

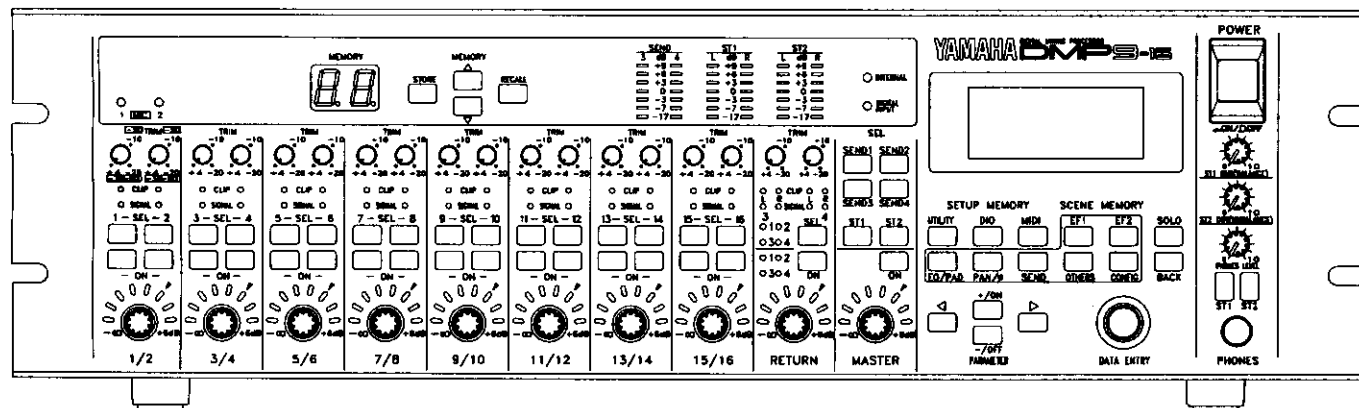
YAMAHA

DIGITAL MIXING PROCESSOR

DMP9-16

DMP9-8

OWNER'S MANUAL
MANUEL D'UTILISATION
BEDIENUNGSANLEITUNG



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 or 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 vedrørende 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

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.

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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.

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Litiumbatteri!

Bör endast bytas av servicepersonal.
Explosionsfara vid felaktig hantering.

VAROITUS!

Lithiumparisto, Räjähdyksvaara.
Pariston saa vaihtaa ainoastaan aian ammattimies.

ADVARSEL!

Lithiumbatteri!
Ekspløsningsfare. Udskiftning må kun foretages af en sagkyndig, -og som beskrevet i servicemanualen.

Operating Precautions & Notes

Please read through the following information before operating the DMP9.

Safety Information

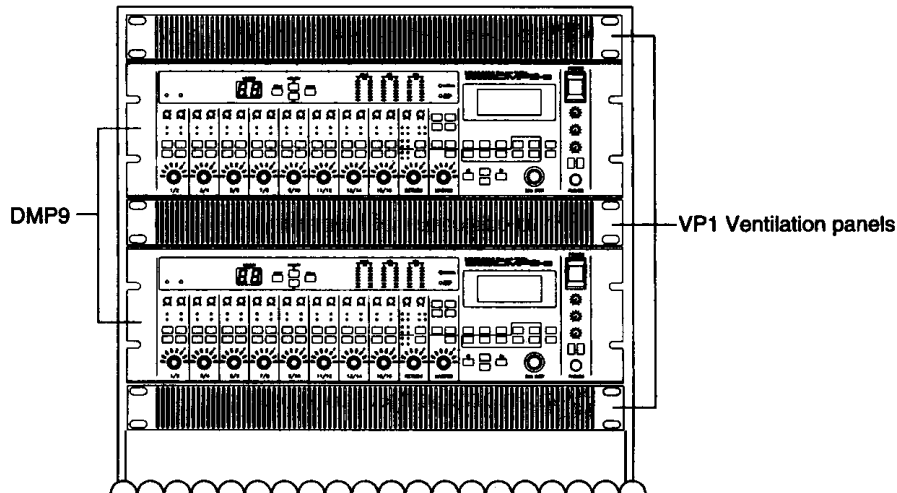
- Make sure that the DMP9 power cord is not located in a position where it is likely to be walked on, pinched, or both by other equipment placed near to it.
- Make sure that the DMP9 is earthed correctly. For a 3-core power cable, make sure that the AC receptacle's earth terminal is actually earthed. For a 2-core power cable, connect the DMP9 GND terminal to an AC receptacle earth point.
- Do not expose the DMP9 to extremes of humidity.
- Do not place the DMP9 near water.
- Do not place the DMP9 in areas subject to extremely low temperatures.
- Do not place the DMP9 in locations subject to excessive dust.
- Do not place the DMP9 in an area subject to vibration.
- Do not expose the DMP9 to severe shocks.
- Do not place the DMP9 in direct sunlight, close to heating units, or in areas subject to high temperatures.
- The ambient temperature where the DMP9 is operated should be between 0°C and 35°C (32°F and 95°F).

Warnings

- The DMP9 should be connected to an AC receptacle of the type described in this *Owner's Guide* or as marked on the DMP9.
- To reduce the risk of electric shock, do not remove the cover of the DMP9.
- To reduce the risk of fire or electric shock, do not expose the DMP9 to rain or moisture.
- In an extremely humid environment, condensation may form on the inside and outside of the DMP9. If condensation does occur, leave the DMP9 powered on, but do not use it until the condensation has cleared.
- The DMP9 contains no user serviceable parts. Refer all servicing to qualified personnel.
- The DMP9 uses digital circuits that operate at high frequencies. When used close to TV and radio equipment, interference may occur. If this is the case, simply relocate the DMP9, or the affected equipment to a different location.
- If any of the following should occur, the DMP9 should be serviced by qualified personnel:
 - The DMP9 power cord or plug becomes damaged in any way.
 - Metal objects or liquids get inside the DMP9.
 - The DMP9 is exposed to rain.
 - The DMP9 is dropped, the enclosure damaged, or both.
 - The DMP9 does not operate normally or a marked change in performance is noticed.

Installation

When installing the DMP9, make sure that the location complies with the previous Safety Information. If you intend to rack mount the DMP9, leave 1U of rack space free above and below. Yamaha VP1 1U ventilation panels can be installed above and below the DMP9. With 1U of free space below, you don't need to remove the feet.



Typically, rack-mounted equipment is located below the users line of sight. Hence, the DMP9 LCD has been optimized so that it is most readable when viewed from above. Please bare this in mind when installing the DMP9.

Memory Backup Battery

The DMP9 uses a long-life battery to backup its RAM memory. The battery should last for about 5 years, and its voltage can be checked using the Battery Check function. See "Battery Check" on page 66. If the battery needs replacing, please contact your Yamaha dealer. Do not attempt to replace the battery yourself.

Connector Contacts

It is recommended that the DMP9 rear panel connector terminals be cleaned about once every six months to ensure good electrical conductivity. Use a quality electrical contact cleaning product (switch cleaner).

Cleaning the DMP9

If the DMP9 should require cleaning use a soft, lightly moistened cloth. Stubborn marks can be removed using a mild detergent. Do not use abrasive cleaners or solvent based cleaning fluids such as alcohol and benzene.

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Introduction

Welcome to the DMP9

Thank you for purchasing a Yamaha DMP9 Digital Mixing Processor. The DMP9 is an all-digital audio mixer that provides many advantages over existing analog mixers, such as transparent digital processing, scene memories for storing mix scenes, built-in multi effects, comprehensive analog and digital inputs and outputs, to name just a few.

Key Features

All Digital

An audio mixer is the critical device used to combine and adjust sounds from various sources at differing levels, impedances, etc. It should minimize phase and inter modulation distortions at the mixing point. Any nonlinear characteristics will have a serious effect on the overall quality of the combined output, resulting in subtle, yet noticeable distortions and noise. Even with excellent design techniques, these kinds of problems are inherent in analog mixers. The DMP9 provides a digital solution to all these problems. For once past the A/D conversion stage, all audio signals are processed in the digital domain, immune from degradation.

Digital Multi Effects

The DMP9 contains two high quality digital multi-effects processors. Each can be used to produce reverb, delay, pitch change, and a wide range of modulation type effects, such as flange, chorus, and symphonic. Effect processors can be used individually or in series, with the output of one effect processor feeding the other. In a digital mixer such as the DMP9, having the effects processors built-in means that the audio signal does not have to go through multiple A/D and D/A conversions, which just compound the effects of conversion.

Scene Memories

The DMP9 has 50 scene memories that allow you store *mix scenes* and *EQ snapshots*. A scene memory stores all variable mix parameters such as mutes, levels, EQ, effects, etc. Scene memories can be recalled using the front panel [RECALL] button, or remotely from a synthesizer, MIDI keyboard, MIDI sequencer, etc., using MIDI Program Change messages. You could, for example, set up different mix scenes for each song. If each scene memory is assigned to the same Program Change message as that of the synthesizer voice used in the song, the corresponding scene memory can be recalled when the voice is selected on the synthesizer. Scene memories can also be recalled using a MIDI footswitch.

MIDI Control

DMP9 variable mix parameters can be remotely controlled using MIDI Control Change messages. You could, for example, adjust DMP9 parameters using a synthesizer's assignable MIDI sliders or pedals. With a MIDI sequencer, you could record and playback these Control Change messages, providing dynamic mixdown automation.

Channel Expansion

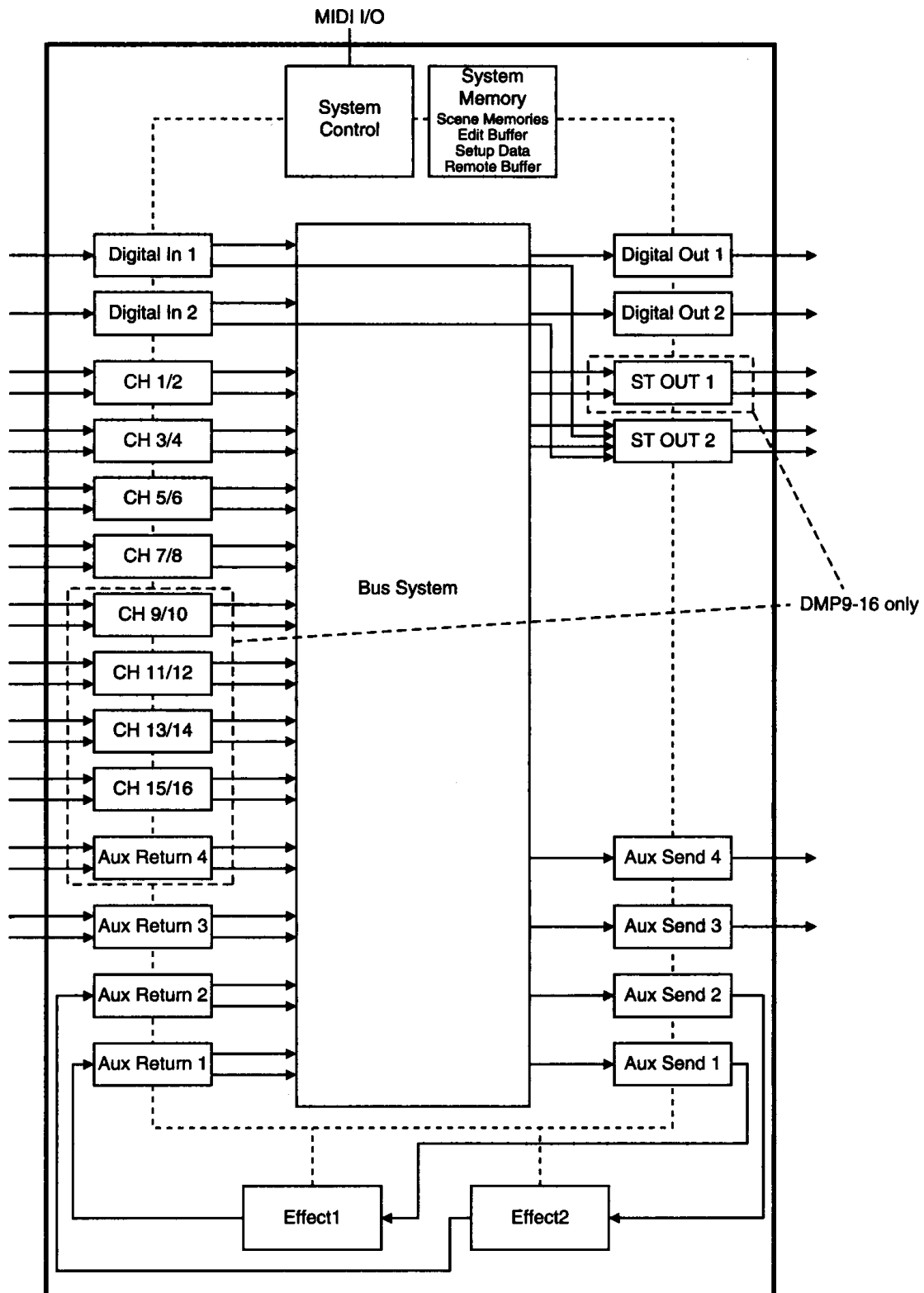
As well as being used to connect CD players, DAT recorders, etc., the DMP9 digital inputs and outputs can also be used to connect other DMP9s for channel expansion. Any combination of DMP9-16s and DMP9-8s can be used to create 24-, 32-, and 48-channel systems. The input channels and auxiliary returns on each DMP9 are mixed down to stereo, and that stereo signal is then fed to the next DMP9 via the digital inputs and outputs. Thus keeping the signal in the digital domain, eliminating signal degradation. The connection between DMP9s is called a cascade, since DMP9s are effectively connected in series, with the stereo output of each DMP9 being fed to the next DMP9.

Other DMP9 Features

- *16-bit A/D converters*
- *18-bit D/A converters*
- *92 dB dynamic range*
- *Switchable XLR microphone inputs on channels 1 and 2*
- *Rotary trim controls for optimum S/N setting*
- *Signal and clip LEDs on each channel, including auxiliary returns (3/4ch)*
- *Two-band fully sweepable EQ with variable Q and selectable peak or shelf response*
- *Mono mode (independent channels) and Stereo mode (paired channels)*
- *Width/Balance control for Stereo mode channels*
- *Channel delay for microphone placement compensation*
- *Channel grouping for simultaneous channel level and on/off control (8 independent groups)*
- *Parameter copy function allows channel settings to be copied between channels*
- *Channel titling for easy identification*
- *Four auxiliary sends: 1 & 2 internal effects, 3 & 4 external*
- *Stereo mode for using Aux Sends 3 and 4 as stereo outputs*
- *Stereo auxiliary returns*
- *20-bit IEC958 (Consumer) and 24-bit Yamaha digital inputs and outputs*
- *Useful digital oscillator*
- *Comprehensive emphasis facilities*
- *Channel status and User Bit monitors for IEC958 (Consumer) format digital input*
- *User Bit entry for IEC958 (Consumer) format digital output*
- *Scene memory titling for easy identification*
- *Scene memory recall using MIDI Program Change messages*
- *MIDI Bulk Dump for storing DMP9 data*
- *MIDI Monitor for monitoring incoming MIDI data*
- *Wordclock out for external device synchronization*
- *16-character 4-line LCD*
- *Rotary level controls with 8-point LED position indicators*
- *7-segment LED bargraphs*
- *Compact 3U rack-mount chassis*

Inside the DMP9

The following block diagram shows the basic parts that make up a DMP9.



Detailed block diagrams are provided at the rear of this *Owner's Guide*.

Applications

The DMP9 can be used in many situations that demand a versatile high-quality digital mixer. It is especially suited to the following applications:

Professional Keyboard Mixer

The DMP9 line inputs are ideal for connecting synthesizers, tone generators, samplers, etc. Input levels, and the subsequent S/N performance can be optimized using the front panel trim controls. The Stereo channel mode makes it easy to mix stereo devices. Microphone inputs on channels 1 and 2 can be used for vocals or talkback in a PA situation. There are two independent stereo outputs. One pair can be used to feed the front of house console, the other for onstage monitoring with channel solo capability. Scene memories allow mixer settings for different songs, or different song parts to be stored, then recalled either manually or via a MIDI footswitch. DMP9 parameters can be controlled using MIDI Control Changes, thus providing real-time performance control. For example, you could control DMP9 parameters using a synthesizer or MIDI keyboard's assignable MIDI sliders and pedals.

MIDI Studio Mixer

As well as the items listed above, the following are useful in a MIDI studio. Channel mutes can be stored in scene memories, or controlled in real time using MIDI Control Changes. All mix parameters can be assigned to MIDI Control Changes, and controlled from a MIDI sequencer. Many of today's MIDI Sequencers are provided with GUI style MIDI mixers that allow you to assign MIDI Control Changes to fader icons. Fader movements can then be recorded as Control Change data in real time during mix down. Fader moves can then be edited using the sequencer's edit tools. Effectively, the DMP9 offers two types of mix automation: scene memories for static mix scene changes, and MIDI control for dynamic mixdown control.

The IEC958 (Consumer) digital 1 input can be used to connect a CD player, DAT, MD, DCC, or other device with a digital output. The IEC958 (Consumer) digital 1 output can be connected directly to a DAT recorder for mix down mastering. The Yamaha format digital input and output can be used to cascade DMP9s for channel expansion. They also allow digital connection directly to other equipment in Yamaha's wide range of professional digital audio products.

