

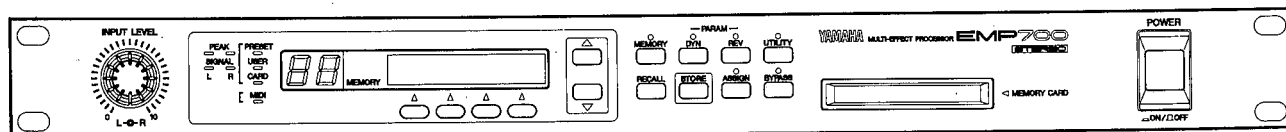
# YAMAHA

Multi-effect Processor  
Processeur d'effets numérique

# EMP700

## STEREO

OPERATION MANUAL  
MANUEL D'INSTRUCTIONS  
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 co-axial 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, 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.

## CANADA

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

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

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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

## 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 or GREEN-AND-YELLOW.

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

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

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

## WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the manufacture of this product contains LEAD. In addition, the electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT REMOVE ANY ENCLOSURE COMPONENTS! There are no user serviceable parts inside. All service should be performed by a service representative authorized by Yamaha to perform such service.

IMPORTANT MESSAGE: Yamaha strives to produce products that are both user safe and environmentally "friendly". We sincerely believe that our products meet these goals. However, in keeping with both the spirit and the letter of various statutes we have included the messages shown above and others in various locations in this manual.

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

## ***Introduction***

*The EMP700 is a true stereo (2-in/2-out) multi-effect processor that is ideally suited to a wide range of recording and musical instrument applications. It features a fresh new range of top-quality effects including compression/limiting, EQ, reverb, delay, enhancer, distortion, panning, pitch shift, wah, phaser, and a full complement of modulation type effects. 90 preset effects programs based on 29 fundamental effect types are provided.*

*Several of the preset effect programs offer noteworthy improvements and innovations: the reverb sound has been significantly improved with extra warmth and depth; the distortion program produces a rich overdrive sound; and the "Hyper Mod" program creates a remarkable rotary-speaker effect.*

*Since separate processor LSIs are used for the "dynamic" (compressor/EQ) and "reverb" (reverb/delay/modulation) effect groups, programs from these groups can be combined and used simultaneously. Furthermore, the simultaneous effects can be connected in serial, reverse serial, or in parallel.*

*Effect programs can be edited to customize the sound as required, and original programs can be stored in any of 50 user memory locations. Four assignable keys below the backlit 16-character 2-line display allow one-touch selection of assigned effect programs, and they also make parameter selection easy in the parameter edit mode. Convenient external data storage is provided by a card slot that accepts optional RAM cards that can be used to store up to 50 effect programs each.*

*Other features include MIDI program selection and control, switchable -20/+4 dB input and output levels, and easy-operation controls and display.*

*Please read this operation manual thoroughly while trying out the many features and effects provided by the EMP700, and keep the manual in a safe place for later reference.*

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# **Precautions !! PLEASE READ THIS BEFORE PROCEEDING !!**

## **1. AVOID EXCESSIVE HEAT, HUMIDITY, DUST AND VIBRATION**

Keep the unit away from locations where it is likely to be exposed to high temperatures or humidity — such as near radiators, stoves, etc.

Avoid mounting the unit directly above other devices that produce heat in an equipment rack or other enclosure. Leave a 1-U rack space between the EMP700 and other devices to allow ventilation. An optional VP-1 ventilation panel is available from Yamaha.

Also avoid locations which are subject to excessive dust accumulation or vibration which could cause mechanical damage.

## **2. AVOID PHYSICAL SHOCKS**

Strong physical shocks to the unit can cause damage. Handle it with care.

## **3. DO NOT OPEN THE CASE OR ATTEMPT REPAIRS OR MODIFICATIONS YOURSELF**

This product contains no user-serviceable parts. Refer all maintenance to qualified Yamaha service personnel. Opening the case and/or tampering with the internal circuitry will void the warranty.

## **4. MAKE SURE POWER IS OFF BEFORE MAKING OR REMOVING CONNECTIONS**

Always turn the power OFF prior to connecting or disconnecting cables.

## **5. HANDLE CABLES CAREFULLY**

Always plug and unplug cables — including the AC cord — by gripping the connector, not the cord.

## **6. CLEAN WITH A SOFT DRY CLOTH**

Never use solvents such as benzine or thinner to clean the unit. Wipe clean with a soft, dry cloth.

## **7. ALWAYS USE THE CORRECT POWER SUPPLY**

Always use the correct AC voltage to power your EMP700. Make sure that your EMP700 is appropriate for the AC mains supply voltage in the area where you intend to use it (the correct supply voltage is marked on the rear panel, below the power cord).

## **8. ELECTRICAL INTERFERENCE**

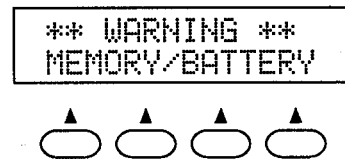
Since the EMP700 contains digital circuitry, it may cause interference and noise if placed too close to TV sets, radios or similar equipment. If such a problem does occur, move the EMP700 further away from the affected equipment.

## **9. MIDI CABLES**

When connecting to EMP700 to MIDI equipment, be sure to use high-quality cables made especially for MIDI data transmission. Avoid cables longer than about 15 meters. Longer cables can pick up electrical noise that may cause data errors.

## **10. MEMORY BACKUP**

The EMP700 contains a special long-life battery that retains the contents of its internal RAM memory even when the power is turned OFF. The backup battery should last for approximately 5 years. When the battery voltage drops to a level that is too low to maintain the memory contents, the following message will appear on the EMP700 display when the power is turned ON:

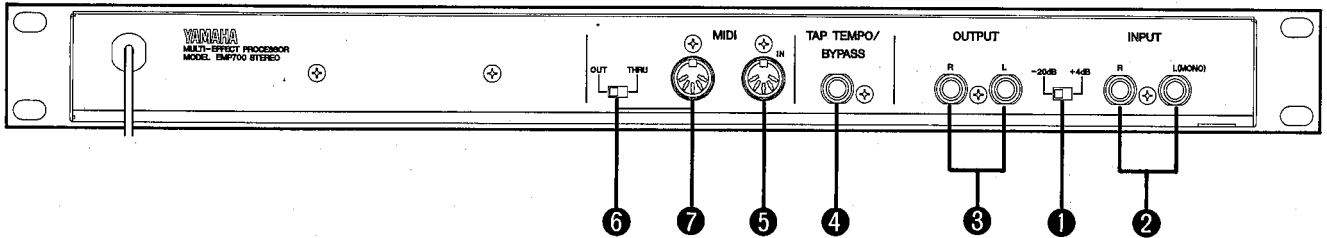


If this display appears, have the backup battery replaced by qualified Yamaha service personnel. **DO NOT ATTEMPT TO REPLACE THE BACKUP BATTERY YOURSELF!**

## **11. ERROR NUMBERS**

When the EMP700 power is initially turned ON, a self-diagnostic program runs automatically to check a number of important operational parameters. If a problem is found, an error number ("E1" through "E4") will appear on the LED MEMORY display. If an error number appears, please take the EMP700 to your nearest Yamaha dealer for servicing, and be sure to tell the service personnel which error number was displayed.

# Connections: Basic System Setup



## 1 -20dB/+4dB Input/Output Level Switch

This switch sets both the input sensitivity of the INPUT jacks and the output level of the OUTPUT jacks. When connecting the EMP700 to professional equipment that has +4 dB outputs, set the level switch to the “+4dB” position. The “-20dB” setting is the best choice when connecting the EMP700 to home-use audio equipment or other sound equipment that has input/output levels in the -20 ... -10 dB range.

## 2 INPUT R & L(MONO) Jacks

The INPUT R and L(MONO) jacks allow either stereo or mono signals to be fed to the EMP700. Stereo signals should be fed to both jacks, while a mono signal should be fed to the L(MONO) jack only. Inserting a plug into the L(MONO) jack only causes the EMP700 to function as a 1-in/2-out type signal processor.

## 3 OUTPUT R and OUTPUT L Jacks

These are the main stereo outputs from the EMP700. We recommend using both outputs and connecting them to the corresponding right and left channels of a stereo sound system, since the full impact of the EMP700 effects can only be appreciated in stereo. If only a mono sound system is available, use either the OUTPUT R or OUTPUT L jack.

## 4 TAP TEMPO/BYPASS Jack

An optional Yamaha FC4 or FC5 Footswitch connected here can be used for either “BYPASS” or “TAP TEMPO” control depending on the setting of the utility-mode “FOOT SW ASSIGN” function (details on page 20). When set to BYPASS operation the footswitch performs exactly the same function as the front-panel [BYPASS] key (see below). Press the footswitch once

to activate the bypass mode, and again to turn bypass off. When set to “TAP TEMPO” control the footswitch can be used to set the delay time for effects with delay parameters (details on page 20).

## 5 MIDI IN Connector

The MIDI IN connector accepts MIDI signals from an external MIDI device such as a MIDI foot controller, keyboard, etc. The EMP700 will accept MIDI PROGRAM CHANGE messages to directly select effect programs, or MIDI CONTROL CHANGE messages via which individual effect parameters may be remotely controlled.

See page 15/16 for further details.

## 6 MIDI OUT/THRU Switch

Selects either MIDI THRU or MIDI OUT operation for the MIDI OUT/THRU connector, described below.

## 7 MIDI OUT/THRU Connector

When the MIDI OUT/THRU switch is set to “THRU,” MIDI signals received at the MIDI IN connector are retransmitted via this connector in real time, allowing other MIDI devices to be “chained” to the EMP700.

When the MIDI OUT/THRU switch is set to “OUT,” MIDI bulk data can be transmitted via this connector.

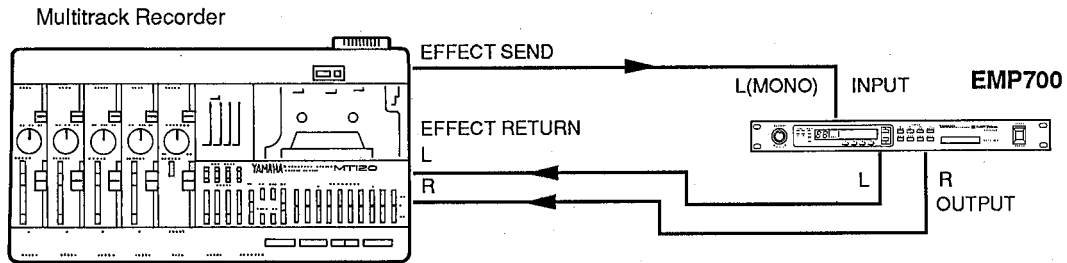
See page 21 for further details.

## ■ Basic System Configurations

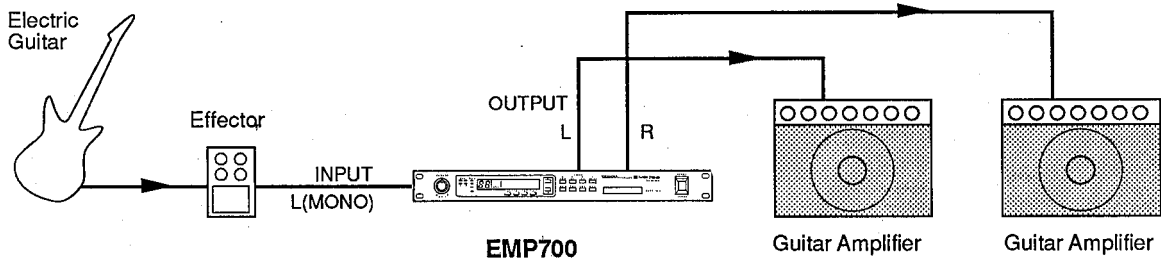
Here's how the EMP700 can be connected for use with a multitrack recording system, electric guitar (or bass), or an electronic keyboard. The actual configuration of your sys-

tem will naturally depend on your own individual requirements, but these examples may help to give you a few ideas.

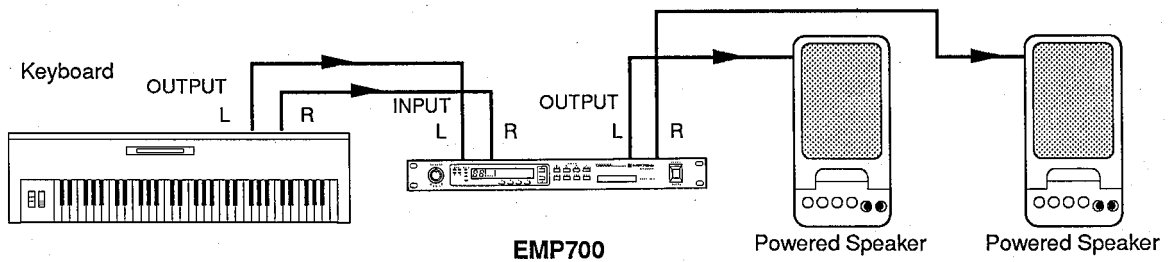
### ● Multitrack Recording



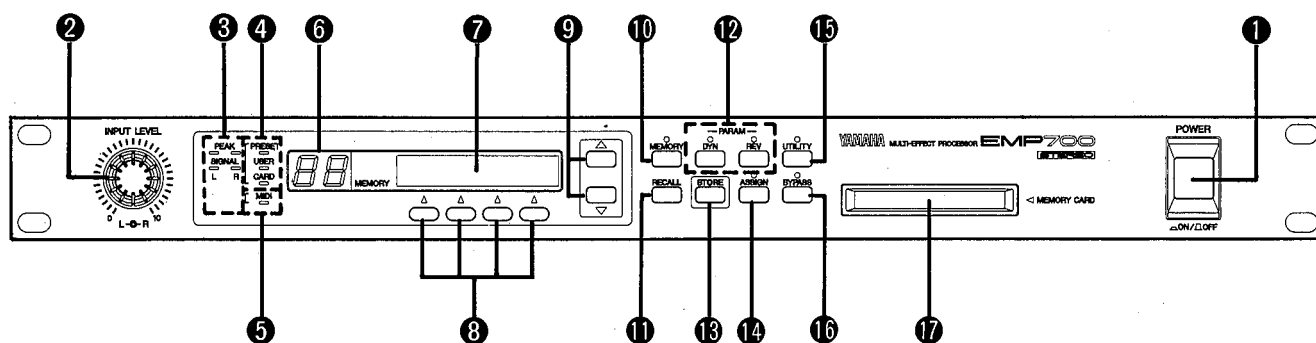
### ● Electric Guitar



### ● Keyboard



# The Front Panel: A Quick Operation Guide



## 1 Power Switch

Press once to turn the EMP700 on, and a second time to turn the power off. When the power is turned on, a title and copyright notice will appear on the display panel for a few seconds before operation actually begins.

## 2 INPUT LEVEL Controls

These dual concentric level controls allow the input sensitivity of the EMP700 to be matched to just about any source. The small inner control adjusts the input level of the left channel while the large outer control affects the right channel.

## 3 SIGNAL and PEAK Indicators

These indicators provide a useful guide for setting input levels and avoiding distortion. Separate indicators are provided for the left (L) and right(R) channels.

For the optimum input level setting, play your source at the highest level it will be played in actual use, and adjust the INPUT LEVEL controls so that SIGNAL indicators light most of the time. The PEAK indicators should not light at all (they may flash occasionally in response to high-level peaks). A PEAK indicator that lights constantly or frequently indicates that the signal level of the corresponding channel is set too high and clipping distortion is likely to occur. In this case reduce the level of the signal either at the source, or by adjusting the INPUT LEVEL controls and/or the rear-panel -20dB/+4dB level switch.

## 4 PRESET, USER, and CARD Indicators

These LEDs indicate whether the PRESET memory area, the USER memory area, or an external CARD memory is selected. Selection is accomplished via the

[MEMORY] key, described below.

See page 8 for further details.

## 5 MIDI Indicator

This indicator flashes whenever a MIDI signal is received by the EMP700, providing a simple way to visually monitor MIDI activity.

## 6 LED MEMORY Number Display

Indicates the selected program number — 0 through 90 when the PRESET memory is selected, or 1 through 50 when either the USER or CARD memory is selected.

## 7 Liquid Crystal Display (LCD) Panel

This is the main EMP700 “information center,” providing all information necessary for effect program selection, programming and utility control.

## 8 Assignable Function Keys

Four assignable keys below the liquid crystal display allow one-touch selection of assigned effect programs, and they also make parameter selection easy in the edit mode.

See page 9 for further details.

## 9 [▲] and [▼] Keys

The [▲] and [▼] keys allow stepwise selection of program numbers and parameter values when in the corresponding modes. These keys can also be held for continuous incrementing or decrementing. For even faster incrementing or decrementing, press the opposite data entry key after pressing and holding the key corresponding to the direction in which you want to increment or decrement.

See page 8/11 for further details.



## 10 [MEMORY] Mode Key & Indicator

When the [MEMORY] key indicator is lit, the EMP700 STEREO MEMORY mode is active and effect programs (0 ... 90 PRESET, 1 ... 50 USER, or 1 ... 50 CARD) can be selected and recalled using the [▲] and [▼] keys and the [RECALL] key, or the assignable function keys. The MEMORY mode can be selected from any other mode by simply pressing the [MEMORY] key.

The [MEMORY] key is also used to select the PRESET, USER, or CARD memory. These memory areas are selected in sequence each time the [MEMORY] key is pressed. The selected memory area is shown by the PRESET, USER, and CARD indicators to the left of the LED MEMORY number display.

See page 8 for further details.

## 11 [RECALL] Key

After using the [▲] and [▼] keys to select a desired effect program while in the MEMORY mode, the [RECALL] key is pressed to actually recall and activate the selected program.

The [RECALL] key is not required if a program is recalled via the assignable function keys.

See page 8 for further details.

## 12 PARAM Keys & Indicators — [DYN] and [REV]

These keys provide access to the editable parameters of the currently selected effect program. The [DYN] key accesses the compressor and equalizer parameters (dynamic group) while the [REV] key accesses the reverb, delay, and modulation parameters (reverb group). Most effects have several “pages” of parameters that can be accessed by repeatedly pressing the corresponding PARAM key.

See page 11 for further details.

## 13 [STORE] Key

After editing any of the effect programs, the new program can be stored in any of the EMP700 USER or CARD memory locations for later recall and use. The CARD memory is only available if a properly formatted memory card is inserted in the MEMORY CARD slot. The [STORE] key is used to store edited data to a USER or CARD memory location.

See page 13 for further details.

## 14 [ASSIGN] Key & Indicator

The [ASSIGN] key is used to assign effect parameters for control via external MIDI controllers. The [ASSIGN] key indicator lights while the controller assignment mode is engaged.

See page 17 for further details.

## 15 [UTILITY] Mode Key & Indicator

Pressing this key activates the UTILITY mode, allowing access to several important utility functions:

- Title Edit [Page 14]
- MIDI Setup [Page 15]
- MIDI Program Change Table Edit [Page 15]
- Controller Assignment [Page 16]
- Foot Switch Assign [Page 20]
- Bulk Out [Page 21]
- Card Data Copy [Page 22]
- RAM Card Format [Page 22]

The [UTILITY] key lights when the UTILITY mode is active. Each time the [UTILITY] key is pressed the next function on the utility “list” is selected. The mode that was active before the [UTILITY] key was pressed (MEMORY or PARAM) is selected following the last function on the utility list. The UTILITY mode can also be exited by pressing any other mode key ([MEMORY], [DYN], [REV], or [ASSIGN]), or by holding the [UTILITY] key until its indicator goes out (about one second).

## 16 [BYPASS] Key & Indicator

When the [BYPASS] key is pressed and its indicator is lit, all EMP700 effects are completely bypassed and the input signal is fed directly to the output. Press the [BYPASS] key a second time to turn the bypass function off. The rear-panel TAP TEMPO/BYPASS footswitch jack can also be used for bypass control (see “TAP TEMPO/BYPASS Jack” on page 4).

## 17 MEMORY CARD Slot

Optional Yamaha MCD32 RAM memory cards can be plugged in here to provide an additional 50 memory locations. You can create entire libraries of original effect programs stored on external memory cards, and the pocket-size cards can be carried anywhere so your original effect programs can be used with any EMP700 unit.

See page 8 for further details.

# Selecting Effect Programs

## ■ Memory Configuration

The EMP700 allows access to three separate groups of effect programs:

**PRESET:** The PRESET memory contains 90 preset effect programs (plus an "Initial Data" program) that you can select and use without modification. The preset programs themselves cannot be erased or changed in any way, but they can be edited and stored in the USER or CARD memory to create original variations. See page 59 — 63 for a complete list of the preset programs.

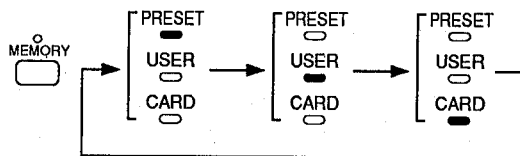
**USER:** The USER memory provides 50 locations into which your own effect creations can be stored. You can edit a preset effect to create an original variation, or start from "scratch" by using the "Initial Data" program (number "0" in the PRESET memory). The general editing and memory store procedures are described in the "Editing and Storing Original Effect Programs" section, beginning on page 10.

**CARD:** In addition to the internal USER memory, original effect programs can be stored on external RAM cards plugged into the EMP700 STEREO MEMORY CARD slot. Optional Yamaha MCD32 (or MCD64) memory cards can hold up to 50 effects each. The CARD memory is only available when a properly formatted card is inserted in the MEMORY CARD slot. When a card is available, the CARD memory can be used in the same way as the USER memory. See the "CARD DATA COPY" and "RAM CARD FORMAT" functions on page 22 in the "Utility Functions" section.

## ■ Effect Program Selection Procedure

### 1. Select the PRESET, USER, or CARD Memory

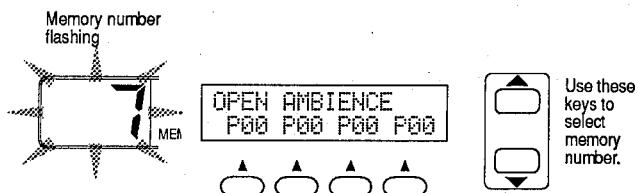
Use the [MEMORY] key to select the desired memory area. The PRESET, USER, and CARD\* memory areas are selected in sequence each time the [MEMORY] key is pressed.



\* The CARD memory will only be selected if a properly formatted Yamaha MCD32 (or MCD64) memory card is loaded in the MEMORY CARD slot — see page 22 for card formatting instructions.

### 2. Select a Program Number

After selecting the desired memory area, use the [▲] and [▼] data entry keys to select the number of the program you want to recall. The program number will flash on the LED MEMORY display and the program name will appear on the upper line of the LCD.



Note that while the MEMORY display is flashing the program has not yet actually been recalled and that the previous effect program is still engaged.

### 3. Recall the Selected Program

When the desired program number has been selected, press the [RECALL] key. The LED display will stop flashing the selected effect program will be engaged.



## ■ Direct Effect Program Selection via the Function Keys

**Note:** If you press the [RECALL] key after editing an effect program and the edited program has not yet been stored, "RECALL?" will appear on the lower display line, and you will have to press either the "Yes" function key to actually recall the specified program, or the "No" function key to cancel the recall operation. Pressing the [RECALL] key a second time has the same effect as pressing the "Yes" function key. Note that if you choose "Yes," the edited un-stored data will be lost. This feature has been implemented to minimize the possibility of accidentally erasing edited data before it is stored.

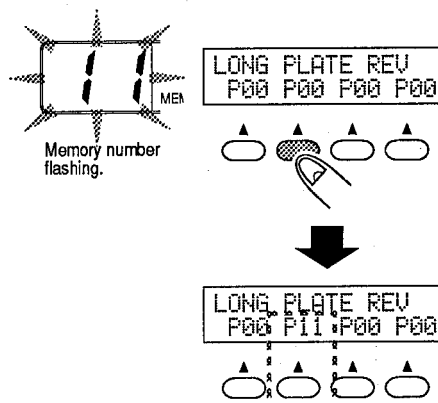
The four assignable function keys located below the LCD can be assigned to any program number in any memory area, and then used to directly recall that program.

### 1. Select the Program To Be Assigned

To assign a function key to an effect program, first select (but do not recall) the program to be assigned: use the [▲] and [▼] data entry keys to select the number of the program you want to recall. The program number will flash on the LED MEMORY display and the program name will appear on the upper line of the LCD.

