YAMAHA

MU128

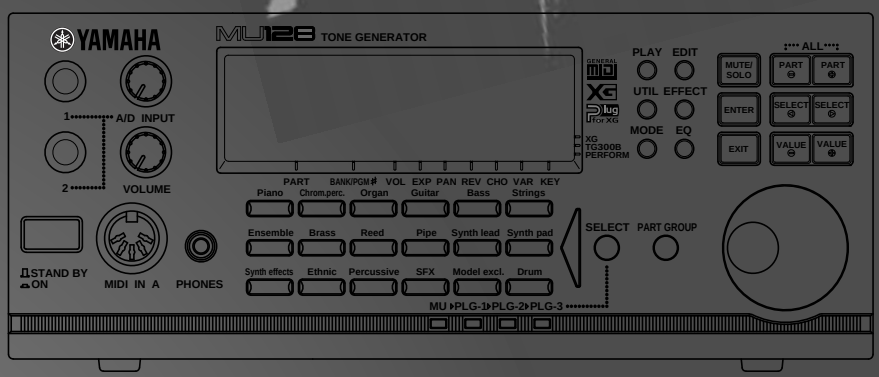
TONE GENERATOR

English

Deutsch

Français

Owner's Manual
Bedienungsanleitung
Mode d'emploi



GENERAL MIDI XG Plug for XG

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 user's 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 your local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

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

NEDERLAND / THE NETHERLANDS

- Dit apparaat bevat een lithium batterij voor geheugen back-up.
- This apparatus contains a lithium battery for memory back-up.
- Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat ann het einde van de levensduur afdankt of de volgende Yamaha Service Afdeiing:
  Yamaha Music Nederland Service Afdeiing
  Kanaalweg 18-G, 3526 KL UTRECHT
  Tel. 030-2828425
- For the removal of the battery at the moment of the disposal at the end of the service life please consult your retailer or Yamaha Service Center as follows:
  Yamaha Music Nederland Service Center
  Address : Kanaalweg 18-G, 3526 KL UTRECHT
  Tel : 030-2828425
- Gooi de batterij niet weg, maar lever hem in als KCA.
- Do not throw away the battery. Instead, hand it in as small chemical waste.

ADVARSEL!

Lithiumbatteri—Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandoren.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

SPECIAL MESSAGE SECTION

This product utilizes batteries or an external power supply (adapter). DO NOT connect this product to any power supply or adapter other than one described in the manual, on the name plate, or specifically recommended by Yamaha.

WARNING: Do not place this product in a position where anyone could walk on, trip over, or roll anything over power or connecting cords of any kind. The use of an extension cord is not recommended! If you must use an extension cord, the minimum wire size for a 25' cord (or less) is 18 AWG. NOTE: The smaller the AWG number, the larger the current handling capacity. For longer extension cords, consult a local electrician.

This Product should be used only with the components supplied or; a cart, rack, or stand that is recommended by Yamaha. If a cart, etc., is used, please observe all safety markings and instructions that accompany the accessory product.

SPECIFICATIONS SUBJECT TO CHANGE: The information contained in this manual is believed to be correct at the time of printing. However, Yamaha reserves the right to change or modify any of the specifications without notice or obligation to update existing units.

This product, either alone or in combination with an amplifier and headphones or speaker/s, may be capable of producing sound levels that could cause permanent hearing loss. DO NOT operate for long periods of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist. **IMPORTANT:** The louder the sound, the shorter the time period before damage occurs.

Some Yamaha products may have benches and/or accessory mounting fixtures that are either supplied with the product or as optional accessories. Some of these items are designed to be dealer assembled or installed. Please make sure that benches are stable and any optional fixtures (where applicable) are well secured BEFORE using. Benches supplied by Yamaha are designed for seating only. No other uses are recommended.

NOTICE: Service charges incurred due to lack of knowledge relating to how a function or effect works (when the unit is operating as designed) are not covered by the manufacturer's warranty, and are therefore the owners responsibility. Please study this manual carefully and consult your dealer before requesting service.

ENVIRONMENTAL ISSUES: Yamaha strives to produce products that are both user safe and environmentally friendly. We sincerely believe that our products and the production methods used to produce them, meet these goals. In keeping with both the letter and the spirit of the law, we want you to be aware of the following:

Battery Notice: This product MAY contain a small non-rechargeable battery which (if applicable) is soldered in place. The average life span of this type of battery is approximately five years. When replacement becomes necessary, contact a qualified service representative to perform the replacement.

This Product may also use "household" type batteries. Some of these may be rechargeable. Make sure that the battery being charged is a rechargeable type and that the charger is intended for the battery being charged.

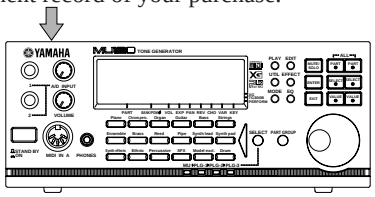
When installing batteries, do not mix old batteries with new, or with batteries of a different type. Batteries MUST be installed correctly. Mismatches or incorrect installation may result in overheating and battery case rupture.

Warning: Do not attempt to disassemble, or incinerate any battery. Keep all batteries away from children. Dispose of used batteries promptly and as regulated by the laws in your area.

Note: Check with any retailer of household type batteries in your area for battery disposal information.

Disposal Notice: Should this Product become damaged beyond repair, or for some reason its useful life is considered to be at an end, please observe all local, state, and federal regulations that relate to the disposal of products that contain lead, batteries, plastics, etc. If your dealer is unable to assist you, Please contact Yamaha directly.

NAME PLATE LOCATION: The name Plate is located on the top of the product. The model number, power requirements, etc., are located on this plate. (The serial number is located on the rear panel.) You should record the model number, serial number, and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.



Model _____

Serial No. _____

Purchase Date _____

92-BP

PLEASE KEEP THIS MANUAL

Welcome to the MU128

Congratulations and thank you for purchasing the Yamaha MU128 Tone Generator!

The MU128 is an advanced tone generator providing an amazing total of **1342 high-quality Voices**, full **General MIDI compatibility** — including Yamaha's **XG** — plus flexible **computer interfacing** in a compact, easy-to-use half-rack mount unit.

With the convenient built-in **host computer interface** and **MIDI terminals**, the MU128 is ideal for any computer music system — from connection to a simple laptop to integration in a complete MIDI studio. With its large LCD and the intuitive graphic controls on the display, the MU128 is remarkably easy to use.

The MU128 also features **completely independent dual MIDI inputs, 64 Part multi-timbral capacity** and full **128-note polyphony** for playback of even the most sophisticated song data. A special **Performance mode** gives you flexible four-Voice operation, for live performance applications. Also built into the system are five **digital multi-effects** and two EQ sections (one per-part, and one overall), which give you enormous versatility in "sweetening" the sound. What's more, the MU128 provides a host of comprehensive, yet easy-to-use **editing tools** for getting just the sound you need.

The MU128 is also compatible with the powerful **XG Plug-in System**, allowing you to install up to three optional XG Plug-in boards for additional Voices and effects. Currently available plug-in boards include the:

PLG100-VL Virtual Acoustic — which provides stunning monophonic synthesizer Voices with the powerful physical modeling tone generation system.

PLG100-VH Vocal Harmony — which produces automatic "harmonizer" effects, letting you apply one-, two- or three-part harmonies to a vocal signal (via a microphone connected to the A/D Inputs).

PLG100-DX Advanced DX/TX — which provides vintage FM synthesis Voices, the same as found on the famous Yamaha DX7.

Three boards (in any combination) can be installed simultaneously. With the easy-to-remove rear panel cover and the special guide slots, installation is also exceptionally simple.

The MU128 also has convenient **A/D inputs** that allow you to connect a microphone, electric guitar or other instrument, and mix those signals with

the MU128's Voices.

* Company names and product names in this Owner's Manual are the trademarks or registered trademarks of their respective companies and are hereby acknowledged.

GM System Level 1

"GM System Level 1 is a standard specification that defines the arrangement of voices in a tone generator and its MIDI functionality, ensuring that data can be played back with substantially the same sounds on any GM-compatible tone generator, regardless of its manufacturer or model.
Tone generators and song data that meet the "GM System Level 1" bear this GM logo.

XG

"XG" is a tone generator format that expands the voice arrangement of the "GM System Level 1" specification to meet the ever-increasing demands of today's computer peripheral environment, providing richer expressive power while maintaining upward compatibility of data. "XG" greatly expands "GM System Level 1" by defining the ways in which voices are expanded or edited and the structure and type of effects.
When commercially available song data bearing the XG logo is played back on a tone generator which bears the XG logo, you will enjoy a full musical experience that includes unlimited expansion voices and effect functions.

About the XG Plug-in System

This system offers powerful expansion and upgrade capabilities for XG-Plug-in-compatible tone generators.

The XG Plug-in System enables you to equip the tone generator with the latest and most sophisticated technology, ensuring that you keep pace with the rapid and multi-faceted advances in modern music production.

Unpacking

Your MU128 package should include the items listed below. Make sure that you have them all. Also, write down the serial number of your MU128 in the box below, for future reference.

MU128	Serial No.:
PA-6 AC Power Adaptor*	
Owner's Manual set (this book and the "Sound List & MIDI Data" booklet)	
CD-ROM (XGtools)	
XGtools Setup Guide	

* Power supply recommendation may vary from country to country. Please check with your nearest Yamaha dealer for further details.