DMP9-16 & DMP9-8 Differences

The DMP9-8 and the DMP9-16 have the following differences:

- DMP9-8 has eight input channels, DMP9-16 has sixteen.
- DMP9-8 can be used as eight mono channels, DMP9-16 as sixteen mono channels.
- DMP9-8 can be used as four stereo pairs, DMP9-16 as eight stereo pairs.
- DMP9-8 has one stereo aux return, DMP9-16 has two.
- DMP9-8 has ST and Solo buses, DMP9-16 has ST1 and ST2/Solo buses.
- DMP9-8 has ST OUT (UNBALANCE) and ST OUT (BALANCE) outputs, DMP9-16 has STEREO OUT1 and STEREO OUT2 outputs.

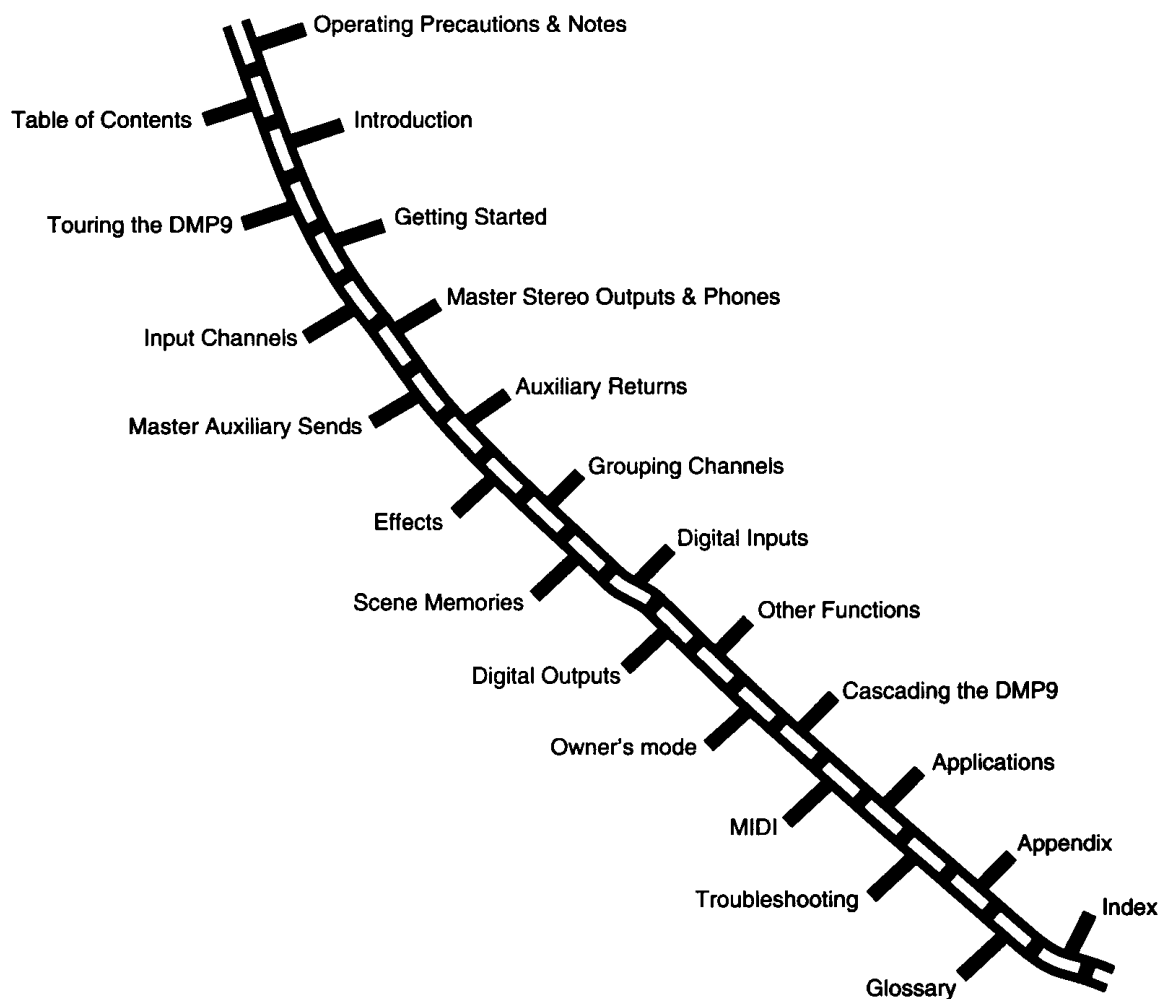
Using this *Owner's Guide*

This *Owner's Guide* applies to both the DMP9-8 and the DMP9-16. Apart from the difference in the number of channels, there are a few other small differences, which are listed above. For information that applies equally to both models, the name DMP9 is used. The full model names are used when referring to information that applies to a particular model.

To help you get the most from your DMP9 in the shortest possible time, please make good use of the following items: the table of contents that shows how this guide is organized, the Glossary that explains unfamiliar terms, and the Index that allows you to locate specific information quickly.

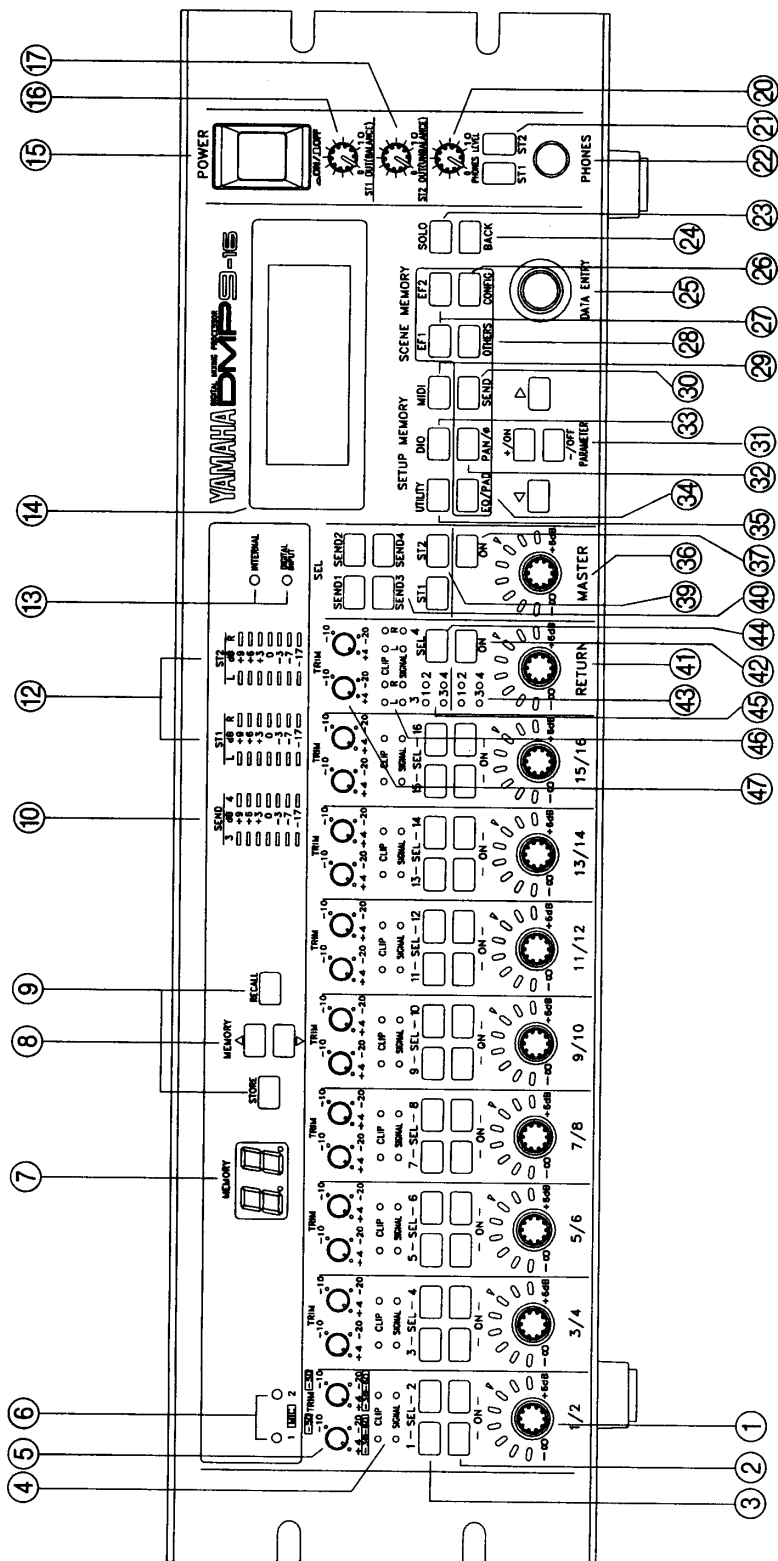
Owner's Guide Road Map

The following road map shows how the chapters of this *Owner's Guide* are organized, and will help you to locate the information you want quickly.

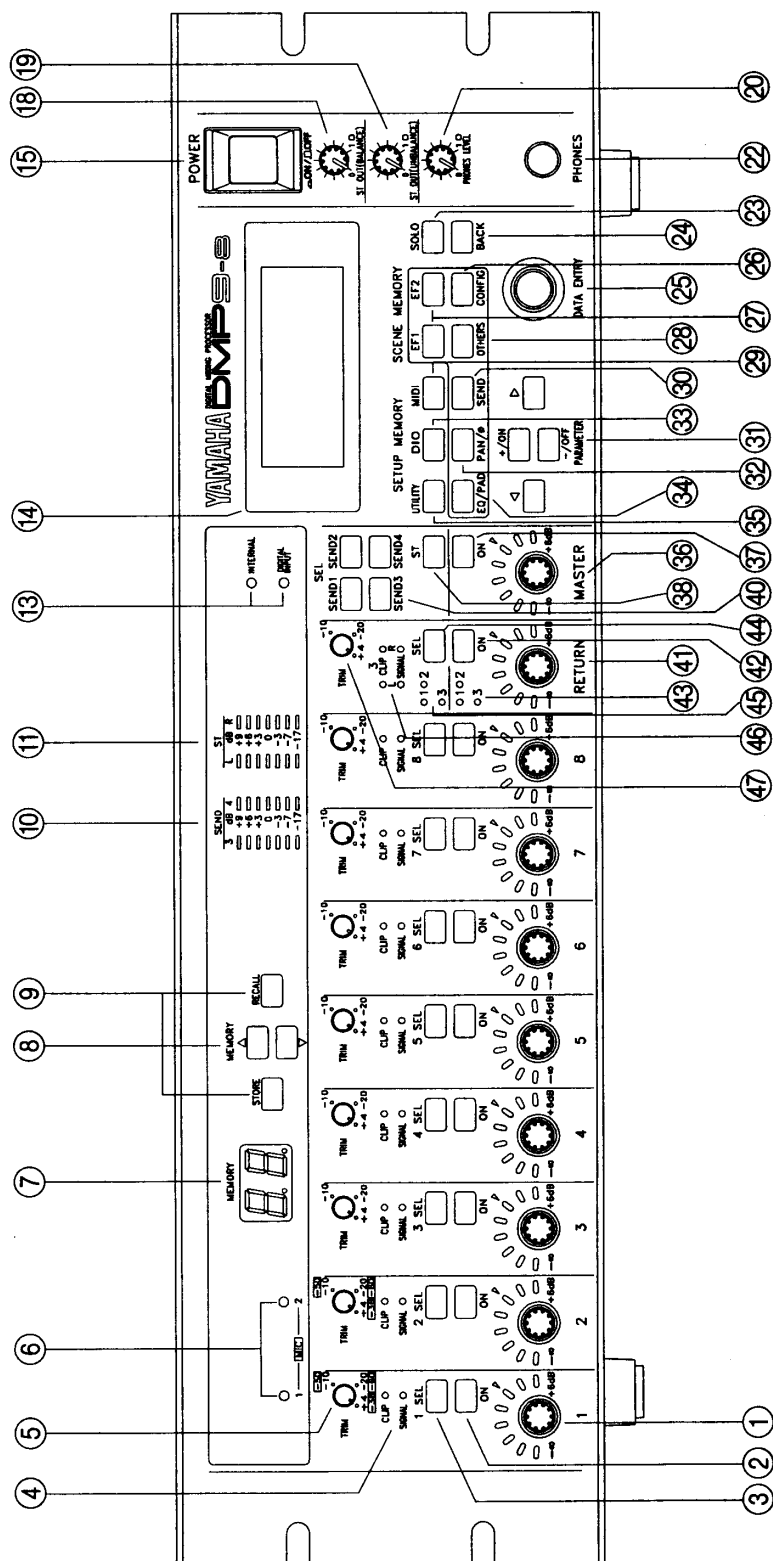


Chapter 1: Touring the DMP9

DMP9-16 Front Panel



DMP9-8 Front Panel



1. Input channel level control

This control is effectively five level controls in one. It is used to adjust the input channel to auxiliary send levels and the input channel to stereo output levels. To adjust a level, first press a MASTER [SEND] or [ST] button to select an auxiliary send or stereo output, then adjust the control. When the Pan Special Function parameter on the System Flags LCD function is set to ON, pan and balance can also be adjusted using the input channel level controls.

The triangular mark indicates the 0 dB position.

2. Input channel [ON] buttons (1~8, 1~16)

These buttons are used to turn input channels on and off, and select channels for solo. Stereo mode channels and grouped channels are turned on and off together.

3. Input channel [SEL] button (1~8, 1~16)

These buttons are used to select input channels. Stereo mode channels are selected together. Pressing and holding down both buttons in a pair for about one second can be used to toggle between Stereo and Mono modes.

4. CLIP & SIGNAL LEDs

These LEDs indicate the signal levels of input channels. They should be used in conjunction with the TRIM controls.

5. TRIM control

This control allows you to optimize the input channel signal level. It should be used in conjunction with the CLIP and SIGNAL LEDs. Ideally, the SIGNAL LED should be lit, indicating that a signal is present, and the CLIP LED should light occasionally. This 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 to high, unpleasant signal clipping may result.

6. MIC/LINE input LEDs

These LEDs indicate the selected input source for input channels 1 and 2: MIC or LINE. LED on means that MIC is selected.

7. MEMORY indicator

This 2-digit LED display is used when selecting scene memories. See “MEMORY Indicator” on page 54.

8. MEMORY [▲] & [▼] buttons

These buttons are used to select scene memories.

9. MEMORY [STORE] & [RECALL] buttons

These buttons are used to store and recall scene memories.

10. SEND level meters

These 7-segment LED bargraphs indicate the output levels for auxiliary sends 3 and 4. When the +9dB LED lights up, there is still about 7dB of headroom before the signal is clipped.

11. ST level meters [DMP9-8]

These 7-segment LED bargraphs indicate the level of the stereo output signal before the ST OUT(BALANCE) control. When the +9dB LED lights up, there is still about 7dB of headroom before the signal is clipped.

12. ST1 & ST2 level meters [DMP9-16]

These 7-segment LED bargraphs indicate the output levels for STEREO OUT1 and STEREO OUT2. Signals are sourced before ST1 OUT (BALANCE) control [DMP9-8] and before ST2 OUT (UNBALANCE) control [DMP9-16]. When the +9dB LED lights up, there is still about 7dB of headroom before the signal is clipped.

13. INTERNAL & DIGITAL INPUT indicators

These LEDs indicate the currently selected wordclock source. The DIGITAL INPUT LED flashes if the DMP9 cannot sync lock to an external wordclock source. See “Master Clock Select” on page 64.

14. LCD

This is a 16-character 4-line LCD.

15. POWER switch

This switch is used to power the DMP9 on and off.

16. STEREO OUT1 control [DMP9-16]

This control adjusts the output level of STEREO OUT1.

17. STEREO OUT2 control [DMP9-16]

This control adjusts the output level of STEREO OUT2.

18. ST OUT(BALANCE) control [DMP9-8]

This control adjusts the output level of ST OUT(BALANCE).

19. ST OUT(UNBALANCE) control [DMP9-8]

This control adjusts the output level of ST OUT(UNBALANCE).

20. PHONES LEVEL control

This control is used to adjust the headphone volume.

21. PHONES [ST1] & [ST2] buttons [DMP9-16]

These buttons are used to select the signal source for the headphones: STEREO OUT1 or STEREO OUT2.

22. PHONES jack

A pair of stereo headphones can be connected to this stereo 6.35 mm (1/4 inch) phone jack.

23. [SOLO] button

This button activates the solo function. The actual channel soloed is the currently selected channel.

24. [BACK] button

This button allows you to go back to the previously selected LCD function. Pressing the [RECALL] button while holding down the [BACK] button allows you to restore the mix settings to how they were before the last scene memory was recalled.

25. DATA ENTRY control

This continuous control is used to increase and decrease parameter values. Turn it clockwise to increase, and counterclockwise to decrease.

26. [CONFIG] button

This button provides access to the following LCD functions: Ch Mode Select, Mem.Title Edit, and Send3/4 Mode.

27. [EF1] & [EF2] buttons

These buttons provide access to the multi-effects processors.

28. [OTHERS] button

This button provides access to the following LCD functions: Memory Title, Level, Level Monitor, Bus Assign, Fade Time, Channel Delay, and Master ON/OFF.