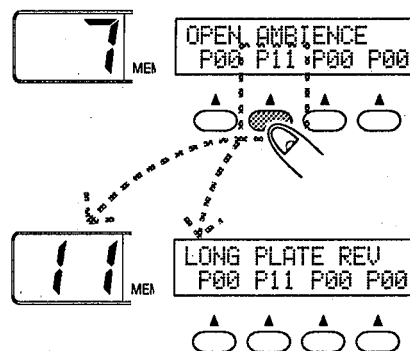
### 2. Press a Function Key

While the MEMORY display is flashing, press the function key you want to assign to the selected effect program. This simultaneously assigns the function key and recalls the selected program.



### 3. Use the Function Key To Recall the Program Later

The assigned program number will appear above the function key in the LCD\*, and the program can be directly recalled by simply pressing the function key.



\* Preset memory numbers appear as "P00" through "P90"; user memory numbers "U01" through "U50," and card memory numbers "C01" through "C50."

# Editing and Storing Original Effect Programs

## ■ EMP700 Effect Configurations

The EMP700 has 29 basic effects that are used to create effect programs. These are divided into two groups — the dynamic (DYN) group and the reverb (REV) group.

### ● Dynamic (DYN) Group

Disp.	Name	IN/OUT
GEQ	Compressor/Graphic EQ	(MO/MO)
CMP	Stereo Compressor/Limiter	(ST/ST)
PEQ	Stereo Parametric EQ	(ST/ST)
ENH	Stereo Enhancer	(ST/ST)
WAH	Stereo Wah	(ST/ST)
PHS	Phaser	(MO/ST)
OVD	Overdrive	(MO/MO)
CDE	Compressor/Distortion/EQ	(MO/MO)

### ● Reverb (REV) Group

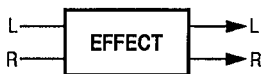
Disp.	Name	IN/OUT
CHO	Chorus	(ST/ST)
FLA	Flanger	(ST/ST)
SYM	Symphonic	(ST/ST)
PAN	Round Pan	(ST/ST)
HMD	Hyper Modulation Delay	(ST/ST)
TPI	Triple Pitch Change	(MO/ST)
SPI	Stereo Pitch Change	(ST/ST)
REV	Reverb	(MO/ST)
GRV	Gate Reverb	(MO/ST)
ER	Early Reflections	(MO/ST)
ADL	After Delay	(ST/ST)
MDL	Mono Delay	(MO/MO)
SMD	Stereo Modulation Delay	(ST/ST)
MTD	Multi Tap Delay	(MO/ST)
R+D	Reverb + Delay	(MO/ST)*
P+R	Stereo Pitch Change + Reverb	(ST/ST)*
P→R	Stereo Pitch Change → Reverb	(ST/ST)**
S+R	Symphonic + Reverb	(ST/ST)*
F→R	Flanger → Reverb	(ST/ST)*
D→E	Delay → Early Reflections	(MO/ST)
D+C	Delay + Chorus	(ST/ST)

Note: ST = Stereo, MO = Mono,

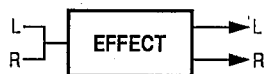
\* Reverb = Mono In/Stereo Out,

\*\* Reverb = Stereo In/Stereo Out,

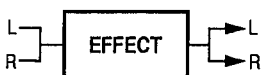
#### ● Stereo In/Stereo Out



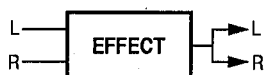
#### ● Mono In/Stereo Out



#### ● Mono In/Mono Out

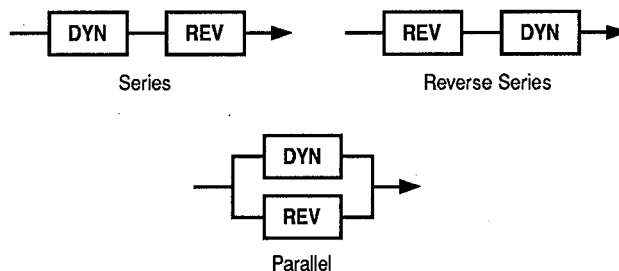


#### ● Stereo In/Mono Out



An effect program can be created using any one fundamental effect from the two groups, or by combining one effect from each group. You could combine Stereo PEQ (parametric equalizer) with Reverb, for example, so you can equalize the sound and add reverb at the same time.

It is also possible to specify how the DYN and REV effects are connected. They can be connected in series, with the DYN effect first and the REV effect last, or in reverse order with the REV effect first and the DYN effect last, or in parallel.



## Some Thoughts On Choosing An Effect Configuration

Deciding which configuration to use for a particular combination of effects may require a little thought. Here are a few hints.

Compression (a DYN group effect), when used, will nearly always be the first effect in a chain because the following effects usually benefit from a “smoother” input signal. Reverb, early reflections, delay, and related effects (all REV group effects) are normally last simply because we usually want to apply these effects to the entire sound. In general the REV → DYN sequence is the one you’ll probably use for most effects.

There are, however, exceptions. You might, for example, want to apply equalization to a chorus effect. In this case you’ll have to use the reverse series configuration (REV → DYN) because the chorus effect is in the REV group and the EQ effects are in the DYN group.

The parallel configuration should be used in cases in which you want two effects to operate independently, without one affecting the other. You could, for example, connect the DYN group Stereo Wah effect in parallel with the REV group Round Pan effect so you have a stationary wah sound plus a panned “dry” sound.

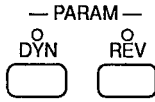
Perhaps the best approach to selecting a configuration is to logically determine the configuration that seems like it will provide the sound you need, then simply try it. If it doesn’t work out the way you planned, then try other configurations until you’re satisfied.

## ■ Accessing & Editing the Parameters

The EMP700 parameter mode provides access to several important parameters for each effect, allowing you to change the sound of each effect over a broad range to suit your specific requirements. Once the parameters for each effect have been programmed and fine-tuned to provide exactly the sound you want, the entire effect program can be stored into a USER or CARD memory location for later recall and use.

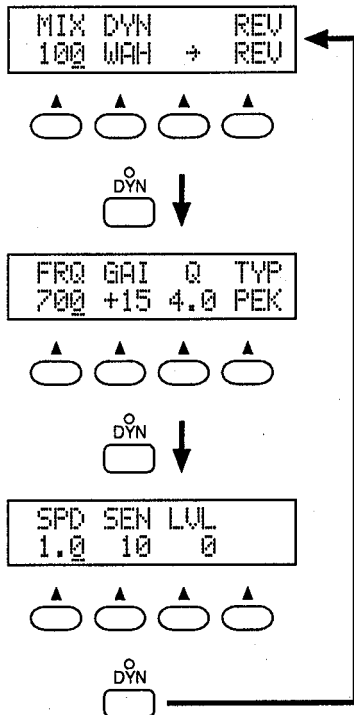
### 1. Select the DYN or REV Parameters

The effect parameters are accessed by pressing either the [DYN] or [REV] PARAM key, depending on the parameter group you want to edit.



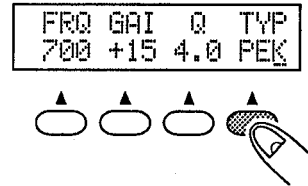
### 2. Select a Parameter for Editing

In most effects, three or more parameter screens are required. The various parameters screens are selected in sequence by repeatedly pressing the currently selected (lit) PARAM key. The DYN group Stereo Wah effect, for example, has the following three parameter screens (including the initial configuration/mix screen):



Each screen contains up to four parameters. The parameter abbreviations are displayed on the upper line of the LCD, and the corresponding data values are shown on the bottom line. Use the function keys to move the underline cursor to the parameter to be edited.

In the following display, for example, pressing the rightmost function button places the cursor under the “TYP” parameter value — currently set to “PEK.”

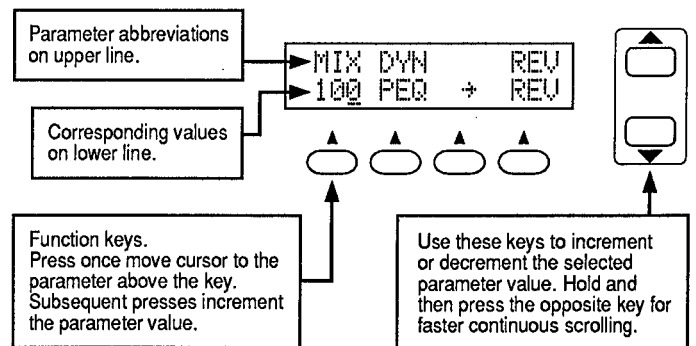


The various parameters are described in detail in the “The Effect Parameters” section, beginning on page 24.

**Note:** No parameters other than the initial configuration screen will appear if the effect for the selected group is set to “OFF.”

### 3. Edit the Selected Parameter

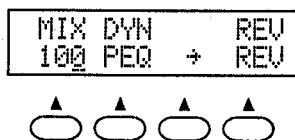
Use the [▲] and [▼] keys to adjust the value of the selected parameter (the function key below the selected parameter can also be used to increase the value of the parameter in single increments). If you hold the [▲] or [▼] key the data will scroll continuously in the specified direction. The data will scroll faster if you press the opposite arrow key while holding either the [▲] or [▼] key.



**Note:** To prevent accidental loss of edited data, the EMP700 responds with a confirmation display — “RECALL OK?” — if you press the [RECALL] key while editing. Press either the “Yes” function key to recall the original (pre-edit) effect and return to the MEMORY mode, or the “No” function key to cancel the recall operation. Pressing the [RECALL] key a second time has the same effect as pressing the “Yes” function key. Note that if you choose “Yes,” the edited un-stored data will be lost.

## ■ Setting the Basic Effects & Configuration

The first display screen to appear when either the [DYN] or [REV] PARAM key is pressed allows the basic effects and effect configuration to be specified (also the effect MIX level).

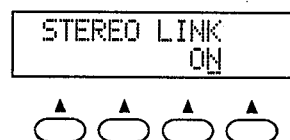


In this example the PEQ (Parametric Equalizer) effect of the DYN is combined with the REV (Reverb) effect of the REV group. The arrow between these parameters indicates that the normal serial connection is selected (DYN → REV). The DYN and REV parameters can be selected and other effects specified by pressing the corresponding function button and then using either the function button itself or the [▲] and [▼] keys.

In the same way, the function button under the “connection” arrow can be pressed to select it (the underline cursor will appear below the arrow), then the function button or the [▲] and [▼] buttons can be used to select a different connection: a reverse arrow for reverse serial connection (DYN ← REV), or a plus sign for parallel connection (DYN + REV).

## ■ Stereo Link

Effects in the DYN group that have a large number of equivalent parameters for the left and right channels (the Parametric Equalizer, for example) have a “STEREO LINK” function that appears as one parameter screen.



When this function is turned ON (by using either the [▲] and [▼] keys, or the function key directly below “OFF” on the display), editing any parameter for one channel automatically sets the equivalent parameter of the other channel to the same value. Turn the STEREO LINK function OFF if you want to program different values for the left and right channel parameters.

## ■ Memory Store

An edited effect program can be stored in any memory location within the EMP700 USER memory area (1 through 50), or the CARD memory if a properly formatted card is loaded in the MEMORY CARD slot. Original effect programs stored in this way can be selected and used in exactly the same way as the preset effect programs. The UTILITY mode TITLE EDIT function can be used to create new titles for your original effect programs after you have stored them in USER or CARD memory.

### 1. Press the [STORE] Key

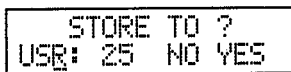
After editing the parameters to create the desired effect, press the [STORE] key.



**Note:** You can press the [STORE] key after exiting from the PARAM mode as long as you haven't already recalled a different effect program. All edited data will be lost if you recall a different program before storing the edited data.

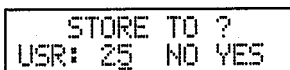
### 2. Select the USER or CARD Memory

Press the leftmost function key to move the cursor to the memory area parameter, then use the [▲] and [▼] keys (or the function key) to select the USER (USR) or CARD (CRD) memory, if necessary.



### 3. Specify the Destination Memory Number

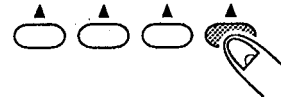
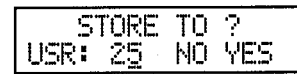
Press the function key under the memory location number to move the cursor there, then use the [▲] and [▼] keys (or the function key under the number) to select the number of the USER or CARD memory location to which you want to store the edited data.



### 4. Execute the Store Operation

When the store destination has been specified, press the rightmost function key (under "YES" on the display) to actually execute the store operation (or the function key under "NO" to cancel the operation). The store operation can also be executed by pressing the [STORE] key a second time. "MEMORY STORE" will appear on the top line of the display for a few seconds while the store operation is in progress.

When the store operation is complete, the memory location to which the edited data was stored will be selected automatically (the MEMORY number display will stop flashing).



### 5. Create a Title For Your Effect Program

Use the UTILITY mode TITLE EDIT function to give your program an original name. The TITLE EDIT function is described in detail on page 14.

# The Utility Mode

## ■ Accessing the Utility Functions

The UTILITY mode is activated by pressing the [UTILITY] key. Each press on the [UTILITY] key calls a different UTILITY function:

- TITLE EDIT
- MIDI SETUP
- MIDI PGM CHANGE
- MIDI CONTROL
- FOOT SW ASSIGN
- BULK OUT
- CARD DATA COPY
- RAM CARD FORMAT

The mode that was active before the [UTILITY] key was pressed (MEMORY, PARAM, or ASSIGN) is selected following the last function on the utility list. The UTILITY mode can also be exited by pressing any other mode key ([MEMORY], [DYN], [REV] or [ASSIGN]), or by pressing and holding the [UTILITY] key until its indicator goes out (about one second).

## ■ Creating Titles For Your Original Programs: TITLE EDIT

The Title Edit function allows you to create original titles for your effect programs, for easy identification. When TITLE EDIT is called the LCD will appear something like the example below — the memory title will appear on the upper line.

```
LARGE ROOM REV
+ TITLE EDIT +
```



Use the left and right function keys (below the “←” and “→” arrows on the LCD) to move the cursor to the desired character location, then use the [▲] and [▼] keys to change the character at the cursor location. The [STORE] key can be used to place a space at the cursor position. Continue until the new title is complete.

The characters accessible via the [▲] and [▼] keys are shown in the chart below, in their proper order.

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	ä	b	c	d	e	f	g	h	i	j
k	l	n	o	ö	p	r	s	t	u	ü	v	w	x	y	z			
ア	イ	ウ	エ	オ	カ	キ	ク	ケ	コ	サ	シ	ス	セ					
ソ	タ	チ	ツ	テ	ト	ナ	ニ	ノ	ネ	ジ	ジ	シ	フ	マ	ミ			
ム	メ	フ	ト	リ	ロ	ヨ	ヨ	リ	リ	レ	ロ	ワ	ワ	ン	ン			
ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ	ハ
%	!	?	→	←	#			0	1	2	3	4	5	6	7	8	9	

A newly created program title is automatically stored with the corresponding program when the Title Edit mode is exited.

**Note:** The TITLE EDIT function can only be used when one of the EMP700 USER or CARD memory locations (1 through 50) are selected. If you call the TITLE EDIT function while a PRESET memory location (0 through 90) is selected, the following display will appear and title editing will not be possible.

```
USER MEMORY ONLY
+ TITLE EDIT +
```





## ■ MIDI Program Selection: MIDI SETUP & MIDI PGM CHANGE

The EMP700 makes it possible to select specific programs via external MIDI control. You can set up the EMP700, for example, so that when you select a voice on a synthesizer the most appropriate effect for that voice is automatically selected. This is accomplished because each time you select a voice on your MIDI synthesizer it transmits the corresponding MIDI "program change number." The EMP700 receives this program change number and selects the effect program that you have assigned to it using the MIDI PGM CHANGE function which will be described below. A more convenient idea for guitarists or bassists would be to use a MIDI foot controller such as the Yamaha MFC05 to transmit the required MIDI program change numbers.

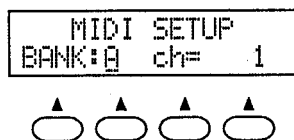
The EMP700 actually can be programmed with four completely independent sets of MIDI PROGRAM CHANGE NUMBER/MEMORY NUMBER assignments. Each of these is contained in a different "BANK": A, B, C or D. Each BANK may also be programmed to receive on a different MIDI channel. The four banks may be programmed with different receive channels using the MIDI SETUP function described below.

### MIDI SETUP

This function makes it possible to select any of the four available program change table BANKs, and to change the MIDI receive and transmit channel for each BANK.

#### 1. Select the MIDI SETUP Display

Use the [UTILITY] key to select the MIDI SETUP display.



#### 2. Select the Bank You Want To Program

The underline cursor should be under the BANK letter. If it is not, press the function key below the BANK parameter to move it there. Use the [▲] and [▼] keys (or the function key directly under the BANK parameter) to select the bank you wish to program: A, B, C or D.

#### 3. Set the MIDI Channel For the Selected Bank

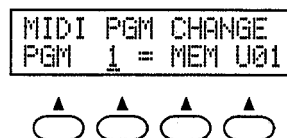
Move the cursor to the channel number (to the right of "ch=") by pressing the rightmost function key, then use the [▲] and [▼] keys (or the function key directly under the parameter) to set the receive/transmit MIDI channel (1 ... 16), the OMNI mode (all channels can be received, transmission on channel 1), or turn MIDI reception OFF for the selected bank.

### MIDI PGM CHANGE

This function allows new memory location numbers to be assigned to to each MIDI program change number.

#### 1. Select the MIDI PGM CHANGE Display

Use the [UTILITY] key to select the MIDI PGM CHANGE display.



#### 2. Select a Program Change Number

The underline cursor should be under the PGM number. Use the [▲] and [▼] keys (or the function key directly under the number) to select the program change number to which a new EMP700 memory location number is to be assigned. The range of available program change numbers is from 1 to 128.

#### 3. Assign a Memory Location to the Program Change Number

Move the underline cursor to the MEM number by pressing the function key below the number. Use the [▲] and [▼] keys (or the function key directly under the number) to select the memory location number containing the effect which is to be assigned to the currently selected program change number.

P00 through P90 are the PRESET memory locations, U01 through U50 are the USER memory locations, and C01 through C50 are the CARD memory locations.

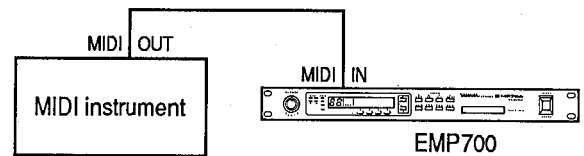
#### 4. Repeat as Necessary

Move the underline cursor back to the PGM parameter by pressing the function key under the PGM number, and repeat the above steps to assign as many program change numbers as necessary.

**Note:** The program number/memory number assignments made are stored in the BANK selected in the preceding MIDI SETUP function. To program the program change/memory number assignments for a different BANK, return to the MIDI SETUP display, select the desired BANK, then program the required assignments.

## ■ External Parameter Control: MIDI CONTROL & the Controller Assign Mode

The EMP700 allows up to two external “controllers” to be assigned for remote real-time control of effect parameters. Any controller on a MIDI instrument that transmits MIDI control change numbers between 0 and 95 can be used. Some of the MIDI numbers are assigned to specific controllers — modulation wheel, data entry, etc — and a MIDI instrument such as a keyboard that has any of these controllers will transmit the corresponding MIDI control change data when the controllers are operated. You could, for example, assign a keyboard modulation wheel to control the EMP700 reverb time.

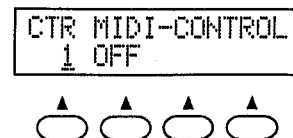


In order to use this kind of setup, the two “controllers” that the EMP700 allows must be set to receive specific MIDI control change data (i.e. receive data from a specific MIDI controller) using the MIDI CONTROL function described below.

### MIDI CONTROL

#### 1. Select the MIDI CONTROL Display

Use the [UTILITY] key to select the MIDI CONTROL display. The LCD should appear as shown below, with the cursor under the controller (CTR) number.



#### 2. Select Controller 1 or 2

If the cursor is not below the CTR number, press the corresponding function key to move it there. Use the [▲] and [▼] keys (or the function key) to select controller 1 or 2.

### 3. Select a MIDI Control Change Number

Move the cursor to the MIDI control number parameter by pressing the by second function key from the left, then use the [▲] and [▼] keys (or the function key) to select the desired MIDI control change number for the current controller (1 or 2).

The following control numbers and associated controllers can be selected:

Control Change Number	Standard Controller Assignment
OFF	Controller OFF
1	MOD. WHEEL
2	BREATH CTRL
3	No standard assignment.
4	FOOT CTRL
5	PORT TIME
6	DATA ENTRY
7	MAIN VOLUME
8	BAL CTRL
9	No standard assignment.
10	PAN CTRL
11	EXP. CTRL
12 — 31	No standard assignment.
64	SUST. PEDAL
65	PORTAMENTO
66	SOSTENUTO
67	SOFT PEDAL
68	No standard assignment.
69	HOLD 2
70 — 95	No standard assignment.

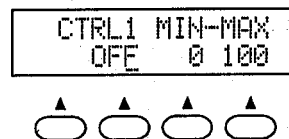
Three other control sources which are not directly associated with MIDI control change numbers can also be selected: KEY NOTE (MIDI note number data), KEY VEL. (key velocity, an integral part of MIDI NOTE ON data), and CH PRESSURE (channel pressure).

## The Controller Assign Mode

Once the MIDI controllers you wish to use have been selected using the MIDI CONTROL function described above, you can then assign the controllers to specific EMP700 effect parameters. Control assignment is carried out in the ASSIGN mode, and individual assignments can be made for each effect program — i.e. the assignments made as described below are automatically stored with the currently selected effect program.

### 1. Engage the Controller Assign Mode

Press the [ASSIGN] key.



### 2. Select Controller 1 or 2

Select controller 1 or 2 by pressing the [ASSIGN] key.

### 3. Select the Parameter To Be Controlled

The cursor will initially appear under the currently selected parameter (or "OFF"). Use the [▲] and [▼] keys (or the function key below the parameter) to select the parameter you wish to control. Parameters that can be controlled by MIDI control change messages are marked "MIDI" in the "The Effect Parameters" section beginning on page 24. Also see the "Controllable Parameters" chart below.

### 4. Set the Desired Control Range

Use the function keys to move the cursor to the MIN and then to the MAX position, using the [▲] and [▼] keys or function keys at each position to set the desired control range. Both MIN and MAX have a possible value range of 0 to 100%.

### 5. Repeat as Required

Repeat steps 2 through 4 above to assign parameters to the remaining controller as required.

### 6. Return To the Previous Mode

When finished with controller assignment, press the [UTILITY] key or any other mode key to return to the desired mode.

**Note:** The parameter assigned to one controller cannot simultaneously be assigned to the other.

## ■ MIDI-Controllable Parameters

### ● DYN and REV Parameters

Display	Parameter
MIX	Effect mix level.
OFF	Off.

### ● DYN Parameters

Effect	Display	Parameter
GEQ	THR	Threshold level.
	LVL	Output level.
CMP	THRL	Left-channel threshold.
	LVLL	Left-channel output level.
	THRR	Right-channel threshold.
	LVLR	Right-channel output level.
PEQ	LoFL	Left-channel low frequency.
	LoGL	Left-channel low gain.
	LoFR	Right-channel low frequency.
	LoGR	Right-channel low gain.
	MiFL	Left-channel middle frequency.
	MiGL	Left-channel middle gain.
	MiFR	Right-channel middle frequency.
	MiGR	Right-channel middle gain.
	HiFL	Left-channel high frequency.
	HiGL	Left-channel high gain.
	HiFR	Right-channel high frequency.
	HiGR	Right-channel high gain.
	LVLL	Left-channel output level.
	LVLR	Right-channel output level.
ENH	FRQL	Left-channel high-pass filter frequency.
	MIXL	Left-channel mix level.
	FRQR	Right-channel high-pass filter frequency.
	MIXR	Right-channel mix level.
	LVL	Left-channel output level.
WAH	FRQ	Frequency.
	SPD	Modulation speed.
	SEN	Sensitivity.
	LVL	Output level.
PHS	FRQ	Frequency.
	SPD	Modulation speed.
	DEP	Modulation depth.
	LVL	Output level.
OVD	OVD	Overdrive level.
	WAR	Warmth.
	BRI	Brightness.
	LVL	Equalizer output level.