English

Table of Contents

Welcome to the MU128 4
Unpacking 6
Table of Contents 7
How to Use This Manual 11
PRECAUTIONS 13

The Controls of the MU128 14
Front Panel 14
Rear Panel 17
The MU128 — What It Is and What It Can Do 19
What It Is... 19
About General MIDI 19
About XG 20
What It Can Do... 20
Using With MIDI Keyboard 20
Using With a Computer or Sequencer 20
About the Modes of the MU128 21
Play Modes and the Part Controls 22
Part Edit Mode 22
Utility Mode 22
Modes and Function Tree 23

GUIDED TOUR

Setting Up Your MU128R 26
What You'll Need 26
Making the Connections 26
Powering Up 29
Playing the Demo Song 30
About the Demo Song 31
Setting Up the MU128 in Your Music System 32
Connecting to MIDI Devices 32
Connecting Directly to a Computer 35
Selecting and Playing the Performances 38
Calling Up the Performance Play Mode and Playing the Performances 38
Selecting and Playing Individual Voices 42
Calling Up the XG Mode 42
Selecting Voice Banks and Voices From the Panel 43
Selecting Voices with the Voice Category Buttons 43
Manually Selecting Voice Banks and Voices 45
Selecting Voices From a MIDI Keyboard 48
About the Parts and Voices of the MU128 49
Parts 49
Voices 49

Normal Voices and Drum Voices 50
Maximum Simultaneous Sounds (Polyphony) 50
Selecting the Voices 50
Use of bank select MSB and LSB when the Sound Module mode is set to "XG" or "PFM" 51
Use of bank select MSB and LSB when the Sound Module mode is set to "TG300B" 52
Part Mode 53
How to select a Voice 54
Selecting Voices when the Sound Module mode is set to "XG" or "PFM" 55
Selecting Voices when the Sound Module mode is set to "TG300B" 56
Editing in the Multi Mode 58
Single Part Controls 59
Changing the Volume and Pan settings of a Part 60
On Your Own... 61
Edit Menu Parameters 62
Changing the Filter and EG Settings of a Part 62
On Your Own... 64
Editing Drum Kits — with the Drum Setup Controls 65
Making Changes to Individual Drum Sounds — the "Drum" Parameters 66
On Your Own... 68
Editing in the Performance Mode 69
All Part Controls 70
Transposing the Overall Key of a Performance 71
Single Part Controls — Selecting Different Voices for the Performance 72
On Your Own... 73
Edit Menu Parameters — Creating a Two-Voice Layer 74
Setting Up a Keyboard Split 76
On Your Own... 77
Using the Assignable Controller in a Performance 77
Saving Your Original Performance 78
Assignable Controller (AC1) 79
Controllers and Control Numbers 79
Control Numbers and the Actual Sound 80
Assigning the Assignable Controller 81
Using the Assignable Controller — Setting Up 82
Using the Assignable Controller — Some Applications 83
Changing the Brightness on a Piano Voice 83
Experssive Volume Control of a Part 85
Expressive Control of Individual Drum Sounds 85
On Your Own... 87
Effects 88
Using Reverb and Chorus 88
Applying Distortion to a Part — Using the Variation Effects 90

Equalizer (EQ) 92
Adjusting the Tone of a Specific Part — Part EQ 92
Adjusting the Overall Tone — Main EQ 94
Mute/Solo 95
Using Mute/Solo 95
A/D Inputs 97
Using the A/D Inputs 97
MIDI/Computer Connecting Cables 101

REFERENCE

Multi Mode 104
Part Controls 104
Single Part Control 105
All Part Control 109
Multi Edit Mode 111
Filter (FIL) 111
Envelope Generator (EG) 113
Equalizer (EQ) 116
Vibrato 117
Others 118
Drum Setup Controls 126

Performance Mode 131
Performance Part Control 132
All Part 132
Single Part 134
Performance Edit Mode 137
Common 137
Part 140
Copy and Store Operations 142
Copy 142
Store 143
Recall Function 145

Effect Edit Mode 146
Reverb (REV) 147
Chorus (CHO) 148
Variation (VAR) 149
Insertion 1, 2 (INS 1, 2) 151
About the Effect Connections — System and Insertion 152

Equalizer (Multi EQ) Edit 155

Utility Mode 156
System Functions (SYSTEM) 157
Dump Out Functions (DUMPOUT) 162
Saving and Restoring Data via MIDI 162
Saving and Restoring Data via TO HOST 162
Initialize Functions (INITIAL) 166
Demo Song Play (DEMO) 169

Other Functions 170
Sound Module Mode (MODE) 170
Show MIDI Data 171

Plug-in System 173
About the XG Plug-in System 173
Structure of the XG Plug-in System 174
Optional XG Plug-in Boards 174
Installing the Plug-in Boards 176
Before Installing the Plug-in Board 176
Setting the Part Assign Parameter 177
Setting Part Assign from an External MIDI Device 178
Selecting Voices of an XG Plug-in Board 178
Installing the Plug-in Board 179

APPENDIX

Troubleshooting 184
Error Messages 185
Specifications 187
Glossary 189
Index 191

How to Use This Manual

You are probably eager to try out your new MU128 Tone Generator right away and hear what it can do, rather than have to read through a lot of instructions before you can even get a sound out of it.

The structure of the manual is very straightforward. You can approach it in a linear manner, reading through from beginning to end, or on an "on-demand" basis, going directly to the information you need as you need it.

However, to get the most out of your MU128, we strongly suggest that you read the following sections in the order given:

1) **Precautions**
   This gives you important information on how to care for your new MU128, how to avoid damaging it, and how to ensure long-term, reliable operation.

2) **The MU128 — What It Is and What It Can Do**
   This briefly provides an overview of the functions and features of the MU128 and offers some important hints on how you can use it effectively. It also provides convenient page references so that you can easily find out about features and functions of interest.

3) **The Controls of the MU128**
   This section introduces you to the panel controls and connectors.

4) **Guided Tour**
   This is perhaps the most important and valuable section of the manual. It gets you started using your new MU128, helping you set up the instrument and play it — and it introduces you to virtually all of the important functions and features. The hands-on experience you gain in this section will help you quickly master the instrument and aid you in navigating the more detailed sections of the manual.

5) **Setting Up the MU128 in Your Music System**
   This section (within the Guided Tour) provides all you need to know to effectively integrate the MU128 into your present computer music system.

6) **Reference**
   Once you're familiar with everything above, lightly go over this comprehensive guide to all editing functions. You won't need (or want) to read everything at once, but it is there for you to refer to when you need information about a certain feature or function.

7) **Appendix**
   Use the sections in the Appendix as necessary. For example, the Index will come in handy when you need to quickly find information on a specific topic. Other sections, such as the **Glossary, Troubleshooting** and **Error Messages** provide additional useful information.

8) **Sound List & MIDI Data booklet**
   This separate booklet features lists of the Performances, Voices, drum sounds, effect types and parameters, as well as details on all relevant MIDI messages and data.

NOTES

- *The illustrations and LCD screens as shown in this owner's manual are for instructional purposes only, and may appear somewhat different from those on your instrument.*
- *Installing an XG Plug-in Board to the MU128 increases the number of menu items and parameters shown in the display. Unless otherwise indicated, the example displays printed in this manual correspond to a MU128 with no boards installed.*

PRECAUTIONS

PLEASE READ CAREFULLY BEFORE PROCEEDING

* Please keep these precautions in a safe place for future reference.

English

⚠ WARNING

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

- Do not open the instrument or attempt to disassemble the internal parts or modify them in any way. The instrument contains no user-serviceable parts. If it should appear to be malfunctioning, discontinue use immediately and have it inspected by qualified Yamaha service personnel.
- Do not expose the instrument to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings.
- If the AC adaptor cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during use of the instrument, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the adaptor plug from the outlet, and have the instrument inspected by qualified Yamaha service personnel.
- Use the specified adaptor (PA-6 or an equivalent recommended by Yamaha) only. Using the wrong adaptor can result in damage to the instrument or overheating.
- Before cleaning the instrument, always remove the electric plug from the outlet. Never insert or remove an electric plug with wet hands.
- Check the electric plug periodically and remove any dirt or dust which may have accumulated on it.

⚠ CAUTION

Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the instrument or other property. These precautions include, but are not limited to, the following:

- Do not place the AC adaptor cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.
- When removing the electric plug from the instrument or an outlet, always hold the plug itself and not the cord.
- Do not connect the instrument to an electrical outlet using a multiple-connector. Doing so can result in lower sound quality, or possibly cause overheating in the outlet.
- Unplug the AC power adaptor when not using the instrument, or during electrical storms.
- Before connecting the instrument to other electronic components, turn off the power for all components. Before turning the power on or off for all components, set all volume levels to minimum.
- Do not expose the instrument to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel disfiguration or damage to the internal components.
- Do not use the instrument near other electrical products such as televisions, radios, or speakers, since this might cause interference which can affect proper operation of the other products.
- Do not place the instrument in an unstable position where it might accidentally fall over.
- Before moving the instrument, remove all connected adaptor and other cables.
- When cleaning the instrument, use a soft, dry cloth. Do not use paint thinners, solvents, cleaning fluids, or chemical-impregnated wiping cloths. Also, do not place vinyl, plastic or rubber objects on the instrument, since this might discolor the panel or keyboard.
- Do not rest your weight on, or place heavy objects on the instrument, and do not use excessive force on the buttons, switches or connectors.
- Do not place object in front of the instrument's air vent, since this may prevent adequate ventilation of the internal components, and possibly result in the instrument overheating.
- Do not operate the instrument for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in the ears, consult a physician.

■ REPLACING THE BACKUP BATTERY

- This instrument contains a non rechargeable internal backup battery which permits internal data to remain stored even when the power is off. When the backup battery needs replacing, the message “Battery Low!” will display in the display. When this happens, immediately back up your data (using an external device such as the floppy disk-based Yamaha MIDI Data Filer MDF3), then have qualified Yamaha service personnel replace the backup battery.
- Do not attempt to replace the backup battery yourself, in order to prevent the possible serious hazards. Always have qualified Yamaha service personnel replace the backup battery.
- Never place the backup battery in a location that a child can reach, since a child might accidentally swallow the battery. If this should happen, consult a physician immediately.

