory No.,"
DATA*1	0xxxxxxx	dsH	Effect User Memory Data(36x2bytes)*8
	0xxxxxxx	dsL	
	:	:	
	0xxxxxxx	deH	
	0xxxxxxx	deL	
CHECK SUM*2	0xxxxxxx	ee	ee=(INVERT('L'+ 'M'+...+dsH+...+deL)+1) AND 7Fh
EOX	11110111	F7	End Of Exclusive

5-7 Compressor User Memory Bulk Dump Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000xxxx	0n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00000000	00	54(22x2+10)bytes
BYTE COUNT(LOW)	00110110	36	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01001111	4F	'O'
MEMORY NO.	0xxxxxxx	mm	"mm=1(00h)-10(09h)...Compressor User Memory No.,"
DATA*1	0xxxxxxx	dsH	Compressor User Memory Data(22x2bytes)*9
	0xxxxxxx	dsL	
	:	:	
	0xxxxxxx	deH	
	0xxxxxxx	deL	
CHECK SUM*2	0xxxxxxx	ee	ee=(INVERT('L'+ 'M'+...+dsH+...+deL)+1) AND 7Fh
EOX	11110111	F7	End Of Exclusive

5-8 Equalizer User Library Bulk Dump Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000xxxx	0n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00000000	00	58(24x2+10)bytes
BYTE COUNT(LOW)	00111010	3A	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01010001	51	'Q'
MEMORY NO.	0xxxxxxx	mm	"mm=1(00h)-20(13h)...Equalizer User Library No.,"
DATA*1	0xxxxxxx	dsH	Equalizer User Memory Data(24x2bytes)*10
	0xxxxxxx	dsL	
	:	:	
	0xxxxxxx	deH	
	0xxxxxxx	deL	
CHECK SUM*2	0xxxxxxx	ee	ee=(INVERT('L'+ 'M'+...+dsH+...+deL)+1) AND 7Fh
EOX	11110111	F7	End Of Exclusive

5-9 Key Remote Bulk Dump Data Format (Receive only)

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000xxxx	0n	n=0-15(Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00000000	00	11(1+10)bytes
BYTE COUNT(LOW)	00001011	0B	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01001011	4B	'K'
MEMORY NO.	0xxxxxxx	Kn	Key Number*11
DATA*1	0xxxxxxx	DT	Key Data*12
CHECK SUM*2	0xxxxxxx	ee	ee=(INVERT('L'+ 'M'+...+dsH+...+deL)+1) AND 7Fh
EOX	11110111	F7	End Of Exclusive

5-10 Error/Warning Report Bulk Dump Data Format (Transmission only)

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000xxxx	0n	n=0-15(Tx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT(HIGH)	0xxxxxxx	nn	nn([Message]x2+10)bytes
BYTE COUNT(LOW)	0xxxxxxx	nn	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01011000	58	'X'
	01000101	45	'E'
DATA*1	0xxxxxxx	EnH	Message No.(HIGH)*13
	0xxxxxxx	EnL	Message No.(LOW)
	0xxxxxxx	Ms	Message*14
	:	:	
	0xxxxxxx	Me	
CHECK SUM*2	0xxxxxxx	ee	ee=(INVERT('L'+ 'M'+...+dsH+...+deL)+1) AND 7Fh
EOX	11110111	F7	End Of Exclusive

5-11 One Memory Mixing Program Bulk Request Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01001101	4D	'M'
MEMORY NO.	0xxxxxxx	mm	"mm=1(01h)-50(32h)...Scene Memory No.," 127(7Fh)...Edit Buffer
EOX	11110111	F7	End Of Exclusive

5-12 All Program Change Assignment Table Bulk Request Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01010000	50	'P'
	00100000	20	' '
EOX	11110111	F7	End Of Exclusive

5-13 All Control Change Assignment Table Bulk Request Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01000011	43	'C'
	00100000	20	' '
EOX	11110111	F7	End Of Exclusive

5-14 Scene Memory Store Bulk Request Data Format*17

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01010111	57	'W'
	00100000	20	' '
EOX	11110111	F7	End Of Exclusive

5-15 All Data Bulk Request Data Format*18

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01000001	41	'A'
	00100000	20	' '
EOX	11110111	F7	End Of Exclusive

5-16 Setup Memory Bulk Request Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Tx/Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01010011	53	'S'
	00100000	20	' '
EOX	11110111	F7	End Of Exclusive

5-17 Backup Memory Bulk Request Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01000010	42	'B'
	00100000	20	' '
EOX	11110111	F7	End Of Exclusive

5-18 Effect User Memory Bulk Request Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01000101	45	'E'
MEMORY NO.	0xxxxxxx	mm	"mm=1(00h)-10(09h)...Effect User Memory No.,"
EOX	11110111	F7	End Of Exclusive

5-19 Compressor User Memory Bulk Request Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01001111	4F	'O'
MEMORY NO.	0xxxxxxx	mm	"mm=1(00h)-10(09h)..Compressor User Memory No.,"
EOX	11110111	F7	End Of Exclusive

5-20 Equalizer User Library Bulk Request Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01010001	51	'Q'
MEMORY NO.	0xxxxxxx	mm	"mm=1(00h)-20(13h)...Equalizer User Library No.,"
EOX	11110111	F7	End Of Exclusive