Effect	Display	Parameter
CDE	THR	Threshold level.
	CLVL	Compressor output level.
	DST	Distortion level.
	WAR	Warmth.
	BRI	Brightness.
	MLVL	Output level.

### ● REV Parameters

Effect	Display	Parameter
CHO	SPD	Modulation speed.
	PMD	Pitch modulation depth.
	AMD	Amplitude modulation depth.
	LVL	Output level.
FLA	SPD	Modulation speed.
	PMD	Pitch modulation depth.
	AMD	Amplitude modulation depth.
	LVL	Output level.
SYM	SPD	Modulation speed.
	DEP	Modulation depth.
	MIX	Mix.
	LVL	Output level.
PAN	SPD	Modulation speed.
	L/R	Left/right modulation depth.
	F/R	Front/rear modulation depth.
	LVL	Output level.
HMD	SPD	Modulation speed.
	DEP	Modulation depth.
	L/R	Left/right modulation depth.
	F/R	Front/rear modulation depth.
	LVL	Output level.
TPI	DLY1	Delay 1.
	DLY2	Delay 2.
	DLY3	Delay 3.
	MX1	Pitch 1 mix.
	MX2	Pitch 2 mix.
	MX3	Pitch 3 mix.
	FB	Feedback.
	MIX	Mix.
	LVL	Output level.

Effect	Display	Parameter
SPI	DLYL	Left delay.
	DLYR	Right delay.
	MIX	Mix.
	LVL	Output level.
REV	RVT	Reverb time.
	E/R	Early reflections balance.
	MIX	Mix.
	LVL	Output level.
GRV	RVT	Reverb time.
	NGL	Noise gate level.
	MIX	Mix.
	LVL	Output level.
ER	RSZ	Room size.
	LIV	Liveness.
	MIX	Mix.
	LVL	Output level.
ADL	DLYL	Left delay time.
	DLYR	Right delay time.
	FBL	Left feedback.
	FBR	Right feedback.
	SEN	Sensitivity.
	LVL	Output level.
MDL	DLY	Delay time.
	SPD	Modulation speed.
	DEP	Modulation depth.
	MIX	Mix.
	LVL	Output level.
SMD	DLYL	Left feedback delay.
	DLYR	Right feedback delay.
	SPDL	Left modulation speed.
	SPDR	Right modulation speed.
	PMD	Pitch modulation depth.
	AMD	Amplitude modulation depth.
	MIX	Mix.
	LVL	Output level.
	MTD	DLY1
LVL1		Tap delay level 1.
DLY2		Tap delay time 2.
LVL2		Tap delay level 2.
DLY3		Tap delay time 3.
LVL3		Tap delay level 3.
DLY4		Tap delay time 4.
LVL4		Tap delay level 4.
DLY5		Tap delay time 5.
LVL5		Tap delay level 5.
FB1		Tap feedback 1.
FB2		Tap feedback 2.

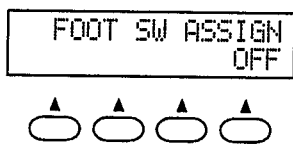
Effect	Display	Parameter
	MIX	Mix.
	LVL	Output level.
R+D	DLYL	Left delay time.
	DLYR	Right delay time.
	RVT	Reverb time.
	D/R	Delay/reverb balance.
	LVL	Output level.
P+R	DLYL	Left delay.
	DLYR	Right delay.
	RVT	Reverb time.
	P/R	Pitch/reverb balance.
	LVL	Output level.
P→R	DLYL	Left delay.
	DLYR	Right delay.
	RVT	Reverb time.
	BAL	Pitch balance.
	LVL	Output level.
S+R	SPD	Modulation speed.
	DEP	Modulation depth.
	RVT	Reverb time.
	S/R	Symphonic/reverb balance.
	LVL	Output level.
F→R	SPD	Modulation speed.
	DEP	Modulation depth.
	RVT	Reverb time.
	MIX	Mix.
	LVL	Output level.
D→E	DLY	Delay time.
	RSZ	Room size.
	LIV	Liveness.
	MIX	Mix.
	LVL	Output level.
D+C	SPD	Modulation speed.
	DEP	Modulation depth.
	DLYL	Left delay time.
	DLYR	Right delay time.
	D/C	Delay/chorus balance.
	LVL	Output level.

## ■ TAP TEMPO/BYPASS Footswitch Mode Selection: FOOT SW ASSIGN

The EMP700 allows Yamaha FC4 or FC5 footswitch connected to the rear-panel TAP TEMPO/BYPASS footswitch jack to be used for either tap tempo or bypass control. The FOOT SW ASSIGN function determines which function the footswitch performs.

### 1. Select the FOOT SW ASSIGN Display

Use the [UTILITY] key to call the FOOT SW ASSIGN display.



### 2. Select the Footswitch Function

Use the [▲] and [▼] keys or the rightmost function key to select "OFF" (footswitch off), "BYPASS," or "TAP TEMPO."

**Less than 50 ms:** The left- and right- channel delay times are changed by the same amount.

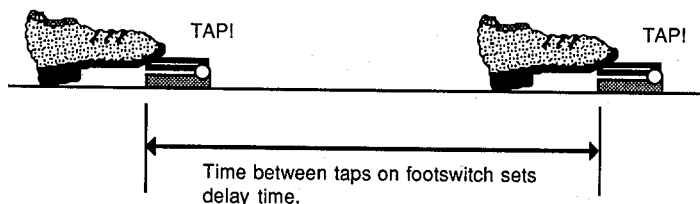
**Greater than 50 ms:** The right-channel delay time is changed proportionally by the same amount as the left-channel delay time. E.g. if the left-channel delay is increased by 1.5 times, the right-channel delay time will also be increased by 1.5 times.

**Note:** Settings cannot be made which result in a delay time that is longer than the maximum or shorter than the minimum for either channel.

## Tap Tempo Operation

When "TAP TEMPO" is selected the footswitch can be used to set the delay time of any effect that includes a single or stereo delay parameters. Simply tap the footswitch twice at the appropriate interval. The time between "taps" sets the time between delays.

By tapping in time with the music you are playing, this function makes it simple to accurately match the delay time to tempo.



In programs that have left and right-channel delay parameters, the TAP TEMPO footswitch directly sets the time of the left-channel delay parameter, and the right-channel delay parameter is set differently depending on whether the difference between the left- and right-channel delay times is less or greater than 50 ms:

## ■ Transmitting MIDI Data To Other Devices: BULK OUT

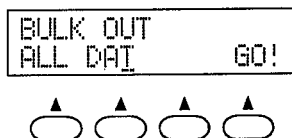
The BULK DUMP function makes it possible to execute a bulk data dump of a single memory location, system setup data, the program change assignment table of a single bank, or all of the above via the MIDI OUT/THRU connector.

### 1. Set the MIDI OUT/THRU Switch to OUT

Make sure that the rear-panel MIDI OUT/THRU switch is set to the "OUT" position.

### 2. Select the BULK OUT Display

Use the [UTILITY] key to select the BULK OUT display.



### 3. Select the Type of Data To Transmit

Use the function key below the data type parameter or the [▲] and [▼] keys to select the type of data you want to transmit:

**ALL DAT** = All program, system setup, and program change table data.

**SYSTEM** = System setup data (i.e. current utility settings, etc).

**MEMORY** = The data for the specified memory location.

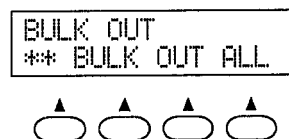
**BANK** = The program change table data of the specified bank.

### 4. Specify the Memory Number or Bank, If Necessary

If you select either MEMORY or BANK, press the function key below the associated memory or bank number, and then use the [▲] and [▼] keys to select the memory location number (PRESET locations P00 ... P90, USER locations U01 ... U50, CARD locations C01 ... C50) or bank (A, B, C, or D) corresponding to the data you want to transmit.

### 5. Press "GO!" to Transmit

Press the function button under "GO!" on the display to execute the bulk dump operation. A display similar to the following will appear while the data is being transmitted (ALL DATA is being transmitted in this case).



The initial BULK OUT display will reappear when transmission has finished.

**Note:** Refer to the MIDI DATA FORMAT section beginning on page 64 for more details about the bulk dump data.

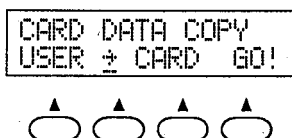
## ■ Card Utilities: CARD DATA COPY & RAM CARD FORMAT

### CARD DATA COPY

The CARD DATA COPY function makes it possible to copy all 50 programs (including empty memory locations) either from the EMP700 USER memory to a RAM card loaded in the MEMORY CARD slot, or from a RAM card to the USER memory.

#### 1. Select the CARD DATA COPY Display

Use the [UTILITY] key to call the CARD DATA COPY display.



#### 2. Set the Copy Direction

Use the second function key from the left to select the copy direction: "USER → CARD" to copy from the USER memory to the CARD, or "USER ← CARD" to copy from the CARD to the USER memory.

#### 3. Press "GO!" to Copy

Press the function key under "GO!" on the display to execute the copy operation. "COMPLETE !!" will appear briefly on the lower display line when the copy operation is finished.

**Note:** It is not possible to copy if the card's WRITE PROTECT switch is set to "ON."

**Note:** ROM card data cannot be copied using the CARD DATA COPY function.

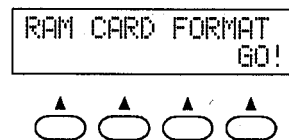
The CARD DATA COPY function cannot be used with optional pre-programmed ROM cards from third-party vendors. Programs from such cards must be copied into the EMP700 USER memory one at a time by first recalling them and then storing them into the required USER memory locations.

### RAM CARD FORMAT

A new MCD32 (or MCD64) RAM card must be formatted by the EMP700 before it can be used to store EMP700 data.

#### 1. Select the RAM CARD FORMAT Display

Use the [UTILITY] key to call the RAM CARD FORMAT display.



#### 2. Press "GO!" to Format

Press the function key under "GO!" on the display to execute the format operation. "COMPLETE !!" will appear briefly on the lower display line when the format operation is finished.

**Note:** It is not possible to format a card if the card's WRITE PROTECT switch is set to "ON."



---

## ■ IMPORTANT PRECAUTIONS CONCERNING RAM CARD USE

1. Never insert or remove a card during a **STORE, RECALL, FORMAT, or COPY CARD DATA** operation.

Also, do not remove or insert a card while the EMP700 **CARD** memory indicator is lit.

2. A **"NO MEMORY CARD!"** or **"WRITE PROTECT!"** Display means that either no card is present or the card is write protected.

If this occurs, press the function key below **"EXIT"** on the display to return to the previous mode.

# The Effect Parameters

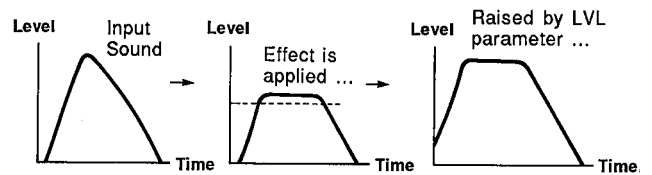
This section includes brief descriptions of each of the EMP700 basic effects, as well as descriptions of the parameters available in each effect. In cases where equivalent parameters are provided for the left and right channels, only the left-channel parameters will be described in detail.

## DYN Group Effects

### Stereo Compressor/Limiter (CMP)

The compressor produces sustain or simple "smoothing" by compressing the signal so that high levels are suppressed while low levels are effectively boosted. The use of compression before other effects is particularly effective because it limits the signal to a dynamic range that results in the best sound with the subsequent effects.

This effect includes a LINK parameter that can be turned ON if you want parameter changes to be applied to both the left and right channels simultaneously.



<b>Lch THR</b>	Left-channel threshold. -24 dB ... +12 dB	<b>MIDI</b>
----------------	--	-------------

Sets the left-channel compressor threshold level. Signal levels exceeding the threshold level will be compressed while those below the threshold level will be unaffected.

<b>Lch RAT</b>	Left-channel ratio. 1/2, 1/3, 1/4, 1/6, 1/8, 1/∞
----------------	---

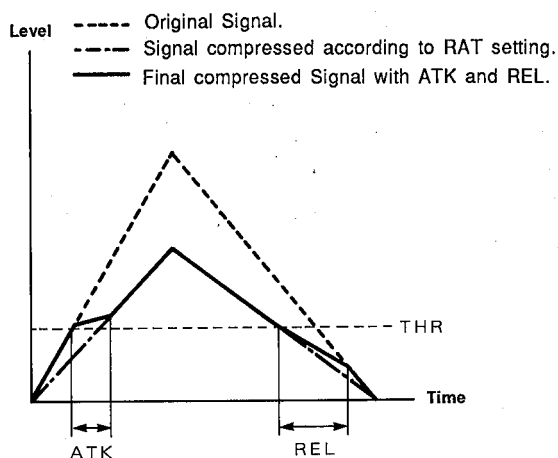
This parameter sets the degree of compression. A compression ratio of 1/2, for example, compresses signals above the threshold level to one-half their original amplitude. A setting of 1/∞ produces almost total compression, producing the same signal level for all signals above the threshold level and therefore the greatest degree of sustain.

<b>Lch ATK</b>	Left-channel attack time. 1.0 ... 20 milliseconds
----------------	--

Determines how long it takes for compression to begin after an input signal is detected. Higher values produce a longer attack time, allowing more of the natural attack of the input signal to come through. This parameter is particularly useful if, for example, you want to retain a sharp attack while increasing sustain.

<b>Lch REL</b>	Left-channel release time. .01 ... 2.0 seconds
----------------	---

Determines how long it takes for the compression to be fully released after the input signal drops below the threshold level. This parameter can be used to eliminate unnatural level variations that can occur if the compression is suddenly released below the threshold.



**Lch NGL** Left-channel noise-gate level.  
0 ... 20

Sets the threshold level of the compressor noise gate. Signals below the threshold level are suppressed, thus reducing noise. Caution: excessively high NGL levels can cause notes to be cut off unnaturally.

**Lch LVL** Left-channel output level. **MIDI**  
-∞, -30 dB ... +6 dB

Determines the left-channel output level of the compressor effect. The effect output can be turned off by setting this parameter to -∞. This, however, means that the following effect (if any) also receives no signal, and will produce no effect.

**Rch THR** Right-channel threshold. **MIDI**  
-24 dB ... +12 dB

**Rch RAT** Right-channel ratio.  
1/2, 1/3, 1/4, 1/6, 1/8, 1/∞

**Rch ATK** Right-channel attack time.  
1.0 ... 20 milliseconds

**Rch REL** Right-channel release time.  
0.1 ... 2.0 seconds

**Rch NGL** Right-channel noise-gate level.  
0 ... 20

**Rch LVL** Right-channel output level. **MIDI**  
-∞, -30 dB ... +6 dB

## Stereo Parametric Equalizer (PEQ)

A three-band parametric equalizer with independent left- and right-channel settings.

This effect includes a LINK parameter that can be turned ON if you want parameter changes to be applied to both the left and right channels simultaneously.

**Lch LoF** Left-channel low frequency. **MIDI**  
40 Hz ... 1.0 kHz

Sets the center frequency of the low equalizer band.

**Lch LoG** Left-channel low gain. **MIDI**  
-15 dB ... +15 dB

Sets the amount of boost or cut applied to the low-band frequencies. A setting of + 0 produces no boost or cut. Minus values produce cut and plus values produce boost.

**Lch LoQ** Left-channel low quality factor (bandwidth).  
0.1 ... 10

Sets the bandwidth of the low EQ band. Higher values produce a sharper (narrower) bandwidth.

**Rch LoF** Right-channel low frequency. **MIDI**  
40 Hz ... 1.0 kHz

**Rch LoG** Right-channel low gain. **MIDI**  
-15 dB ... +15 dB

**Rch LoQ** Right-channel low Q (bandwidth).  
0.1 ... 10

**Lch MiF** Left-channel middle frequency. **MIDI**  
250 Hz ... 4 kHz

Sets the center frequency of the middle equalizer band.

**Lch MiG** Left-channel middle gain. **MIDI**  
-15 dB ... +15 dB

Sets the amount of boost or cut applied to mid-band frequencies.

**Lch MiQ** Left-channel middle quality factor (bandwidth).  
0.1 ... 10

Sets the bandwidth of the middle EQ band. Higher values produce a sharper (narrower) bandwidth.

**Rch MiF** Right-channel middle frequency. **MIDI**  
250 Hz ... 4 kHz

<b>Rch MiG</b>	Right-channel middle gain. -15 dB ... +15 dB	<b>MIDI</b>
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<b>Rch MiQ</b>	Right-channel middle Q (bandwidth). 0.1 ... 10	
----------------	---	--

<b>Lch HiF</b>	Left-channel high frequency. 1.0 kHz ... 16 kHz	<b>MIDI</b>
----------------	--	-------------

Sets the center frequency of the high equalizer band.

<b>Lch HiG</b>	Left-channel high gain. -15 dB ... +15 dB	<b>MIDI</b>
----------------	--	-------------

Sets the amount of boost or cut applied to the high-band frequencies.

<b>Lch HiQ</b>	Left-channel high quality factor (bandwidth). 0.1 ... 10	
----------------	---	--

Sets the bandwidth of the high EQ band. Higher values produce a sharper (narrower) bandwidth.

<b>Rch HiF</b>	Right-channel high frequency. 1.0 kHz ... 16 kHz	<b>MIDI</b>
----------------	---	-------------

<b>Rch HiG</b>	Right-channel high gain. -15 dB ... +15 dB	<b>MIDI</b>
----------------	---	-------------

<b>Rch HiQ</b>	Right-channel high Q (bandwidth). 0.1 ... 10	
----------------	---	--

<b>Lch HPF</b>	Left-channel high-pass filter frequency. THRU, 20 Hz ... 1.0 kHz	
----------------	---	--

Sets the cutoff frequency of the left-channel high-pass filter. The "THRU" setting bypasses the filter.

<b>Lch LPF</b>	Left-channel low-pass filter frequency. 1.0 kHz ... 10 kHz, THRU	
----------------	---	--

Sets the cutoff frequency of the left-channel low-pass filter. The "THRU" setting bypasses the filter.

<b>Lch LVL</b>	Left-channel output level. -∞, -30 dB ... +6 dB	<b>MIDI</b>
----------------	--	-------------

Sets the left-channel output level of the PEQ effect.

<b>Rch HPF</b>	Right-channel high-pass filter frequency. THRU, 20 Hz ... 1.0 kHz	
----------------	--	--

<b>Rch LPF</b>	Right-channel low-pass filter frequency. 1.0 kHz ... 10 kHz, THRU	
----------------	--	--

<b>Rch LVL</b>	Right-channel output level. -∞, -30 dB ... +6 dB	<b>MIDI</b>
----------------	---	-------------

## Stereo Enhancer (ENH)

This program artificially adds appropriate harmonics to the input signal, adding luster and effectively bringing "buried" sounds to the foreground.

This effect includes a LINK parameter that can be turned ON if you want parameter changes to be applied to both the left and right channels simultaneously.

**Lch FRQ** Left-channel high-pass filter frequency. **MIDI**  
400 Hz ... 10 kHz

Determines the cutoff frequency of the left-channel high-pass filter. This parameter makes it possible to specify the range of frequencies that will be affected by the enhancer — i.e. only frequency above the cutoff will be enhanced.

**Lch DRV** Left-channel drive level.  
0 ... 100

Sets the level of the harmonics added to the left-channel input sound. The higher the value, the greater the enhancer effect.

**Lch MIX** Left-channel mix level. **MIDI**  
0 ... 100

Sets the mixture or balance between the direct input sound and the applied harmonics. A setting of "0" produces only the direct sound.

**Rch FRQ** Right-channel high-pass filter frequency. **MIDI**  
400 Hz ... 10 kHz

**Rch DRV** Right-channel drive level.  
0 ... 100

**Rch MIX** Right-channel mix level. **MIDI**  
0 ... 100

**Lch LVL** Left-channel output level. **MIDI**  
-∞, -30 dB ... +6 dB

Sets the left-channel output level of the enhancer effect.

**Rch LVL** Right-channel output level. **MIDI**  
-∞, -30 dB ... +6 dB

## Stereo Wah (WAH)

This fully programmable stereo wah effect can be controlled by input signal level, an internal LFO, a foot controller, or MIDI control change data.

**FRQ** Frequency. **MIDI**  
100 Hz ... 8.0 kHz

Sets the basic frequency around which the wah filter sweep will occur — i.e. the center or cutoff frequency of the selected filter type.

**GAI** Gain.  
-18 dB ... +18 dB

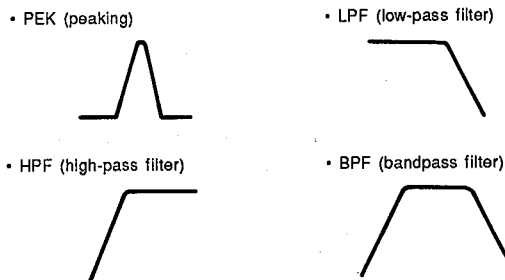
This parameter is only available when the "PEK" filter type is selected in the "TYP" parameter. It sets the gain of the filter peak — minus values for a notch response and plus values for a normal peak response.

**Q** Quality factor (bandwidth).  
0.7 ... 8.0

When the TYP parameter, below, is set to "PEK" or "BPF," this parameter sets the bandwidth of the peak or passband. When TYP is set to "LPF" or "HPF," the Q parameter controls resonance (a peak at the filter cutoff frequency). Higher values produce a narrower bandwidth or higher resonant peak.

**TYP** Filter type.  
PEK, LPF, HPF, BPF

Selects the type of filter response used to produce the wah effect — PEK = peaking; LPF = low-pass filter; HPF = high-pass filter; BPF = bandpass filter.



**SPD** Modulation speed. **MIDI**  
0.1 Hz ... 10 Hz

Sets the speed of the internal low-frequency oscillator.

**SEN** Sensitivity. **MIDI**  
0 ... 10

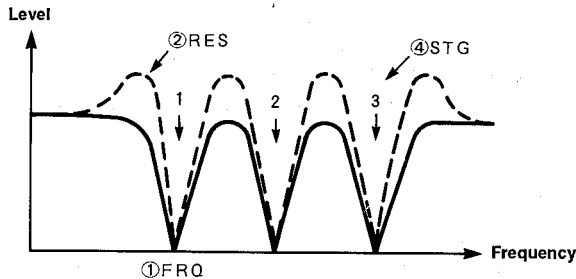
Determines the sensitivity of the wah effect. Higher values produce a broader frequency sweep.

**LVL** Output level. **MIDI**  
-∞, -30 dB ... +6 dB

Sets the output level of the Stereo Wah effect.

## Phaser (PHS)

This is an excellent simulation of traditional "phaser" effects, producing a gentle phase-shift sound that can be used to add extra animation to a wide range of source signals.



<b>FRQ</b>	Frequency.	<b>MIDI</b>
	100 Hz ... 8.0 kHz	

Sets the basic frequency around which the phase sweep will occur.

<b>RES</b>	Resonance.	
	0 ... 10	

Creates a resonant peak at the frequency determined by the FRQ parameter, above. The higher the value the higher the peak, and the more the sound at that frequency is emphasized.

<b>SPD</b>	Modulation speed.	<b>MIDI</b>
	0.1 Hz ... 10 Hz	

Sets the speed of the internal low-frequency oscillator, and therefore the speed of the phaser sweep.

<b>STG</b>	Stages.	
	1, 2, 3, 4	

Sets the number of phase-shift "stages" to be used. The more stages, the more pronounced the phaser effect.

<b>DEP</b>	Modulation depth.	<b>MIDI</b>
	0 ... 100	

Sets the depth of phase modulation.

<b>LVL</b>	Output level.	<b>MIDI</b>
	$-\infty$ , -30 dB ... +6 dB	

Sets the output level of the phaser effect.

## Overdrive (OVD)

The Overdrive effect produces a smooth, rich overdrive distortion sound that can be adjusted to achieve an extremely wide variety of effects. In addition to providing full control of the degree of overdrive produced, a built-in noise gate function with adjustable trigger level effectively shuts out unwanted noise. The overdrive effect also includes a versatile equalizer for broad sound-shaping control.

<b>OVD</b>	Overdrive level.	<b>MIDI</b>
	0 ... 200	

Sets the degree of overdrive distortion produced. Higher values produce more distortion.