■ SAVING USER DATA

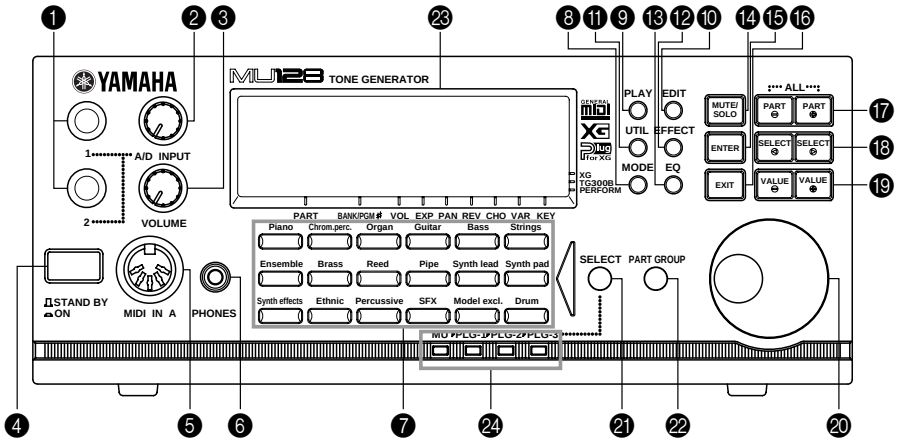
- Save all data to an external device such as the Yamaha MIDI Data Filer MDF3, in order to help prevent the loss of important data due to a malfunction or user operating error.

Yamaha cannot be held responsible for damage caused by improper use or modifications to the instrument, or data that is lost or destroyed.

Always turn the power off when the instrument is not in use.

The Controls of the MU128

Front Panel



❶ A/D INPUT 1, 2 jacks

For connection of a microphone, electric guitar or other electronic instruments (1/4" mono).

❷ A/D INPUT VOLUME control

For control of the level of the A/D inputs.

❸ VOLUME control

For adjusting the overall volume of the MU128. (This does not affect the external signal received via the rear panel INPUT jacks.).

❹ STAND BY/ON switch (Power Switch)

Pressing this turns the power on and off (stand by).

> ***CAUTION***
> *Even when the switch is in the "STAND BY" position, electricity is still flowing to the instrument at the minimum level. When you are not using the MU128, make sure you unplug the AC power adaptor from the wall AC outlet.*

❺ MIDI IN A terminal (front panel)

For connection to other MIDI devices, such as a MIDI keyboard or sequencer. When the HOST SELECT switch is set to "MIDI," this receives MIDI data for controlling Parts set to receive over channels A01 - A16. When the HOST SELECT switch is set to "Mac," "PC-1," or "PC-2," it transmits the received MIDI data to the TO HOST terminal. The front panel MIDI IN A terminal can be selected for operation in the Utility mode (page 157). A rear panel MIDI IN-A terminal is also provided; however both the front and rear panel terminals cannot be used simultaneously.

❻ PHONES jack

For connection to a set of stereo headphones (stereo mini pin).

❼ Voice Category buttons

For selection of basic Voice categories. Use these buttons to call up the desired Voice category in the Multi Play mode (Single Part controls; page 59) or in the Performance Play mode (Single Part controls; page 72), then select a specific Voices from the category by using the [VALUE ⊖/⊕] buttons or data dial. (page 43.)

❽ MODE button

For calling up the Sound Module mode display. (page 170.)

❾ PLAY button

For entering the Play mode and switching among the different Play displays. (pages 41, 47.)

❿ EDIT button

For entering the Edit mode. (pages 58, 69.)

⓫ UTIL (UTILITY) button

For entering the Utility mode. (page 156.)

⓬ EFFECT button

For entering the Effect Edit mode. (page 146.)

⓭ EQ button

For entering the EQ Edit mode. (page 155.)

⓮ MUTE/SOLO button

Pressing this alternately mutes or solos the selected Part. (page 95.)

⓯ ENTER button

For calling up menu items in the display and for executing certain functions and operations. Double-clicking this (pressing it twice quickly) calls up the Show MIDI data function. (page 171.)

⓰ EXIT button

For leaving various display pages and returning to previous displays. Also for canceling certain functions and operations.

⓱ PART ⊖/⊕ buttons

For selecting different Parts. In the Effect Edit mode, these can be used to switch among the different effects. Pressing these together alternately switches between All Part and Single Part control. (page 61.)

⓲ SELECT ◀/▶ buttons

For selecting the various menu items, parameters and controls on the display.

⓳ VALUE ⊖/⊕ buttons

For changing the value of a selected parameter or control.

Hint

You can rapidly move through the values by holding down one of the [VALUE ⊖/⊕] buttons. You can move even more rapidly by holding down one button and then pressing and holding down the other. For example, to rapidly advance (increase) the value, hold down the [VALUE ⊕] button and simultaneously press and hold down the [VALUE ⊖] button.

⑳ Data dial

For rapidly adjusting/changing values of the selected function or parameter. Rotate this clockwise to increase the value.

㉑ SELECT button

For switching among the internal Voices of the MU128 and the Voices of any installed optional XG Plug-in boards (page 174). (This applies to tone generator type boards only; effect type boards are selected by a different method.) Press this repeatedly to select the desired board and its Voices. The appropriate LED flashes briefly and the corresponding icon for the board appears in the LCD. (This button has no effect unless a tone generator type plug-in board is installed.) (page 178.)

㉒ PART GROUP button

For switching among the Part groups. Press this repeatedly to select the desired Part group (A, B, C, or D).

㉓ Display

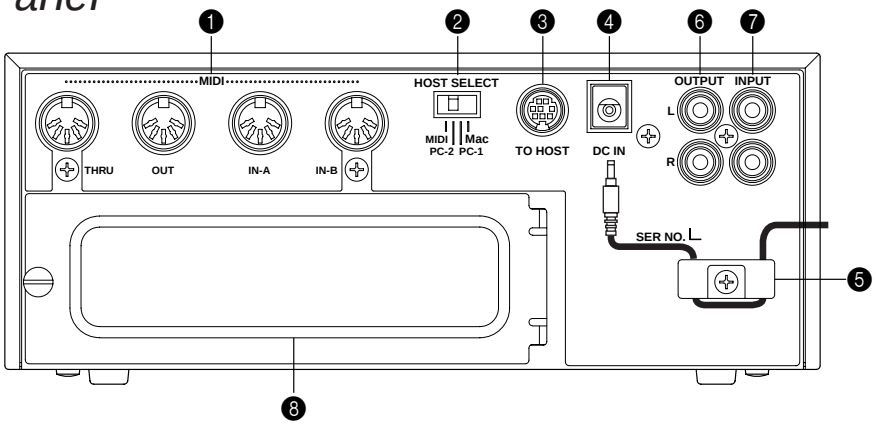
This back-lit LCD displays all necessary operation information for the MU128.

㉔ LEDs

These indicate how many plug-in boards are installed. The MU LED indicates the MU128 itself and its built-in Voices and remains lit. PLG-1, PLG-2, and PLG-3 are lit according to the number of XG Plug-in boards installed. When using the SELECT button to select a board, the corresponding LED flashes briefly.

During playback of song data (from a sequencer, etc.), these flash to indicate usage of the various sound sources.

Rear Panel



❶ MIDI terminals

For connection to other MIDI devices, such as a MIDI keyboard, tone generator, or sequencer, or to a computer that has a MIDI interface.

• MIDI IN-A terminal

When the HOST SELECT switch is set to “MIDI,” this receives MIDI data for controlling Parts set to receive over channels A01 - A16. When the HOST SELECT switch is set to “Mac,” “PC-1,” or “PC-2,” it transmits the received MIDI data to the TO HOST terminal. The front and rear panel MIDI IN-A terminals cannot be used simultaneously. The rear panel MIDI IN-A terminal can be selected for operation in the Utility mode (page 157).

• MIDI IN-B terminal

When the HOST SELECT switch is set to “MIDI,” this receives MIDI data for controlling Parts set to receive over channels B01 - B16.

• MIDI OUT terminal

This is for transmitting data to another MIDI device, in the case of sending bulk data to a computer or MIDI data storage device (when the HOST SELECT switch is set to “MIDI”). It also can be used for outputting the data received via the TO HOST terminal, letting you connect other MIDI instruments and use the MU128 as a MIDI interface for your computer (when the HOST SELECT switch is set to “Mac,” “PC-1,” or “PC-2”).

• MIDI THRU terminal

This is for outputting the data received via the MIDI IN-A terminal as is, without any additional data generated by the MU128 itself. This is commonly used for “daisy-chain” connection of other MIDI instruments.

❷ HOST SELECT switch

For selecting the type of host computer. (page 35.)

❸ TO HOST terminal

For connection to a host computer that does not have a MIDI interface. (page 36.)

❹ DC IN jack

For connection to the PA-6 AC power adaptor.

WARNING

Use ONLY a Yamaha PA-6 AC Power Adaptor (or other adaptor specifically recommended by Yamaha) to power your instrument from the AC mains. The use of other adaptors may result in irreparable damage to both the adaptor and the MU128.

CAUTION

When connecting the AC power adaptor, first make sure that the MU128 is turned off (set to STAND BY). Next, connect one end of the power adaptor to the DC IN jack on the MU128, and connect the other end to an appropriate AC outlet.

❺ Power cord hook

Use this to secure the AC power adaptor's cord and connector to the MU128, to prevent accidental disconnection. Plug the connector into the DC IN jack, then wrap the cord inside both ends of the hook.

❻ OUTPUT L, R jacks (Left, Right)

For connection to a stereo amplifier/speaker system.

❼ INPUT L, R jacks (Left, Right)

These are for connection to external sound sources, such as CD players, cassette decks, etc. Neither the front panel VOLUME control nor the built-in effects and equalizer of the MU128 have any effect on the input sound.

❽ XG Plug-in Board expansion bay

This bay accommodates up to three XG Plug-in Boards. To install a board, first remove the expansion bay cover (page 179). Since the screw is tightened securely at the factory, you may need to use a screwdriver to loosen it at first. Normally, it can be fastened and removed simply by using your fingers.

The MU128 — What It Is and What It Can Do

What It Is...

The MU128 is a full-featured and easy-to-use tone generator, that provides an unprecedented wealth of Voices and expressive sonic control. It features full General MIDI Level 1 compatibility. It also provides XG compatibility, with an huge total of 1149 Voices and 37 drum kits.

The MU128 has 128-note polyphony and is 64-Part multi-timbral. In other words, the MU128 has 64 different Parts, each with its own Voice, so that up to 64 different Voices can be sounded simultaneously.

Additional A/D Parts let you connect up to two external signals — such as a microphone, electric guitar or CD player — and mix them with the MU128's Voices.