29. [MIDI] button

This button provides access to the following LCD functions: MIDI Setting, PGM Change, CTRL Change, PGM Assign, CTRL Assign, CTRL Out PRM., BULK, MIDI Local, and MIDI monitor.

30. [SEND] button

This button provides access to the following LCD functions: auxiliary send ON/OFF and auxiliary send PRE/POST.

31. [+ / ON] [- / OFF] [◀] [▶] PARAMETER buttons

These buttons are used to select parameters, increase and decrease parameter values, and activate and deactivate functions.

32. [PAN/Ø] button

This button provides access to the following LCD functions: Width/Balance, ST1/2 Balance (DMP9–8: ST Balance), Pan Moni (INPUT), PHASE.

33. [DIO] button

This button provides access to the following LCD functions: Master CLK Sel, D.In Routing, Cascade PAD, Cascade Assign, D.In Emphasis, Ch Status Rx, User's Bit Rx, D. Out Routing, D.Out Emphasis, and User's Bit.

34. [EQ/PAD] button

This button provides access to the following LCD functions: Low EQ, High EQ, and PAD.

35. [UTILITY] button

This button provides access to the following LCD functions: Memory Protect, Ch Group, Parameter Copy, Oscillator (CH16/CH8), LINE/MIC Select, Master Delay, Ch.Title, Battery Check, Emphasis, and System Flags.

36. MASTER level control

This control is used to set the master level for the stereo outputs and auxiliary sends.

The triangular mark indicates the 0 dB position.

37. MASTER [ON] button

This button is used to turn the stereo outputs and auxiliary sends on and off. The on/off status of each output can be seen on the Master ON/OFF LCD function, which is accessed by pressing the [OTHERS] button.

38. MASTER [SEL] button (ST) [DMP9–8]

This button is used to select the main stereo output. When selected, it can be controlled with the MASTER level control and MASTER [ON] button, and the input channel level controls work as input channel to stereo output level controls.

39. MASTER [SEL] buttons (ST1 & ST2) [DMP9–16]

These buttons are used to select stereo outputs. When a stereo output is selected, it can be controlled with the MASTER level control and MASTER [ON] button, and the input channel level controls work as input channel to stereo output level controls.

40. MASTER [SEL] buttons (SEND 1~4)

These buttons are used to select auxiliary sends. When an auxiliary send is selected, it can be controlled with the MASTER level control and MASTER [ON] button, and the input channel level controls work as input channel auxiliary send level controls.

41. RETURN level control

This control is used to set the level of the auxiliary returns. When the Pan Special Function parameter on the System Flags LCD function is set to ON, pan and width can also be adjusted using the RETURN level control.

The triangular mark indicates the 0 dB position.

42. RETURN [ON] button

This button is used to turn the auxiliary returns on and off, and select them for solo.

43. RETURN ON/OFF indicators

These LEDs indicate which auxiliary returns are turned on.

44. RETURN [SEL] button

These buttons are used to select auxiliary returns. The selected auxiliary return can be controlled with the RETURN level control and RETURN [ON] button.

45. RETURN SELECT indicators

These LEDs indicate which auxiliary return is currently selected.

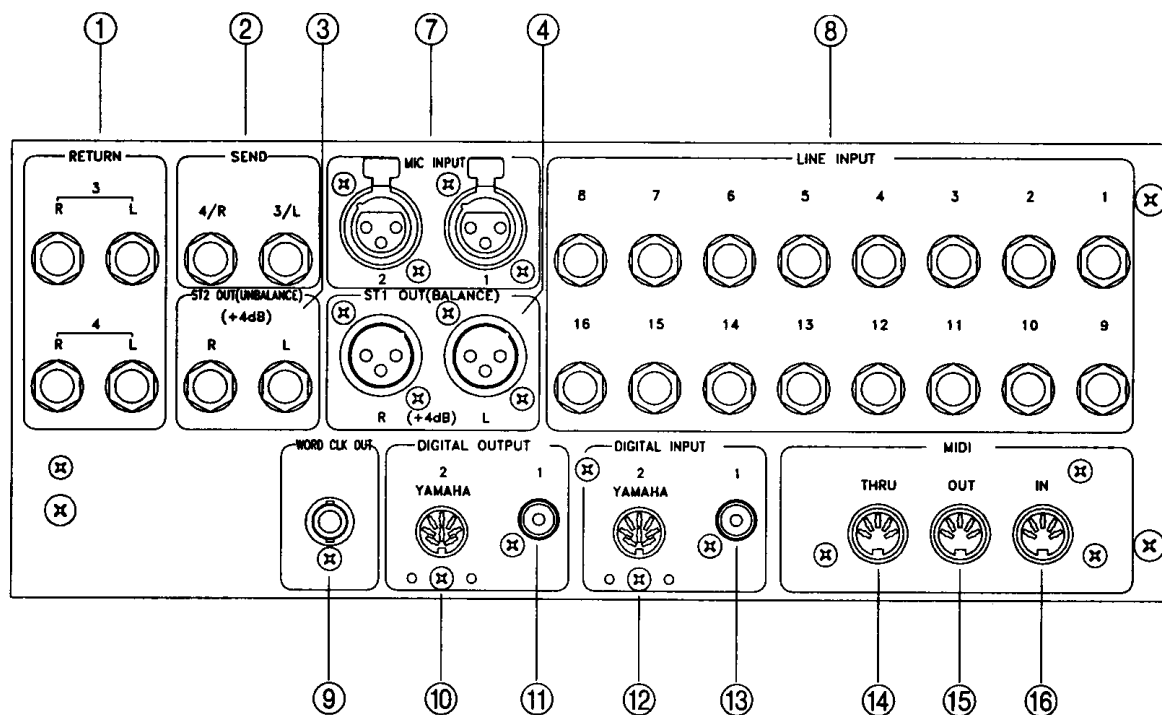
46. RETURN CLIP & SIGNAL LEDs

These LEDs indicate the signal levels of auxiliary returns 3 and 4. They should be used in conjunction with the RETURN TRIM control.

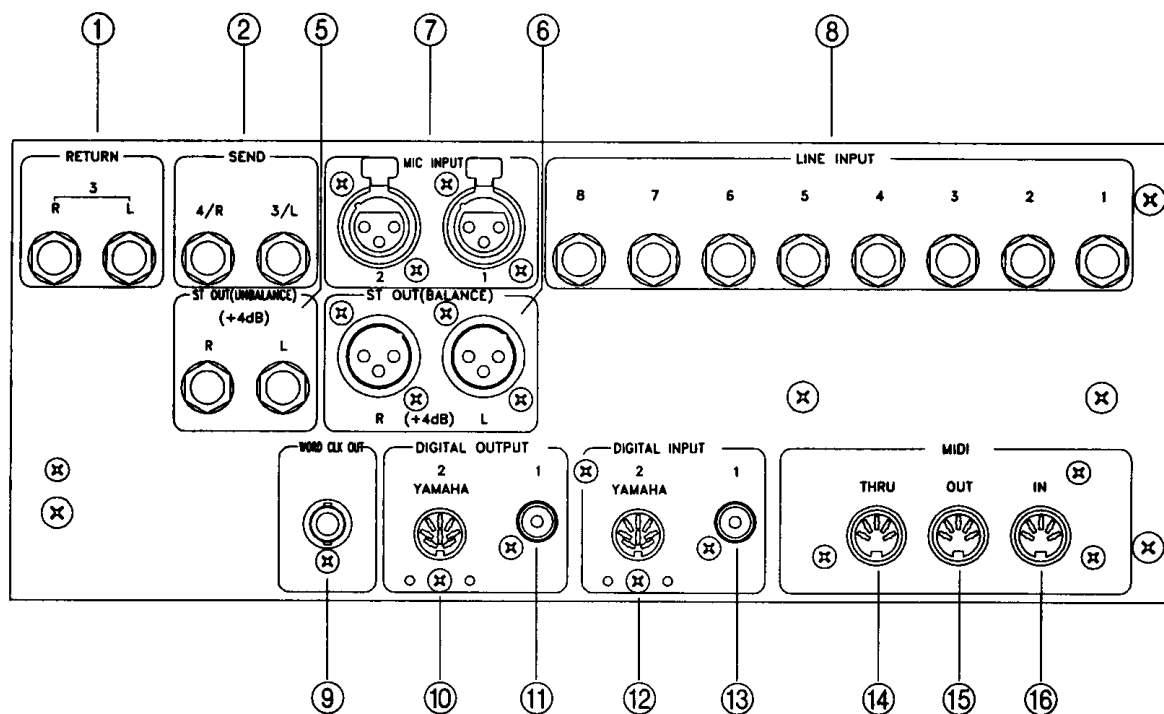
47. RETURN TRIM control

These controls allow you to optimize the auxiliary return signal level. They should be used in conjunction with the CLIP and SIGNAL LEDs. Ideally, the SIGNAL LED should be lit, indicating that a signal is present, and the CLIP LED should light occasionally. This control should be set with some care, because if it is set to low, the S/N performance will suffer, and if it is set to high, unpleasant signal clipping may result.

DMP9-16 Rear Panel



DMP9-8 Rear Panel



1. AUX RETURN jacks

These 6.35 mm (1/4 inch) phone jacks are used to return the auxiliary signals from external processors, etc.

2. AUX SEND jacks

These 6.35 mm (1/4 inch) phone jacks output the auxiliary send signals. They can be used to feed external processors, etc.

3. STEREO OUTPUT2 [DMP9-16]

These 6.35 mm (1/4 inch) phone jacks are the main monitor outputs. Typically, they monitor the main stereo output or solo. However, they can also be used to monitor the auxiliary sends and digital inputs.

4. STEREO OUTPUT1 [DMP9-16]

These balanced XLR-3-32 type connections are the main stereo outputs.

5. ST OUT (UNBALANCE) [DMP9-8]

These unbalanced 6.35 mm (1/4 inch) phone jacks output the same signal as the ST OUT (BALANCE) connections.

6. ST OUT (BALANCE) [DMP9-8]

These balanced XLR-3-32 type connections are the main stereo outputs. Typically, they output the main stereo signal or solo. However, they can also be used to monitor the auxiliary sends and digital inputs.

7. MIC INPUT 1 & 2

These XLR-3-31 type connections are balanced low-impedance inputs. They can be used to connect microphones to input channels 1 and 2.

8. ANALOG LINE INPUT jacks

These 6.35 mm (1/4 inch) phone jacks accept line level analog signals for the input channels.

9. WORD CLK OUT

This BNC type connector outputs a wordclock signal based on the DMP9's internal wordclock. See "Master Clock Select" on page 64.

10. DIGITAL OUTPUT2

This 8-pin DIN connector outputs Yamaha format digital audio. It can be used for cascading DMP9s and connecting other Yamaha digital audio equipment.

11. DIGITAL OUTPUT1

This RCA/phono connector outputs IEC958 (Consumer) format digital audio. It can be used for cascading DMP9s and connecting DAT, MD, DCC recorders, etc.

12. DIGITAL INPUT2

This 8-pin DIN connector accepts Yamaha format digital audio. It can be used for cascading DMP9s and connecting other Yamaha digital audio equipment.

13. DIGITAL INPUT1

This RCA/phono connector accepts IEC958 (Consumer) format digital audio. It can be used for cascading DMP9s and connecting CD players, DAT, MD, DCC recorders, etc.

14. MIDI THRU

This connection outputs all MIDI data received at the MIDI IN connection.

15. MIDI OUT

MIDI Control Change, Program Change, and Bulk Dump data are output via this connection. When echo back is turned ON, this data is merged with the MIDI data received at the MIDI IN connection.

16. MIDI IN

MIDI Control Change, Program Change, and Bulk Dump data are received via this connection.

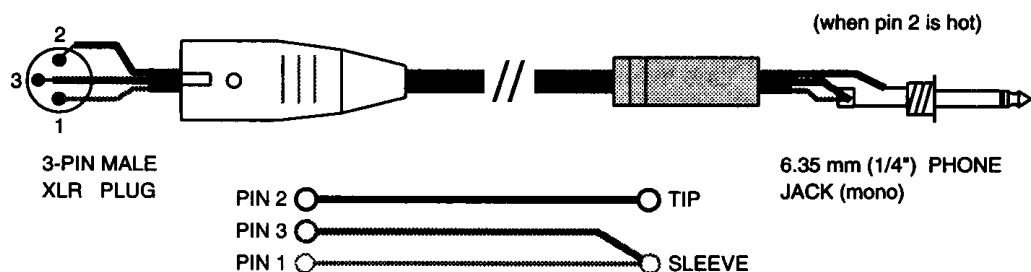
Chapter 2: Getting Started

In this chapter, we explain some of the general operating concepts of the DMP9.

Connecting Cable Notes

Analog

Use connecting cables that are made with high quality cable and reliable connectors. With the high performance offered by the DMP9, the last thing you want is corroded or intermittent connections interfering with the input and output signals. Most DMP9 connections use standard 6.35 mm (1/4 inch) phone jacks, which are wired ground to sleeve, signal to tip. To connect equipment with XLR type connectors, use a cable of the type shown below. However, before connecting, check the equipment's operating manual to see how the hot and cold conductors are wired, pin 2 or pin 3? Incorrectly wired cables will cause undesirable phase shifts.



The XLR MIC INPUTs and XLR STEREO OUTPUTS use Yamaha's usual ground to pin 1, cold to pin 3, hot to pin 2 wiring scheme.

Digital I/O

1) IEC958 (RCA phono)

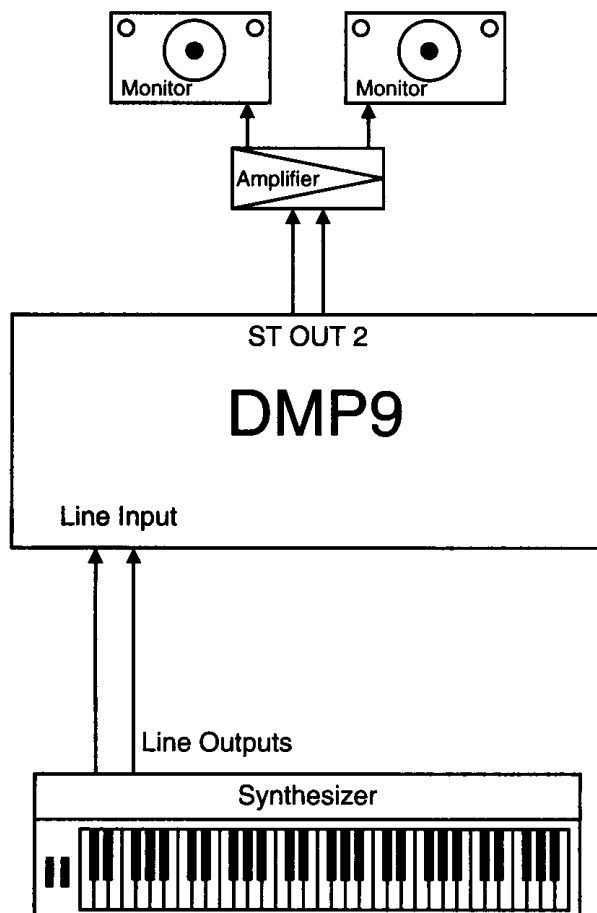
For DIGITAL INPUT1 and DIGITAL OUTPUT1, use 75 ohm coaxial RCA phono cables.

2) Yamaha (8-pin DIN)

For DIGITAL INPUT2 and DIGITAL OUTPUT2, use Yamaha YDC803, YDC805, and YDC815 8-pin DIN cables; 3, 5, and 15 meters respectively.

Basic DMP9 Setup

The following illustration shows the basic components needed to start mixing on the DMP9.



Power On & Power Off

Warning: The DMP9 should be connected only to an AC receptacle of the voltage type marked on its rear panel.

Signal source devices should be powered on first and your power amplifier last. Reverse this procedure when powering off.

1. To power on the DMP9, press the POWER switch.

The model name, system software version, and some other information will be displayed for a few seconds. The DMP9 will then return to the state that it was last powered off in.

If you are using an external wordclock via one of the digital inputs, it's a good idea to power on the device that is sending the digital signal first. Otherwise, the DMP9 cannot be used until that device is powered on. In this case, the DIGITAL INPUT indicator flashes until the either the device is powered on or the DMP9 is set to internal wordclock. See "Master Clock Select" on page 64.

2. To power off the DMP9, press the POWER switch again.

All mixer settings are stored while the power is off.

Getting Around the User Interface

The DMP9 user interface is straightforward and easy to use, and similar operating techniques apply to most functions. Functions that do not have dedicated controls are called LCD functions. These functions are accessed using the [UTILITY], [DIO], [MIDI], [EF1], [EF2], [EQ/PAD], [PAN/Ø], [SEND], [OTHERS], and [CONFIG] buttons. Repeated pressing of the respective button scrolls through the available functions. The [BACK] button can be used to go back to the previous LCD function. To go directly to the first LCD function in a group, press the respective function button twice within 150 ms.

Selecting Channels

Many LCD functions share the same physical controls. So before making any adjustments, you must first select the channel that you want to adjust. Channels can be selected using the [SEL] buttons. There is one [SEL] button for each input channel. For the auxiliary returns, you must press the RETURN [SEL] button repeatedly to select each return in turn. The green RETURN select indicators next to the RETURN [SEL] button indicate the currently selected return. When selected, the respective green [SEL] button will flash, and the title of the input channel or auxiliary return will flash on the top line of the LCD for a few seconds. For the master output section, use the SEND and ST buttons to select the master outputs.