<b>TON</b>	Tone.	
	0 ... 10	

Adjusts the overall tone of the overdrive sound. Higher values produce a brighter tone.

<b>NGL</b>	Noise gate level.	
	0 ... 20	

Sets the threshold level of the overdrive effect noise gate. Signals below the threshold level are suppressed, thus reducing noise. Caution: excessively high NGL levels can cause notes to be cut off unnaturally.

<b>LVL</b>	Overdrive output level.	
	$-\infty$ , -30 dB ... +6 dB	

Sets the output level of the overdrive signal.

<b>WAR</b>	Warmth.	<b>MIDI</b>
	0 ... 6	

Emphasizes the low to mid-frequencies, thereby adding "warmth" to the sound. Higher values produce a warmer sound.

<b>BRI</b>	Brightness.	<b>MIDI</b>
	0 ... 6	

Emphasizes the high-frequency range, thereby increasing the brightness of the sound. Higher values produce a brighter sound.

<b>LoG</b>	Low gain.	
	-15 dB ... +15 dB	

Sets the amount of boost or cut applied to frequencies below 280 Hz. A setting of 0 produces no boost or cut. Minus values produce cut and plus values produce boost.

<b>HiG</b>	High gain.	
	-15 dB ... +15 dB	

Sets the amount of boost or cut applied to frequencies above 6.3 kHz. A setting of 0 produces no boost or cut. Minus values produce cut and plus values produce boost.

<b>MiF</b>	Middle frequency. 400 Hz ... 8.0 kHz
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Sets the center frequency of the Mid equalizer band.

<b>MiG</b>	Middle gain. -15 dB ... +15 dB
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Sets the amount of boost or cut applied to mid-band frequencies. A setting of 0 produces no boost or cut. Minus values produce cut and plus values produce boost.

<b>MiQ</b>	Middle Q. 0.5 ... 10
------------	-------------------------

Sets the bandwidth of the middle distortion band. Higher values produce a sharper (narrower) bandwidth.

<b>LVL</b>	Equalizer output level. -∞, -30 dB ... +6 dB
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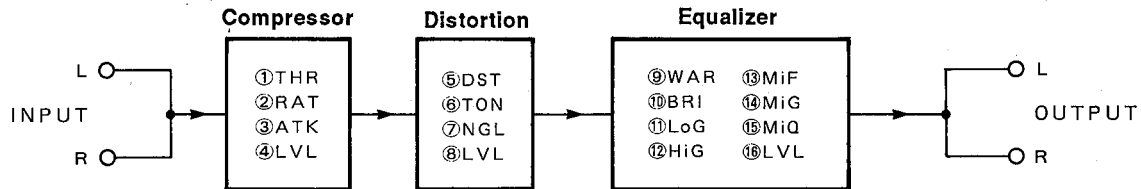
<b>MIDI</b>
-------------

Sets the output level of the overdrive equalizer.

## Compressor-Distortion-EQ (CDE)

This effect actually combines a versatile compressor, distortion, and three-band equalization in a single effect stage. The parameters have the same effect as the equivalent

parameters in the Compressor/Limiter (page 24) and Overdrive (page 28) effects — refer to those pages for details.



<b>THR</b>	Threshold level. -30 dB ... +12 dB	<b>MIDI</b>
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<b>RAT</b>	Ratio. 1/2, 1/3, 1/4, 1/6, 1/8, 1/∞
------------	--

<b>ATK</b>	Attack time. 1.0 ... 20 milliseconds
------------	---

<b>LVL</b>	Compressor output level. -∞, -30 dB ... +6 dB	<b>MIDI</b>
------------	--	-------------

<b>DST</b>	Distortion level. 0 ... 200	<b>MIDI</b>
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<b>TON</b>	Tone. 0 ... 10
------------	-------------------

<b>NGL</b>	Noise gate level. 0 ... 20
------------	-------------------------------

<b>LVL</b>	Distortion output level. -∞, -30 dB ... +6 dB
------------	--

<b>WAR</b>	Warmth. 0 ... 6	<b>MIDI</b>
------------	--------------------	-------------

<b>BRI</b>	Brightness. 0 ... 6	<b>MIDI</b>
------------	------------------------	-------------

<b>LoG</b>	Low gain. -15 dB ... +15 dB
------------	--------------------------------

<b>HiG</b>	High gain. -15 dB ... +15 dB
------------	---------------------------------

<b>MiF</b>	Middle frequency. 400 Hz ... 8.0 kHz
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<b>MiG</b>	Middle gain. -15 dB ... +15 dB
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<b>MiQ</b>	Middle Q. 0.5 ... 10
------------	-------------------------

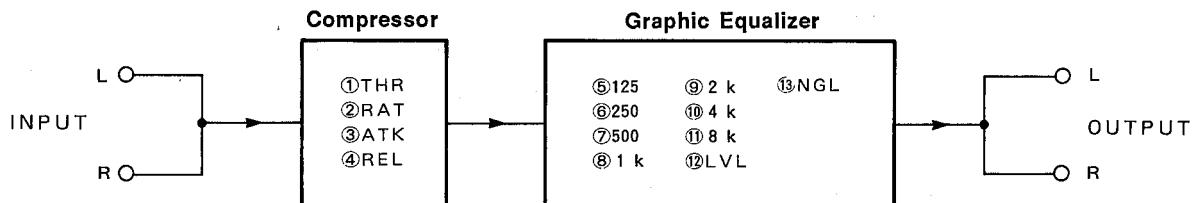
<b>LVL</b>	Output level. -∞, -30 dB ... +6 dB	<b>MIDI</b>
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## Compressor-Graphic EQ (GEQ)

This effect combines a compressor with a 7-band graphic equalizer and noise gate. The compressor parameters are the same as the equivalent parameters in the Compressor!

Limiter effect (page 24).



<b>THR</b>	Threshold level.	<b>MIDI</b>
	-30 dB ... +12 dB	

<b>RAT</b>	Ratio.
	1/2, 1/3, 1/4, 1/6, 1/8, 1/∞

<b>ATK</b>	Attack time.
	1.0 ... 20 milliseconds

<b>REL</b>	Release time.
	0.01 ... 2.0 seconds

<b>125</b>	GEQ 125 Hz band.
	-15 dB ... +15 dB

Sets the amount of boost or cut applied to the 125 Hz equalizer band. A setting of 0 produces no boost or cut. Minus values produce cut and plus values produce boost. The same applies to the remaining 6 equalizer bands, below.

<b>250</b>	GEQ 250 Hz band.
	-15 dB ... +15 dB

<b>500</b>	GEQ 500 Hz band.
	-15 dB ... +15 dB

<b>1k</b>	GEQ 1 kHz band.
	-15 dB ... +15 dB

<b>2k</b>	GEQ 2 kHz band.
	-15 dB ... +15 dB

<b>4k</b>	GEQ 4 kHz band.
	-15 dB ... +15 dB

<b>8k</b>	GEQ 8 kHz band.
	-15 dB ... +15 dB

<b>LVL</b>	Output level.	<b>MIDI</b>
	-∞, -30 dB ... +18 dB	

<b>NGL</b>	Noise gate level.
	0 ... 20

## REV Group Effects

### Chorus (CHO)

The chorus effect combines delay time and amplitude modulation to effectively thicken and add warmth to the sound.

<b>SPD</b>	Modulation speed.	<b>MIDI</b>
	0.1 Hz... 20 Hz	

Sets the speed of LFO modulation and therefore the rate at which the chorus effect varies.

<b>PMD</b>	Pitch modulation depth.	<b>MIDI</b>
	0% ... 100%	

Sets the depth of pitch modulation. Higher values produce deeper pitch modulation.

<b>AMD</b>	Amplitude modulation depth	<b>MIDI</b>
	0% ... 100%	

Sets the depth of amplitude modulation. Higher values produce deeper amplitude modulation.

<b>MDLY</b>	Modulation delay.
	3.0 ... 20.0 milliseconds

Sets the modulation delay time. Short delays produce the greatest effect in the high-frequency range, while with long delay times the effect extends to the middle frequencies.

<b>PDLY</b>	Pre delay.
	0.1 ... 100 milliseconds

Sets the delay time before the Chorus sound begins.

<b>DLYL</b>	Left-channel output delay.
	0.1 ... 50 milliseconds

Applies the specified amount of delay to the left-channel output signal.

<b>DLYR</b>	Right-channel output delay.
	0.1 ... 50 milliseconds

Applies the specified amount of delay to the right-channel output signal.

<b>FB</b>	Feedback.
	0% ... 100%

Determines the amount of effect-sound feedback returned to the input of the processor. Higher values produce a more pronounced effect.

<b>HPF</b>	High-pass filter frequency.
	THRU, 40 Hz ... 1.0 kHz

Sets the cutoff frequency of the high-pass filter. The "THRU" setting bypasses the filter.

<b>LPF</b>	Low-pass filter frequency.
	1.0 kHz ... 16 kHz, THRU

Sets the cutoff frequency of the low-pass filter. The "THRU" setting bypasses the filter.

<b>WID</b>	Sound image width.
	0 ... 10

Determines the strength of a feeling of "width" between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

<b>MIX</b>	Mix.	<b>MIDI</b>
	0% ... 100%	

Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

<b>LVL</b>	Output level.	<b>MIDI</b>
	$-\infty$ , -30 dB ... +6 dB	

Sets the output level of the Chorus effect.

## Flanger (FLA)

*Flanging is a fairly pronounced effect based primarily on delay time modulation. By adjusting the various parameters you should be able to create an extremely broad range of sounds, from gentle shimmering to wild sweeps.*

<b>SPD</b>	Modulation speed.	<b>MIDI</b>
0.1 Hz... 20 Hz		

Sets the speed of modulation and therefore the rate of effect variation.

<b>PMD</b>	Pitch modulation depth.	<b>MIDI</b>
0% ... 100%		

Sets the depth of pitch modulation. Higher values produce deeper modulation.

<b>AMD</b>	Amplitude modulation depth	<b>MIDI</b>
0% ... 100%		

Sets the depth of amplitude modulation. Higher values produce deeper modulation.

<b>MDLY</b>	Modulation delay.
0.2 ... 20.0 milliseconds	

Sets the modulation delay time. Delay times shorter than 1 millisecond produce the greatest effect in the high-frequency range, while with delay times from 1 to 3 milliseconds the effect extends to the middle frequencies.

<b>PDLY</b>	Pre delay.
0.1 ... 100 milliseconds	

Sets the delay time before the Flanger sound begins.

<b>DLYL</b>	Left-channel output delay.
0.1 ... 50 milliseconds	

Applies the specified amount of delay to the left-channel output signal.

<b>DLYR</b>	Right-channel output delay.
0.1 ... 50 milliseconds	

Applies the specified amount of delay to the right-channel output signal.

<b>FB</b>	Feedback.
-100% ... +100%	

Determines the amount of effect-sound feedback returned to the input of the processor. Higher values produce a more pronounced effect.

<b>HPF</b>	High-pass filter frequency.
THRU, 100 Hz ... 1.0 kHz	

Sets the cutoff frequency of the high-pass filter. The "THRU" setting bypasses the filter.

<b>LPF</b>	Low-pass filter frequency.
1.0 kHz ... 11 kHz, THRU	

Sets the cutoff frequency of the low-pass filter. The "THRU" setting bypasses the filter.

<b>WID</b>	Sound image width.
0 ... 10	

Determines the strength of a feeling of "width" between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

<b>MIX</b>	Mix.	<b>MIDI</b>
0% ... 100%		

Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

<b>LVL</b>	Output level.	<b>MIDI</b>
-∞, -30 dB ... +6 dB		

Determines the output level of the Flanger effect.

## Symphonic (SYM)

*Symphonic is a broad, sweeping effect that adds a sense of scale to the sound.*

<b>SPD</b>	Modulation speed.	<b>MIDI</b>
0.1 Hz... 20 Hz		

Sets the speed of modulation and therefore the rate of effect variation.

<b>DEP</b>	Modulation depth.	<b>MIDI</b>
0% ... 100%		

Sets the depth of modulation. Higher values produce deeper modulation.

<b>MDLY</b>	Modulation delay.	
3.0 ... 20.0 milliseconds		

Sets the modulation delay time. Short delays produce the greatest effect in the high-frequency range, while with long delay times the effect extends to the middle frequencies.

<b>PDLY</b>	Pre delay.	
0.1 ... 100 milliseconds		

Sets the delay time before the Symphonic sound begins.

<b>DLYL</b>	Left-channel output delay.	
0.1 ... 50 milliseconds		

Applies the specified amount of delay to the left-channel output signal.

<b>DLYR</b>	Right-channel output delay.	
0.1 ... 50 milliseconds		

Applies the specified amount of delay to the right-channel output signal.

<b>FB</b>	Feedback.	
0% ... 100%		

Determines the amount of effect-sound feedback returned to the input of the processor. Higher values produce a more pronounced effect.

<b>HPF</b>	High-pass filter frequency.	
THRU, 40 Hz ... 1.0 kHz		

Sets the cutoff frequency of the high-pass filter. The "THRU" setting bypasses the filter.

<b>LPF</b>	Low-pass filter frequency.	
1.0 kHz ... 16 kHz, THRU		

Sets the cutoff frequency of the low-pass filter. The "THRU" setting bypasses the filter.

<b>WID</b>	Sound image width.	
0 ... 10		

Determines the strength of a feeling of "width" between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

<b>MIX</b>	Mix.	<b>MIDI</b>
0% ... 100%		

Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

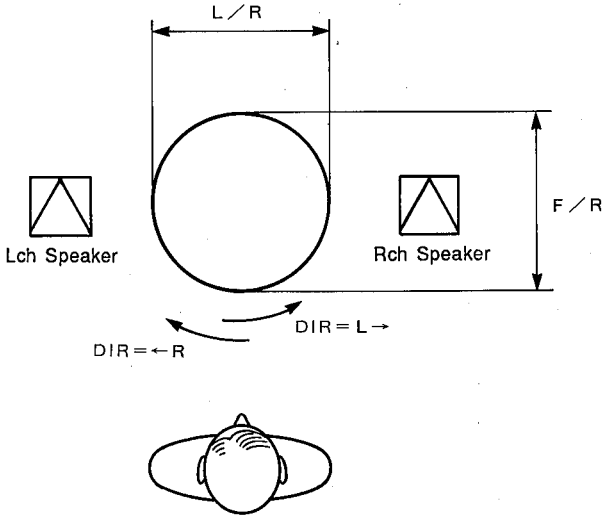
<b>LVL</b>	Output level.	<b>MIDI</b>
-∞, -30 dB ... +6 dB		

Sets the output level of the Symphonic effect.

# Round Pan (PAN)

This is a very sophisticated pan program that allows creation of "rotary" pan in addition to straightforward pan effects.

## Apparent motion of sound image



<b>SPD</b>	Modulation speed.	<b>MIDI</b>
	0.1 Hz... 20 Hz	

Sets the speed of the PAN effect (i.e. how rapidly the signal sweeps from channel to channel).

<b>L/R</b>	Left/right modulation depth.	<b>MIDI</b>
	0% ... 100%	

Sets the "depth" of the pan sweep from left to right and right to left.

<b>F/R</b>	Front/rear modulation depth.	<b>MIDI</b>
	0% ... 100%	

This parameter sets the apparent depth of the sweep from front to rear.

<b>DIR</b>	Direction.
	L→ ... ←R

Determines the direction in which the sound sweeps across the stereo sound field.

<b>TYP</b>	Filter type.
	HPF, LPF

Determines the type of filter to be applied to the Round Pan effect: HPF (high-pass filter) or LPF (low-pass filter). Please note that whenever the setting of this parameter is changed, the "FRQ" parameter, below, is automatically set to "Thru."

<b>FRQ</b>	Frequency.
	HPF: Thru, 40 Hz ... 1 kHz.
	LPF: 1.0 kHz ... 16 kHz, Thru

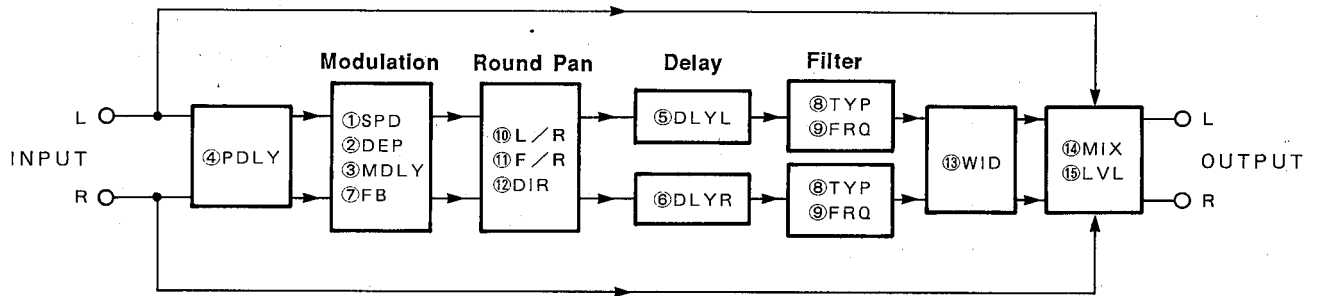
Sets the cutoff frequency of the filter type determined by the TYP parameter, above.

<b>LVL</b>	Output level.	<b>MIDI</b>
	-∞, -30 dB ... +6 dB	

Sets the output level of the Round Pan effect

## Hyper Modulation Delay (HMD)

This effect is an innovative combination of modulation, pan and delay.



<b>SPD</b>	Modulation speed. 0.1 Hz... 20 Hz	<b>MIDI</b>
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Sets the speed of modulation and therefore the rate of effect variation.

<b>DEP</b>	Modulation depth. 0% ... 100%	<b>MIDI</b>
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Sets the depth of modulation. Higher values produce deeper modulation.

<b>MDLY</b>	Modulation delay. 3.0 ... 20.0 milliseconds
-------------	--

Sets the modulation delay time. Short delays produce the greatest effect in the high-frequency range, while with long delay times the effect extends to the middle frequencies.

<b>PDLY</b>	Pre delay. 0.1 ... 100 milliseconds
-------------	--

Sets the delay time before the hyper modulation sound begins.

<b>DLYL</b>	Left-channel output delay. 0.1 ... 50 milliseconds
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Applies the specified amount of delay to the left-channel output signal.

<b>DLYR</b>	Right-channel output delay. 0.1 ... 50 milliseconds
-------------	--

Applies the specified amount of delay to the right-channel output signal.

<b>FB</b>	Feedback. 0% ... 100%
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Determines the amount of effect-sound feedback returned to the input of the processor. Higher values produce a more pronounced effect.

<b>TYP</b>	Filter type. HPF, LPF
------------	--------------------------

Determines the type of filter to be applied to the Hyper Modulation effect: HPF (high-pass filter) or LPF (low-pass filter). Please note that whenever the setting of this parameter is changed, the "FRQ" parameter, below, is automatically set to "Thru."

<b>FRQ</b>	Frequency. HPF: Thru, 40 Hz ... 1 kHz. LPF: 1.0 kHz ... 16 kHz, Thru
------------	--

Sets the cutoff frequency of the filter type determined by the TYP parameter, above.

<b>L/R</b>	Left/right modulation depth. 0% ... 100%	<b>MIDI</b>
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Sets the "depth" of the modulation sweep from left to right and right to left.

<b>F/R</b>	Front/rear modulation depth. 0% ... 100%	<b>MIDI</b>
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This parameter sets the apparent depth of the sweep from front to rear.

<b>DIR</b>	Direction. L → ... ← R
------------	---------------------------

Determines the direction in which the sound sweeps across the stereo sound field.

<b>WID</b>	Sound image width. 0 ... 10
------------	--------------------------------

Determines the strength of a feeling of "width" between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

<b>MIX</b>	Mix.	<b>MIDI</b>
0% ... 100%		

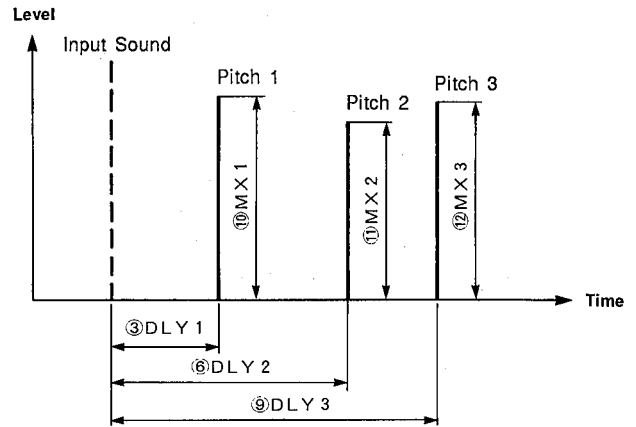
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

<b>LVL</b>	Output level.	<b>MIDI</b>
-∞, -30 dB ... +6 dB		

Sets the output level of the Hyper Modulation effect.

## Triple Pitch Change (TPI)

The Triple Pitch Change effect produces three independent pitch-shifted notes in addition to the original note, making it possible to produce automatic four-part harmonies.



<b>PC1</b>	Pitch 1.
-12 ... +12	

This parameter sets the pitch of the first pitch-shifted note between one octave below (-12) and one octave above (+12) the input note. Each increment corresponds to one semitone. The PC2 and PC3 parameters, below, do the same for the second and third pitch-shifted notes.

<b>FI1</b>	Fine pitch 1.
-99 ... +99	

Permits fine tuning of the first pitch-shifted note in 1-cent steps (1 cent is 1/100th of a semitone). The FI2 and FI3 parameters, below, do the same for the second and third pitch-shifted notes.

<b>DLY1</b>	Delay 1.	<b>MIDI</b>
0.1 ... 1300.0 milliseconds		

Determines the time delay between input of the original note and output of the first pitch-shifted note. The DL2 and DL3 parameters, below, do the same for the second and third pitch-shifted notes.

<b>PC2</b>	Pitch 2.
-12 ... +12	

<b>FI2</b>	Fine pitch 2.
-99 ... +99	

<b>DLY2</b>	Delay 2.	<b>MIDI</b>
0.1 ... 1300.0 milliseconds		

<b>PC3</b>	Pitch 3.
-12 ... +12	

<b>F3</b>	Fine pitch 3. -99 ... +99
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<b>DLY3</b>	Delay 3. 0.1 ... 1300.0 milliseconds	<b>MIDI</b>
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<b>MX1</b>	Pitch 1 mix. 0 ... 100 %	<b>MIDI</b>
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Sets the amount of the first pitch-shifted note mixed with the original signal. The MX2 and MX3 parameters, below, do the same for the second and third pitch-shifted notes.

<b>MX2</b>	Pitch 2 mix. 0 ... 100 %	<b>MIDI</b>
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<b>MX3</b>	Pitch 3 mix. 0 ... 100 %	<b>MIDI</b>
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<b>PA1</b>	Pitch 1 pan. L, L<<, L<, L=R, >R, >>R, R
------------	---

Sets the stereo position of the first pitch-shifted note. The PA2 and PA3 parameters, below, do the same for the second and third pitch-shifted notes.

<b>PA2</b>	Pitch 2 pan. L, L<<, L<, L=R, >R, >>R, R
------------	---

<b>PA3</b>	Pitch 3 pan. L, L<<, L<, L=R, >R, >>R, R
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<b>FB</b>	Feedback. 0% ... 100%	<b>MIDI</b>
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When this parameter is set to 0, only a single pitch-shifted sound is produced after each delay time has elapsed. As the value of this parameter is increased, however, more and more delayed repeats are produced, each pitch-shifted up or down from the previous repeat according to the settings of the PC1 through PC3 parameters.

<b>HF</b>	Feedback high frequency. 1.0 kHz ... 16 kHz, Thru
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Sets the cutoff frequency of a low-pass filter to be applied to the feedback signal. No filter is applied when the "Thru" setting is selected.

<b>KEY</b>	Base key. Off, C1 ... C6
------------	-----------------------------

This parameter sets the "base key" for an external MIDI synthesizer used to control the amount of pitch change produced (the MIDI OUT terminal of the synthesizer must be connected to the EMP700 MIDI IN terminal, and the EMP700 must be set to receive on the MIDI channel on which the synthesizer is transmitting). If, for example, the KEY parameter is set to C4, pressing the C3 key on the synthesizer (C3 is one octave lower than C4) will set the pitch change value to -12. Pressing D4 on the keyboard would produce a pitch increase of one whole-tone (+2).