Although Voices cannot be directly edited, the various Part controls and Edit mode give you tools for transforming or customizing the sound of the Voices. What's more, the MU128 has a built-in multi-effect processor, with seven independent digital effect "units" for enhancing the sound.

The MU128 also features a special Performance mode, in which four Parts are played simultaneously over a single MIDI channel. Connected to a MIDI keyboard, this effectively gives you four tone generators in one. The MU128 gives you 100 factory-programmed Preset Performances plus 100 Internal Performance locations for storing your own original Performances.

About General MIDI

General MIDI is a new addition to the worldwide MIDI standard. MIDI, as you know, stands for Musical Instrument Digital Interface, and makes it possible for various electronic musical instruments and other devices to "communicate" with each other. For example, by connecting a sequencer to the MU128's MIDI IN terminal, you could play back a song on the sequencer using the Voices of the MU128.

So, where does General MIDI fit in all of this? One of the most important features of General MIDI is in the standardization of Voices. This means that a song recorded in the General MIDI format can be played back on any General MIDI compatible tone generator and sound just as the composer intended. For example, if there is an alto sax solo in the song, it will be played by an alto sax Voice on the General MIDI tone generator (and not by a tuba or harpsichord!). Since the MU128 is fully compatible with General MIDI, you can take advantage of the vast wealth of musical material recorded in that format.

About XG

The new XG format is an extension of General MIDI, and provides a number of significant improvements and enhancements. XG-compatible song data takes advantage of the extensive MIDI control and built-in effects of the MU128 (and other MU-series instruments).

To take greatest advantage of the powerful capabilities of XG, we recommend using XG-compatible instruments and software. For example, XG-compatible keyboards such as the Yamaha CBX-K2 keyboard and software give you direct controls for accessing the full expressive potential of the MU128's XG Voices and the XG-related parameters.

What It Can Do...

Here are a few ideas on how you can use the MU128. The list below is not comprehensive, but is meant to be a general guide to the possibilities and provide a starting point or springboard for your own creative ideas and explorations.

Using With MIDI Keyboard

Use the MU128 as supplementary tone generator with your MIDI keyboard and play the Voices of both instruments in a layer together. Or, use the convenient Performance mode, and play four Voices on the MU128 at once. You can split the four Voices across the keyboard, playing each from a different register. Or you can create sophisticated velocity splits, in which a different Voice is heard depending on how strongly you play the keyboard. Or use keyboard and velocity splits together for even greater flexibility.

Using With a Computer or Sequencer

Home Studio Setup

The MU128 integrates instantly and easily into any existing setup. If you have a MIDI keyboard, computer and sequencing software, the MU128 with its high-quality Voices and multi-timbral capabilities can expand your home studio system.

Carry It With You

If you have a laptop computer (and sequencing software), simply connect the MU128, plug in some headphones and you've got a complete, high-powered music making system that's ready to go wherever you go. Use it for composing, arranging, practicing or making/playing demos for your band.

Use It on a Gig

Similarly, you can connect a laptop or a MIDI data filer and playback song data with the MU128's Voices. Plug a microphone into one of the A/D inputs and a guitar into

the other, and you can mix your own live performance with the sequencer tracks.

Multimedia

Since it's compatible with General MIDI and XG, the MU128 is a natural for multimedia applications. Bring it with you to a presentation — since the computer interface is built-in to the MU128, it hooks up instantly and easily to the computer's serial port or printer port, without the need for any other equipment.

About the Modes of the MU128

The MU128 has two main operating modes: Multi and Performance. In Multi mode, the MU128 is a 64-Part multi-timbral tone generator; in Performance mode, the MU128 effectively functions as four tone generators controlled over a single MIDI channel.

Which mode the MU128 is in depends on the selected Sound Module mode. If XG or TG300B are selected, the MU128 automatically sets itself to the Multi mode. When PFM is selected, the MU128 is in the Performance mode. (For information on selecting the Sound Module mode, see page 170.)

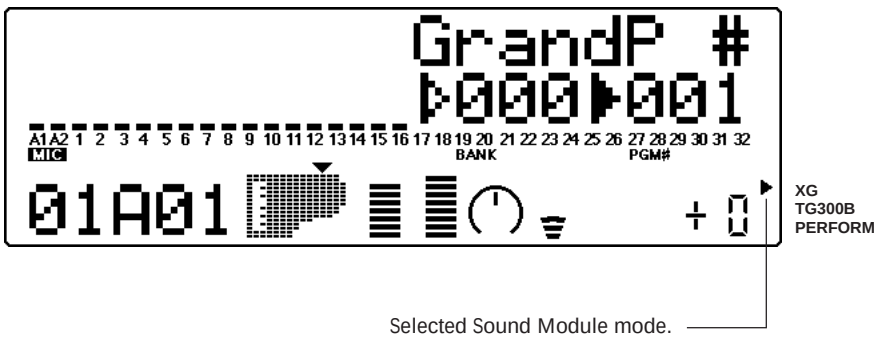
Each mode provides compatibility with different music software and hardware.

XG: This mode provides the full potential of the MU128, giving you access to the 1149 XG Voices.

TG300B: This mode provides compatibility with the GM-B mode of the TG300 Tone Generator.

PFM: This mode (Performance) lets you play four Voices simultaneously over a single MIDI channel. (For more information on using the Performance mode, see pages 38 and 70.)

The bottom right of the display indicates the currently selected Sound Module mode.



NOTE
*When set to the **TG300B** mode, the MU128 may not be able to play TG300-specific song data with complete accuracy. However, MIDI data designed for other computer music tone generators is compatible with the MU128.*

Play Modes and the Part Controls

Once the operating mode of the MU128 is set (Multi or Performance), there are two main ways you can use the MU128: playing and editing. In the Play modes, you play the Voices; in the various Edit modes, you change their settings.

Within the Play modes are the Part controls. These let you make basic settings for the Parts. The Single Part controls allow you to make independent settings for each Part, while the All Part controls allow you to change the overall settings of all Parts. (See pages 59 and 61 for more information.) The MU128 has several different Edit modes, each with various menus and operations:

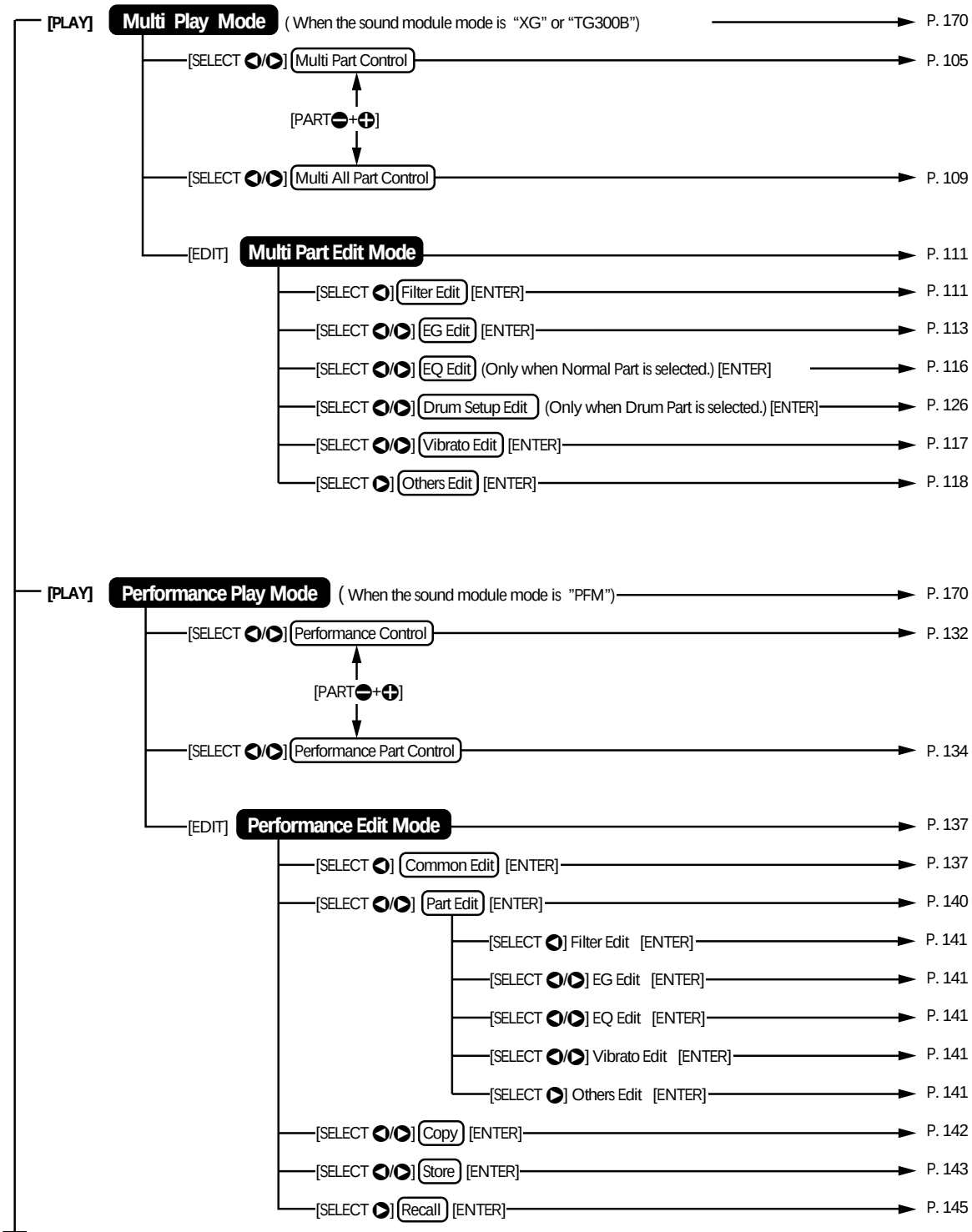
Part Edit Mode

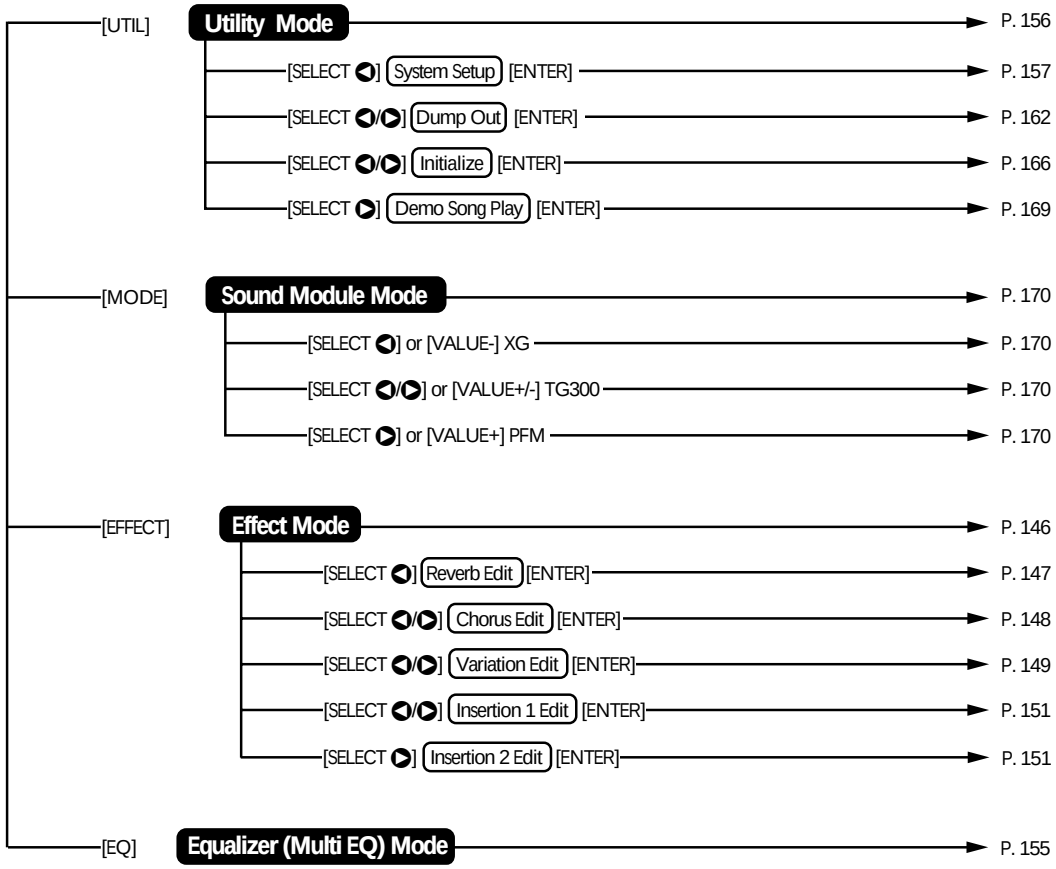
The Part Edit mode allows you to change certain settings for each individual Part, such as those of the Filter, EG (Envelope Generator), and many other settings. The internal Voices can be sounded during editing, allowing you to hear the effects of your edits.

Utility Mode

The Utility mode lets you set functions related to the overall operation of the MU128, such as Master Tune, display Contrast and reception of certain MIDI messages that affect the entire instrument. Included also are miscellaneous operations, such as sending bulk data to a data storage device, initializing of the MU128 settings, and playing the special Demo song.

Modes and Function Tree





: Mode

: Submode

A slash mark (/) indicates that either button can be pressed. (For example, SELECT ◀ / ▶ means that either ◀ or ▶ can be pressed.)

A Plus sign (⊕) indicates that both buttons should be pressed simultaneously. (For example, PART ⊖+ ⊕ means that both PART ⊖ and ⊕ should be pressed.)

GUIDED TOUR

When using your MU128 for the first time, read through this short section of the manual. It guides you step-by-step in using many of the basic operations: setting the instrument up, connecting it properly to other equipment, and — most importantly — playing it. It also introduces you to most of the other, advanced features and operations of the instrument — enabling you to quickly and effectively get the most out of your new MU128.

Setting Up Your MU128

In this section, you'll learn how to:

▶ **Connect the MU128 in the most basic setup** — with a MIDI keyboard and an external amplifier/speaker system.

Other setup examples are covered in later sections; for example, setting up for use with a computer is on page 35. Once you've set up the MU128, we urge you to play the Demo song (page 30) and hear what the instrument is capable of.

What You'll Need

- ☛ **The MU128 and the included PA-6 power adaptor.**
- ☛ **A MIDI keyboard, electronic piano, or any instrument that can output MIDI data.**
- ☛ **An amplifier/speaker system, preferably stereo. Alternately, you can use a set of stereo headphones.**
- ☛ **Audio connecting cables.**
- ☛ **A MIDI cable.**

Making the Connections

CAUTION
Before making any connections, turn all related equipment off, and make sure the MU128 power adaptor is not connected to an electrical outlet.

Operation

1 Connect the MIDI cable.
Connect the MIDI OUT terminal of the MIDI keyboard to the MIDI IN-A of the MU128 (as shown in the illustration).

NOTE
The MU128 features both rear and front panel MIDI IN-A terminals. Since both cannot be used simultaneously, you must determine which of them you will use. At the factory, the MIDI IN-A is set for rear panel operation. This can be changed to front panel operation in the Utility mode's System parameters (page 157).

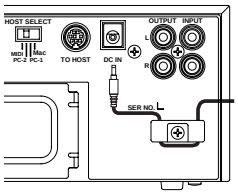
2 Connect the audio cables.
Connect the R and L OUTPUT jacks of the MU128 to the appropriate inputs on the amplifier speaker system (as shown in the illustration).

- If you are using stereo headphones, connect them to the front panel PHONES jack.

3 Set the HOST SELECT switch.
Set this rear panel switch to MIDI (see illustration).

4 Connect the AC power adaptor.
Plug the DC output cable of the PA-6 into the DC IN terminal on the rear panel, then plug the adaptor into an appropriate electrical outlet.

- Wrap the DC output cable of the adaptor around the cable clip (as shown at right) to prevent accidental unplugging of the cable during operation.

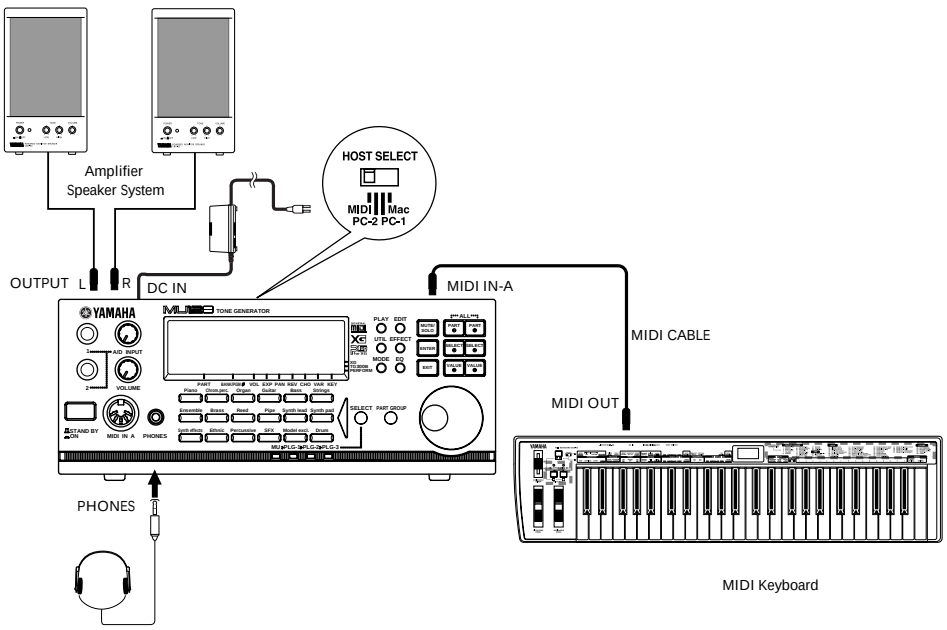


WARNING

- *Use ONLY a Yamaha PA-6 AC Power Adaptor (or other adaptor specifically recommended by Yamaha) to power your instrument from the AC mains. The use of other adaptors may result in irreparable damage to both the adaptor and the MU128.*

CAUTION

- *Unplug the AC Power Adaptor when not using the MU128, or during electrical storms.*



Now that you've set up the MU128, we urge you to go on to the next section, turn on the instrument, and play the Demo song (page 30) to hear what the instrument is capable of. If you need information on setting up the MU128 for a different type of system, refer to "**Setting Up the MU128 in Your Music System**" on page 32.

Powering Up

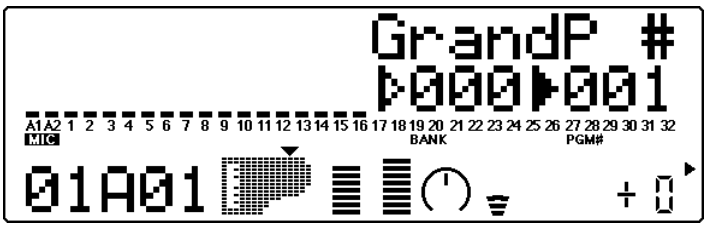
Admittedly this is a simple operation, but you should be careful to follow the instructions below to avoid possible damage to your equipment and speakers.

Operation

1 Turn on the power of your MIDI keyboard.

2 Turn on the power of the MU128.
Press the STAND BY/ON switch.

After the animated greeting display finishes, the following display appears:



3 Turn down all volume controls.
This includes the MU128 and any connected equipment.

4 Turn on the amplifier/speaker system.

5 Set the volume controls.
First, set the volume control on the MU128 to about the midway position, then set the volume on the amplifier to a suitable level.

Powering Down

When you turn the power off, make sure to do it in the following order:
1) Amplifier/speaker system
2) MU128
3) Other connected equipment (MIDI keyboard, etc.)

This prevents possible damage to the speakers.