For some channel functions, such as Pad and Phase, you can also use the [◀] and [▶] PARAMETER buttons to select channels, so long as the respective LCD function is displayed. When a channel is selected in this way, the corresponding [SEL] button will flash.

For Stereo mode channels, both channels in the stereo pair will be selected when either channel's [SEL] button is pressed. Parameter adjustments to either channel will affect both channels.

Optimizing Level Settings

The DMP9 offers some excellent performance specifications, so it only makes sense to take full advantage of them. The following guidelines will help you to optimize level settings, which will, in turn, effect a good S/N ratio (signal to noise).

The channel TRIM controls should be set so that the SIGNAL LED is lit most of time, and the CLIP LED lights occasionally. These controls should be set with some care, because if set to low, the S/N performance will suffer, and if it is set to high, unpleasant signal clipping may result. Wherever possible, the MASTER level control should be set to about 0 dB.

Data Organization

The DMP9 uses the following data types:

- Scene memories
- Setup data
- Edit buffer
- Remote buffer (only when Local = OFF)

Scene memories are used to store mix scenes. A scene memory contains settings for all variable mixing parameters. On the front panel, the box around the [EF1], [EF2], [EQ/PAD], [PAN/Ø], [SEND], [OTHERS], and [CONFIG] buttons indicates that settings for all the LCD functions accessed via these buttons are also stored in scene memories.

Setup data consists of settings for LCD functions that are accessed using the [UTILITY], [DIO], and [MIDI] buttons.

The Edit buffer is an internal RAM area that stores the current DMP9 parameter settings. That is, 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 to the Edit buffer.

All the above data types are stored while the DMP9 is powered off. Furthermore, they can be saved using MIDI Bulk Dump. See “MIDI Bulk Dump” on page 80.

The Remote buffer is active only when the MIDI Local parameter on the MIDI LCD function is set to OFF. It stores the settings of the front panel controls. Adjusting the controls will not affect the parameter settings that are stored in the Edit buffer. See “MIDI Local” on page 81.

Chapter 3: Input Channels

In this chapter, we explain the input channels. Just like the signal flow through a channel, this chapter starts at the input jack and ends where a channel meets the buses.

Analog Line Input

These 6.35 mm (1/4 inch) jack inputs accept unbalanced line level signals. Standard input level range from -20 dB to +4 dB.

Digital Inputs

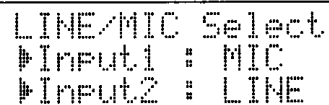
On the DMP9-16, input channels 13/14 and 15/16 can be used with the digital inputs. See “Digital Input Routing” on page 58. In this case, the ANALOG LINE INPUT connection, TRIM control, and SIGNAL and CLIP LEDs are inactive.

On the DMP9-8, the above applies to input channels 5/6 and 7/8.

Mic Input (channels 1 & 2 only)

Input channels 1 and 2 can be used as line inputs or microphone inputs. When an input is set to LINE, it is fed from the corresponding ANALOG LINE INPUT. When set to MIC, it is fed from the corresponding MIC INPUT. MIC INPUTS use balanced XLR-3-31 type connectors (pin 2 hot).

1. Press the [UTILITY] button repeatedly until the display shown below appears:



```
LINE/MIC Select
▶Input1 : MIC
▶Input2 : LINE
```

2. Use the [◀] and [▶] PARAMETER buttons to select Input1 or Input2.
3. Use the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to select MIC or LINE.

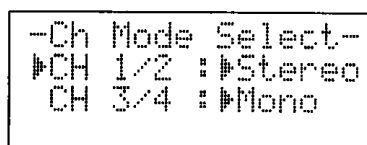
The MIC LEDs above channels 1 and 2 light up when MIC is selected.

Channel Mode

Input channels can be used as independent mono channels or in stereo pairs; Mono mode and Stereo mode respectively. Only adjacent channels can be paired: 1/2, 3/4, and so on. In Stereo mode, the following channel parameters are linked: Phase, Pad, On/Off, Level, EQ, Send levels, and Channel Delay. For Stereo mode channels, the panpot parameter becomes Width/Balance. See “Panpot, Width, & Balance” on page 29.

Mode Setting Method 1

1. Press a [SEL] button to select an input channel.
2. Press the [CONFIG] button repeatedly until the display shown below appears:



```
-Ch Mode Select-  
CH 1/2 : Stereo  
CH 3/4 : Mono
```

3. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to select Mono or Stereo.

While the above display is shown, you can also use the [◀] and [▶] PARAMETER buttons to select other input channels.

Mode Setting Method 2

The following method will toggle between Stereo and Mono mode.

1. Press and hold down a pair of input channel [SEL] buttons for about one second.

If the Channel mode is changed from Mono to Stereo, and one of the input channels in the stereo pair is already assigned to a group, the message “Change Ch Group!” will appear.

When Stereo mode input channels are selected, both [SEL] buttons flash.

Titling Input Channels

When an input channel is selected using a [SEL] button, the title of that input channel appears on the top line of the LCD for a few seconds. Using titles such as Synth1, Vocal, etc., makes it easy to identify channels.

1. Press the [SEL] button of the input channel that you want to title.
2. Press the [UTILITY] button repeatedly until the display shown below appears:

```

Ch.Title(CH 1  )
[SY99Lead]
↓
XYZ abcdefghijkl
    
```

3. Use the [◀] and [▶] PARAMETER buttons to position the cursor within the title.
4. Use the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to select characters.

Stereo mode channels share the same title.

To fill a title with spaces, press the [+ON] and [-OFF] PARAMETER buttons simultaneously for one second.

Titles can be up to eight characters long, and the following characters are available:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
T	U	V	W	X	Y	Z		a	b	c	d	e	f	g	h	i	j	k	l
m	n	o	p	q	r	s	t	u	v	w	x	y	z		0	1	2	3	4
5	6	7	8	9		!	"	#	%	&	'	()	*	+	,	_	.	/
:	;	<	=	>	?	[]	¥	^	_	`	{	}		→	←	@		□
␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣

If the title contains the Null character NL (NL=00h), it will not be displayed when that channel is selected. This can be used when you don't want channel titles to appear.

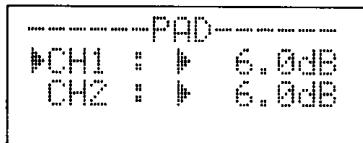
Trim Control, Clip, & Signal LEDs

The TRIM control allows you to optimize the input signal level. Use it in conjunction with the CLIP and SIGNAL LEDs. Ideally, the SIGNAL LED should be lit, indicating that a signal is present, and the CLIP LED should light occasionally. This control should be set with some care, because if it is set to low, the S/N performance will suffer, and if it is set to high, unpleasant signal clipping may result.

Pad

The Pad function allows you to attenuate input signals that the TRIM control alone cannot handle.

1. Press a [SEL] button to select an input channel.
2. Press the [EQ/PAD] button repeatedly until the display shown below appears:



```
-----PAD-----
▶CH1 : ▶ 6.0dB
CH2 : ▶ 6.0dB
```

If the [EQ/PAD] button is pressed when an auxiliary return is selected, the message “NO PAD for RETURN!” will appear. In this case, use the [SEL] buttons to select an input channel.

3. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set the pad. Pad can be set from 0.0 dB to -95.25 dB (128 steps)

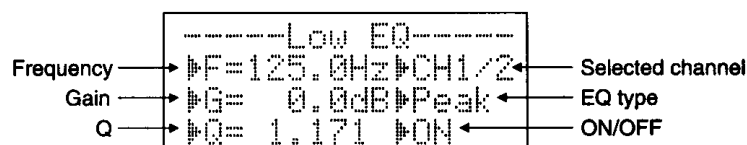
Stereo mode channels are controlled together.

To select other channels on the above display, use the [◀] and [▶] PARAMETER buttons to select the channel parameter, then use the [+ / ON] and [- / OFF] PARAMETER buttons.

EQ

Each input channel has 2-band fully sweepable EQ, with variable Q, selectable peaking or shelving response, and ON/OFF.

1. Press a [SEL] button to select an input channel.
2. Press the [EQ/PAD] button repeatedly until the display shown below appears:



The display shown above is for the Low EQ.

If the [EQ/PAD] button is pressed when an auxiliary return is selected, the message "NO EQ for RETURN!" will appear. In this case, use the [SEL] buttons to select an input channel.

3. Press the [EQ/PAD] button again to select the High EQ display.
4. Use the [◀] and [▶] PARAMETER buttons to select parameters, and the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set them.

With the gain parameter selected, pressing the [+ / ON] and [- / OFF] PARAMETER buttons simultaneously for one second will reset the gain to 0 dB.

Frequency (F) — 20.9 Hz to 20.16 kHz (12 steps/octave)

Gain (G) — ±18 dB (0.5 dB steps)

Q — 0.1 to 8.157 (20 steps/octave)

Selected channel — Use this to select other input channels.

Peak/Shelf — EQ type: peaking or shelving.

ON/OFF — EQ ON/OFF: can be set on the High and Low EQ displays.

Stereo mode channels are controlled together.

Note: EQ boosting and cutting will have an effect on the overall signal level. So always check signal levels after using EQ, and adjust as necessary.

Delay

This function allows you delay channel signals. It can be used to compensate signal delays or just as a delay. When input channels 1 and 2 are used as microphone inputs, it can be used to compensate delays caused by differing microphone placements.

1. Press a [SEL] button to select an input channel.
2. Press the [OTHERS] button repeatedly until the display shown below appears:

```

-Channel Delay-
▶CH1 : ▶000Sample
CH2 : ▶000Sample
Time: 0.00nsec

```

3. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set the delay. Since the delay function is not intended for use as a typical effects delay, settings are made in samples.

Delay can be set from 000 to 700 samples.

A delay of 700 samples is approximately 14.6 ms (fs@48 kHz)

The delay is also expressed in milliseconds. This calculation is based on the following formula:

$$\text{DelayTime} = \frac{\text{samples}}{\text{samplingfrequency}}$$

While the above display is shown, you can also use the [◀] and [▶] PARAMETER buttons to select other input channels.

Stereo mode channels are controlled together.

Phase

This function allows you reverse a channel's signal phase. This can be used to compensate for incorrectly wired cables, connectors, etc.

1. Press a [SEL] button to select an input channel.
2. Press the [PAN/Ø] button repeatedly until the display shown below appears:

```

----PHASE----
▶CH1 : ▶Normal
CH2 : ▶Reverse

```

3. Use the [+ / ON] and [- / OFF] PARAMETER buttons to select Normal phase or Reverse phase.

While the above display is shown, you can also use the [◀] and [▶] PARAMETER buttons to select other input channels.

Stereo mode channels are controlled together.

Level Control

This control adjusts the level of the input channel signal that is fed to the stereo outputs and the auxiliary sends. It is effectively five controls in one, so you need to make sure that you have selected the right auxiliary send or stereo output before adjusting it.

The position of the input channel control is indicated by an 8-point LED array. The dial legend ranges from $-\infty$ to +6 dB, and the 0 dB position is indicated by a small triangular symbol.

Stereo Output

To set the level of the channel signal that is sent to the stereo outputs:

1. Press a [SEL] button to select an input channel.
2. Press the MASTER [SEL] buttons (ST1 & ST2).

On the DMP9-8, press the MASTER [SEL] button (ST).

3. Use the channel level control to set the level.

Stereo mode channels and grouped channels are controlled together.

Note: The selected input channel must be assigned to the stereo bus. See “Bus Assign” on page 26.

Auxiliary Sends

To set the level of the channel signal that is sent to an auxiliary send:

1. Press a [SEL] button to select an input channel.
2. Press a MASTER [SEND] button to select the auxiliary send.
3. Use the channel level control to set the level.

Stereo mode channels and grouped channels are controlled together.

Note: When auxiliary sends 3 and 4 are used as a stereo output pair, the level of the channel signal is controlled using auxiliary send 3. Auxiliary send 4 is ignored. The signal is also affected by the input channel's pan and balance functions. See “Send 3/4 Mode” on page 39.

When the [EF1] or [EF2] button is pressed, the MASTER [SEND1] or [SEND2] is selected automatically.

Note: The DMP9 level-control resolution is 128 steps. When signal levels are controlled dynamically, certain sounds, such as sine waves, are prone to level jump and noise. For the INPUT, RETURN, and MASTER level controls, a simple interpolation is performed when signal levels are changed to alleviate this. However, other level controls do not have this, so large level jumps may occur.

Bus Assign

This function allows you to assign channels to the stereo outputs.

1. Press a [SEL] button to select an input channel.
2. Press the [OTHERS] button repeatedly until the display shown below appears:

```
---Bus Assign---  
      ST1  ST2  
▶CH1 : ▶ON  ▶ON  
CH2 : ▶ON  ▶ON
```

3. Use the [◀] and [▶] PARAMETER buttons to select a ST1 or ST2.
On the DMP9-8 you can select ST only.
4. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to assign the channel.

ON — Assigned

OFF — Not assigned

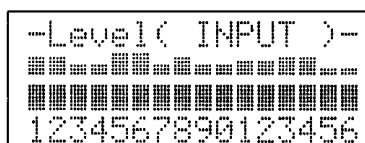
Stereo mode channels are controlled together.

Graphical Level Monitor

This function allows you to monitor the positions of the input channel level controls Graphically.

Displaying Input Channel to Stereo Output Positions

1. Press the MASTER [SEL] buttons (ST1 & ST2).
On the DMP9-8, press the MASTER [SEL] button (ST).
2. Press a [SEL] button to select an input channel.
3. Press the [OTHERS] button repeatedly until a display similar to the one shown below appears:



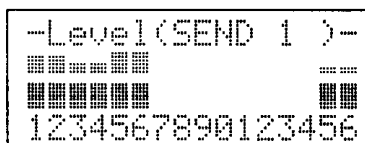
4. Use the input channel level controls to adjust levels.

Note: You must select an input channel to see the above display. It will be different if you select an auxiliary send, auxiliary return, or stereo output.

If, while the previous display is shown, you adjust the RETURN or MASTER level control, the display will change and display the respective control positions. If you then adjust an input channel level control, the previous display will reappear.

Displaying Input Channel to Auxiliary Send Positions

1. Press a MASTER [SEND] button to select an auxiliary send.
2. Press a [SEL] button to select an input channel.
3. Press the [OTHERS] button repeatedly until a display similar to the one shown below appears:



4. Use the input channel level controls to adjust levels.

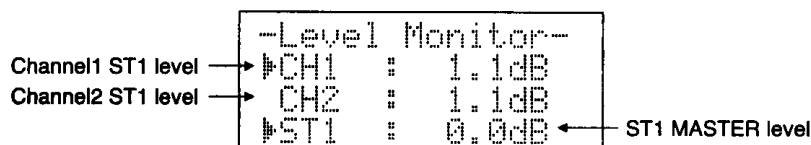
Note: You must select an input channel to see the above display. It will be different if you select an auxiliary send, auxiliary return, or stereo output.

If, while the previous display is shown, you adjust the RETURN or MASTER level control, the display will change and display the respective control positions. If you then adjust an input channel level control, the previous display will reappear.

Numeric Level Monitor

This function allows you to monitor the positions of the input channel level controls numerically. It can display level control positions for the four auxiliaries and the stereo output.

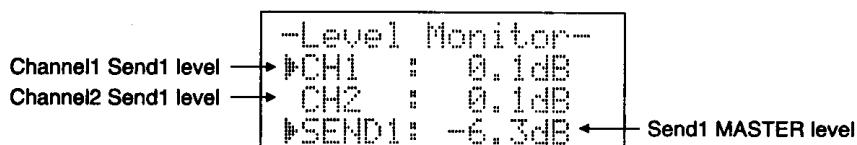
1. Press a [SEL] button to select an input channel.
2. Press the [OTHERS] button repeatedly until a display similar to the one shown below appears:



On the display above, "ST1" indicates that the input channel to STEREO OUT1 level control positions are shown.

3. Use the input channel level controls to adjust levels.
4. Use the MASTER [SEL] buttons (ST1, ST2, SEND 1~4) to select other controls for monitoring. Alternatively, use the DATA ENTRY control.

The following display shows the input channel to auxiliary send 1 control positions.



Note: You must select an input channel to see the above display. It will be different if you select an auxiliary send or auxiliary return.

If, while the previous display is shown, you adjust the RETURN level control, the display will change and display the respective control positions. If you then adjust an input channel level control, the previous display will reappear.

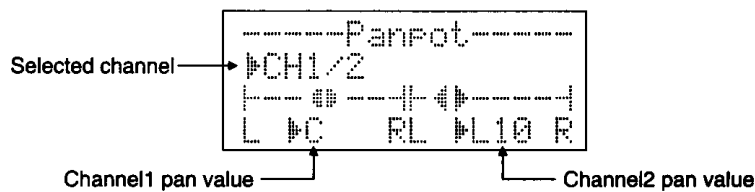
When the Auto Level Monitor Screen parameter on the System Flags LCD function is set to ON, the numeric level monitor will appear automatically when an input channel level control is adjusted. After three seconds, the previous LCD function will appear.

Panpot, Width, & Balance

Pan operation depends on the channel mode. Mono mode channels have a typical panpot. Stereo mode channels have a Width/Balance control, allowing you to set the stereo image width and balance between the left and right channels.