When two or three keys are pressed, the highest note determines the pitch of the PC3 note, the center note determines the pitch of the PC2 note, and the lower note determines the pitch of the PC1 note.

If a key more than one octave higher or lower than the base key is pressed, the resultant pitch change setting will still be within the -12 to +12 range.

If the KEY parameter is set OFF, pitch cannot be controlled via the MIDI IN terminal.

<b>LPF</b>	Low-pass filter frequency. 1.0 kHz ... 16 kHz, Thru
------------	--

Sets the cutoff frequency of the low-pass filter applied to the overall sound of the effect. The "Thru" setting bypasses the filter.

<b>MIX</b>	Mix. 0% ... 100%	<b>MIDI</b>
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Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

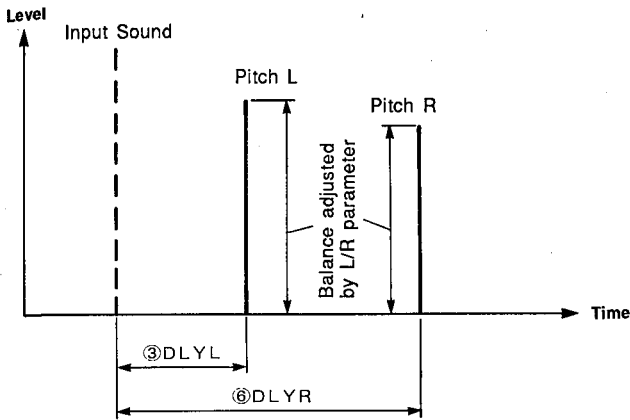
<b>LVL</b>	Output level. -∞, -30 dB ... +6 dB	<b>MIDI</b>
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Sets the output level of the Triple Pitch effect.



## Stereo Pitch Change (SPI)

The Stereo Pitch Change program produces two pitch-shifted notes independently for the left- and right-channel signals.



**PCL** Left pitch.  
-12 ... +12

Set the pitch of the left-channel pitch-shifted note between one octave below (-12) and one octave above (+12) the input note. The PCR parameter, below, does the same for the right-channel pitch-shifted note.

**FIL** Left fine pitch.  
-99 ... +99

Permits fine tuning of the left-channel pitch-shifted note in 1-cent steps (1 cent is 1/100th of a semitone). The FIR parameter, below, does the same for the right-channel pitch-shifted note.

**DLYL** Left delay. **MIDI**  
0.1 ... 650.0 milliseconds

Determines the time delay between input of the original note and output of the left-channel pitch-shifted note. The DLYR parameter, below, does the same for the right-channel pitch-shifted note.

**PCR** Right pitch.  
-12 ... +12

**FIR** Right fine pitch.  
-99 ... +99

**DLYR** Right delay. **MIDI**  
0.1 ... 650.0 milliseconds

**LLPF** Left low-pass filter frequency.  
1.0 kHz ... 16 kHz, Thru

Sets the cutoff frequency of the left-channel low-pass filter. The "THRU" setting bypasses the filter. The RLPF parameter, below, does the same for the right-channel filter.

**LFB** Left feedback.  
-100% ... +100%

When this parameter is set to 0, only a single pitch-shifted sound is produced in the corresponding channel after the delay time has elapsed. As the value is increased, however, more and more delayed repeats are produced, each pitch-shifted up or down from the previous repeat according to the settings of the PCL or PCR parameter. The RFB parameter, below, affects the right channel in the same way.

**RLPF** Right low-pass filter frequency.  
1.0 kHz ... 16 kHz, Thru

**RFB** Right feedback.  
-100% ... +100%

**KEY** Base key.  
Off, C1 ... C6

Same as the KEY parameter in the Triple Pitch effect (page 37) except that when two keys are pressed, the highest note determines the pitch of the PCL sound, and the lower note determines the pitch of the PCR sound.

**L/R** Left/right balance.  
L50 ... L=R ... R50

Sets the balance between the left- and right-channel pitch-shifted notes. A setting of "L50," for example, produces only the sound of the left-channel note. "L=R" produces both channels in equal balance. "R50" produces only the sound of the right-channel note.

**WID** Sound image width.  
0 ... 10

Determines the strength of a feeling of "width" between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

**MIX** Mix. **MIDI**  
0% ... 100%

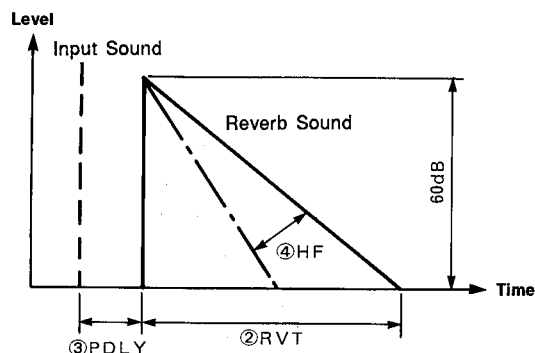
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

## Reverb (REV)

Reverberation is the warm musical "ambience" you experience when listening to music in a hall or other natural environment.

<b>LVL</b>	Output level.	<b>MIDI</b>
	-∞, -30 dB ... +6 dB	

Sets the output level of the Stereo Pitch effect.



<b>TYP</b>	Reverb type.
	Rhl, Rrm, Rvc, Rpl

The EMP700 offers several different reverb types, simulating types of reverberation you would experience in a hall (Rhl = Reverb Hall), in a smaller room (Rrm = Reverb Room), a reverb effect ideally suited to vocals (Rvc = Reverb Vocal), and the type of reverberation produced artificially by a plate reverberator (Rpl = Reverb Plate).

<b>RVT</b>	Reverb time.	<b>MIDI</b>
	0.3 ... 40 seconds	

Sets the amount of time it takes for the reverb sound to decay by 60 dB.

<b>PDLY</b>	Pre-delay.
	0.1 ... 500.0 milliseconds

Sets the delay time before the reverb sound begins.

<b>HF</b>	High-frequency damping.
	1 ... 10

Reduces the reverb time of the high frequencies in relation to the overall reverb time. Higher values produce longer high-frequency reverb times, gradually approaching the overall reverb time.

<b>TYP</b>	First filter type.
	HPF, LPF

Selects the type of filter to be used with the reverb effect: HPF = high-pass filter; LPF = low-pass filter. Please note that whenever the setting of this parameter is changed, the "FRQ" parameter, below, is automatically set to "Thru."

<b>FRQ</b>	First filter frequency. HPF: Thru, 40 Hz ... 1 kHz. LPF: 1.0 kHz ... 16 kHz, Thru
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Sets the cutoff frequency of the filter type selected in the preceding parameter (TYP). If the HPF is selected, the range is from 40 Hz to 1.0 kHz. If the LPF is selected the range is from 1.0 kHz to 16 kHz. In either case the "Thru" setting bypasses the filter.

<b>TYP</b>	Second filter type. HPF, LPF
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<b>FRQ</b>	Second filter frequency. HPF: Thru, 40 Hz ... 1 kHz. LPF: 1.0 kHz ... 16 kHz, Thru
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<b>E/R</b>	Early reflections balance. E50 ... E=R ... R50	<b>MIDI</b>
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Determines the balance between the early reflections portion of the reverb sound and the final, denser reverb sound. A setting of "E50," for example, produces only the sound of the early reflections. "E=R" produces both channels in equal balance. "R50" produces only the reverb.

<b>WID</b>	Sound image width. 0 ... 10
------------	--------------------------------

Determines the strength of a feeling of "width" between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

<b>MIX</b>	Mix. 0% ... 100%	<b>MIDI</b>
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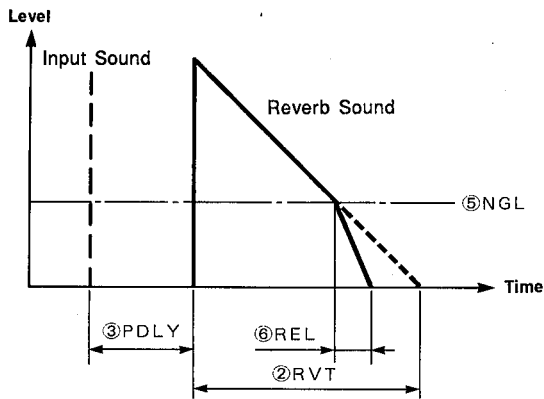
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

<b>LVL</b>	Output level. -∞, -30 dB ... +6 dB	<b>MIDI</b>
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Sets the output level of the Reverb effect.

## Gate Reverb (GRV)

The Gate Reverb effect combines reverb with a "gate" that has programmable threshold and release time parameters. All other parameters are the same as those in the Reverb effect (page 40).



**TYP** Reverb type.  
Rhl, Rrm, Rvc, Rpl

Rhl = Reverb Hall, Rrm = Reverb Room, Rvc = Reverb Vocal, and Rpl = Reverb Plate.

**RVT** Reverb time. **MIDI**  
0.3 ... 40 seconds

Sets the amount of time it takes for the reverb sound to decay by 60 dB.

**PDLY** Pre-delay.  
0.1 ... 500.0 milliseconds

Sets the delay time before the reverb sound begins.

**HF** High-frequency damping.  
1 ... 10

Sets the reverb time of the high frequencies in relation to the overall reverb time.

**NGL** Noise gate level. **MIDI**  
1 ... 100

Sets the threshold level of the reverb gate. Only signals above the threshold level will pass through the gate, producing the sharp, truncated sound of gated reverb.

**REL** Release time.  
1 ... 4

Determines how long it takes for the gate to close fully after the input signal drops below the threshold level. This parameter can be used to produce a gentler gate cutoff, allowing part or all of the natural decay of the signal to be heard.

**WID** Sound image width.  
0 ... 10

Determines the strength of a feeling of "width" between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

**MIX** Mix. **MIDI**  
0% ... 100%

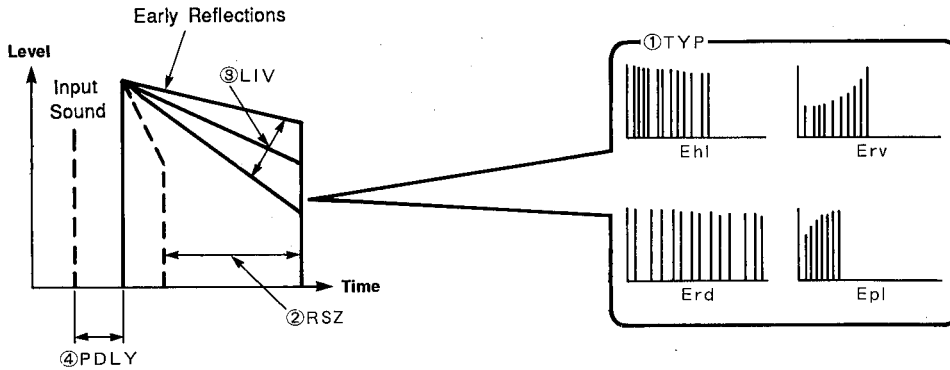
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

**LVL** Output level. **MIDI**  
 $-\infty$ , -30 dB ... +6 dB

Sets the output level of the Gate Reverb effect.

## Early Reflections (ER)

ER effects are created using different groupings of “early reflections” — the first cluster of reflections that occurs after the direct sound but before the dense reflections that are known as reverberation begin.



**TYP** Early reflection type.  
Eh1, Erd, Erv, Epl

The “Eh1” setting selects a typical grouping of early reflections that would occur in a performing environment such as a hall. “Erd” (Early Reflection Random) produces an irregular series of reflections that could not occur naturally. “Erv” (Early Reflection Reverse) generates a series of reflections that increase in level — like the effect produced by playing a recorded reverberation sound backwards. “Epl” (Early Reflection Plate) produces a typical grouping of reflections that would occur in a plate reverb unit.

**RSZ** Room size. **MIDI**  
0.1 ... 20

Sets the separation between reflections. The values increment in 0.1 steps from 0 to 10, while values above 10 increment in steps of 1. Higher values produce greater separation between reflections, and therefore the effect of a bigger room.

**LIV** Liveness. **MIDI**  
0 ... 10

Determines how the early reflections decay. Higher values result in slower decay, producing the effect of a more reflective (“live”) room.

**PDLY** Pre-delay.  
0.1 ... 500.0 milliseconds

Sets the delay time before the Early Reflection sound begins.

**HPF** High-pass filter frequency.  
Thru, 40 Hz ... 1.0 kHz

Sets the cutoff frequency of the high-pass filter. The “THRU” setting bypasses the filter.

**TYP** Filter type.  
HPF, LPF

Selects the type of a second filter to be used with the Early Reflections effect: HPF = high-pass filter; LPF = low-pass filter. Please note that whenever the setting of this parameter is changed, the “FRQ” parameter, below, is automatically set to “Thru.”

**FRQ** Filter frequency.  
HPF: Thru, 40 Hz ... 1 kHz.  
LPF: 1.0 kHz ... 16 kHz, Thru

Sets the cutoff frequency of the filter type selected in the preceding parameter (TYP). If the HPF is selected, the range is from 40 Hz to 1.0 kHz. If the LPF is selected the range is from 1.0 kHz to 16 kHz. In either case the “Thru” setting bypasses the filter.

**WID** Sound image width.  
0 ... 10

Determines the strength of a feeling of “width” between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

**MIX** Mix. **MIDI**  
0% ... 100%

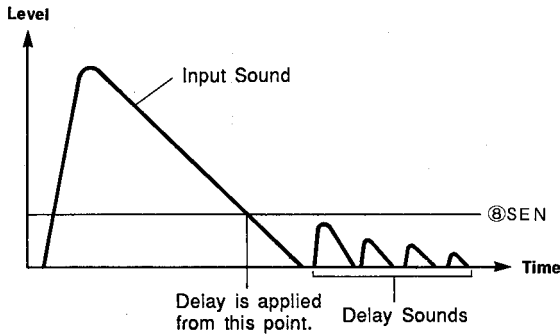
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

**LVL** Output level. **MIDI**  
-∞, -30 dB ... +6 dB

Sets the output level of the Early Reflections effect.

## After Delay (ADL)

This is a unique delay effect that produces louder repeats in response to low-level input signals and softer repeats in response to loud input signals. Subjectively, the effect can be similar to the delays often applied only to the last note in a passage. It can also be used to produce a fuller delay sound on soft passages while the delay level is reduced on louder passages to avoid a confusing, boomy sound.



<b>DLYL</b>	Left delay time.	<b>MIDI</b>
0.1 ... 1300.0 milliseconds		

Sets the delay time of the left channel. The DLYR parameter, below, does the same for the right channel.

<b>DLYR</b>	Right delay time.	<b>MIDI</b>
0.1 ... 1300.0 milliseconds		

<b>FBL</b>	Left feedback.	<b>MIDI</b>
0 ... 100%		

Determines the amount of effect-sound feedback returned to the input of the left channel processor. Higher values produce a greater number of repeats. The FBR parameter, below, does the same for the right channel.

<b>FBR</b>	Right feedback.	<b>MIDI</b>
0 ... 100%		

<b>HF</b>	Feedback high-frequency damping.
1.0 kHz ... 16 kHz, Thru	

Determines the cutoff frequency of the low-pass filter applied to the feedback signal.

<b>HPF</b>	High-pass filter frequency.
Thru, 40 Hz ... 1.0 kHz	

Sets the cutoff frequency of the high-pass filter applied to the overall effect. The "Thru" setting bypasses the filter.

<b>LPF</b>	Low-pass filter frequency.
1.0 kHz ... 16 kHz, Thru	

Sets the cutoff frequency of the low-pass filter applied to the overall effect. The "Thru" setting bypasses the filter.

<b>SEN</b>	Sensitivity.	<b>MIDI</b>
1 ... 4		

This parameter determines the relationship between the loudness of the direct and delay sound. The higher the sensitivity setting, the more pronounced the inverse difference in level between the direct and delay sound.

<b>MIX</b>	Mix.	<b>MIDI</b>
0% ... 100%		

Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

<b>LVL</b>	Output level.	<b>MIDI</b>
-∞, -30 dB ... +6 dB		

Sets the output level of the After Delay effect.

## Mono Delay (MDL)

*This is a relatively simple mono delay effect that includes modulation capability for extra variety.*

<b>DLY</b>	Delay time.	<b>MIDI</b>
0.1 ... 1300.0 milliseconds		

Sets the delay time — including the delay between repeats when multiple repeats are produced by using the FB parameter.

<b>HF</b>	Feedback filter.
1.0 kHz ... 16 kHz, Thru	

Sets the cutoff frequency of the low-pass filter applied to the feedback signal. When the “Thru” setting is selected the filter is bypassed.

<b>FB</b>	Feedback.
0 ... 100%	

Determines the amount of effect-sound feedback returned to the input of the delay effect, and therefore the number of gradually-decaying repeats produced. Higher values produce a greater number of repeats.

<b>SPD</b>	Modulation speed.	<b>MIDI</b>
0.1 Hz ... 20.0 Hz		

Determines the speed of delay modulation.

<b>DEP</b>	Modulation depth.	<b>MIDI</b>
0 ... 100%		

Determines the depth of delay modulation.

<b>TYP</b>	Filter type.
HPF, LPF	

Selects the type of the filter to be used with the Mono Delay effect: HPF = high-pass filter; LPF = low-pass filter. Please note that whenever the setting of this parameter is changed, the “FRQ” parameter, below, is automatically set to “Thru.”

<b>FRQ</b>	Filter frequency.
HPF: Thru, 40 Hz ... 1 kHz.	
LPF: 1.0 kHz ... 16 kHz, Thru	

Sets the cutoff frequency of the filter type selected in the preceding parameter (TYP). If the HPF is selected, the range is from 40 Hz to 1.0 kHz. If the LPF is selected the range is from 1.0 kHz to 16 kHz. In either case the “Thru” setting bypasses the filter.

<b>MIX</b>	Mix.	<b>MIDI</b>
0% ... 100%		

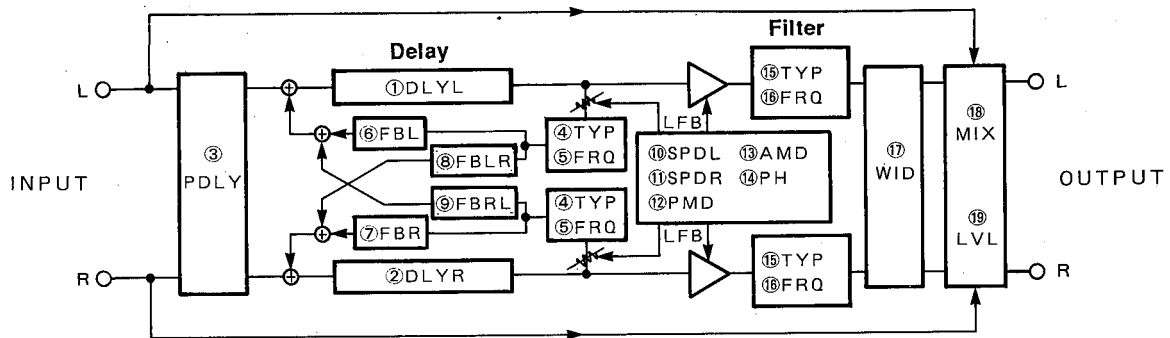
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

<b>LVL</b>	Output level.	<b>MIDI</b>
-∞, -30 dB ... +6 dB		

Sets the output level of the Mono Delay effect.

## Stereo Modulation Delay (SMD)

This delay effect uses delay modulation to create a range of pitch and amplitude modulated sounds.



**DLYL** Left feedback delay. **MIDI**  
0.3 ... 600.0 milliseconds

Sets the delay time before feedback begins for the left channel. The DLYR parameter, below, does the same for the right channel.

**DLYR** Right feedback delay. **MIDI**  
0.3 ... 600.0 milliseconds

**PDLY** Pre-delay.  
0.1 ... 100.0 milliseconds

Sets the delay before the first repeat.

**TYP** Feedback filter type.  
HPF, LPF

Selects the type of feedback filter to be used with the Stereo Mod Delay effect: HPF = high-pass filter; LPF = low-pass filter.

**FRQ** Filter frequency.  
HPF: Thru, 40 Hz ... 1 kHz.  
LPF: 1.0 kHz ... 16 kHz, Thru

Sets the cutoff frequency of the filter type selected in the preceding parameter (TYP). If the HPF is selected, the range is from 40 Hz to 1.0 kHz. If the LPF is selected the range is from 1.0 kHz to 16 kHz. In either case the "Thru" setting bypasses the filter.

**FBL** Left feedback.  
0 ... 100%

Determines the amount of effect-sound feedback returned to the input of the left channel processor. Higher values produce a greater number of repeats. The FBR parameter, below, does the same for the right channel.

**FBR** Right feedback.  
0 ... 100%

**FBLR** Left cross feedback.  
0 ... 100%

The FBLR parameter determines the amount of effect-sound feedback from the left channel returned to the input of the right-channel processor. The FBRL parameter, below, works in the opposite direction — right-channel output to left-channel input.

**FBRL** Right cross feedback.  
0 ... 100%

**SPDL** Left modulation speed. **MIDI**  
0.1 Hz ... 20.0 Hz

Sets the modulation speed for the left channel. The SPDR parameter, below, does the same for the right channel.

**SPDR** Right modulation speed **MIDI**  
0.1 Hz ... 20.0 Hz

**PMD** Pitch modulation depth. **MIDI**  
-100% ... +100%

Sets the depth of pitch modulation (vibrato). Negative settings produce reverse-phase modulation.



**AMD** Amplitude modulation depth. **MIDI**  
-100% ... +100%

Sets the depth of amplitude modulation (tremolo). Negative settings produce reverse-phase modulation.

**PH** Left/right modulation phase.  
NOR, INV

Sets the phase of the left and right-channel modulation to normal (NOR: both channels have the same phase), or inverse (INV: channels out of phase). If the "INV" setting is selected and fairly deep amplitude modulation is applied via the AMD parameter, an auto-pan effect is produced.

**TYP** Filter type.  
HPF, LPF

Selects the type of the filter to be used with the Stereo Mod Delay effect: HPF = high-pass filter; LPF = low-pass filter. Please note that whenever the setting of this parameter is changed, the "FRQ" parameter, below, is automatically set to "Thru."

**FRQ** Filter frequency.  
HPF: Thru, 40 Hz ... 1 kHz.  
LPF: 1.0 kHz ... 16 kHz, Thru

Sets the cutoff frequency of the filter type selected in the preceding parameter (TYP). If the HPF is selected, the range is from 40 Hz to 1.0 kHz. If the LPF is selected the range is from 1.0 kHz to 16 kHz. In either case the "Thru" setting bypasses the filter.

**WID** Sound image width.  
0 ... 10

Determines the strength of a feeling of "width" between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

**MIX** Mix. **MIDI**  
0% ... 100%

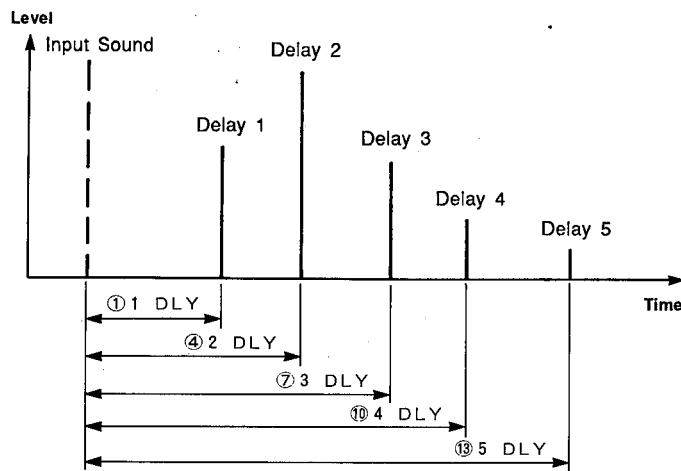
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

**LVL** Output level. **MIDI**  
-∞, -30 dB ... +6 dB

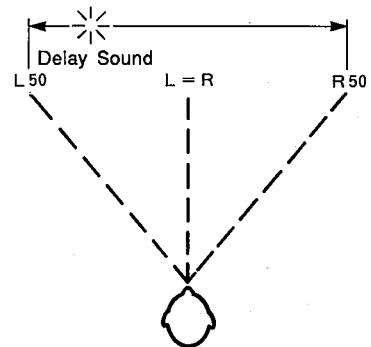
Sets the output level of the Stereo Mod Delay effect.

## Multi Tap Delay (MTD)

This is a multi-tap delay effect in which the time, stereo position, and level of up to 5 separate delays can be individually programmed.