5-21 Memory Control Change Out Bulk Request Data Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0010xxxx	2n	n=0-15(Rx Channel No.)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000001	41	'A'
	00110100	34	'4'
	00110001	31	'1'
DATA NAME	01011001	59	'Y'
MEMORY NO.	0xxxxxxx	mm	"mm=1(01h)-50(32h)...Scene Memory No.," 127(7Fh)...Edit Buffer
EOX	11110111	F7	End Of Exclusive

Button Number Table

Button #	Button Name
# 0	MEMORY STORE
# 1	MEMORY UP
# 2	UTILITY
# 3	MIDI
# 4	MEMORY RECALL
# 5	MEMORY DOWN
# 6	GROUP
# 7	PAIR
# 8	METER
# 9	PAN/PHASE
# 10	COMP
# 11	CUE
# 12	SEND1
# 13	SEND2
# 14	SEND3
# 15	SEND4
# 16	EQ LOW
# 17	EQ MID
# 18	EQ HIGH
# 19	EQ LIBRARY
# 20	CH1 SEL
# 21	CH2 SEL
# 22	CH3 SEL
# 23	CH4 SEL
# 24	CH5 SEL
# 25	CH6 SEL
# 26	CH7 SEL
# 27	CH8 SEL
# 28	CH9 SEL
# 29	CH10 SEL
# 30	CH11 SEL
# 31	CH12 SEL
# 32	CH13 SEL
# 33	CH14 SEL
# 34	CH15 SEL
# 35	CH16 SEL
# 36	ST IN SEL
# 37	RTN/SEND SEL

Button #	Button Name
# 38	ST OUT SEL
# 39	CH1 ON
# 40	CH2 ON
# 41	CH3 ON
# 42	CH4 ON
# 43	CH5 ON
# 44	CH6 ON
# 45	CH7 ON
# 46	CH8 ON
# 47	CH9 ON
# 48	CH10 ON
# 49	CH11 ON
# 50	CH12 ON
# 51	CH13 ON
# 52	CH14 ON
# 53	CH15 ON
# 54	CH16 ON
# 55	ST IN ON
# 56	RTN/SEND ON
# 57	ST OUT ON
# 58	CURSOR UP
# 59	CURSOR DOWN
# 60	CURSOR LEFT
# 61	CURSOR RIGHT
# 62	ENTER
# 63	PARAMETER UP
# 64	PARAMETER DOWN

*1 How to calculate data format. For example, Internal Data: Ds,D1,D2,D3,...,Dx,...,De (Dx is 1 byte data). The data ranges between 00h and FFh.

$DxH = \text{ASCII} ((Dx/16) \text{ AND } 0Fh)$ (Character code '0' to 'F')

$DxL = \text{ASCII} (Dx \text{ AND } 0Fh)$ (Character code '0' to 'F')

*2 Check sum. Sum is calculated for the sum after the BYTE COUNT (LOW), namely 'L' to the data immediately before the CHECK SUM, all bits are inverted (one's compliment), and then add 1 (one), and then the MSB (bit7) is set 0 (zero) for obtaining the CHECK SUM (two's compliment).

*3 Data between D0 and D407

*4 Data between D0 and D127 (See the Program Change Assign Map)

*5 Data between D0 and D1151 (See the Control Change Assign Map)

*6 Data between D0 and D25

*7 Data between D0 and D71

*8 Data between D0 and D35

*9 Data between D0 and D21

*10 Data between D0 and D23

*11 Data between 0 and 45 (See the Button Number Table)

*12 SWITCH: "ON=7Fh, OFF=00h" DATA ENTRY:01-7Fh

*13 See the Error Message List

*14 How to calculate data format. For example, Strings character: Ms,M1,M2,M3,...,Mx,...,Me (Mx is ASCII code 1 byte data. The data ranges between 00h and FFh).

$Mx = Mx$ (Character code) LF (Return) = 0Ah

*15 The following is how to calculate data format. For example, Internal Data: Ds, D1, D2, D3, ..., Dx, ..., De (Dx is 1 byte data. The data ranges between 00h and 3Fh.) $Dx = Dx$

*16 Data between D0 and D2559

*17 This request signal is output when storing a scene memory on the STORE key, thus enabling the current setup within the EDIT BUFFER to be stored into a specified memory.

*18 All Data= [1 Memory Mixing Program No. 1-50, Edit Buffer] + [All Program Change Assignment Table] + [All Control Change Assignment Table] + [Setup Memory] + [Backup Memory] + [1 Effect User Memory No. 0-9] + [1 Compressor User Memory No. 0-12] + [1 EQ User Library No. 0-19].

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 – 16 1 – 16	1 – 16 1 – 16	Memorized
Mode	Default Messages Altered	X X *****	OMNI off / OMNI on OMNI on/off X	Memorized
Note Number	True Voice	X *****	X X	
Velocity	Note On Note Off	X X	X X	
After Touch	Keys Ch's	X X	X X	
Pitch bend		X	X	
Control Change	0–95 96–97 98–99 100–120	O X O X	O X O X	*1
Prog Change	:True#	O ***** 0–127	O 0–127 0–50	*2
System Exclusive		O	O	Bulk Dump/Request
System Common	:Song Pos :Song Sel :Tune	X X X	X X X	
System Real Time	:Clock :Commands	X X	X X	
Aux Messages	:Local ON/OFF :All Notes OFF :Active Sense	X X X X	X X X X	

Notes *1: Each parameter can be assigned to any Control Change and these assignment tables can be stored in memory.
*2: For program 1–128, memory #0–#50 is selected.

YAMAHA