Mono Mode Channels

1. Press a [SEL] button to select a Mono mode input channel.
2. Press the [PAN/Ø] button repeatedly until the display shown below appears:



Note: If the selected input channel is a Stereo mode channel, the Width/Bal LCD function will appear, not the display shown above.

3. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to pan.

To set the pan to center, press and hold down the [+ / ON] and [- / OFF] PARAMETER buttons for about one second. The ## symbol indicates pan center.

Other input channels can be selected by positioning the cursor next to the "Selected channel" parameter, and using the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons.

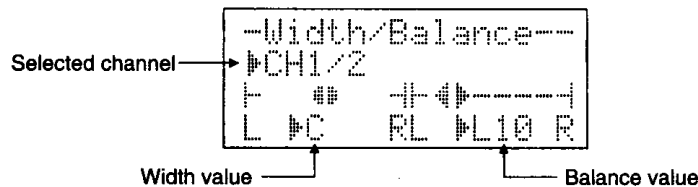
Pan range:

Left Center Right
 L16←L15←...←L02←L01← C →R01→R02→...→R15→R16

When the Pan Special Function parameter on the System Flags LCD function is set to ON, pan can be adjusted using the input channel level controls while the [PAN/Ø] button is being held down. The [PAN/Ø] button must be held down for at least 500 ms to activate the Pan Special Function.

Stereo Mode Channels

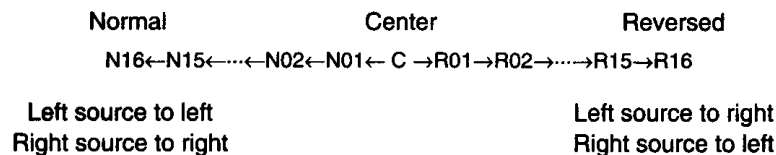
1. Press a [SEL] button to select a Stereo mode input channel.
2. Press the [PAN/Ø] button repeatedly until the display shown below appears:



Note: If the selected input channel is a Mono mode channel, the Panpot LCD function will appear, not the display shown above.

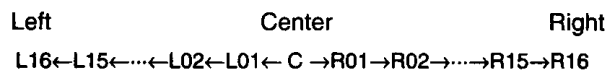
3. Press the [◀] PARAMETER button to select the width parameter.
4. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set the width.

Width range:



5. Press the [▶] PARAMETER button to select the balance parameter.
6. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set the balance.

Balance range:



To set the width or balance to center, press and hold down the [+ / ON] and [- / OFF] PARAMETER buttons for about one second. The # symbol indicates center.

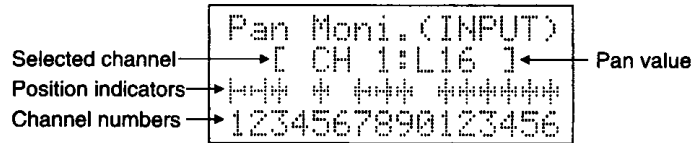
Other input channels can be selected by positioning the cursor next to the "Selected channel" parameter, and using the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons.

When the Pan Special Function parameter on the System Flags LCD function is set to ON, balance can be adjusted using the input channel level controls while the [PAN/Ø] button is being held down. The [PAN/Ø] button must be held down for at least 500 ms to activate the Pan Special Function.

Pan/Balance Monitor

This function allows you to monitor and set the pan and balance for the input channels. For Mono mode channels, the pan position is shown above the corresponding channel number. For Stereo mode channels, the balance position is shown above the odd numbered channel number in the pair.

1. Press a [SEL] button to select an input channel.
2. Press the [PAN/Ø] button repeatedly until the display shown below appears:



Note: You must select an input channel to see the above display. It will be different if you select an auxiliary return.

3. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set the pan or balance.
4. Use the [SEL] buttons to select other input channels for adjustment.

The position indicators show the following values:



Input Channel On/Off button

The channel [ON] buttons are effectively channel mutes. When a channel is on, its [ON] button lights up. When it is off, the light goes out, and no signal is fed to the stereo or auxiliary buses.

Stereo mode channels and grouped channels are controlled together.

Auxiliary Sends On/Off

This function allows you to turn an input channel's auxiliary sends on and off.

1. Press a [SEL] button to select an input channel.
2. Press the [SEND] button repeatedly until the display shown below appears:

```

-ON(==)/OFF(==)-
SEND 1  2  3  4
▶CH1▶==▶==▶==▶==
CH2▶==▶==▶==▶==

```

If the [SEND] button is pressed when an auxiliary return is selected, the message "NO SEND for RETURN!" will appear. In this case, use the [SEL] buttons to select an input channel.

3. Use the [◀] and [▶] PARAMETER buttons to select an auxiliary send.
4. Use the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to turn the auxiliary send on or off.

A filled oblong symbol indicates that an auxiliary send on.

Auxiliary Sends Pre/Post

This function allows you to set an input channel's auxiliary sends to pre level control or post level control.

1. Press the [SEND] button repeatedly until the display shown below appears:

```

PRE(==)/POST(==)
SEND 1  2  3  4
▶CH1▶==▶==▶==▶==
CH2▶==▶==▶==▶==

```

If the [SEND] button is pressed when an auxiliary return is selected, the message "NO SEND for RETURN!" will appear. In this case, use the [SEL] buttons to select an input channel.

2. Use the [SEL] buttons to select a channel.
3. Use the [◀] and [▶] PARAMETER buttons to select an auxiliary send.
4. Use the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to select PRE or POST.

An oblong symbol with the left half filled indicates a pre level setting. A filled right half indicates a post level setting.

Note: Remember, when an input channel auxiliary send is set to POST, the signal level is affected by the input channel level control in two ways. Firstly, when the level control is used to set the input channel auxiliary send level, and, secondly, when it is used to set the input channel to stereo output level. See "Level Control" on page 25.

Solo

This function allows you to monitor individual input channels.

1. Press the [SOLO] button.
2. Press an [ON] button to select an input channel.

The [ON] button of the input channel being monitored will light up. The [SOLO] button and the [ON] buttons on other channels will flash. On the DMP9–16, the solo signal is monitored via STEREO OUT2 and, when the PHONES source is set to ST2, the phones. On the DMP9–8, it is monitored via the ST OUTs and phones.

Stereo mode channels are not monitored together.

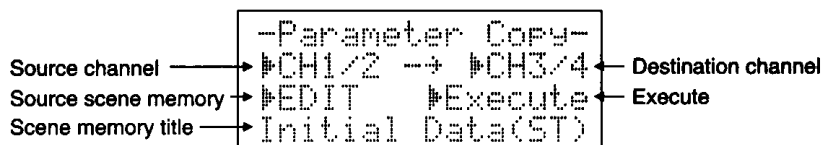
3. While the solo function is active, use the [ON] buttons to monitor other input channels.
4. Press the [SOLO] button again to cancel.

Pressing the [SOLO] button again will restore the previous solo settings. In other words, the channel that was being monitored when solo was cancelled will be monitored again.

Parameter Copy

This function allows you to copy parameter settings between input channels. The following parameters settings are copied: On/Off, Level, Pan/Width/Balance, Phase, EQ, Pad, Send On/Off, Send Level, Send Pre/Post, Bus Assign, Ch Delay, and Ch Mode. The copy source can be any input channel stored in a scene memory or the Edit buffer. Edit buffer settings are actually the current settings.

1. Press the [UTILITY] button repeatedly until the display shown below appears:



2. Use the [◀] and [▶] PARAMETER buttons to select the source channel parameter, then use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to select the channel whose settings you want to copy.
3. Move the cursor to the destination channel parameter, and select the channel that you want to copy to.
4. Move the cursor to the source scene memory parameter, and select the scene memory that contains the channel setting that you want to copy. Selecting EDIT (edit buffer) allows you to copy current channel settings.
5. Position the cursor next to the Execute parameter, then press the [+ / ON] PARAMETER button or turn the DATA ENTRY control clockwise to execute the copy.

“Done” will appear when the copy is complete.

If the source and the destination channels are Stereo mode channels, parameter settings for both channels in the pair will be copied. If the source and destination channels are in different modes, the settings of an odd channel will be copied to an odd destination channel, and the settings of an even channel will be copied to an even destination channel.

Chapter 4: Master Stereo Outputs & Phones

In this chapter, we explain the stereo outputs and phones.

The DMP9–16 has two independent stereo outputs: STEREO OUT1, which uses balanced XLR-3-32 type connectors (pin 2 hot), and STEREO OUT2, which uses unbalanced 6.35 mm (1/4 inch) phone jacks. Both have a standard output level of +4 dB.

The DMP9–8 has one stereo output. Although, there are two sets of output connections: one pair of balanced XLR-3-32 type connectors (pin 2 hot) and one pair of unbalanced 6.35 mm (1/4 inch) phone jacks. Both have a standard output level of +4 dB.

Master Level Control

The MASTER level control is used to set the stereo output level. It is located immediately after the stereo buses. To set the level:

1. Press the MASTER [SEL] buttons (ST1 & ST2) to select a stereo output.

On the DMP9–8, press the [ST] button.

2. Adjust the MASTER level control.

As a good starting point, set the MASTER level control to about 0 dB when setting up a mix.

The position of the MASTER level control is indicated by an 8-point LED array. The dial legend ranges from $-\infty$ to +6 dB, and the 0 dB position is indicated by a small triangular symbol.

Note: The DMP9 level-control resolution is 128 steps. When signal levels are controlled dynamically, certain sounds, such as sine waves, are prone to level jump and noise. For the INPUT, RETURN, and MASTER level controls, a simple interpolation is performed when signal levels are changed to alleviate this. However, other level controls do not have this, so large level jumps may occur.

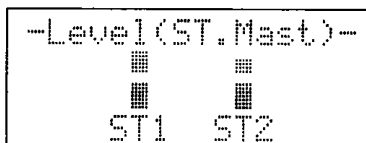
Graphical Level Monitor

This function allows you to monitor the positions of the MASTER stereo output level controls Graphically.

1. Press the MASTER [SEL] buttons (ST1 & ST2) to select a stereo output.

On the DMP9–8, press the [ST] button.

2. Press the [OTHERS] button repeatedly until the display shown below appears:



On the DMP9–8, only ST is shown.

If, while the previous display is shown, you adjust an input channel level control or the RETURN level control, the display will change and display the respective control positions. If you then adjust the MASTER level control, the previous display will reappear.

Numeric Level Monitor

This function allows you to monitor the positions of the MASTER stereo output level controls numerically.

1. Press the MASTER [SEL] buttons (ST1 & ST2) to select a stereo output.
On the DMP9-8, press the [ST] button.
2. Press the [OTHERS] button repeatedly until the display shown below appears:

```

- Level Monitor -
▶CH1 : 1.1dB
CH2 : 1.1dB
▶ST1 : 0.0dB ← ST1 MASTER level
  
```

3. On the DMP9-16, you can use the MASTER [SEL] buttons (ST1 & ST2) to select stereo outputs.

If, while the previous display is shown, you adjust the RETURN level control, auxiliary return control positions will be shown. However, the stereo master control position will not change.

When the Auto Level Monitor Screen parameter on the System Flags LCD function is set to ON, the numeric level monitor will appear automatically when the MASTER level control is adjusted. After three seconds, the previous LCD function will appear.

Stereo Outputs On/Off

To turn a stereo output on and off:

1. Press the MASTER [SEL] buttons (ST1 & ST2) to select a stereo output.
On the DMP9-8, press the [ST] button.
2. Press the MASTER [ON] button to turn the stereo output on or off.

When a stereo output is on, the [ON] button lights up. When it is off, the light goes out.

Note: If a stereo output is assigned to a signal source other than a stereo bus, a signal may be output regardless of this setting. See “ST2 Out Select” on page 36.

Master ON/OFF LCD Function

The Master ON/OFF LCD function allows you to check the stereo output’s ON/OFF status.

1. Press the [OTHERS] button repeatedly until the display shown below appears:

```

- Master ON/OFF -
▶Snd1◐▶Snd2◐
▶Snd3◐▶Snd4◐
▶ST1◐▶ST2◐
  
```

A filled oblong symbol indicates that the output is ON.

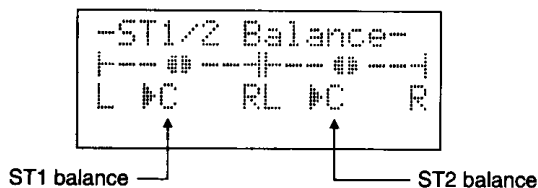
On the DMP9-8, ST1 is ST, and ST2 is not available.

If the “Auto Master ON/OFF Screen” parameter on the System Flags LCD function is set to ON, the Master ON/OFF LCD function will appear automatically when the DMP9 controls are not adjusted for more than 30 seconds. See “System Flags” on page 67.

Balance

This function allows you to balance the stereo outputs.

1. Press the [PAN/Ø] button repeatedly until the display shown below appears:



2. Press the MASTER [SEL] buttons (ST1 & ST2) to select a stereo output. On the DMP9–8, press the MASTER [SEL] button (ST).
3. Use the DATA ENTRY control or the [+ / ON] and [– / OFF] PARAMETER buttons to set the balance.

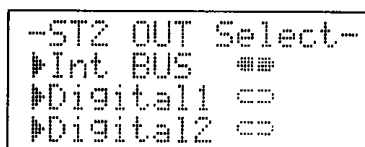
On the DMP9–8, only ST will appear.

To set the balance to center, press and hold down the [+ / ON] and [– / OFF] PARAMETER buttons for about one second. The ## symbol indicates center.

ST2 Out Select

This function allows you to monitor the digital inputs. The DMP9 does not have to be wordclock synchronized to the digital input signal to use this monitor. However, the tonal quality may be impaired, so we recommend that you set the Master CLK Sel source to the input being monitored. See “Master Clock Select” on page 64. Digital inputs routed to channels or cascade cannot be monitored. On the DMP9–16, this function affects STEREO OUT2. On the DMP9–8, it affects the STEREO OUT.

1. Press the MASTER [SEL] button (ST2) repeatedly until the following display appears. On the DMP9–8, press the MASTER [SEL] button (ST).



2. Use the [◀] and [▶] PARAMETER buttons to select a source.
3. Use the DATA ENTRY control or the [+ / ON] and [– / OFF] PARAMETER buttons to activate the selected source.

A filled oblong symbol indicates the currently selected source.

The ▮ symbol does not appear when a digital input is routed to channels or cascade. In this case, the digital input cannot be monitored, unless it is being used as the wordclock source. If either Digital1 or Digital2 is selected as the monitor source, routing the signal being monitored to the internal bus using the D.In Routing function, see page 58, will cause the monitor source to change to Int BUS.

ST Internal Bus Select

This function allows you to select the signal source for the ST2 internal bus. On the DMP9–8, it selects the signal source for the STEREO OUT.

Note: This function is available only when the Int BUS parameter on the ST2 Out Select LCD function is set to Int BUS. See “ST2 Out Select” on page 36.

1. Press the MASTER [ST2] button repeatedly until the following display appears. On the DMP9–8, press the MASTER [SEL] button (ST).

```

ST2 Int BUS Sel
▶ST1 ◀▶ST2 ◀◀
▶Snd1◀▶Snd2◀◀
▶Snd3◀▶Snd4◀◀
  
```

2. Use the [◀] and [▶] PARAMETER buttons to select a source.
3. Use the DATA ENTRY control or the [+ / ON] and [– / OFF] PARAMETER buttons to activate the selected source.

A filled oblong symbol indicates the currently selected source.

The ST2 source is not available on the DMP9–8.

Output Volume Controls

On the DMP9–16, the output levels for STEREO OUT1 and STEREO OUT2 can be set independently using the corresponding rotary controls.

On the DMP9–8, the output levels for STEREO OUT(UNBALANCED) and STEREO OUT(BALANCED) can be set independently using the corresponding rotary controls.

These controls are analog controls, and are located after D/A conversion.

Metering

Stereo output signal levels can be monitored on the ST meters. The signal is monitored just before the rotary output level controls. These are 7-segment LED bargraphs.

Phones

By connecting a stereo pair of headphones to the PHONES jack, you can monitor the stereo output signals. The PHONES jack accepts a stereo 6.35 mm (1/4 inch) phone jack. Use the PHONES LEVEL control to adjust the volume.

On the DMP9–16, you can monitor STEREO OUT1 or STEREO OUT2. Use the PHONES [ST1] and [ST2] buttons to select which.

On the DMP9–8, the headphones always monitor the STEREO OUT.

Chapter 5: Master Auxiliary Sends

In this chapter, we explain the master auxiliary sends. The DMP9 has four auxiliary sends. Auxiliary sends 1 and 2 feed the internal effects. Auxiliary sends 3 and 4 can be used to feed external equipment. They can also be used as a stereo output pair. See “Send 3/4 Mode” on page 39.

To output a signal using an auxiliary send, you must first send a signal from an input channel. See “Auxiliary Sends” on page 25.

Auxiliary sends can be monitored using the Stereo Select LCD function. See “ST Internal Bus Select” on page 37.

Aux Send Outputs

Auxiliary sends 3 and 4 are output via 6.35 mm (1/4 inch) phone jacks. The standard output level is +4 dB.