Stereo positions of delays 1 ... 5 determined by the corresponding PAN parameters.



<b>1 DLY</b>	Tap delay time 1. 0.1 ... 1200.0 milliseconds	<b>MIDI</b>
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The first delay time. The remaining 4 delays are programmed via the 2 DLY, 3 DLY, 4 DLY, and 5 DLY parameters.

<b>1 PAN</b>	Tap delay pan 1. L50 ... L=R ... R50
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Sets the stereo position of the first delay. A setting of "L50" positions the sound all the way to the left; "L=R" positions the delay sound at the center; and "R50" positions the sound all the way to the right. The stereo positions of the remaining 4 delays are programmed via the 2 PAN, 3 PAN, 4 PAN, and 5 PAN parameters.

<b>1 LVL</b>	Tap delay level 1. -100% ... +100%	<b>MIDI</b>
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The output level of the first delay sound. Minus values produce a reverse-phase delay sound. The output levels of the remaining 4 delays are programmed via the 2 LVL, 3 LVL, 4 LVL, and 5 LVL parameters.

<b>2 DLY</b>	Tap delay time 2. 0.1 ... 1200.0 milliseconds	<b>MIDI</b>
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<b>2 PAN</b>	Tap delay pan 2. L50 ... L=R ... R50
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<b>2 LVL</b>	Tap delay level 2. -100% ... +100%	<b>MIDI</b>
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<b>3 DLY</b>	Tap delay time 3. 0.1 ... 1200.0 milliseconds	<b>MIDI</b>
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<b>3 PAN</b>	Tap delay pan 3. L50 ... L=R ... R50
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<b>3 LVL</b>	Tap delay level 3. -100% ... +100%	<b>MIDI</b>
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<b>4 DLY</b>	Tap delay time 4. 0.1 ... 1200.0 milliseconds	<b>MIDI</b>
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<b>4 PAN</b>	Tap delay pan 4. L50 ... L=R ... R50
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<b>4 LVL</b>	Tap delay level 4. -100% ... +100%	<b>MIDI</b>
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<b>5 DLY</b>	Tap delay time 5. 0.1 ... 1200.0 milliseconds	<b>MIDI</b>
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<b>5 PAN</b>	Tap delay pan 5. L50 ... L=R ... R50
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<b>5 LVL</b>	Tap delay level 5. -100% ... +100%	<b>MIDI</b>
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<b>FB1</b>	Tap feedback 1. -100% ... +100%	<b>MIDI</b>
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Sets the feedback level for tap delay 1. The tap delay 1 signal is fed back to the input of the processor, so it is subsequently affected by all other delays. The FB2 parameter, below, does the same for tap delay 2.

<b>FB2</b>	Tap feedback 2.	<b>MIDI</b>
-100% ... +100%		

<b>HF</b>	Feedback low-pass filter frequency.	
1.0 kHz ... 16 kHz, Thru		

Sets the cutoff frequency of the low-pass filter applied to the feedback signal. When the "Thru" setting is selected the filter is bypassed.

<b>HPF</b>	High-pass filter frequency.	
Thru, 40 Hz ... 1.0 kHz		

Sets the cutoff frequency of the high-pass filter applied to the overall effect. The "Thru" setting bypasses the filter.

<b>LPF</b>	Low-pass filter frequency.	
1.0 kHz ... 16 kHz, Thru		

Sets the cutoff frequency of the low-pass filter applied to the overall effect. The "Thru" setting bypasses the filter.

<b>MIX</b>	Mix.	<b>MIDI</b>
0% ... 100%		

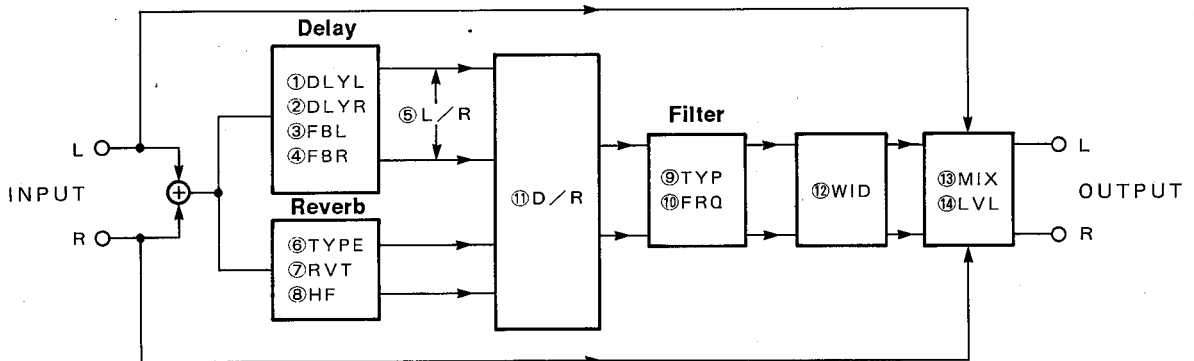
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

<b>LVL</b>	Output level.	<b>MIDI</b>
-∞, -30 dB ... +6 dB		

Sets the output level of the Multi Tap Delay effect.

## Reverb + Delay (R+D)

This effect combines reverb and delay, with the reverb and delay effect processors connected in parallel.



**DLYL** Left delay time. MIDI  
0.1 ... 760.0 milliseconds

Sets the left-channel delay time. The DLYR parameter, below, does the same for the right channel.

**DLYR** Right delay time. MIDI  
0.1 ... 760.0 milliseconds

**FBL** Left feedback gain.  
-100% ... +100%

Determines the amount of effect-sound feedback returned to the left channel of the processor. Negative values produce out-of-phase feedback. Higher values produce a greater number of repeats. The FBR parameter, below, does the same for the right channel.

**FBR** Right feedback gain.  
-100% ... +100%

**L/R** Left/right balance.  
L50 ... L=R ... R50

Sets the balance between the left- and right-channel delay sound. A setting of "L50," for example, produces only the sound of the left-channel delay. "L=R" produces both channels in equal balance. "R50" produces only the sound of the right-channel delay.

**TYPE** Reverb type.  
Rh1, Rrm, Rvc, Rpl

Rh1 = Reverb Hall, Rrm = Reverb Room, Rvc = Reverb Vocal, and Rpl = Reverb Plate.

**RVT** Reverb time. MIDI  
0.3 ... 40 seconds

Sets the amount of time it takes for the reverb sound to decay by 60 dB.

**HF** High-frequency damping.  
1 ... 10

Sets the reverb time of the high frequencies in relation to the overall reverb time.

**TYP** Filter type.  
HPF, LPF

Selects the type of filter to be used with the Reverb + Delay effect: HPF = high-pass filter; LPF = low-pass filter. Please note that whenever the setting of this parameter is changed, the "FRQ" parameter, below, is automatically set to "Thru."

**FRQ** Filter frequency.  
HPF: Thru, 40 Hz ... 1 kHz.  
LPF: 1.0 kHz ... 16 kHz, Thru

Sets the cutoff frequency of the filter type selected in the preceding parameter (TYP). If the HPF is selected, the range is from 40 Hz to 1.0 kHz. If the LPF is selected the range is from 1.0 kHz to 16 kHz. In either case the "Thru" setting bypasses the filter.

**D/R** Delay/reverb balance. MIDI  
D50 ... D=R ... R50

Sets the balance between the delay and reverb sound. A setting of "D50," for example, produces only the delay sound. "D=R" produces both delay and reverb in equal balance. "R50" produces only the reverb sound.

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<b>WID</b>	Sound image width. 0 ... 10
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Determines the strength of a feeling of "width" between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

<b>MIX</b>	Mix. 0% ... 100%	<b>MIDI</b>
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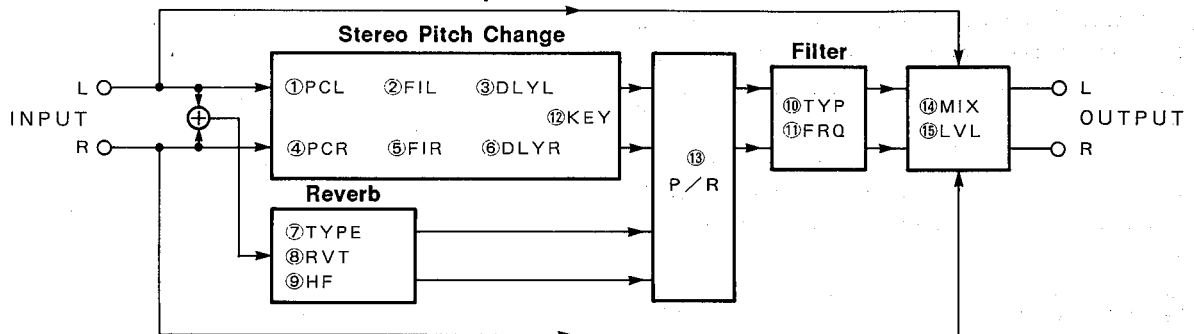
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

<b>LVL</b>	Output level. -∞, -30 dB ... +6 dB	<b>MIDI</b>
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Sets the output level of the Reverb + Delay effect.

## Stereo Pitch Change + Reverb (P+R)

This effect combines pitch shift and reverb in parallel. That is, the pitch-shift and reverb sounds are not affected by each other.



**PCL** Left pitch.  
-12 ... +12

Set the pitch of the left-channel pitch-shifted note between one octave below (-12) and one octave above (+12) the input note. The PCR parameter, below, does the same for the right-channel pitch-shifted note.

**FIL** Left fine pitch.  
-99 ... +99

Permits fine tuning of the left-channel pitch-shifted note in 1-cent steps (1 cent is 1/100th of a semitone). The FIR parameter, below, does the same for the right-channel pitch-shifted note.

**DLYL** Left delay. **MIDI**  
0.1 ... 400.0 milliseconds

Determines the time delay between input of the original note and output of the left-channel pitch-shifted note. The RDLY parameter, below, does the same for the right-channel pitch-shifted note.

**PCR** Right pitch.  
-12 ... +12

**FIR** Right fine pitch.  
-99 ... +99

**DLYR** Right delay. **MIDI**  
0.1 ... 400.0 milliseconds

**TYPE** Reverb type.  
Rhl, Rrm, Rvc, Rpl

Rhl = Reverb Hall, Rrm = Reverb Room, Rvc = Reverb Vocal, and Rpl = Reverb Plate.

**RVT** Reverb time. **MIDI**  
0.3 ... 40 seconds

Sets the amount of time it takes for the reverb sound to decay by 60 dB.

**HF** High-frequency damping.  
1 ... 10

Sets the reverb time of the high frequencies in relation to the overall reverb time.

**TYP** Filter type.  
HPF, LPF

Selects the type of filter to be used with the Reverb + Delay effect: HPF = high-pass filter; LPF = low-pass filter. Please note that whenever the setting of this parameter is changed, the "FRQ" parameter, below, is automatically set to "Thru."

**FRQ** Filter frequency.  
HPF: Thru, 40 Hz ... 1 kHz.  
LPF: 1.0 kHz ... 16 kHz, Thru

Sets the cutoff frequency of the filter type selected in the preceding parameter (TYP). If the HPF is selected, the range is from 40 Hz to 1.0 kHz. If the LPF is selected the range is from 1.0 kHz to 16 kHz. In either case the "Thru" setting bypasses the filter.

**KEY** Base key.  
Off, C1 ... C6

Same as the KEY parameter in the Stereo Pitch effect (page 39).

**P/R**

Pitch/reverb balance.

**MIDI**

P50 ... P=R ... R50

Sets the balance between the pitch-shift and reverb sound. A setting of "P50," for example, produces only the pitch-shift sound. "P=R" produces both pitch-shift and reverb in equal balance. "R50" produces only the reverb sound.

**MIX**

Mix.

**MIDI**

0% ... 100%

Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

**LVL**

Output level.

**MIDI**

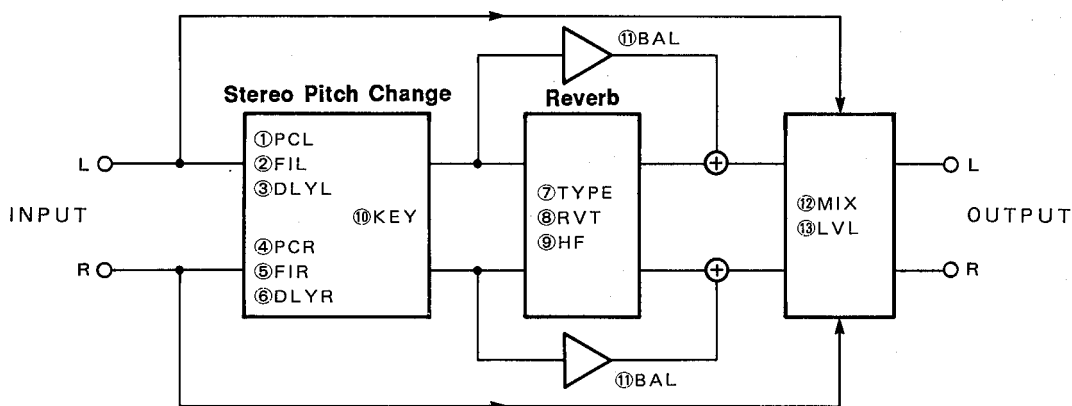
-∞, -30 dB ... +6 dB

Sets the output level of the Pitch + Reverb effect.

## Stereo Pitch Change → Reverb (P→R)

Stereo Pitch Change → Reverb has the same parameters as the Stereo Pitch Change + Reverb effect (minus the filter type and frequency parameters). The main difference between these effects is that while pitch shift and reverb are connected in parallel in Stereo Pitch Change + Reverb, they are

connected in series in Stereo Pitch Change → Reverb. This means that reverb is applied to the original and pitch-shifted sound. Another important difference is that left- and right-channel processing in the Stereo Pitch Change → Reverb effect is completely independent.



<b>PCL</b>	Left pitch.	-12 ... +12
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<b>FIL</b>	Left fine pitch.	-99 ... +99
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<b>DLYL</b>	Left delay.	0.1 ... 300.0 milliseconds	<b>MIDI</b>
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<b>PCR</b>	Right pitch.	-12 ... +12
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<b>FIR</b>	Right fine pitch.	-99 ... +99
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<b>DLYR</b>	Right delay.	0.1 ... 300.0 milliseconds	<b>MIDI</b>
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<b>TYPE</b>	Reverb type.	Rhl, Rrm, Rvc, Rpl
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<b>RVT</b>	Reverb time.	0.3 ... 40 seconds	<b>MIDI</b>
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<b>HF</b>	High-frequency damping.	1 ... 10
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<b>KEY</b>	Base key.	Off, C1 ... C6
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<b>BAL</b>	Pitch balance.	0% ... 100%	<b>MIDI</b>
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Sets the level of the "dry" pitch-shift sound in relation to the pitch-shift with reverb. A setting of 100% produces only the pitch-shift sound, while a setting of 0% produces the pitch-shift sound with maximum reverb.

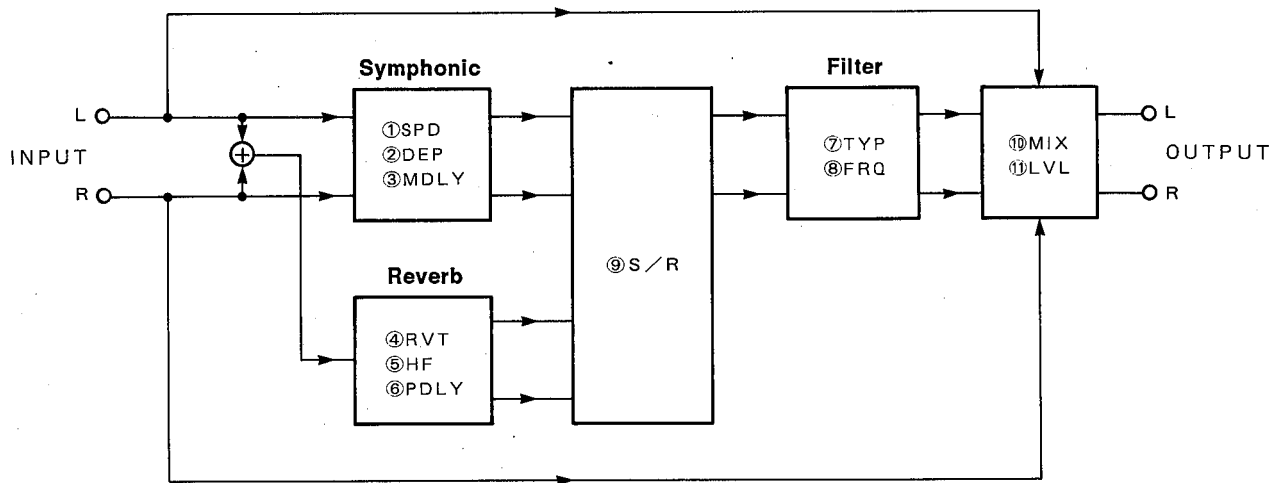
<b>MIX</b>	Mix.	0% ... 100%	<b>MIDI</b>
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<b>LVL</b>	Output level.	-∞, -30 dB ... +6 dB	<b>MIDI</b>
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## Symphonic + Reverb (S+R)

Symphonic and Reverb effects connected in parallel.



**SPD** Modulation speed. **MIDI**  
0.1 ... 20.0 Hz

Sets the speed of Symphonic effect modulation.

**DEP** Modulation depth. **MIDI**  
0 ... 100%

Sets the depth of Symphonic effect modulation.

**MDLY** Modulation delay.  
3.0 ... 20.0 milliseconds

Sets the Symphonic modulation delay time. Short delay times produce the greatest Symphonic effect in the high-frequency range, while with longer delay times the effect extends to the middle frequencies.

**RVT** Reverb time. **MIDI**  
0.3 ... 40 seconds

Sets the amount of time it takes for the reverb sound to decay by 60 dB.

**HF** High-frequency damping.  
1 ... 10

Sets the reverb time of the high frequencies in relation to the overall reverb time.

**PDLY** Pre-delay.  
0.1 ... 400.0 milliseconds

Sets the delay time before Reverb portion of the effect begins

**TYP** Filter type.  
HPF, LPF

Selects the type of filter to be used with the Symphonic + Reverb effect: HPF = high-pass filter; LPF = low-pass filter. Please note that whenever the setting of this parameter is changed, the "FRQ" parameter, below, is automatically set to "Thru."

**FRQ** Filter frequency.  
HPF: Thru, 40 Hz ... 1 kHz.  
LPF: 1.0 kHz ... 16 kHz, Thru

Sets the cutoff frequency of the filter type selected in the preceding parameter (TYP). If the HPF is selected, the range is from 40 Hz to 1.0 kHz. If the LPF is selected the range is from 1.0 kHz to 16 kHz. In either case the "Thru" setting bypasses the filter.

**S/R** Symphonic/reverb balance. **MIDI**  
P50 ... P=R ... R50

Sets the balance between the symphonic and reverb sound. A setting of "S50," for example, produces only the symphonic sound. "S=R" produces both symphonic and reverb in equal balance. "R50" produces only the reverb sound.

**MIX** Mix. **MIDI**  
0% ... 100%

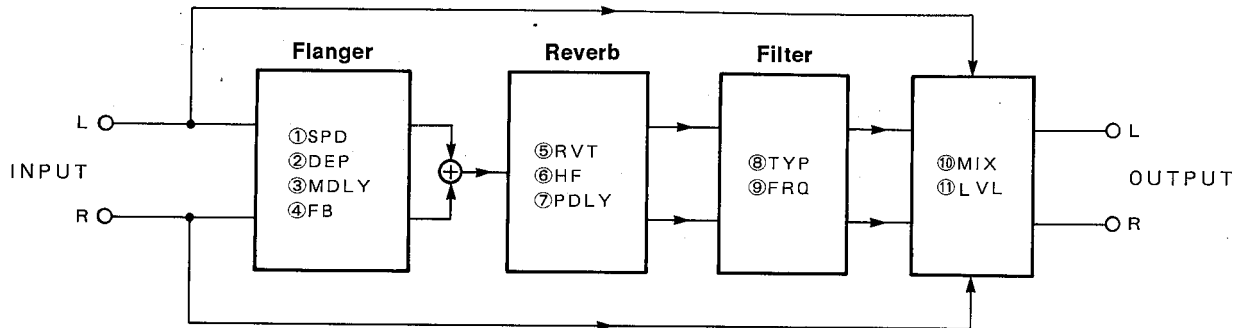
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

**LVL** Output level. **MIDI**  
-∞, -30 dB ... +6 dB

Sets the output level of the Symphonic + Reverb effect.

## Flanger → Reverb (F→R)

Flanger and Reverb effects connected in series (reverb is applied to the flanger sound).



<b>SPD</b>	Modulation speed.	<b>MIDI</b>
	0.1 ... 20.0 Hz	

Sets the speed of Flanger effect modulation.

<b>DEP</b>	Modulation depth.	<b>MIDI</b>
	0 ... 100%	

Sets the depth of Flanger effect modulation.

<b>MDLY</b>	Modulation delay.	
	0.2 ... 20.0 milliseconds	

Sets the Flanger modulation delay time. Short delay times produce the greatest Flanger effect in the high-frequency range, while with longer delay times the effect extends to the middle frequencies.

<b>FB</b>	Flanger feedback.	
	-100% ... +100%	

Determines the amount of flanger feedback returned to the input of the processor. Higher values produce a more pronounced effect.

<b>RVT</b>	Reverb time.	<b>MIDI</b>
	0.3 ... 40 seconds	

Sets the amount of time it takes for the reverb sound to decay by 60 dB.

<b>HF</b>	High-frequency damping.	
	1 ... 10	

Sets the reverb time of the high frequencies in relation to the overall reverb time.

<b>PDLY</b>	Pre-delay.	
	0.1 ... 200.0 milliseconds	

Sets the delay time before Reverb portion of the effect begins.

<b>TYP</b>	Filter type.	
	HPF, LPF	

Selects the type of filter to be used with the Flanger → Reverb effect: HPF = high-pass filter; LPF = low-pass filter. Please note that whenever the setting of this parameter is changed, the "FRQ" parameter, below, is automatically set to "Thru."

<b>FRQ</b>	Filter frequency.	
	HPF: Thru, 40 Hz ... 1 kHz.	
	LPF: 1.0 kHz ... 16 kHz, Thru	

Sets the cutoff frequency of the filter type selected in the preceding parameter (TYP). If the HPF is selected, the range is from 40 Hz to 1.0 kHz. If the LPF is selected the range is from 1.0 kHz to 16 kHz. In either case the "Thru" setting bypasses the filter.

<b>MIX</b>	Mix.	<b>MIDI</b>
	0% ... 100%	

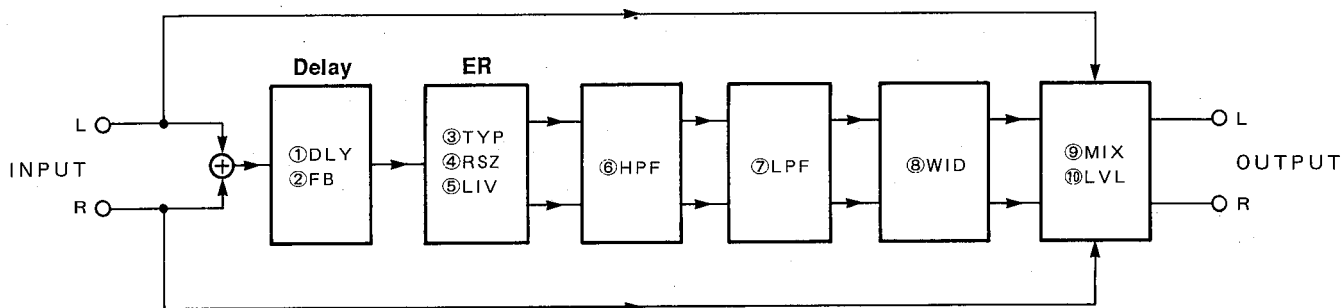
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

<b>LVL</b>	Output level.	<b>MIDI</b>
	$-\infty$ , -30 dB ... +6 dB	

Sets the output level of the Flanger → Reverb effect.

## Delay → Early Reflections (D→E)

Delay and Early Reflections connected in series — the Early Reflections effect is applied to the Delay sound.



**DLY** Delay time. **MIDI**  
0.1 ... 500.0 milliseconds

Sets the delay time for the Delay portion of the effect.