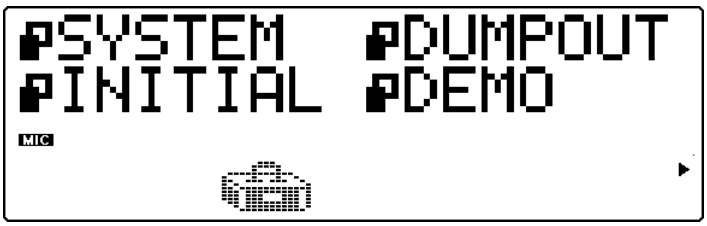
Playing the Demo Song

Now that you've set everything up properly, try playing the built-in Demo song. This showcases the high-quality Voices and the AWM2 tone generation system of the MU128. It also is an excellent demonstration of the 64-part multi-timbral capacity and the various expressive controls and effects that can be used simultaneously. Most importantly, the Demo song will give you an idea of how powerful the MU128 can be in your own MIDI/computer music setup.

NOTE
All System Setup and Multi Part Edit settings are initialized to their default values when playing back the demo song. Save your important data to a computer or the MDF3 MIDI Data Filer by using the Dump Out functions (page 162).

Operation

1 Press the **[UTIL]** button.



2 Select and open the DEMO menu.
Use the **[SELECT ◀/▶]** buttons to select "DEMO" (the menu icon flashes), then press the **[ENTER]** button.

3 Start the Demo song.
Press the **[ENTER]** button. The Demo Song starts playing immediately and repeats indefinitely until stopped (in step 4 below).

NOTES
- *During Demo Song playback, none of the panel controls (with the exception of the [EXIT] button and the VOLUME control) can be used.*
- *In the Multi mode, the default setting for Variation Connection is Insertion. In the Performance mode, the default setting differs depending on the selected Performance.*

4 Stop playback of the song.
Press the **[EXIT]** button.



5 Exit from the Demo Song function.
Press the **[EXIT]** button again — twice to return to the Play mode. (Or you can simply press the **[PLAY]** button.)

About the Demo Song

All instrument sounds and processing heard in the demo song were realized exclusively with the Voices and effects of the MU128. It demonstrates just how powerful and realistic sounding the MU128 can be on its own, as the only tone generator in a MIDI sequencing system.

The demo song starts out with a soft orchestral introduction, using the rich and realistic orchestra Voices, then swiftly segues into a hard rock section showcasing fast and furious distorted guitar followed by jazz guitar and overdriven guitar Voices. This breaks into a big band passage, starting with a 40's style swinging sax section and continuing with a powerful full brass arrangement. A rhythm and blues band, complete with an authentic sounding organ and horn section, rounds out the demo, followed by a luscious ambient/world music ending.

Make sure to read the display as the demo plays back — this shows the names of some of the Voices used in creating this dynamic piece. Listen to the demo often, as well — it'll give you ideas and directions for interesting paths to take as you use the MU128 in creating your own music.

Demo Song Credits

Programmed by Paul Lawley
Remixed by Graham Lee
Produced by XG Tokyo Office and Yamaha MusicSoft Europe
Data edited by Yasunori Ogawa

Setting Up the MU128 in Your Music System

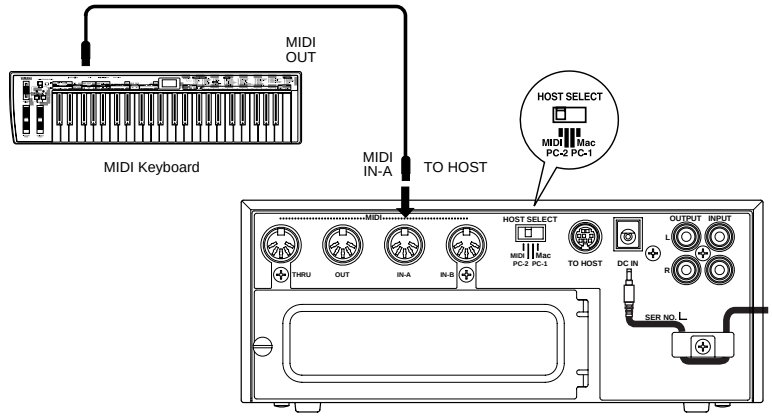
As you learned in the section **The MU128 — What It Is and What It Can Do** on page 19, the MU128 can be integrated into a variety of setups. It would be impossible to cover all connection possibilities in a short manual as this; however, the section below will help in quickly setting up the MU128 and using it in your system.

Connecting to MIDI Devices

The MU128 is equipped with MIDI IN, OUT, and THRU terminals, allowing you to use it in any MIDI system. Moreover, the two MIDI IN terminals are independent 16-channel ports, effectively giving you two tone generators in one. Refer to the example that most closely matches your setup, then read the Operation steps at the end of this section.

• *MIDI keyboard*

In this setup, you can play the sounds of the MU128 from the connected keyboard.

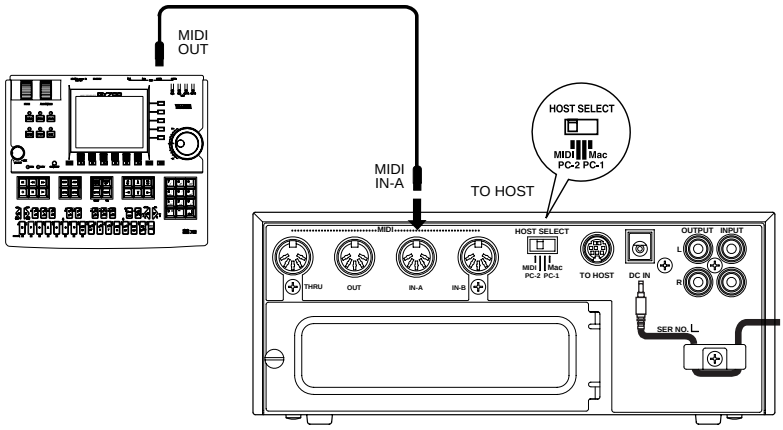


NOTES

- *Connect the MIDI OUT terminal of the keyboard or sequencer to the MIDI IN-A terminal of the MU128.*
- *The MU128 features both rear and front panel MIDI IN-A terminals. Since both cannot be used simultaneously, you must determine which of them you will use. At the factory, the MIDI IN-A is set for rear panel operation. This can be changed to front panel operation in the Utility mode's System parameters (page 157).*

• Hardware sequencer

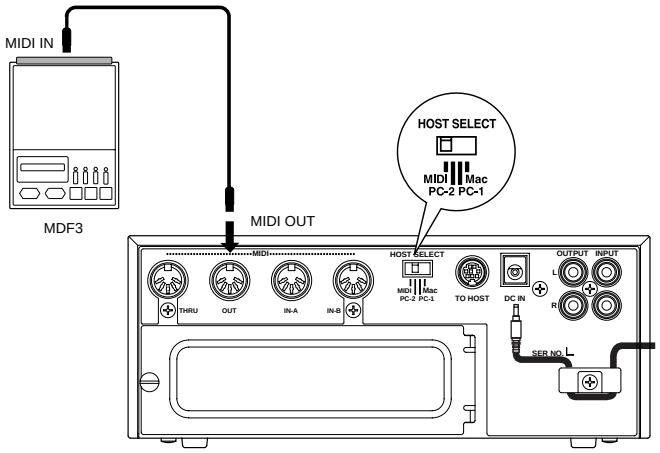
In this setup, a hardware sequencer (such as the Yamaha QY700) is used. The main advantage of such a setup is its portability.



• MIDI data storage device

This setup is used for backing up your important data — including original Performances you've created, as well as settings you've changed in the Part Edit, Effect, EQ, or Utility modes.

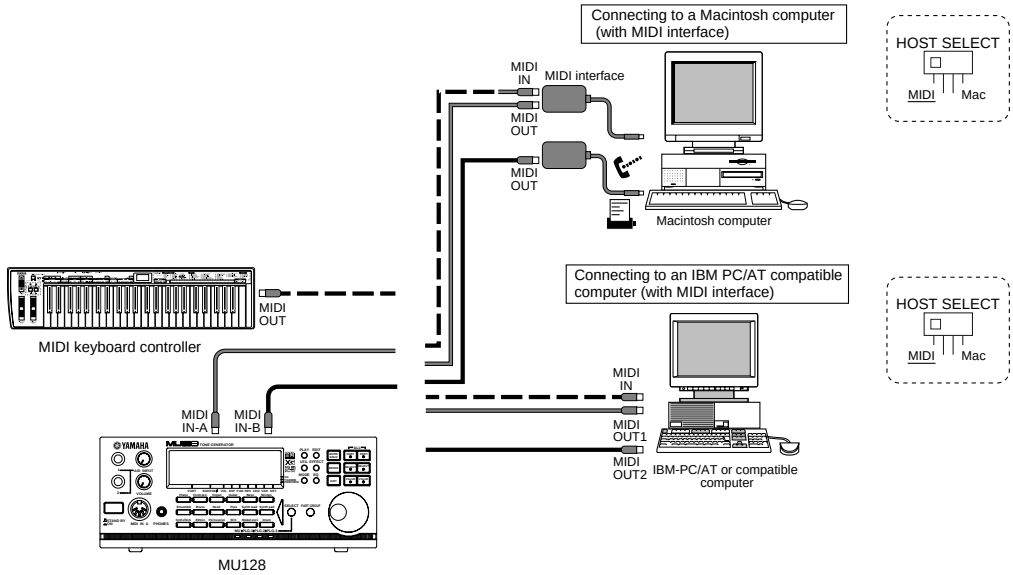
In this example, a Yamaha MDF3 MIDI Data Filer is used. To back up data, connect the MIDI IN of the MDF3 to the MIDI OUT of the MU128. To restore the data to the MU128, connect the MIDI OUT of the MDF3 to the MIDI IN-A of the MU128. Refer to the owner's manual of the MDF3 (or your particular data storage device) for specific operating instructions in receiving or sending data.



With the MDF3, you can also play compatible song data on the MU128 directly from the MDF3 itself, without the need of a sequencer. In this case, the MIDI OUT of the MDF3 should be connected to the MIDI IN-A of the MU128.