Master Aux Send Level

To set a master auxiliary send level:

1. Press the respective MASTER [SEL] button (SEND 1~4).
2. Use the MASTER level control to set the level.

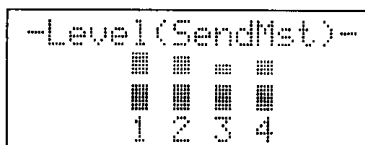
The position of the MASTER level control is indicated by an 8-point LED array. The dial legend ranges from $-\infty$ to +6 dB, and the 0 dB position is indicated by a small triangular symbol.

When a MASTER [SEL] button (SEND 1~4) is pressed, the corresponding auxiliary return is selected automatically.

Master Send Level Monitor

This function allows you to monitor the positions of the master auxiliary send level controls.

1. Press a MASTER [SEND] button to select an auxiliary send.
2. Press the [OTHERS] button repeatedly until the display shown below appears:



If, while the previous display is shown, you adjust an input channel level control or the RETURN level control, the display will change and display the respective control positions. If you then adjust the MASTER level control, the previous display will reappear.

Master Aux Send On/Off

To turn a master auxiliary send on and off:

1. Press the respective MASTER [SEL] button (SEND 1~4).
2. Press the MASTER [ON] button to turn the auxiliary send on and off

The MASTER [ON] button lights up when an auxiliary send is on.

Master ON/OFF LCD Function

The Master ON/OFF LCD function allows you to check the auxiliary send's ON/OFF status.

1. Press the [OTHERS] button repeatedly until the display shown below appears:

```

-Master ON/OFF-
▶Snd1■▶▶Snd2◀◀
▶Snd3◀◀▶Snd4◀◀
▶ST1◀◀▶ST2◀◀
  
```

A filled oblong symbol indicates that the send is ON.

If the "Auto Master ON/OFF Screen" parameter on the System Flags LCD function is set to ON, the Master ON/OFF LCD function will appear automatically when the DMP9 controls are not adjusted for more than 30 seconds. See "System Flags" on page 67.

Metering

Auxiliary send 3 and 4 signal levels can be monitored on the SEND 3/4 meters. These are 7-segment LED bargraphs.

Send 3/4 Mode

This function allows you to use auxiliary sends 3 and 4 as a stereo output pair. When set to Stereo Link, the MASTER auxiliary send 4 level control, On/Off button, and [SEL] button are ignored, and the corresponding auxiliary send 3 controls are effective for both sends. Likewise, the auxiliary send 4 level control each input channel is ignored, and the input channel signal is affected by the channel's pan and balance controls.

1. Press the [CONFIG] button repeatedly until the display shown below appears:

```

--Send3/4 Mode--
▶Individual
  
```

2. Use the [+ / ON] and [- / OFF] PARAMETER buttons to select Individual or Stereo Link. When this parameter is changed, MIDI Control Change 584 is output.

Chapter 6: Auxiliary Returns

In this chapter, we explain the auxiliary returns. The DMP9-16 has four auxiliary returns. Returns 1 and 2 are fed from the internal effects. Returns 3 and 4 can be fed from external equipment. The DMP9-8 has three auxiliary returns, no auxiliary return 4.

The “Aux Return Inputs” and “Trim Control, Clip, & Signal LEDs” sections in this chapter apply to auxiliary returns 3 and 4 only. Other sections apply equally to auxiliary returns 1, 2, 3, and 4.

Auxiliary returns are selected automatically when the corresponding auxiliary send is selected using a MASTER [SEL] button (SEND 1~4).

Aux Return Inputs

These 6.35 mm (1/4 inch) jack inputs accept unbalanced line level signals. The standard input level range is -20 dB to +4 dB.

Titling Auxiliary Returns

When an auxiliary return is selected, the title of that auxiliary return appears on the top line of the LCD for a few seconds.

1. Press the [SEL] button of the auxiliary return that you want to title.
2. Press the [UTILITY] button repeatedly until the display shown below appears:

```
Ch.Title(RET 2 )
[Return 2]
↓
XYZ abcdefghijkl
```

3. Use the [◀] and [▶] PARAMETER buttons to position the cursor within the title.
4. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to select characters.

Titles can be up to eight characters long, and the following characters are available:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
T	U	V	W	X	Y	Z		a	b	c	d	e	f	g	h	i	j	k	l
m	n	o	p	q	r	s	t	u	v	w	x	y	z		0	1	2	3	4
5	6	7	8	9		!	"	#	%	&	'	()	*	+	,	-	.	/
:	;	<	=	>	?	[]	¥	^	_	`	()		÷	←	→		□
⌈	⌋	⌊	⌉	⌈	⌋	⌊	⌉	⌈	⌋	⌊	⌉	⌈	⌋	⌊	⌉	⌈	⌋	⌊	⌉

Trim Control, Clip, & Signal LEDs

The TRIM control allows you to optimize the auxiliary return signal level. Use it in conjunction with the CLIP and SIGNAL LEDs. Ideally, the SIGNAL LED should be lit, indicating that a signal is present, and the CLIP LED should light occasionally. This control should be set with some care, because if it is set to low, the S/N performance will suffer, and if it is set to high, unpleasant signal clipping may result.

Phase

This function allows you reverse an auxiliary returns's signal phase. This can be used to compensate for incorrectly wired cables, connectors, etc.

1. Press the RETURN [SEL] button repeatedly to select an auxiliary return.
2. Press the [PAN/Ø] button repeatedly until the display shown below appears:

```

---- PHASE ----
▶RET 1: Normal
▶RET 2: Reverse
  
```

3. Use the [+ON] and [-OFF] PARAMETER buttons to select Normal phase or Reverse phase.

Return Level Control

This control adjusts the level of the auxiliary return signal that is fed to the stereo outputs.

The position of the input channel control is indicated by an 8-point LED array. The dial legend ranges from $-\infty$ to +6 dB, and the 0 dB position is indicated by a small triangular symbol.

To set the level:

1. Press RETURN [SEL] button repeatedly to select an auxiliary return.
2. Use the RETURN level control to set the level.

Note: The selected auxiliary return must be assigned to the stereo bus. See “Bus Assign” on page 41.

Grouped channels are controlled together.

When the [EF1] or [EF2] button is pressed, return 1 or return 2 is selected automatically.

Bus Assign

This function allows you to assign auxiliary returns to the stereo outputs.

1. Press RETURN [SEL] button repeatedly to select an auxiliary return.
2. Press the [OTHERS] button repeatedly until the display shown below appears:

```

---Bus Assign---
          ST1  ST2
▶RET1  ▶ON  ▶ON
▶RET2  ▶ON  ▶ON
  
```

3. Use the [◀] and [▶] PARAMETER buttons to select ST1 or ST2.

On the DMP9-8 you can select ST only.

4. Use the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to assign the auxiliary return.

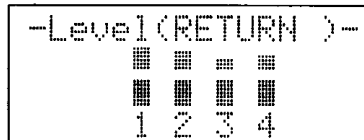
ON — Assigned

OFF — Not assigned

Graphical Level Monitor

This function allows you to monitor the positions of the auxiliary return level controls Graphically.

1. Press the RETURN [SEL] button.
2. Press the [OTHERS] button repeatedly until the display shown below appears:



3. Use the RETURN level control to adjust the level.
4. Use the RETURN [SEL] button to select other auxiliary returns, and the RETURN level control to adjust them.

Note: You must select an auxiliary return to see the above display. It will be different if you select an input channel, auxiliary send, or stereo output.

If, while the previous display is shown, you adjust an input channel level control or the MASTER level control, the display will change and display the respective control positions. If you then adjust an auxiliary return level control, the previous display will reappear.

Numeric Level Monitor

This function allows you to monitor the positions of the auxiliary return level controls numerically.

1. Press the RETURN [SEL] button.
2. Press the [OTHERS] button repeatedly until a display similar to the one shown below appears:

```

- Level Monitor -
▶RET1 : 1.1dB
  RET2 : 1.1dB
▶ST1 : 0.0dB
  
```

On the display above, “ST 1” indicates that the input channel to STEREO OUT1 level control positions are shown.

3. Use the RETURN level control to adjust the level.
4. Use the MASTER [SEL] buttons (ST1 & ST2) to select other controls for monitoring. Alternatively, use the DATA ENTRY control.

On the DMP9–8, you can select ST only.

Note: You must select an auxiliary return to see the above display. It will be different if you select an input channel.

If, while the previous display is shown, you adjust an input channel level control, the display will change and display the respective control positions. If you then adjust the RETURN level control, the previous display will reappear.

When the Auto Level Monitor Screen parameter on the System Flags LCD function is set to ON, the numeric level monitor will appear automatically when the RETURN level control is adjusted. After three seconds, the previous LCD function will appear.

The following display will appear if you try to monitor the positions of the auxiliary return level controls while a MASTER [SEND] button is on. This is because auxiliary return channels do not have auxiliary sends.

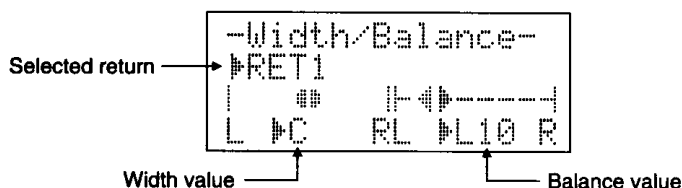
```

- Level Monitor -
▶RET1 : NO SEND
  RET2 : for RET!
▶SEND1: 0.0dB
  
```

Width & Balance

This function allows you to set the stereo image width and balance of each auxiliary return.

1. Press the RETURN [SEL] button to select an auxiliary return.
2. Press the [PAN/Ø] button repeatedly until the display shown below appears:



3. Use the [◀] and [▶] PARAMETER buttons to select Width.
4. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set the width.

Width range:

Normal	Center	Reversed
N16←N15←...←N02←N01← C →R01→R02→...→R15→R16		
Left source to left		Left source to right
Right source to right		Right source to left

5. Use the [◀] and [▶] PARAMETER buttons to select Balance.
6. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set the balance.

Balance range:

Left	Center	Right
L16←L15←...←L02←L01← C →R01→R02→...→R15→R16		

To set the width or balance to center, press and hold down the [+ / ON] and [- / OFF] PARAMETER buttons for about one second. The ## symbol indicates center.

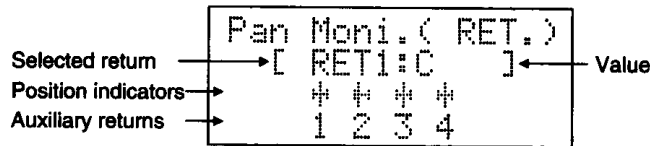
Other return channels can be selected by positioning the cursor next to the “Selected return” parameter, and using the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons.

When the Pan Special Function parameter on the System Flags LCD function is set to ON, balance can be adjusted using the RETURN level control while the [PAN/Ø] button is being held down. The [PAN/Ø] button must be held down for at least 500 ms to activate the Pan Special Function.

Balance Monitor

This function allows you to monitor and set the balance for the auxiliary returns.

1. Press the RETURN [SEL] button.
2. Press the [PAN/Ø] button repeatedly until the display shown below appears:



3. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set the balance.
4. Use the RETURN [SEL] button to select other auxiliary returns.

The position indicators show the following values:



Note: You must select an auxiliary return to see the above display. It will be different if you select an input channel.

Auxiliary Return On/Off button

To turn an auxiliary return on and off:

1. Press the RETURN [SEL] button to select the auxiliary return.

The RETURN [SEL] button will flash, and the corresponding green LED will light up.

2. Press the RETURN [ON] button.

When an auxiliary return is on, the RETURN [ON] button and the corresponding auxiliary return red LED light up.

Grouped channels are controlled together.

Solo

This function allows you to monitor individual auxiliary returns.

1. Press the [SOLO] button.
2. Press the RETURN [SEL] button to select an auxiliary return.
3. Press the RETURN [ON] button.

The RETURN [ON] button and the RETURN ON/OFF indicator of the auxiliary return being monitored will light up. The [SOLO] button and the [ON] buttons on other channels will flash. On the DMP9–16, the solo signal is monitored via STEREO OUT2 and, when the PHONES source is set to ST2, the phones. On the DMP9–8, it is monitored via the ST OUTs and phones.

4. While the solo function is active, use the RETURN [SEL] button to select other auxiliary returns, and the RETURN [ON] button to monitor them.
5. Press the [SOLO] button again to cancel.

Pressing the [SOLO] button again will restore the previous solo settings. In other words, the auxiliary return that was being monitored when solo was cancelled will be monitored again.

Chapter 7: Effects

In this chapter, we look at the DMP9's internal effects. There are two digital multi-effects processors: Effect1 and Effect2. Each can be assigned a specific effect type, which can then be edited. Effect1 is fed from auxiliary send 1, and Effect2, from auxiliary send 2. The effected signals are returned using auxiliary returns 1 and 2, respectively. As well as individual operation, Effect1 and Effect2 can be used in series, with Effect1 feeding Effect2. All effect settings can be stored in scene memories.

The following effect types are available:

HQ-Rev 1 Hall (Rev 1 Hall)	Symphonic
HQ-Rev 2 Room (Rev 2 Room)	Early Ref. 1
HQ-Rev 3 Stage (Rev 3 Stage)	Early Ref. 2
HQ-Rev 4 Plate (Rev 4 Plate)	Gate Reverb
Flange	Reverse Gate
Chorus	Delay L-C-R
Phasing	Stereo Echo
Tremolo	Pitch Change

Note that the HQ reverbs apply to Effect1 only. Effect2 reverbs are shown in parenthesis. For your primary reverb, use one of the HQ reverbs of Effect1. Use the Effect2 reverbs for secondary applications.

Using Effects

To use the effects, you must:

- Send a signal from an input channel. See "Auxiliary Sends On/Off" on page 32, "Auxiliary Sends Pre/Post" on page 32, and "Level Control" on page 25.
- Set up the effects as described in this chapter.
- Return the effected signal using auxiliary return 1 or 2. See "Auxiliary Returns" on page 40.

Selecting Effects

There are two displays for setting effects: Effect TYPE (used to select and recall an effect type) and Effect PRM (used to edit effect parameters).

1. Press the [EF1] or [EF2] button. A display similar to the following will appear:

```
- Effect1 TYPE -  
▶HQ-REV 1 HALL  
▶Effect Recall
```

2. Use the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to select an effect type.

A flashing name indicates that the effect type has not been recalled.

Note: You cannot edit an effect until it has been recalled.

3. Move the cursor to Effect Recall, then press the [+ON] PARAMETER button.

If the “Effect Recall Assignment” parameter on the System Flags LCD function is set to ON, effects can be recalled just by pressing the [▶] PARAMETER button. See “System Flags” on page 67.

The effect type will be recalled and its name will stop flashing.

When the [EF1] or [EF2] button is pressed, the MASTER [SEND1] or [SEND2] and return 1 or return 2 are selected automatically.

Editing Effects

1. Press the [EF1] or [EF2] button repeatedly until a display similar to the following appears:

```
- Effect1 PRM. -  
Rev.Time= 2.8s  
▶High Ratio= 0.8  
Diffusion= 7
```

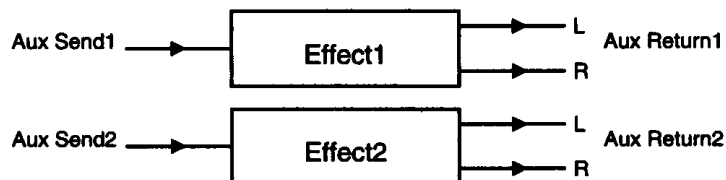
2. Use the [◀] and [▶] PARAMETER buttons to select parameters, and the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to set them.

Effect parameters are explained on page 50.

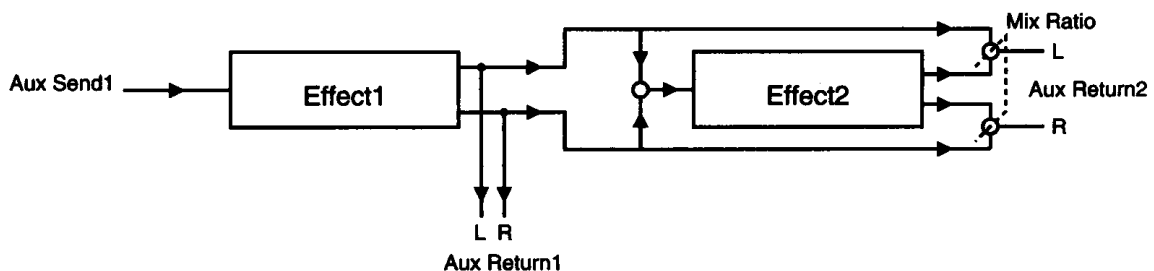
Effect Assign

This function allows you to use Effect1 and Effect2 as individual effects processors or in a serial configuration, with Effect1 feeding Effect2. The following diagrams shows how:

Individual



Serial



1. Press the [EF2] button repeatedly until the following display appears:

```
-- Eff.Assign --
▶Individual
```

2. Use the [+ON] and [-OFF] PARAMETER buttons to select Individual or Serial.

When Serial is selected, the following display appears:

```
-- Eff.Assign --
▶Serial
Mix Ratio → ▶EF1+RET2: 50%
              ▶EF2+RET2: 50%
```

3. Use the [◀] and [▶] PARAMETER buttons to select the Mix Ratio parameter, and the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to set the mix ratio.