**FB** Feedback.  
0% ... 100%

Determines the amount of effect-sound feedback returned to the delay processor. Higher values produce a greater number of repeats.

**TYP** Early reflection type.  
Ehl, Erd, Erv, Epl

“Ehl” = Early Reflection Hall, “Erd” = Early Reflection Random, “Erv” = Early Reflection Reverse, and “Epl” = Early Reflection Plate.

**RSZ** Room size. **MIDI**  
0.1 ... 20

Sets the separation between reflections. The values increment in 0.1 steps from 0 to 10, while values above 10 increment in steps of 1. Higher values produce greater separation between reflections, and therefore the effect of a bigger room.

**LIV** Liveness. **MIDI**  
0 ... 10

Determines how the early reflections decay. Higher values result in slower decay, producing the effect of a more reflective (“live”) room.

**HPF** High-pass filter frequency.  
Thru, 40 Hz ... 1.0 kHz

Sets the cutoff frequency of the high-pass filter applied to the overall effect. The “Thru” setting bypasses the filter.

**LPF** Low-pass filter frequency.  
1.0 kHz ... 16 kHz, Thru

Sets the cutoff frequency of the low-pass filter applied to the overall effect. The “Thru” setting bypasses the filter.

**WID** Sound image width.  
0 ... 10

Determines the strength of a feeling of “width” between the left and right channels. The lower the value, the more the left- and right-channel sound is mixed, reducing the feeling of stereo width.

**MIX** Mix. **MIDI**  
0% ... 100%

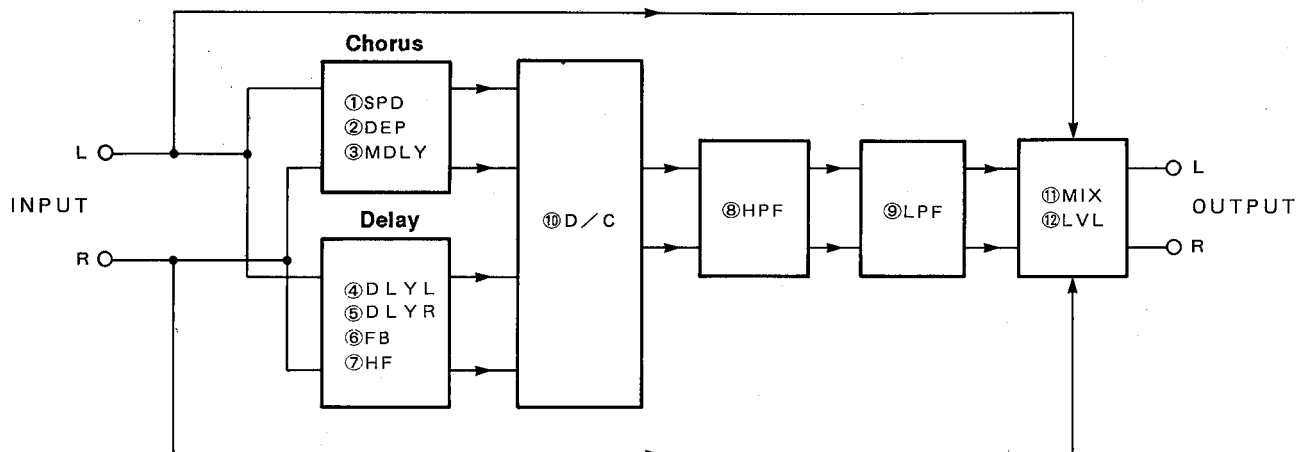
Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

**LVL** Output level. **MIDI**  
−∞, −30 dB ... +6 dB

Sets the output level of the Delay → Early Reflections effect.

## Delay + Chorus (D+C)

Delay and Chorus connected in parallel.



<b>SPD</b>	Modulation speed. 0.1 ... 20.0 Hz	<b>MIDI</b>
------------	--------------------------------------	-------------

Sets the speed of Chorus effect modulation.

<b>DEP</b>	Modulation depth. 0 ... 100%	<b>MIDI</b>
------------	---------------------------------	-------------

Sets the depth of Chorus effect modulation.

<b>MDLY</b>	Modulation delay. 3.0 ... 20.0 milliseconds	
-------------	--	--

Sets the Chorus modulation delay time. Short delay times produce the greatest Chorus effect in the high-frequency range, while with longer delay times the effect extends to the middle frequencies.

<b>DLYL</b>	Left delay time. 0.1 ... 600.0 milliseconds	<b>MIDI</b>
-------------	--	-------------

Sets the left-channel delay time. The DLYR parameter, below, does the same for the right channel.

<b>DLYR</b>	Right delay time. 0.1 ... 600.0 milliseconds	<b>MIDI</b>
-------------	---	-------------

<b>FB</b>	Feedback. -100% ... +100%	
-----------	------------------------------	--

Determines the amount of feedback returned to the delay processor. Negative values produce out-of-phase feedback. Higher values produce a greater number of repeats.

<b>HF</b>	Feedback high-frequency damping. 1 ... 10	
-----------	--	--

Rolls off the high frequencies of the feedback signal. Lower values cut more high frequencies.

<b>HPF</b>	High-pass filter frequency. Thru, 40 Hz ... 1.0 kHz	
------------	--	--

Sets the cutoff frequency of the high-pass filter applied to the overall effect. The "Thru" setting bypasses the filter.

<b>LPF</b>	Low-pass filter frequency. 1.0 kHz ... 16 kHz, Thru	
------------	--	--

Sets the cutoff frequency of the low-pass filter applied to the overall effect. The "Thru" setting bypasses the filter.

<b>D/C</b>	Delay/chorus balance. D50 ... D=C ... C50	<b>MIDI</b>
------------	--	-------------

Sets the balance between the delay and chorus sound. A setting of "D50," for example, produces only the delay sound. "D=C" produces both delay and chorus in equal balance. "C50" produces only the chorus sound.

<b>MIX</b>	Mix. 0% ... 100%	<b>MIDI</b>
------------	---------------------	-------------

Sets the balance between the direct and effect sound. Higher values produce a greater proportion of effect sound in relation to direct sound.

<b>LVL</b>	Output level. -∞, -30 dB ... +6 dB	<b>MIDI</b>
------------	---------------------------------------	-------------

Sets the output level of the Delay + Chorus effect.

# Appendix

## ■ EMP700 Preset Effects

\* The abbreviations listed in the "Effect" column refer to the following effects: (Display, Name, IN/OUT)

<b>DYN Effects (8 Types)</b>		• TPI: TRIPLE PITCH CHANGE (MO/ST)
• GEQ: COMPRESSOR-GRAPHIC EQUALIZER (MO/MO)	• SPI: STEREO PITCH CHANGE (ST/ST)	• REV: REVERB (MO/ST)
• CMP: STEREO COMPRESSOR/LIMITER (ST/ST)	• GRV: GATE REVERB (MO/ST)	• ER: ER (Early Reflection) (MO/ST)
• PEQ: STEREO PARAMETRIC EQUALIZER (ST/ST)	• ADL: AFTER DELAY (ST/ST)	• MDL: MONO DELAY (MO/MO)
• ENH: STEREO ENHANCER (ST/ST)	• SMD: STEREO MODULATION DELAY (ST/ST)	• MTD: MULTI TAP DELAY (MO/ST)
• WAH: STEREO WAH (ST/ST)	• R+D: REVERB + DELAY (MO/ST)*	• P+R: STEREO PITCH CHANGE + REVERB (ST/ST)*
• PHS: PHASER (MO/ST)	• P→R: STEREO PITCH CHANGE → REVERB (ST/ST)**	• S+R: SYMPHONIC + REVERB (ST/ST)*
• OVD: OVERDRIVE (MO/MO)	• F→R: FLANGER → REVERB (ST/ST)*	• D→E: DELAY → ER (MO/ST)
• CDE: COMPRESSOR-DISTORTION-EQUALIZER (MO/MO)	• D+C: DELAY + CHORUS (ST/ST)	
<b>REV Effects (21 Types)</b>		
• CHO: CHORUS (ST/ST)		
• FLA: FLANGER (ST/ST)		
• SYM: SYMPHONIC (ST/ST)		
• PAN: ROUND PAN (ST/ST)		
• HMD: HYPER MODULATION DELAY (ST/ST)		

Note: ST = Stereo, MO = Mono, \* Reverb = Mono In/Stereo Out, \*\* Reverb = Stereo In/Stereo Out.

No.	Program Name	Effect	Comments
0	Initial Data	PEQ → CHO	This program represents the standard parameter values of each effect and serves as a base for editing from scratch.

## ● General

No.	Program Name	Effect	Comments
1	MEDIUM HALL REV	PEQ → REV	These two programs simulate the reverberation of a large and a medium-sized hall. Both are general-purpose reverb effects. The reverb type or time may be changed as desired.
2	LARGE HALL REV	REV → PEQ	
3	DYNAMIC HALL REV	PEQ → REV	This is a slightly brighter hall reverb effect with a marginally emphasized bass range. Reverb type or time may also be changed freely.
4	TIGHT ROOM REV	REV → CMP	These three effects simulate different types of room reverberations and are most suited for percussion sounds. In programs 4 and 5 the compressor produces well-balanced reverbs, while program 6 puts some emphasis on the bass range of the reverb sound using the equalizer. As with the hall effects, the reverb type or time may be set freely, and the filter settings can also be changed as desired.
5	DEEP ROOM REV	REV → CMP	
6	LARGE ROOM REV	REV → PEQ	
7	OPEN AMBIENCE	REV → PEQ	
8	COMPACT AMBIENCE	R+D → PEQ	These programs are based on a shorter reverb time than the ROOM effects. The effects are very useful for emphasizing the attack of percussion or brass sounds to add some spice.
9	GATE REVERB	GRV → PEQ	This effect is a noise-gated reverb. The smaller the "REL" value, the faster the gate acts. For soft sounds, the "NGL" value should be set to around 90. Various gated reverbs can be created by changing the reverb type and time or the settings of "NGL" and "REL".
10	BRIGHT PLATE REV	REV → PEQ	These two plate reverb effects are highly recommended for strings or piano sounds. They also work very well with vocals and chorus, etc.
11	LONG PLATE REV	REV → PEQ	

No.	Program Name	Effect	Comments
12	DUAL COMPRESSOR	OFF → CMP	Normally the two compressors for left and right channel have the same data settings. When "LINK" is set to OFF, they assume the function of two individual mono-in/mono-out compressors which can be set independently.
13	STEREO PHASER	PHS → OFF	This is a "vibration" effect generated by phase modulation. By using it after a reverb, a gimmick-like effect comparable to a phase reverb can be produced. Four different phase effects can be obtained by changing the setting of "STG".
14	STEREO ENHANCER	ENH → OFF	This effect produces a distinctive sound by emphasizing overtones. Especially in ensemble setups it can be used effectively by comparing and carefully balancing it with other sounds.
15	SERENE CHORUS	OFF → CHO	Both are modulation-based stereo effects which can be used beautifully for expanding the sound of synthesizer pads or electric pianos.
16	SWEET SYMPHONIC	OFF → SYM	

### ● Drums/Percussion

No.	Program Name	Effect	Comments
17	BIG TOM & SNARE	REV → CMP	A rather short reverb best suited for snares, toms and bass drums.
18	SPACIOUS BASS	REV → ENH	Slightly longer than No. 17 and a good choice for heavy snares, toms and bass drums.
19	DAMP HEADS	ENH → REV	This fairly short reverb is a combination of plate reverb and enhancer. It is very useful for peppering up snare drums and toms.
20	LIVE ROOM	CMP + REV	Mixing a little of this reverb into all drum set instruments produces an ambience-like effect.
21	PERCUSSION REV	REV → PEQ	This reverb effect is suited mainly for percussion instruments.
22	HOUSE DRUM REV	GRV → CMP	A neat effect for the drum sounds of House Music and Ground Beat.
23	SHARP SNARE	CMP + REV	This is a bright reverb effect, suited mainly for snare drums, toms, etc.
24	SNARE ROOM	CMP → REV	A somewhat heavy room reverb, suited mainly for snare drums, toms, etc.
25	CRISP ER	ER → PEQ	This is a gated-reverb type ER effect. It's fun to use for lower pitch bass drums or snares, and also for congas, etc.
26	DOUBLE DEPTH	CMP → ER	This program is a good solution for short delay effects which should not stand out too much.
27	LOW REFLECTIONS	D→E → PEQ	This is another short delay effect in which sound reverberations are added using the ER effect.
28	RICOCHET SNARE	CMP → ER	This delay gate-like effect is quite sufficient as a sound effect.
29	CANNED SNARE	ENH → REV	This effect produces a sound like throwing a stone or an empty can into a large garbage can.
30	WAH PERCUSSION	ER → WAH	This program adds the "Wah" effect to a gated-reverb type ER effect.

● Vocal/Chorus

No.	Program Name	Effect	Comments
31	FAT VOCAL ER	REV → PEQ	While both programs emphasize vocals, in program 32 the high and low frequencies are enhanced further by the equalizer.
32	FAT VOCAL ER+EQ	REV → PEQ	
33	WARM VOCAL REV	REV → PEQ	This is an orthodox reverb for vocals, conveying a "warm" feeling.
34	ROCK 'N ROLL!	ENH → ER	Try this one for vocals in Rock 'n Roll music of the 50's.
35	STRAIGHT VOCAL	OFF → REV	Like No. 33, this is a basic reverb for vocals.
36	DOUBLE REVERB	OFF → REV	Both reverb programs feature a natural doubling effect. No. 36 is a short reverb with a strong doubling effect, while No. 37 is a longer reverb in which the doubling effect is slightly weakened. The effects are suited best for vocal solos.
37	VOCAL PLATE	OFF → REV	
38	DOUBLE PLATE	REV → PEQ	This reverb includes a doubling effect and is intended for chorus applications.
39	VOCAL SPREADER	MTD → CMP	This doubling effect is created by five short delays, making it ideal for chorus spreading.
40	VOCAL DOUBLER	D→E → CMP	This is also a stereo doubling effect for chorus sound, but provides more expansion and depth due to ER enhancement.
41	LONG VOCAL REV	REV → PEQ	A natural reverb with long reverberation sound.
42	FLANGE REVERB	F→R → PEQ	A reverb with delicate flange effect.
43	ANSWER REVERB	REV → CMP	When applied to suspended chorus sounds, this reverb adds brightness, and when used with a slightly staccato-like chorus it gives the impression of the chorus sound being chased by an exciter-effected sound.

● Synthesizer/Keyboard

No.	Program Name	Effect	Comments
44	PAD ENHANCER	D+C → ENH	This is a stereo effect suited for synthesizer voices and pad sounds.
45	PAD REVERB	ENH → F→R	
46	STRING REVERB	PHS + REV	A phase reverb effect ideally suited mainly for strings.
47	MOD REVERB	PHS + S+R	This is a modulation effect suitable for strings and pad sounds.
48	BRASS ATTACK	PEQ + REV	These are effects for the brass section. All three are suitable for horn voices with strong attack. Programs 48 and 49 emphasize the attack further, while No. 50 features added ER reverberation.
49	SHORT ATTACK	PEQ + ER	
50	BRASS ER	PEQ + ER	
51	PHASE ORGAN	REV → PHS	These effects are provided for organ voices. Program 51 is a phase reverb type effect, and No. 52 is an effect with a "wide" feel. In program 53 the attack is slightly emphasized by the compressor.
52	FULL ORGAN	P+R → PEQ	
53	SQUEEZE ORGAN	P+R → CMP	

No.	Program Name	Effect	Comments
54	SHIMMER PIANO	OFF → SPI	These are effects for electric piano voices. Programs 54 and 55 are geared towards LA sound with a lot of "stereo feel". No. 56 is worth trying with "roads" type sounds. Program 57 is an effect with rather strong modulation for which symphonic SPD should be adjusted as required. Depending on the voice, weird and interesting effects can be created.
55	WIDE PIANO	P+R → PEQ	
56	PIANO DELAY	SPI → PHS	
57	SPINNING PIANO	SYM → CMP	
58	BRITE PIANO REV	ENH + R+D	Try this one with sounds of a sampling piano that have attack feel.
59	SYNTH SWIRL	PHS → PAN	Here the phase effect is followed by round panning which should be an interesting effect for marimba and other sound sequences.
60	SYNTH VIBRATO	HMD → CMP	This is a powerful effect combining modulation and panning.
61	SYNTH PHASE	PHS → S+R	An orthodox phase effect with slow attack, recommended for sounds with long decay.
62	RHYTHMIC MOD	PEQ → SMD	This is a panning effect created using stereo delay.
63	SOLAR WIND	F→R → WAH	In this program the flange effect is followed by the Wah effect, producing a unique effect quite different from modulation. Using a suitable voice, the sound of strong wind can be simulated.
64	HYPER MOD	OFF → HMD	This is an interesting mix consisting of flanging and panning effects, and delay. The effect covers a wide range, from beautiful sounds to horrifying noise.
65	MODULATED DELAY	SMD → ENH	In this program modulation is applied to stereo delay.
66	ROADS REVERB	P→R → PHS	This reverb with delicate phase effect is suited for "roads" type sounds.
67	SLOW PAN	OFF → PAN	This is a basic panning effect.
68	LONG DELAY	OFF → MDL	An especially long mono delay effect.
69	FLANGED FLANGE	WAH → FLA	A double modulation effect with Wah and flange effects. Using individual SPD settings various modulation effects can be created.
70	ECCENTRIC REVERB	REV → WAH	This program provides a unique effect by applying the Wah effect to a reverb. It is recommended for sound sequences such as in Black Music.
71	RESONANT BASS	PHS + HMD	A vibrato-like phase effect.
72	GLITTER REVERB	REV → CMP	A somewhat longer effect with pre-delay.
73	LIQUID PHASE	REV → PHS	A phase effect suited for the brilliant sounds of wind chimes.
74	ATTACK SOFTENER	REV → CMP	A reverb sound sustained by compressor.
75	CHAPEL REVERB	REV → PEQ	This is a reverb simulating a chapel with a high ceiling.
76	SYNTH SOLO	CDE → ER	These are three effects for synthesizer solos. No. 76 is a hard, distortion-based effect. No. 77 is a delay reverb with slightly de-emphasized distortion. No. 78 delays the sound of released keys, produces delicate delay effects when playing fast, and lets the delayed sounds stand out after all other sounds have faded.
77	SYNTH SOLO DELAY	CDE → R+D	
78	AFTER DELAY	ADL → CMP	



● Bass

No.	Program Name	Effect	Comments
79	BASIC BASS	CHO → CDE	These are two effects for electric bass. The first is an orthodox warm chorus effect, while the second can be used for playing the bass "slap" style, even when using a pick.
80	SLAPPER	ER → CDE	

● Guitar

No.	Program Name	Effect	Comments
81	SUBTLE RHYTHM	CDE → D+C	This is a chorus and delay effect for clean tone. Change the delay time according to the tempo of each song.
82	SOLID DRIVE	OVD → SMD	This effect produces a distortion sound. Use it for solos etc.

● Sound Effect

No.	Program Name	Effect	Comments
83	BOUNCE WOW	R+D → WAH	This is a delay reverb with Wah effect.
84	SPIRAL STAIRS	OFF → TPI	This effect is based on triple pitch. Various effects can be created by changing the settings of feedback, delay, and pitch.
85	ESCALATOR	OFF → TPI	
86	TEMPO 120	MTD → PEQ	Use for songs with a tempo of 120 beats per minute. The effect can be matched with any tempo by changing the delay time.
87	METAL PERCUSSION	OVD + GRV	Distortion produces a rather "violent" Metal sound.
88	BOOM ROOM	REV → CMP	Mainly used for enhancing explosion sounds.
89	SINGLE GATE REV	ER → GEQ	A mono sound image gate type reverb.
90	MULTI FLAM	MTD → CMP	Allows creation of various sequence phrases using different delay times.

\* There are no rules for using specific effects for particular sounds. You are free to combine sounds and effects any way you like. Try to create your own unique effects.

## ■ Troubleshooting

If your EMP700 does not seem to be operating properly, please check the following points before concluding that the EMP700 itself is faulty. If none of the solutions listed below solves the problem, contact your Yamaha dealer or service station.

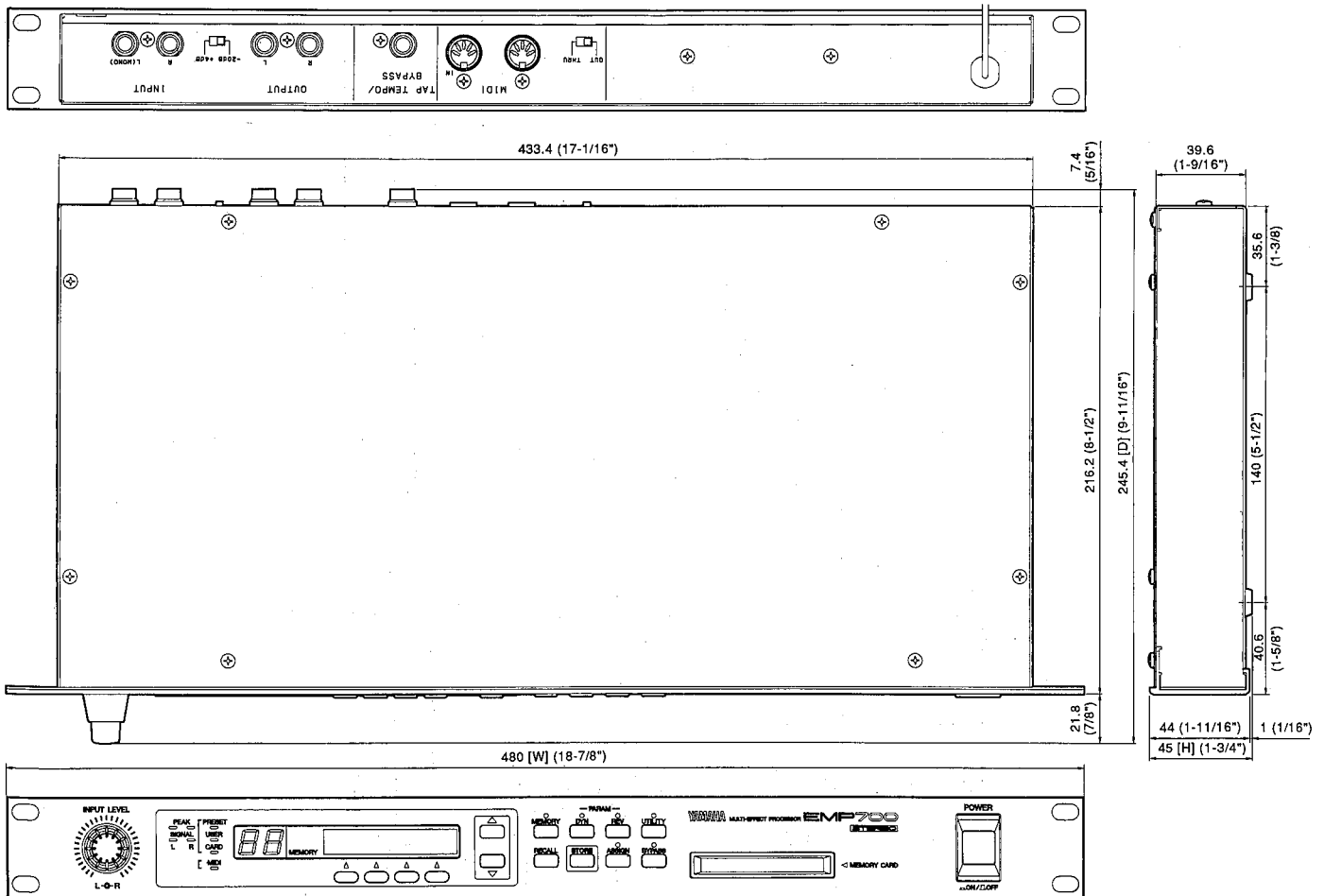
Symptom	Possible Causes & Solutions
The power does not come on even when the power switch is pressed.	<ul style="list-style-type: none"><li>• Is the AC cord plugged into an appropriate AC socket?</li><li>• Does the AC socket have a switch somewhere that needs to be turned on before power is available?</li></ul>
The EMP700 produces a humming sound (50- or 60-cycle hum).	<ul style="list-style-type: none"><li>• The audio cables and/or connections may be faulty. Check all cables and connections carefully.</li></ul>
The EMP700 sound has excessive hiss and noise.	<ul style="list-style-type: none"><li>• This can be caused by improper input/output level settings. Refer to “-20dB/+4dB Input/Output Level Switch” on page 4 and “SIGNAL and PEAK Indicators” on page 6 for details.</li></ul>
No effect sound.	<ul style="list-style-type: none"><li>• Make sure that the input and output cables are connected properly (e.g. not reversed).</li><li>• Check that the [BYPASS] key or bypass footswitch has not been pressed, thereby bypassing the effects (see page 7).</li><li>• Check that the input level control is set to an appropriate level (i.e. not minimum).</li><li>• Make sure that the MIX and/or OUTPUT LEVEL parameters of the selected effect are set to appropriate levels (i.e. not “0”).</li></ul>
The STORE function will not work.	<ul style="list-style-type: none"><li>• Effect programs can only be stored in the USER or CARD memory. Make sure that the PRESET memory area is not selected.</li><li>• If you are attempting to store to an external memory card, make sure that the card is properly inserted into the card slot, that the card has been properly formatted (see page 22), and that the card write protect switch is set properly (see the MCD32 or MCD64 memory card operation manual).</li></ul>
The Tap Tempo function doesn't work.	<ul style="list-style-type: none"><li>• Tap Tempo will not work with effects that do not have delay parameters. Make sure you select an effect that has one or more delay parameters if you want to use the Tap Tempo function.</li><li>• Make sure that the UTILITY mode FOOT SW ASSIGN function is set to TAP TEMPO (see page 20)</li></ul>
Effect programs cannot be elected via MIDI.	<ul style="list-style-type: none"><li>• Is the MIDI transmit channel number of the transmitting device the same as the MIDI receive channel number of the EMP700? Make sure that the transmit and receive channel numbers match (see page 15 for details on setting the EMP700 MIDI receive channel number).</li><li>• MIDI program change data is not recognized by the EMP700 while the controller assign mode is engaged. Select any other mode before receiving program change data.</li><li>• Check all MIDI cable connections.</li></ul>