• Computer equipped with a MIDI interface

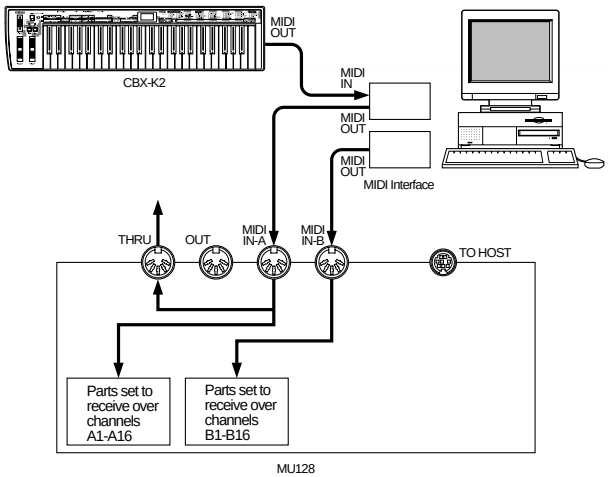
In this setup, you can control the MU128 from a computer (using sequencing or other song playback software).



NOTES

- *The MU128 features both rear and front panel MIDI IN-A terminals. Since both cannot be used simultaneously, you must determine which of them you will use. At the factory, the MIDI IN-A is set for rear panel operation. This can be changed to front panel operation in the Utility mode's System parameters (page 157).*
- *For Macintosh computers, you may have to change the MIDI interface clock setting on the application software to match your particular MIDI interface.*

MIDI Data Flow



NOTES

- *Data received via the MIDI IN-A terminal plays back Parts set to channels A01 - A16, and data received via the MIDI IN-B terminal plays back Parts set to channels B01 - B16.*
- *When the the HOST SELECT switch is set to MIDI, up to 32 Parts can be played simultaneously.*

Operation

1 Set the HOST SELECT switch to MIDI.

2 Connect the MU128 to the appropriate MIDI device.
Refer to the illustrations above. Use a standard MIDI cable (see page ??).

3 Turn on the the connected device, then the MU128.

4 If you are using a computer, start up your music software, and set up the appropriate options on the software for operation with the MU128.

Connecting Directly to a Computer

The MU128 features a built-in host computer interface, allowing you to directly connect it to your computer — eliminating the need of installing a special MIDI interface to your computer. The MU128 can be used with the following computers: Apple Macintosh and compatibles, IBM PC/AT and compatibles.

If your computer has a MIDI interface you may want to connect the MU128 to it, rather than using the host computer interface on the MU128. (See the section "**Connecting to MIDI Devices**" on page 32.)

Depending on the computer or interface used, set the **HOST SELECT** switch to the appropriate setting: **MIDI, PC-1, PC-2** (IBM and compatibles), or **Mac** (Macintosh and compaibles). For information on the types of cables that can be used for connection, see the section "**MIDI/Computer Connecting Cables**" on page 101.

Operation

1 Set the HOST SELECT switch on the rear panel of the MU128 to the appropriate setting:

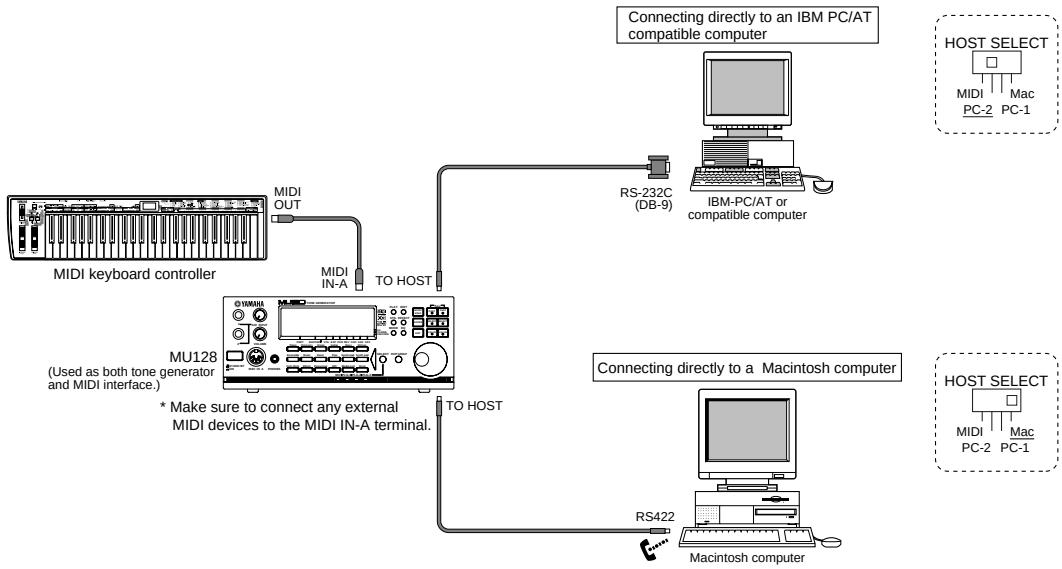
For IBM PC/AT or compatible computers: PC-2
For Macintosh computers: Mac

2 Connect the terminals as shown in the illustration below, using standard computer cables*.

*** Make sure to use the following commercially available standard cable types:**
For IBM PC/AT or compatible computers: D-SUB 9-pin to Mini DIN 8-pin (page 101)
For Macintosh computers:8-pin Macintosh Peripheral cable (page 101)

3 Turn on the power of the computer, then the MU128.

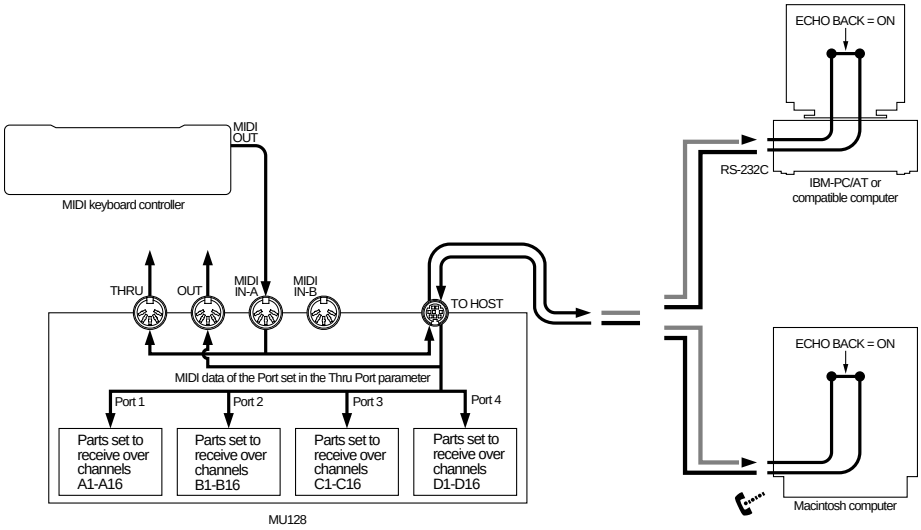
4 Start up your music software, and set up the appropriate options on the software for operation with the MU128.



NOTES

- *The MU128 features both rear and front panel MIDI IN-A terminals. Since both cannot be used simultaneously, you must determine which of them you will use. At the factory, the MIDI IN-A is set for rear panel operation. This can be changed to front panel operation in the Utility mode's System parameters (page 157).*
- *For Windows 95 users:*
  In order to use the TO HOST connection of the MU128 with your computer, you'll need to install special MIDI driver software (YAMAHA CBX Driver for Windows 95). This driver is contained in the included CD-ROM.
- *For Macintosh computers, you should set the MIDI interface clock setting on the application software to 1 MHz.*

MIDI Data Flow



NOTES

- *Data received via the MIDI IN-A terminal is transmitted directly to the computer (via the TO HOST terminal) without affecting the Parts of the MU128. To have Parts on the MU128 respond to data received via the MIDI IN-A terminal (for example, to hear sounds while entering data to the computer), make sure that the MIDI Thru (or MIDI Echo) function on the music software is set to on. This function allows you to route data coming into the computer back out again.*
- *Providing your particular music software is capable of multi-port operation, you can independently play all 64 Parts of the MU128 from your computer. With a second multi-timbral tone generator, you can even expand this to a full 80 Parts. To do this, connect the tone generator to the MIDI OUT terminal, then set the Thru Port parameter (page 160) to a value of 5 or higher — giving you an additional 16 MIDI channels.*

Selecting and Playing the Performances

As pointed out on page 21, the Performances of the MU128 let you play four Voices together over one MIDI channel. These specially programmed Performances (100 Preset and 100 Internal) take full advantage of the MU128 dynamic Voices and flexible editing functions — giving you exceptionally powerful and expressive sounds for live performance situations.

In this section, you'll learn how to:

- ▶ **Call up the Performance mode.**
- ▶ **Select and play Performances.**
- ▶ **Change the play mode display to suit your preference.**

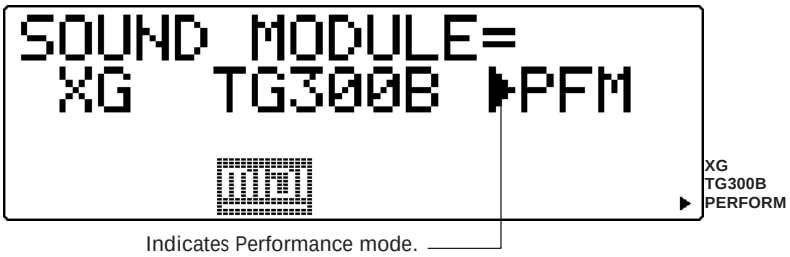
Calling Up the Performance Play Mode and Playing the Performances

Operation

1 Press the **[MODE]** button.



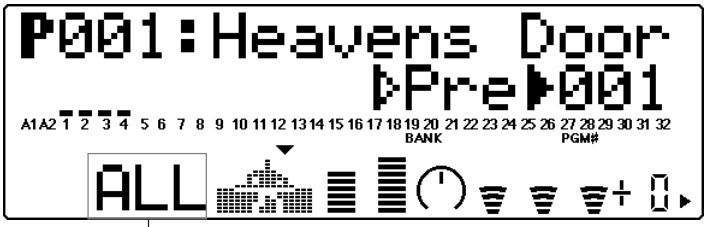
2 Select "PFM" (PERFORMANCE) in the display.
Use the **[SELECT ◀/▶]** buttons, **[VALUE ⊖/⊕]** buttons or data dial.