The mix ratio determines the amount of signal from Effect1 and Effect2 that is fed to auxiliary return 2. When Serial is selected, the auxiliary send 2 level control is not used.

Effect Parameters

HQ–Rev1 Hall, HQ–Rev2 Room, HQ–Rev3 Stage, HQ–Rev4 Plate (Effect1)

These effect types apply to Effect1 only.

Parameter	Range	Description
Rev.Time	0.3 ~ 30 sec	Reverb time
High Ratio	0.1 ~ 1.0	High frequency damping
Diffusion	0 ~ 10	Reverb diffusion
Ini.Dly	0.1 ~ 200 ms	Initial delay
Rev.Dly	0.1 ~ 100 ms	Reverb delay
Density	0 ~ 4	Reverb density
LPF	1 kHz ~ 16 kHz, THRU	Low pass filter cutoff frequency
HPF	THRU, 32 Hz ~ 8.0 kHz	High pass filter cutoff frequency

Rev1 Hall, Rev2 Room, Rev3 Stage, Rev4 Plate (Effect2)

These effect types apply to Effect2 only.

Parameter	Range	Description
Rev.Time	0.3 ~ 30 sec	Reverb time
High Ratio	0.1 ~ 1	High frequency damping
Diffusion	0 ~ 10	Reverb diffusion
Ini.Dly	0.1 ~ 200 ms	Initial delay
LPF	1 kHz ~ 16 kHz, THRU	Low pass filter cutoff frequency
HPF	THRU, 32 Hz ~ 8.0 kHz	High pass filter cutoff frequency

Flange

Parameter	Range	Description
Mod.Freq	0.1 Hz ~ 20 Hz	Modulation frequency (speed)
Mod.Depth	0 ~ 100%	Modulation depth
FB.Gain	-99 ~ +99%	Feedback gain
Mod.Dly	0 ~ 15 ms	Modulation delay offset

Chorus

Parameter	Range	Description
Mod.Freq	0.1 Hz ~ 20 Hz	Modulation frequency (speed)
PM Depth	0 ~ 100%	Pitch modulation depth
AM Depth	0 ~ 100%	Amplitude modulation depth
Mod.Dly	0 ~ 40 ms	Modulation delay offset

Phasing

Parameter	Range	Description
Mod.Depth	0 ~ 100%	Modulation depth
Mod.Freq	0.1 Hz ~ 20 Hz	Modulation frequency (speed)
Phase Ofst	0 ~ 100	Phase shift offset
FB.Gain	-99 ~ +99%	Feedback gain

Tremolo

Parameter	Range	Description
AM Depth	0 ~ 100%	Amplitude modulation depth
Mod.Freq	0.1 Hz ~ 20 Hz	Modulation frequency (speed)
PM Depth	0 ~ 100%	Pitch modulation depth

Symphonic

Parameter	Range	Description
Mod.Freq	0.1 Hz ~ 20 Hz	Modulation frequency (speed)
Mod.Depth	0 ~ 100%	Modulation depth
Mod.Dly	0.0 ~ 40 ms	Modulation delay offset

Early Ref.1 & Early Ref.2

Parameter	Range	Description
Type	S-hall, L-hall, random, reverse, plate, spring	Reverb type
Room Size	0.1 ~ 20.0	Room size
Liveness	0 ~ 10	Reverb liveness
Diffusion	0 ~ 10	Reverb diffusion
Ini.Dly	0.1 ~ 400 ms	Initial delay
LPF	1 kHz ~ 20 kHz, THRU	Low pass filter cutoff frequency

Gate Reverb & Reverse Gate

Parameters for the Gate Reverb and Reverse Gate effect types are the same as those for the Early Ref.1 & Early Ref.2 effect types except for the Type parameter. Gate Reverb and Reverse Gate Type options are TypeA and TypeB.

Delay L-C-R

Parameter	Range	Description
Dly(L)	0.1 ~ 1340 ms	Left channel delay time
Dly(R)	0.1 ~ 1340 ms	Right channel delay time
Dly(C)	0.1 ~ 1340 ms	Center channel delay time
Level(C)	0 ~ 100	Center level
FB.Dly	0.1 ~ 1340 ms	Feedback delay
FB.Gain	-99 ~ +99%	Feedback gain
High Ratio	0.1 ~ 1.0	High frequency damping

Stereo Echo

Parameter	Range	Description
Dly(L)	0.1 ~ 680 ms	Left channel delay time
FB.Gain(L)	-99 ~ +99%	Left channel feedback gain
Dly(R)	0.1 ~ 680 ms	Right channel delay time
FB.Gain (R)	-99 ~ +99%	Right channel feedback gain
High Ratio	0.1 ~ 1.0	High frequency damping

Pitch Change

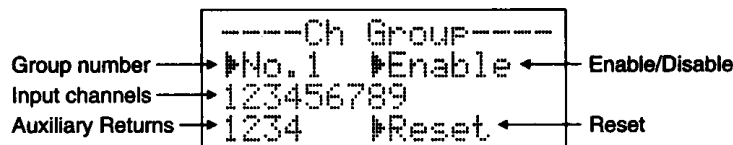
Parameter	Range	Description
Pitch	-12 ~ +12 semitone	Pitch change
Fine 1	-50 ~ +50 cent	Fine pitch change
Fine 2	-50 ~ +50 cent	Fine pitch change
Out.Lvl(1)	-100 ~ +100	Pitch changer1 output level
Out.Lvl(2)	-100 ~ +100	Pitch changer2 output level
Pan(1)	L100 ~ R100	Pitch changer1 pan
Pan(2)	L100 ~ R100	Pitch changer2 pan
FB.Gain 1	-99 ~ +99%	Pitch changer1 feedback gain
FB.Gain 2	-99 ~ +99%	Pitch changer2 feedback gain
FB.Dly	0.0 ~ 610 ms	Feedback delay

Chapter 8: Grouping Channels

In this chapter, we explain how to group channels. Grouping allows you to mute and adjust the level of a number of channels simultaneously. Eight groups are available, and any combination of input channels and auxiliary returns can be assigned to a group. Groups can be enabled and disabled independently.

Setting Up a Group

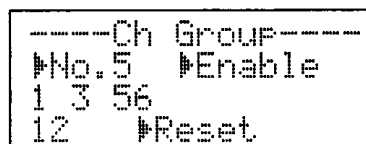
1. Press the [UTILITY] button repeatedly until the display shown below appears:



2. Use the [◀] and [▶] PARAMETER buttons to select the group number parameter, and the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to select a group from 1 to 8.
3. Use the [◀] and [▶] PARAMETER buttons to position the cursor at a position on the third line that corresponds to an input channel or the fourth line that corresponds to an auxiliary return, then press the [+ON] button or use the DATA ENTRY control to add that input channel or auxiliary return to the group. Stereo mode input channels are added in pairs.
4. Repeat step 3 to add other input channels and auxiliary returns to the group.
5. To remove an input channel or auxiliary return from a group, first select it, then press the [-OFF] PARAMETER button or use the DATA ENTRY control. Stereo mode input channels are removed in pairs.
6. To enable a group, position the cursor next to the Enable/Disable parameter, then press the [+ON] PARAMETER button or use the DATA ENTRY control. To disable a group, press the [-OFF] PARAMETER button or use the DATA ENTRY control.

When a group is enabled, pressing an [ON] button or adjusting a level control will mute or adjust all level controls in the group, respectively. While the previous display is shown, the [SEL] buttons of channels in the currently selected group light up.

In the following example, input channels 1, 3, 5, 6 and auxiliary returns 1 and 2 have been assigned to group 5, which is enabled. Levels can be adjusted simultaneously by adjusting the level control of an input channel or auxiliary return that is assigned to the group. Likewise, they can be muted by pressing an [ON] button of an input channel or auxiliary return that is assigned to the group.



7. To reset a group, position the cursor next to Reset, then press the [+ON] PARAMETER button or use the DATA ENTRY control. All assigned channels will be removed from the group.

Chapter 9: Scene Memories

In this chapter, we explain scene memories. Up to 50 mix scenes can be stored in DMP9 scene memories 1 to 50. A scene memory contains settings for all variable mix parameters, including effects. On the front panel, the box around the [EF1], [EF2], [EQ/PAD], [PAN/Ø], [SEND], [OTHERS], and [CONFIG] buttons indicates that the settings for LCD functions accessed via these buttons are also stored. Scene memories can be stored, then recalled either manually or using MIDI Programs Change messages from a MIDI footswitch or MIDI sequencer. See “MIDI Program Change” on page 75 for more details.

The DMP9’s Edit buffer is an internal RAM area that stores the current DMP9 parameter settings. That is, the current mix scene. When a mix scene is stored, the Edit buffer data (or when Local = OFF, the Remote buffer data) is copied to the selected scene memory. When a mix scene is recalled, the data of the selected scene memory is copied to the Edit buffer.

MEMORY Indicator

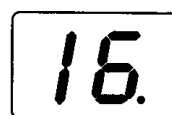
As shown below, the MEMORY indicator flashes when a scene memory other than the one stored or recalled last is selected. If a mix scene is stored to or recalled from that scene memory, the flashing stops. Then, if a parameter is adjusted, a red dot appears in the bottom right-hand corner indicating that the mix scene data has changed since it was last stored or recalled. In other words, the scene memory data and the Edit buffer data do not match.



Scene memory
selected but not
recalled



Scene memory
recalled



Parameter adjusted
after recall. Scene
memory 16 and Edit
buffer not the same

Note: The red dot will work as described above only when the Local parameter on the MIDI Local LCD function is set to ON. When set to OFF, the red dot will flash. See “MIDI Local” on page 81.

Scene Memory 0

Scene memory 0 is a little different to scene memories 1 to 50 in that it is a read only memory that contains the initial DMP9 settings. You can recall it, but cannot store a mix scene to it. When you want to reset all parameters to their initial settings, recall scene memory 0.

In Owner’s mode, you can change the initial settings of scene memory 0. See “Initialize Scene Memory 0” on page 68.

Storing Mix Scenes

1. Use the MEMORY [▲] and [▼] buttons to select a scene memory.

The MEMORY indicator will flash when scene memories other than the one recalled last are selected.

Note: Before pressing the [STORE] button, remember that all the mix settings including every parameter adjustment made since scene memory was last recalled will be stored. Hence, overwriting those settings stored in the selected scene memory. If you are not sure about the contents of the selected scene memory, first recall it, make your adjustments, then store. You may want to store the current mix scene to an unused scene memory before recalling, just in case.

2. Press the [STORE] button. The display shown below will appear:

```
--Memory Store--
Edit Buffer to
Memory No.16
Sure?Push[STORE]
```

← Memory No. (1~50)

3. Press the [STORE] button again to store, or any other button to cancel.

If cancelled, “Store Cancelled!!” will appear on the display before returning to the previous LCD function.

The MEMORY indicator will stop flashing.

Recalling Mix Scenes

1. Use the MEMORY [▲] and [▼] buttons to select a scene memory.
2. Press the [RECALL] button to recall the mix scene.

The MEMORY indicator will stop flashing.

Undoing Mix Scene Recalls

If you recall a mix scene by mistake, you can restore the previous settings:

1. While holding down the [BACK] button, press the [RECALL] button.

Fade Time

This function allows you to specify the rate at which level controls change to the positions stored in a scene memory, when that scene memory is recalled. The following levels controls are affected: input channels 1 to 16, auxiliary returns 1 to 4, auxiliary sends 1 to 4, and stereo.

Note: You must set the fade time, store the scene memory, then recall it for the fade time to take effect.

1. Press the [OTHERS] button repeatedly until the display shown below appears:

```

---Fade Time---
    ▸ 0.1sec
  
```

2. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set the Fade Time.

Fade time range: OFF, 0.1 to 10.0 seconds.

Titling Scene Memories

This function allows you to title scene memories. Using titles such as Song1, Finale, etc., makes it easy to identify which mix scenes are stored in which scene memories.

1. Press the [CONFIG] button repeatedly until the display shown below appears:

```

-Mem.Title Edit-
    Finale
      ▾ [65]
YZ abcdefghijklm
  
```

The title of the last scene memory recalled will be shown. To edit the title of a different scene memory you must recall it first.

2. Use the [◀] and [▶] PARAMETER buttons to position the cursor within the title.
3. Use the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to select characters.

Scene memory titles can be up to 16 characters long.

Store the scene memory to save the title.

Edit Buffer Title

This function displays the title of the Edit buffer data. In other words, the title of the scene memory last recalled.

1. Press the [OTHERS] button repeatedly until the display shown below appears:

- Memory Title -
Finale Mute

Memory Protect

This function allows you to protect stored scene memories. When set to ON, scene memories cannot be stored using the [STORE] button. Additionally, scene memory data received as MIDI Bulk Dump will be ignored.

1. Press the [UTILITY] button repeatedly until the display shown below appears:

-Memory Protect-
[Scene Memory]
OFF

2. Use the [+ / ON] and [- / OFF] PARAMETER buttons to turn the memory protection ON or OFF.

Chapter 10: Digital Inputs

In this chapter, we explain the DMP9 digital inputs. DIGITAL INPUT1 can receive IEC958 (Consumer) format digital audio, and DIGITAL INPUT2 can receive Yamaha format digital audio. These inputs can be used for digital connection to CD players, DAT recorders, etc. They are also used for cascade operation. See "Cascading the DMP9" on page 70.

Note: If you use a digital input and route it to CH or CASCADE, the DMP9 must be set to derive its wordclock signal from that digital input. See "Master Clock Select" on page 64. However, this does not apply when a digital input is just monitored using the ST2 Out Select LCD function. See "ST2 Out Select" on page 36.

Digital Input Routing

This function allows you to route the digital input signals.

1. Press the [DIO] button repeatedly until the following display appears:

```
--D.In Routing--
Digi.1: OFF
Digi.2: OFF
```

2. Use the [◀] and [▶] PARAMETER buttons to select Digi.1 or Digi.2, DIGITAL INPUT1 and DIGITAL INPUT2 respectively.
3. Use the [+ / ON] and [- / OFF] PARAMETER buttons to select an input routing option.

The following options are available:

OFF — Digital input off.

CH13/14 — DIGITAL INPUT1 routed to input channels 13 and 14 (line inputs are turned off).

CH15/16 — DIGITAL INPUT2 routed to input channels 15 and 16 (line inputs are turned off).

CASCADE — Digital input used as cascade input.

On the DMP9-8, DIGITAL INPUT1 can be routed to input channels 5 and 6, and DIGITAL INPUT2 can be routed to input channels 7 and 8.

If there is no digital signal being input, or the digital input signal is not correct, the above options cannot be selected, and the input routing will be forced to OFF, or one of the following displays may appear:

①

```
--Confirmation--
D1 In Format ERR
Routing "ON"?
[+] : Yes [-] : No
```

②

```
--Confirmation--
D1 In Data Error
Auto "OFF"
(Push [+] Key)
```

Display ① appears when the signal at DIGITAL INPUT1 is not IEC958 (Consumer) format digital audio, or when the sampling frequency information in the channel status bytes is different to that of the actual signal. If you set the Routing to ON by pressing the [+ / ON] PARAMETER button, the signal at DIGITAL INPUT1 can be used.

Display ② appears when, the sampling frequency of the DMP9 is different to that of the incoming digital signal; the incoming signal causes a parity error; or no digital signal is input.

For DIGITAL INPUT2, only screen ② may appear, and D1 will be replaced by D2.

If either Digital1 or Digital2 is selected as the monitor source, routing the signal being monitored to the internal bus using the D.In Routing function, see page 58, will cause the monitor source to change to Int BUS.

Digital Input Emphasis

This function allows you apply emphasis to the DIGITAL INPUT2 Yamaha format signal. Emphasis cannot be detected automatically for this format, so if the Internal emphasis function is set to ON, or the signal being input has been emphasized, you must set this function to ON. The DMP9 automatically detects whether or not emphasis has been applied to the DIGITAL INPUT1 IEC958 (Consumer) signal, and either emphasizes or de-emphasizes it accordingly.

1. Press the [DIO] button repeatedly until the following display appears:

```
-D.In Emphasis-
Digital1: ---
Digital2: OFF
```

2. Use the [+ / ON] and [- / OFF] PARAMETER buttons to set the emphasis to ON and OFF.

Note: When the DMP9 is connected to a DMP7, DMP7D, or DMP11, emphasis must be set to ON. This is because these units process all internal digital audio data with emphasis ON.

Channel Status Monitor

This function allows you to monitor the Channel Status data in the DIGITAL INPUT1 IEC958 (Consumer) format signal. DIGITAL INPUT1 must be routed to something other than OFF before this function can be used. See "Digital Input Routing" on page 58.

1. Press the [DIO] button repeatedly until the following display appears:

```
--Ch Status Rx--
Hex:00c00000
Format:Consumer
Use:Audio
```

2. Use the DATA ENTRY control or the [◀] and [▶] PARAMETER buttons to scroll through the display.

When the format is Pro, only status data from Hex through to Emphasis is shown.