# Specifications

• Inputs	2 channels, 1/4" phone jack, impedance greater than 500KΩ.
• Outputs	2 channels, 1/4" phone jack, impedance 1KΩ.
• Input/Output Level	-20dB/+4dB switchable.
• Sampling Frequency	44.1 kHz.
• Quantization	16 bits.
• Frequency Response	20 Hz ... 20 kHz.
• Dynamic Range	Greater than 85 dB, effect off.
• T.H.D	0.03% @ 1 kHz.
• Internal Memory	90 presets in ROM, 50 user RAM.
• External Memory	RAM (50 programs) cards, optional.
• Power Consumption	US & Canadian model: 120V AC, 10 watts. General model: 230 ... 240V AC, 10 watts.
• Dimensions (W x H x D)	480 x 45 x 245.4 mm. (18-7/8" x 1-3/4" x 9-11/16")
• Weight	2.9 kg. (6 lbs. 6 oz)

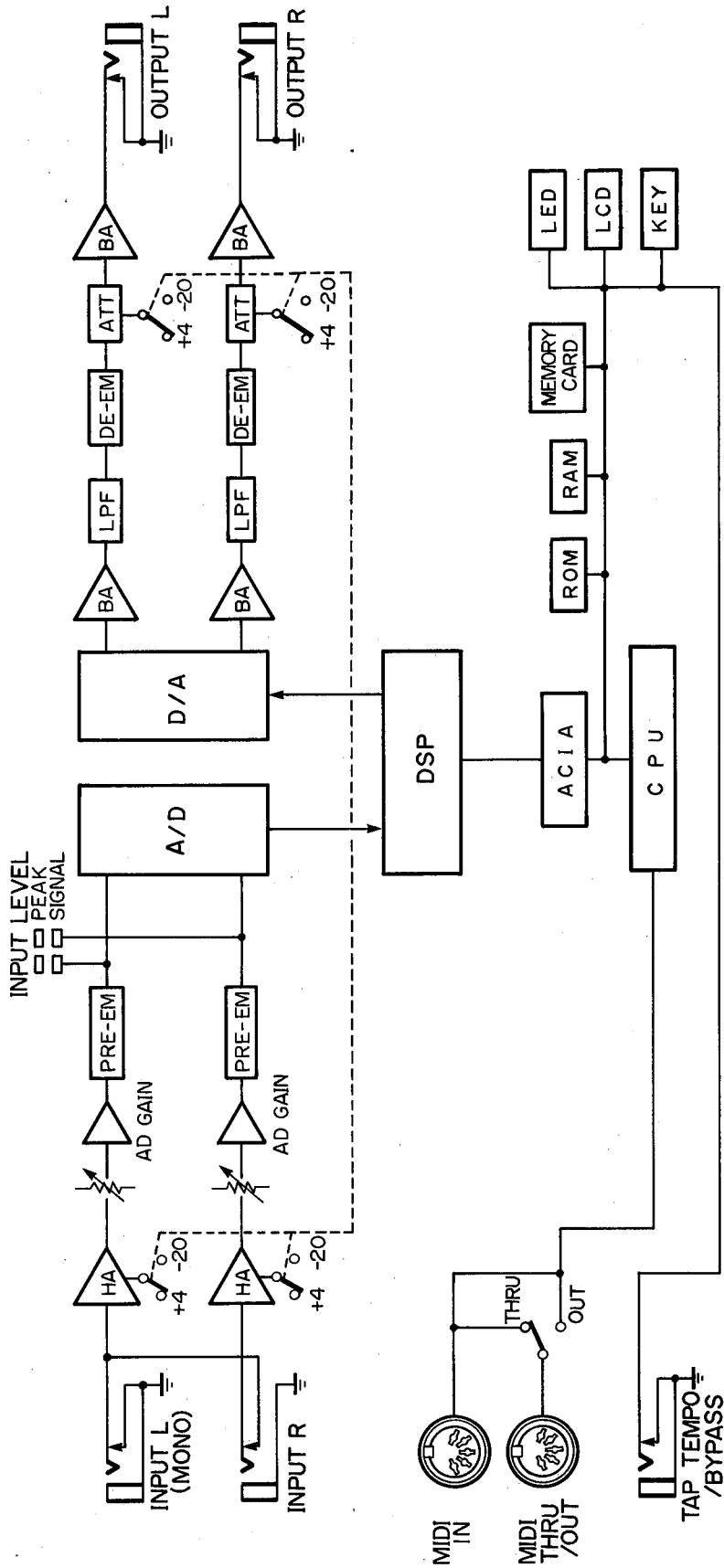
\* Specifications and appearance subject to change without notice.

# Dimensions



Unit=mm (inch)

# Block Diagram



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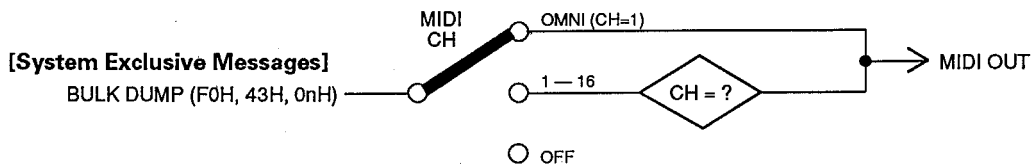
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**MIDI Data Format**  
**Format de données MIDI**  
**MIDI-Datenformat**

# 1. Transmission Conditions / Conditions de transmission / Übertragungsbedingungen



## 2. Transmission Data / Transmission de données / Datenübertragung

### 2-1. System Information

#### [1] System Exclusive Messages

##### • BULK DUMP

Bulk dump messages can be transmitted when the MIDI OUT/THRU select switch of the EMP700 is set to the "OUT" position.

The combination of bulk dump data to be transmitted can be selected in the utility mode.

#### 2) 1 BANK PROGRAM CHANGE TABLE BULK DATA

When a 1 BANK PROGRAM CHANGE TABLE BULK OUT operation is performed or when a 1 BANK PROGRAM CHANGE TABLE BULK DUMP REQUEST message is received by the EMP700, the data is transmitted on the MIDI channel specified for the currently selected BANK.

#### 1) 1 MEMORY BULK DATA

When a 1 MEMORY BULK OUT operation is performed or when a 1 MEMORY BULK DUMP REQUEST message is received by the EMP700, the data is transmitted on the MIDI channel specified for the currently selected BANK.

STATUS	11110000 (F0H)	SYSTEM EXCLUSIVE
ID NO.	01000011 (43H)	YAMAHA
SUB STATUS	0000nnnn	nnnn = CHANNEL NO. *1
FORMAT NO.	01111110 (7EH)	UNIVERSAL BULK DUMP
BYTE COUNT	00000001 (01H)	HEADER & DATA = 168 bytes
	00101000 (28H)	
HEADER	01001100 (4CH)	"L"
	01001101 (4DH)	"M"
	00100000 (20H)	" "
	00100000 (20H)	" "
	00111000 (38H)	"8"
	00110111 (37H)	"7"
	00110111 (37H)	"7"
	00110001 (31H)	"1"
DATA NAME	01001101 (4DH)	"M" (1 MEMORY DATA)
MEMORY NO.	0nnnnnnnnnn	nnnnnnnnnn = USER MEMORY NO. *8
DATA	0000dddd	1st byte *9
	:	:
	:	:
	0000dddd	160th byte
CHECKSUM	0eeeeeee	*10
EOX	11110111 (F7H)	

STATUS	11110000 (F0H)	SYSTEM EXCLUSIVE
ID NO.	01000011 (43H)	YAMAHA
SUB STATUS	0000nnnn	nnnn = CHANNEL NO. *1
FORMAT NO.	01111110 (7EH)	UNIVERSAL BULK DUMP
BYTE COUNT	00000010 (02H)	HEADER & DATA = 266 bytes
	00001010 (0AH)	
HEADER	01001100 (4CH)	"L"
	01001101 (4DH)	"M"
	00100000 (20H)	" "
	00100000 (20H)	" "
	00111000 (38H)	"8"
	00110111 (37H)	"7"
	00110111 (37H)	"7"
	00110001 (31H)	"1"
DATA NAME	01010100 (54H)	"T" (1BANK DATA)
BANK NO.	00000bbb	bbb = BANK NO. *11
DATA	00000bbb	1st byte *12
	:	:
	:	:
	00000bbb	256th byte
CHECKSUM	0eeeeeee	*10
EOX	11110111 (F7H)	



### 3) SYSTEM SETUP BULK DATA

When a SYSTEM SETUP BULK OUT operation is performed or when a SYSTEM SETUP BULK DUMP REQUEST message is received by the EMP700, the data is transmitted on the MIDI channel specified for the currently selected BANK.

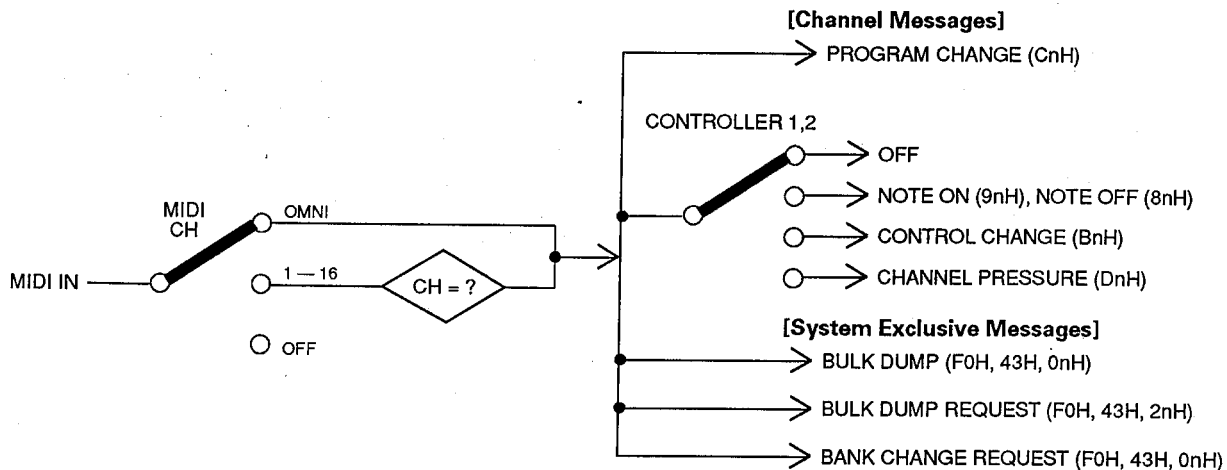
STATUS	11110000 (F0H)	SYSTEM EXCLUSIVE
ID NO.	01000011 (43H)	YAMAHA
SUB STATUS	0000nnnn	nnnn = CHANNEL NO. *1
FORMAT NO.	01111110 (7EH)	UNIVERSAL BULK DUMP
BYTE COUNT	00000000 (00H)	HEADER & DATA = 20 bytes
	00010100 (14H)	
HEADER	01001100 (4CH)	"L"
	01001101 (4DH)	"M"
	00100000 (20H)	" "
	00100000 (20H)	" "
	00111000 (38H)	"8"
	00110111 (37H)	"7"
	00110111 (37H)	"7"
	00110001 (31H)	"1"
DATA NAME	01010011 (53H)	"S" (SYSTEM SETUP DATA)
	00100000 (20H)	" "
VERSION NO.	0vvvvvvv	VERSION NO. MSB
	0vvvvvvv	VERSION NO. LSB
CHANNEL NO.	000nnnnn	bank A *13
	000nnnnn	bank B
	000nnnnn	bank C
	000nnnnn	bank D
BANK NO.	000000bb	CURRENTLY SELECTED BANK NO. *11
CONTROL NO.	0ccccccc	CONTROLLER 1 *14
	0ccccccc	CONTROLLER 2
FOOTSWITCH	0000dddd	FOOTSWITCH ASSIGNMENT *15
CHECKSUM	0eeeeeee	*10
EOX	11110111 (F7H)	

### 4) ALL BULK DATA

When an ALL BULK OUT operation is performed or when an ALL BULK DUMP REQUEST message is received by the EMP700, the data is transmitted on the MIDI channel specified for the currently selected BANK.

All user program data from U01 to U50, all bank program change tables A through D, and system setup data will be transmitted in this order and in the formats described in (1) to (3) above.

### 3. Reception Conditions / Conditions de réception / Empfangsbedingungen



### 4. Reception Data / Réception des données / Empfangsdaten

#### 4-1. Channel Information

##### [1] Channel Voice Messages

##### 1) NOTE ON

Received on the channel specified for the selected bank when a program with controllers 1 and 2 assigned to KEY NOTE or KEY VEL. is active or when a pitch change group effect (TPI, SPI, P+R, P→R) and a parameter setting other than OFF are selected.

When a message is received, the value of the assigned effect parameter is changed according to the note number or velocity value or the pitch change course value changes according to the note number.

STATUS	1001nnnn (9nH)	nnnn = Channel No. *1
1st data	0kkkkkkk	kkkkkkk = Note No. *2
2nd data	0vvvvvvv	vvvvvvv = Velocity *3

##### 2) NOTE OFF

This message affects the EMP700 only when the equipment signalling the end of a NOTE ON message is connected.

STATUS	1000nnnn (8nH)	nnnn = Channel No. *1
1st data	0kkkkkkk	kkkkkkk = Note No. *2
2nd data	0vvvvvvv	vvvvvvv = Velocity *3

##### 3) CONTROL CHANGE

Received on the channel specified for the selected bank when a program with controllers 1 and 2 assigned to either 01 (MOD. WHEEL) ~ 31 or 64 (SUSTAIN) ~ 95 is active.

When a message is received, the value of the assigned effect parameter is changed according to the control value.

STATUS	1011nnnn (BnH)	nnnn = Channel No. *1
1st data	0ccccccc	ccccccc = Control No. *4
2nd data	0vvvvvvv	vvvvvvv = Control Value *5

##### 4) PROGRAM CHANGE

Received on the MIDI channel specified for the currently selected bank.

When a message is received, the corresponding program is called from the program change table of the selected bank.

STATUS	1100nnnn (CnH)	nnnn = Channel No. *1
1st data	0ppppppp	ppppppp = Program No. *6

##### 5) CHANNEL PRESSURE

Received on the channel specified for the selected bank when a program with controllers 1 and 2 assigned to CH PRES. in the UTILITY mode is active.

When a message is received, the value of the assigned parameter is changed according to the pressure value.

STATUS	1101nnnn (DnH)	nnnn = Channel No. *1
1st data	0vvvvvvv	vvvvvvv = Pressure Value *7

## 4-2. System Information

### [1] System Exclusive Messages

#### 1) 1 MEMORY BULK DATA

Received on the MIDI channel specified for the currently selected bank.

When received, the currently active program data is erased and replaced by the received data.

The data format is the same as for transmission.

#### 2) 1 BANK PROGRAM CHANGE TABLE BULK DATA

Received on the MIDI channel specified for the currently selected bank.

When received, the currently active program change table is erased and replaced by the received data.

The data format is the same as for transmission.

#### 3) SYSTEM SETUP BULK DATA

Received on the MIDI channel specified for the currently selected bank.

When received, the currently active system setup data is erased and replaced by the received data.

The data format is the same as for transmission.

#### 4) ALL BULK DATA

Received on the MIDI channel specified for the currently selected bank.

When received, virtually all currently active data is erased and replaced by the received data.

The data format is the same as for transmission.

#### 5) 1 MEMORY BULK DUMP REQUEST

Received on the MIDI channel specified for the currently selected bank.

When received, the data corresponding to the specified USER program is transmitted.

```
STATUS      11110000 (F0H)  SYSTEM EXCLUSIVE
ID NO.      01000011 (43H)  YAMAHA
SUB STATUS  0010nnnn        nnnn = CHANNEL NO. *1
FORMAT NO.  01111110 (7EH)  UNIVERSAL BULK DUMP
BYTE COUNT  00000010 (02H)  HEADER & DATA = 266 bytes
           00001010 (0AH)
HEADER      01001100 (4CH)  "L"
           01001101 (4DH)  "M"
           00100000 (20H)  " "
           00100000 (20H)  " "
           00111000 (38H)  "8"
           00110111 (37H)  "7"
           00110111 (37H)  "7"
           00110001 (31H)  "1"
DATA NAME   01001101 (4DH)  "M" (1 MEMORY DATA)
DATA        0mmmmmmmm      mmmmmmmmm = USER'S MEMORY NO. *8
EOX        11110111 (F7H)
```

#### 6) 1 BANK PROGRAM CHANGE TABLE BULK DUMP REQUEST

Received on the MIDI channel specified for the currently selected bank.

When received, the data corresponding to the program change table of the specified bank is transmitted.

```
STATUS      11110000 (F0H)  SYSTEM EXCLUSIVE
ID NO.      01000011 (43H)  YAMAHA
SUB STATUS  0010nnnn        nnnn = CHANNEL NO. *1
FORMAT NO.  01111110 (7EH)  UNIVERSAL BULK DUMP
BYTE COUNT  00000010 (02H)  HEADER & DATA = 266 bytes
           00001010 (0AH)
HEADER      01001100 (4CH)  "L"
           01001101 (4DH)  "M"
           00100000 (20H)  " "
           00100000 (20H)  " "
           00111000 (38H)  "8"
           00110111 (37H)  "7"
           00110111 (37H)  "7"
           00110001 (31H)  "1"
DATA NAME   01010100 (54H)  "T" (1BANK DATA)
BANK NO.    00000bbb        bbb = BANK NO. *11
EOX        11110111 (F7H)
```

#### 7) BANK CHANGE REQUEST

Received on the MIDI channel specified for the currently selected bank.

When received, the specified bank is called up.

```
STATUS      11110000 (F0H)  SYSTEM EXCLUSIVE
ID NO.      01000011 (43H)  YAMAHA
SUB STATUS  0000nnnn        nnnn = CHANNEL NO. *1
FORMAT NO.  01111100 (7CH)  CONDITION SETSETUP
BYTE COUNT  00000000 (00H)  HEADER & DATA = 13 bytes
           00001101 (0DH)
HEADER      01001100 (4CH)  "L"
           01001101 (4DH)  "M"
           00100000 (20H)  " "
           00100000 (20H)  " "
           00111000 (38H)  "8"
           00110111 (37H)  "7"
           00110111 (37H)  "7"
           00110001 (31H)  "1"
DATA NAME   01010101 (55H)  "U" (BANK CHANGE)
           00100000 (20H)  " "
VERSION NO. 0vvvvvvv        VERSION NO. MSB
           0vvvvvvv        VERSION NO. LSB
DATA        00000bbb        bbb = BANK NO. *11
CHECKSUM    0eeeeeee        *10
EOX        11110111 (F7H)
```

## 5. Notes / Remarques / Hinweise

### 8) SYSTEM SETUP BULK DUMP REQUEST

Received on the MIDI channel specified for the currently selected bank.

When received, the system setup data is transmitted.

```

STATUS      11110000 (F0H)  SYSTEM EXCLUSIVE
ID NO.      01000011 (43H)  YAMAHA
SUB STATUS  0010nnnn        nnnn = CHANNEL NO. *1
FORMAT NO.  01111110 (7EH)  UNIVERSAL BULK DUMP
HEADER      01001100 (4CH)  "L"
              01001101 (4DH)  "M"
              00100000 (20H)  " "
              00100000 (20H)  " "
              00111000 (38H)  "8"
              00110111 (37H)  "7"
              00110111 (37H)  "7"
              00110001 (31H)  "1"
DATA NAME   01010011 (53H)  "S" (SYSTEM SETUP DATA)
              00100000 (20H)  " "
EOX         11110111 (F7H)
    
```

- \*1 nnnn = 0 (Channel 1) ~ 15 (Channel 16)
- \*2 kkkkkkk = 0 ~ 127
- \*3 vvvvvvv = 0 (Note OFF), 1 ~ 127
- \*4 cccccc = 1 ~ 31, 64 ~ 95
- \*5 vvvvvvv = 0 ~ 127
- \*6 ppppppp = 0 (Program 1) ~ 127 (Program 128)
- \*7 vvvvvvv = 0 ~ 127
- \*8 mmmmmmm = 0 (U01) ~ 49 (U50)
- \*9 Depending on memory contents
- \*10 eeeeeee is the 2's complement of the lowest 7 bits of the sum of all header and data bytes.
- \*11 bbb = 1 (Bank A) ~ 4 (Bank D)
- \*12 Two bytes as a set expressing a PRESET, USER, or CARD memory No.

mmmmmmmm	MEMORY NO.
0	P00
:	:
90	P90
91	U01
:	:
140	U50
141	C01
:	:
190	C50

- \*13 Reception channel No. of Banks A ~ D

nnnnn	CHANNEL NO.
0	OMNI ON
1	1
:	:
16	16
17	OFF

\*14 Control source of Controllers 1, 2

dddddd	CONTROL SOURCE
0	OFF
1	MOD. WHEEL
2	BREATH CONTROL
3	---
4	FOOT CONTROL
:	:
5	MIDI CTRL 5
31	MIDI CTRL 31
:	:
32	MIDI CTRL 64 SUSTAIN PEDAL
63	MIDI CTRL 95
64	MIDI NOTE ON KEY #
65	MIDI NOTE ON VELOCITY
66	MIDI CHANNEL PRESS.

\*15 Foot switch assignment

dddd	SETTING
0	BYPASS
1	TAP TEMPO
2	OFF

Function ...	Transmitted	Recognized	Remarks
Basic Default Channel Changed	x x	1 - 16, off 1 - 16, off	memorised
Mode Default Messages Altered	x x *****	OMNIoff/OMNIon x x	memorised
Note Number : True voice	x *****	0 - 127 x	
Velocity Note ON Note OFF	x x	o v=0-127 x	
After Key's Touch Ch's	x x	x o	
Pitch Bender	x	x	
Control Change	1 - 31 x	o	
	64 - 95 x	o	
Prog Change : True #	x	o	*1
System Exclusive	o	o	Bulk Dump
System : Song Pos : Song Sel Common : Tune	x x x	x x x	
System :Clock Real Time :Commands	x x	x x	
Aux :Local ON/OFF :All Notes OFF Mes- :Active Sense sages:Reset	x x x x	x x o x	
Notes: *1 = For program 1 - 128, memory P00-P90, U01-U50 C01-C50 is selected.			

Mode 1 : OMNI ON, POLY  
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO  
Mode 4 : OMNI OFF, MONO

o : Yes  
x : No

Litiumbatteri

Bör endast bytas av servicepersonal.  
Explosionsfara vid felaktig hantering.

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Lithiumbatteri  
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# YAMAHA