Channel Status	Options	Description
Hex		Indicated as eight hexadecimal values
Format	Consumer	Consumer use
	Pro	Professional use
Use	Audio	Audio
	Non-Audio	Unknown
Fs Type	44.1 kHz	44.1 kHz
	48 kHz	48 kHz
	32 kHz	32 kHz
	Unknown	Unknown
Emphasis	On	with 50/15 μ s emphasis
	Off	without 50/15 μ s emphasis
Copyright	Yes	Copyright protected
	No	Not copyright protected
Cate (Category)	General	General
	Laser	Optical disc device other than CD/Optical/MD
	CD	CD conforming to IEC908
	Optical	A disc other than those listed above
	MD	Mini disc
	D.Conv/DSP	Digital/digital converter and signal processing devices other than PCM Proces/D.Mixer/FsConv/Sampler
	PCM Proces	PCM encoder/decoder
	D.Mixer	Digital mixing console
	FsConv	Sample rate converter
	Sampler	Digital sound sampler
	Magnet	Magnetic tape device and magnetic disk device other than DAT/VTR w/D./DCC
	DAT	Digital Audio Tape
	VTR w/D.	VTR with digital audio
	DCC	Digital compact cassette
	Broadcast	Digital broadcast with or without video signal other than BroadcastJ/BroadcastE/BroadcastA
	BroadcastJ	Digital broadcast with or without video signal in Japan
	BroadcastE	Digital broadcast with or without video signal in Europe
	BroadcastA	Digital broadcast with or without video signal in U.S.A.
	D.Inst	Signal source other Synth/Microphone, microphone signal, and original signal
	Synthe	Synthesizer
	Microphone	Microphone
	AD Conv	A/D converter for analog signals without copyright information
	AD Conv(C)	A/D converter for analog signals with copyright information
	Solid Mem	Solid state memory device
	Experiment	Experimental device not for commercial use
	Unknown	Device other than those listed above
Gene (Generation)	Original	Original software for commercial use
	Home Copy	Software recorded from an original

User Bit Monitor

This function allows you to monitor the four bytes at the start of the 32-bit block of User Bits in the DIGITAL INPUT1 IEC958 (Consumer) format signal. User Bits are displayed as hexadecimal and ASCII characters. DIGITAL INPUT1 must be routed to something other than OFF before this function can be used. See "Digital Input Routing" on page 58.

1. Press the [DIO] button repeatedly until the following display appears:

```
-User's Bit Rx-
Hex :41 41 41 41
Char: "AAAA"
```

The characters shown on the User's Bit Rx display correspond to user bit data sent and received by DMP9s only. When the DMP9 is connected to a DMC1000, for example, characters sent may not match those displayed. In this case, refer to the Hex data.

Digital Input Notes

Wordclock Source

When you use a digital input and route it to CH or CASCADE, the DMP9 must be set to derive its wordclock signal from that digital input. See "Master Clock Select" on page 64. However, this does not apply when a digital input is just monitored using the ST2 Out Select LCD function. See "ST2 Out Select" on page 36.

A digital signal received from a device that is synchronized via the DMP9's WC OUT connection, will be received correctly.

Digital Input Signal Range

Digital input signals must be at one of the following sampling frequencies: 32 kHz, 44.1 kHz, or 48 kHz, ± 1000 ppm. If the signal is out of this range, the DMP9 will not be able to sync lock to it. If the DMP9 sync locks to a signal, but then that signal drifts out of the acceptable range, all DMP9 signals will be muted.

SCMS

DIGITAL INPUT1 can receive only IEC958 (Consumer) consumer format digital audio, which has copy protection bit or generation information. The DMP9 conforms to the Serial Copy Management System (SCMS). Therefore, if you input a DAT signal which originated from a CD, you will not be able to record the DMP9's digital output signal.

Using Both Digital Inputs

When you use DIGITAL INPUT1 and DIGITAL INPUT2 simultaneously, the digital audio devices supplying the digital signals must be wordclock synchronized. Therefore, only devices that have external wordclock sync facilities can be used. If, for example, you connect two Consumer Use CD players, although they are both outputting digital audio at 44.1 kHz, their internal wordclocks are free running, so the DMP9 will not be able to receive both signals correctly.

This does not apply when both digital inputs are used to cascade DMP9s, because both digital signals come from the same DMP9.

System Power On

When powering on a digital system, the wordclock master device should be powered on first, and once that device is ready, the wordclock slave devices.

Chapter 11: Digital Outputs

In this chapter, we explain the DMP9 digital outputs. DIGITAL OUTPUT1 outputs IEC958 (Consumer) format digital audio, and DIGITAL OUTPUT2 outputs Yamaha format digital audio. These outputs can be used for digital connection to DAT recorders, etc. They are also used for cascade operation. See “Cascading the DMP9” on page 70.

Digital Output Routing

This function allows you to select the signal source for each digital output.

1. Press the [DIO] button repeatedly until the following display appears:

```
-D.Out Routing-
▶Digi.1:ST1 PRE
▶Digi.2:ST2 POST
```

2. Use the [◀] and [▶] PARAMETER buttons to select Digi.1 or Digi.2, DIGITAL OUTPUT1 and DIGITAL OUTPUT2, respectively.
3. Use the [+ / ON] and [- / OFF] PARAMETER buttons to select the signal source.

The following sources can be selected:

ST1 PRE — Stereo1 bus signal before MASTER level control

ST1 POST — Stereo1 bus signal after MASTER level control

ST2 PRE — Stereo2 bus signal before MASTER level control

ST2 POST — Stereo2 bus signal after MASTER level control

SEND1 — Aux Send1 bus signal after MASTER level control

SEND2 — Aux Send2 bus signal after MASTER level control

SEND3 — Aux Send3 bus signal after MASTER level control

SEND4 — Aux Send4 bus signal after MASTER level control

SEND1/2 — Left channel: Aux Send1 bus signal. Right channel: Aux Send2 bus signal (both after MASTER level control)

SEND3/4 — Left channel: Aux Send3 bus signal. Right channel: Aux Send4 bus signal (both after MASTER level control)

On the DMP9-8, the ST2 PRE and ST2 POST settings become ST PRE and ST POST, and the ST1 PRE and ST1 POST settings are not available.

Output Emphasis

This function allows you to apply emphasis to the DIGITAL OUTPUT1 IEC958 (Consumer) format signal and the DIGITAL OUTPUT2 Yamaha format signal. These settings are effective regardless of the Input Emphasis setting. See “Internal Emphasis” on page 65.

1. Press the [DIO] button repeatedly until the following display appears:

```
-D.Out Emphasis-
▶Digital1: OFF
▶Digital2: OFF
```

2. Use the [◀] and [▶] PARAMETER buttons to select Digital1 or Digital2.
3. Use the [+ON] and [-OFF] PARAMETER buttons to turn emphasis ON or OFF.

Note: When the DMP9 is connected to a DMP7, DMP7D, or DMP11, emphasis for the respective digital output must be set to ON. This is because these units process all internal digital audio data with emphasis ON.

User Bits

This function allows you to set the User Bits for the DIGITAL OUTPUT1 IEC958 (Consumer) format signal. This function has no effect on DIGITAL OUTPUT2.

1. Press the [DIO] button repeatedly until the following display appears:

```
-User's Bit Tx-
  "HNNN"
  # [48]
  ABCDEFGHIJKLMNOP
```

2. Use the [◀] and [▶] PARAMETER buttons to position the cursor.
3. Use the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to set the User Bits.

Up to four characters (four bytes) can be entered as User Bits. This User Bit information is included in the left and right channels of the DIGITAL OUTPUT1 IEC958 (Consumer) format signal.

The characters shown on the User's Bit Rx display correspond to user bit data sent and received by DMP9s only. When the DMP9 is connected to a DMC1000, for example, characters sent may not match those displayed. In this case, refer to the Hex data.

Channel Status

The Channel Status of digital output 1 is set as follows:

When the digital inputs are not used or are used just for monitoring, the Channel Status is set to “A/D converter for analog signals without copyright information”.

When the digital inputs are used, except when used just for monitoring, the Channel Status is set to “Digital mixing console”.

Chapter 12: Other Functions

In this chapter, we explain the Master Clock Select, Internal Emphasis, Oscillator, and Battery Check functions.

Master Clock Select

The master clock is the clock signal that is used to synchronize the DMP9 data processing circuits, such as its digital signal processors (DSP). This type of clock signal is often called a *wordclock* because it synchronizes digital audio data words. By default, the DMP9 uses its own internal clock at a fixed sampling frequency of 48 kHz. If you use the digital inputs, the clock source must be set to the corresponding input: Digital1 or Digital2. The DMP9 will automatically detect the sampling frequency of the incoming digital signal, and will synchronize to it. The DMP9 can synchronize to digital signals at 32 kHz, 44.1 kHz, and 48 kHz. The current clock source is indicated by the INTERNAL and DIGITAL INPUT LEDs.

Note: If you use a digital input and route it to CH or CASCADE, the DMP9 must be set to derive its wordclock signal from that digital input. However, this does not apply when a digital input is just monitored using the ST2 Out Select LCD function. See “ST2 Out Select” on page 36.

The WORD CLK OUT BNC connection always outputs a clock signal that corresponds to the clock signal selected as the Master Clock.

Setting the Clock Source

1. Press the [DIO] button repeatedly until the display shown below appears:

```
-Master CLK Sel-
▶Internal
▶Select
>>> Fs=48KHz <<<
```

2. Use the [◀] and [▶] PARAMETER buttons to position the cursor next to Internal.
3. Use the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to select a clock source: Internal, Digital1, or Digital2.
4. Use the [◀] and [▶] PARAMETER buttons to position the cursor next to Select.
5. Press the [+ON] PARAMETER button.

If you selected Internal, the sampling frequency will be set to 48 kHz, and the INTERNAL LED will light up. If you selected Digital1 or Digital2, the DMP9 will check the sampling frequency of the incoming digital signal. While it does this, the DIGITAL INPUT LED will flash, and the possible sampling frequency values will appear on the display. Once an acceptable clock signal has been detected, the DMP9 will lock to it, and the DIGITAL INPUT LED will remain lit. If an acceptable clock signal is not detected, the DMP9 will keep checking indefinitely. You cannot use the DMP9 in this state, so you must select another clock source. If an external wordclock is lost, this LCD function will appear automatically. See “Digital Input Notes” on page 61 for more details about inputting digital signals.

Internal Emphasis

Emphasis is a technique that is used to improve the performance of A/D and D/A converters. It is analogous to some analog noise reduction systems in that high frequencies are boosted (emphasized) before A/D conversion, then automatically cut (de-emphasized) after D/A conversion. The DMP9 emphasis facilities provide compatibility with earlier digital audio devices such as the DMP7, DMP7D, and DMP11.

This function allows you to apply emphasis to all analog input signals. Analog output signals are automatically de-emphasized before being output. Emphasis for DIGITAL INPUT1 is automatically set to conform with the Internal emphasis setting. However, for DIGITAL INPUT2, you must set it manually. See "Digital Input Emphasis" on page 59. Emphasis can be set independently for the digital outputs. See "Output Emphasis" on page 63. Incorrect emphasis settings usually appear as a slight level boost or cut to frequencies above 3.5 kHz.

To set the Internal emphasis:

1. Press the [UTILITY] button repeatedly until the display shown below appears:

```

-----Emphasis-----
      ▶OFF
  
```

2. Use the [+ / ON] and [- / OFF] PARAMETER buttons to turn the emphasis ON or OFF.

Note: If this emphasis function is set to ON, and you are using the DIGITAL INPUT2, you must set the emphasis for that input accordingly. See "Digital Input Emphasis" on page 59.

Oscillator

The oscillator feeds a sine wave signal into input channel 16 of a DMP9–16, channel 8 of a DMP9–8.

1. Press the [UTILITY] button repeatedly until the display shown below appears:

```

Oscillator(CH16)
▶OFF
▶Freq = 200Hz
▶Att. = 0dB
  
```

2. Use the [◀] and [▶] PARAMETER buttons to select a parameter.
3. Use the [+ / ON] and [- / OFF] PARAMETER buttons or the DATA ENTRY control to set the selected parameter.

Parameters can be set as follows:

ON/OFF — Turn the oscillator on and off

Frequency (Freq) — 50, 60, 100, 200, 440, 500, 1.0k, 2.0k, 5.0k, 10.0k Hz

Attenuation (Att.) — 0 dB to -72 dB (73 steps)

Battery Check

The Battery Check function allows you to check the condition of the internal RAM backup battery.

1. Press the [UTILITY] button repeatedly until the following display appears:

-Battery Check-

Battery is OK.

Message	What to do?
Battery is OK.	Battery is OK
Warning! Low Battery.	Battery voltage is low, change the battery
Warning! No Battery.	No battery installed, install a battery.
Unknown Signal Check CPU Sheet!	Contact your Yamaha dealer.

If the battery needs replacing, please contact your Yamaha dealer.

System Flags

The System Flags LCD function is used to set various DMP9 parameters.

1. Press the [UTILITY] button repeatedly until the following display appears:

```

--System Flags--
▶1 [Auto Level
   Monitor Screen]
▶ON
  
```

2. Use the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to select a parameter.
3. Press the [▶] PARAMETER button, then use the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to set the parameter.

1 [Auto Level Monitor Screen] ON/OFF

When set to ON, the numeric level monitor LCD functions will appear automatically when an input channel, RETURN, or MASTER level control is adjusted. After three seconds, the previous LCD function will appear. When set to OFF, they will not. This function reduces the overall processing speed of the DMP9, so when signal levels are adjusted frequently, we recommend that you set this to OFF.

2 [Pan Special Function] ON/OFF

When set to ON, the input channel level controls and the RETURN level control can be used to adjust pan (Mono mode) and stereo balance (Stereo mode) while the [PAN/Ø] button is being held down. When set to OFF, they cannot. The [PAN/Ø] button must be held down for at least 500 ms to activate the Pan Special Function.

3 [Auto Master ON/OFF Screen]

When set to ON, the Master ON/OFF LCD function will appear automatically when the DMP9 controls are not adjusted for more than 30 seconds. See "Stereo Outputs On/Off" on page 35 and "Master Aux Send On/Off" on page 39. If the DMP9 is receiving MIDI data, the Master ON/OFF LCD function does not appear. So, for example, the MIDI Monitor LCD function will remain while MIDI data is being received.

4 [Memory Store Request Out ON/OFF]

When set to ON, MIDI Exclusive data is output when a scene memory is stored. When set to OFF, it is not output.

5 [Effect Recall Assignment]

When set to ON, and with the Effect TYPE LCD function selected, effects can be recalled by pressing just the [▶] PARAMETER button. When set to OFF, the "Effect Recall" parameter must be selected, and the [+ON] PARAMETER button pressed. See "Selecting Effects" on page 48.

Initializing the DMP9

This function allows you to reset all settings to their initial (factory) values.

1. With the DMP9 powered off, press and hold down the MEMORY [RECALL] button, the RETURN [SEL] button, and the [UTILITY] button.
2. Power on the DMP9.

All settings including scene memories and the owner memory will be initialized.

Chapter 13: Owner's Mode

Owner's mode provides access to LCD functions that are not required for normal operation.

Entering Owner's Mode

1. Press and hold down the [UTILITY] and [BACK] buttons, then power on. Hold the buttons down until the Version Number appears on the LCD.

When the Version Number appears, "OWNER'S Mode ON!" will appear at the bottom of the display.

Owner's Mode LCD Functions

The following LCD functions can be set only in Owner's mode.

Initialize Scene Memory 0

1. Press the [UTILITY] button repeatedly until the following display appears:

```
Initialize Mem#0
▶Protect : OFF
▶Type : Monaural
▶Execute
```

2. Use the [◀] and [▶] PARAMETER buttons to select the parameters, and the DATA ENTRY control or the [+ / ON] and [- / OFF] PARAMETER buttons to set them.

The parameters are:

Protect — OFF/ON

When set to OFF, you can change the settings stored in scene memory 0 (in Owner's mode).

When set to ON, you cannot change scene memory 0.

The following two parameters do not appear when the Protect parameter is set to ON.

Type — Stereo/Monaural

When set to Stereo, all input channels will be set to **Stereo** mode when scene memory 0 is recalled.

When set to Monaural, all input channels will be set to **Mono** mode when scene memory 0 is recalled.

Note: To make the Type parameter effective, you must use the Execute parameter below.

Execute — This is used to initialize scene memory 0. Select it, then press the [+1/ON] PARAMETER button to initialize.

Channel Status Transmit

This LCD function is used to check DMP9 operation. Channel Status bits 0 to 31 are shown.

1. Press the [DIO] button repeatedly until the following display appears:

```
--Ch Status Tx--
Mode: Auto
00000000001001001
00000000000000000
```

Panpot, Width, & Balance Mode

This LCD function determines how the pan, width, and balance controls work. It allows you to change the 0dB position level.

1. Press the [DIO] button repeatedly until the following display appears:

```
--Pan/Bal Mode--
▶Pan 0dB=Center
▶Bal 0dB=Center
```

2. Use the [◀] and [▶] PARAMETER buttons to select the parameters, and the DATA ENTRY control or the [+ON] and [-OFF] PARAMETER buttons to set them.

The parameters are:

Pan 0dB — Center or L/R

When set to Center, pan center level is 0 dB, and hard left and right levels are +3 dB.

When set to L/R, pan center level is -3 dB, and hard left and right levels are 0 dB.

After changing this parameter, pan/width levels will change. The initial setting is Center.

Bal 0dB — Center or L/R

When set to Center, balance center level is 0 dB, and hard left and right levels are +3 dB.

When set to L/R, balance center level is -3 dB, and hard left and right levels are 0 dB.

After changing this parameter, balance levels will change. The initial setting is Center.