The Performance mode setting is also shown by the arrow at the bottom right of the display.

NOTE
For more information on the sound module modes, see page 170.

3 Press the **[PLAY]** button to go to the Performance Play mode. You can press the **[EXIT]** button for this as well.

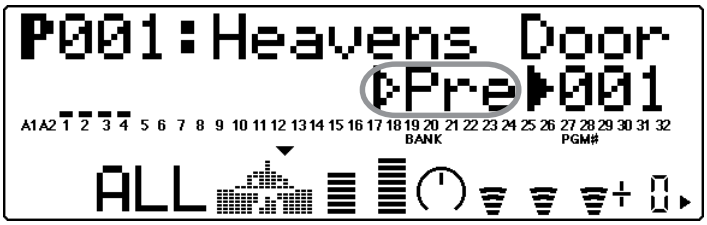


"All" and keyboard player icon indicate All Part display of Performance Play mode.

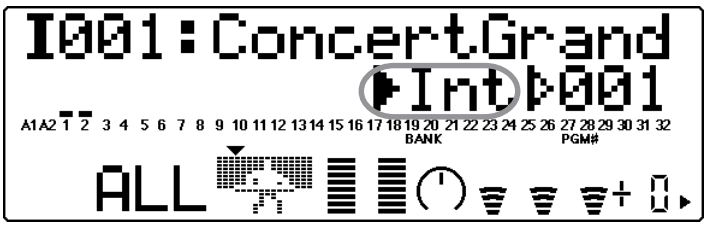
If the All Part display above (with the keyboard player icon) is not shown, press both **[PART⊖/⊕]** buttons simultaneously.

4 Select the desired bank of Performances — Preset or Internal. Use the **[SELECT ◀/▶]** buttons to select the Bank parameter, then use the **[VALUE ⊖/⊕]** buttons to select the desired bank, Preset (Pre) or Internal (Int).

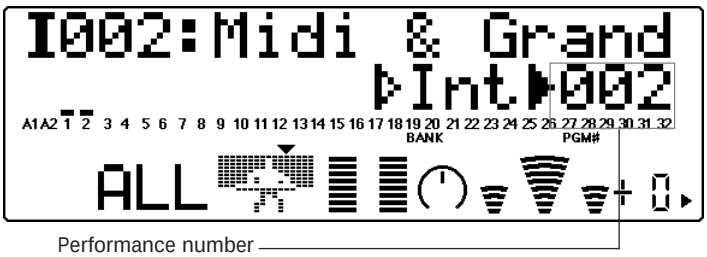
- **Preset bank**



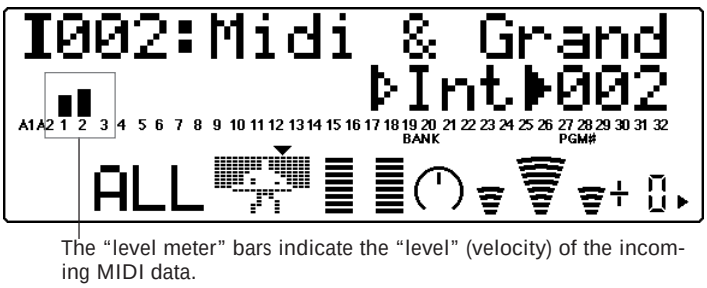
- **Internal bank**



5 Select the desired Performance.
Use the **[SELECT ◀/▶]** buttons to select the Program Number parameter, then use the **[VALUE ⊖/⊕]** buttons or data dial to select the desired Performance number.



6 Play the connected MIDI keyboard.
Make sure that your keyboard is transmitting over MIDI channel 1. (Refer to the owner's manual of that instrument if necessary.) If you've carefully followed all instructions up to now, the "level meter" bars in the display should move — and you should be able to hear the sound of the MU128 as you play.

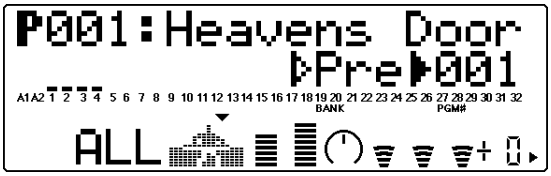


Go on to select other Performances in the same bank and play those as well. To try out Performances in the other bank, return to step #4 above.

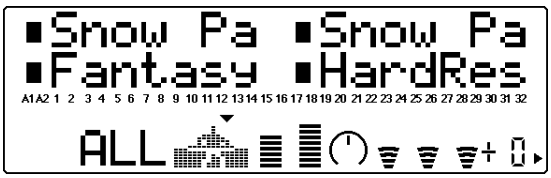
Changing the Play Mode Display

The MU128 lets you view the Parts of the Performance in two ways, depending on your preference.

Press the **[PLAY]** button repeatedly. Each press of the [PLAY] button switches between the two displays below.



Performance number and name are indicated.



Voice names which make up the Performance are indicated.

Selecting and Playing Individual Voices

The MU128 has a stunningly huge variety of Voices — a total of 1342. In this section, you'll select and play Voices in the XG mode, which features 1149 different Voices.

In this section, you'll learn how to:

- ▶ **Call up the XG mode.**
- ▶ **Select Voice banks and Voices from the panel controls.**
- ▶ **Change the Play mode display to suit your preference.**
- ▶ **Select and play Voices from a MIDI keyboard.**

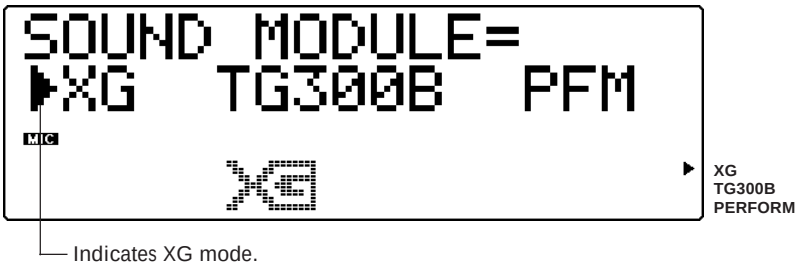
Calling Up the XG Mode

Operation

1 Press the **[MODE]** button.



2 Select "XG" in the display.
Use the **[SELECT ◀/▶]** buttons, **[VALUE ⊖/⊕]** buttons or data dial.



The XG mode setting is also shown by the arrow at the bottom right of the display.

3 Press the **[PLAY]** button to go to the Play mode.
You can press the **[EXIT]** button for this as well.

About the Modes — Multi and Performance

The MU128 has two main operating modes: Multi and Performance. You used the Performance mode earlier when playing Performances — playing four Voices over one MIDI channel. The Multi mode is primarily used in sequencer and computer music applications, since it allows you to play all 64 Parts independently over different MIDI channels.

Which mode the MU128 is set to depends on the selected Sound Module mode. The XG andTG300B settings are all Multi mode. When PFM is selected, the MU128 is in the Performance mode.

Selecting Voice Banks and Voices From the Panel

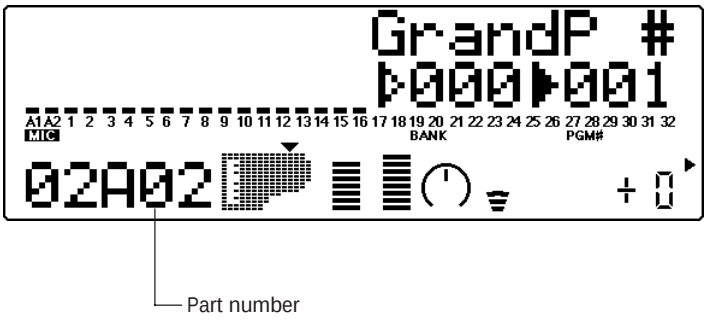
There are two basic methods of selecting Voices and banks: one using the Voice Category buttons to automatically select specific Voices according to their instrument groups, and the other letting you manually select the Voice bank and Voice. (Voices/banks can also be selected remotely from a MIDI device; see page 48.)

Selecting Voices with the Voice Category Buttons

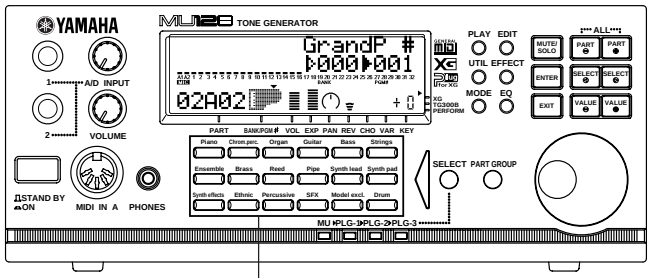
This convenient method lets you select Voices according to the general instrument groups to which they belong, automatically selecting the appropriate program number and bank for you.

Operation

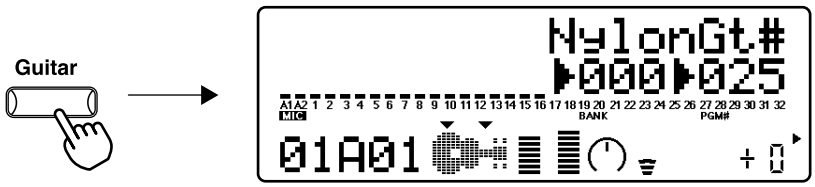
1 Select a Part by using the [PART ⊖/⊕] buttons.



2 Press the Voice Category button corresponding to the desired Voice group (Piano, Guitar, Bass, etc.).
The lowest numbered bank/Voice in the category is automatically selected.



For example, when the [Guitar] Voice Category button is pressed, bank 000/Voice 025 [NylonGt#] is selected as shown below.



The following list briefly describes the characteristics of the Voices for each Voice Category button.

Piano:	Conventional piano sounds, such as acoustic piano and electric piano.
Chrom.perc.:	Chromatic (pitched) percussion sounds, such as marimba and vibraphone.
Organ:	Various organ sounds, such as rock organ, pipe organ and accordion.
Guitar:	Guitar sounds, such as acoustic guitar and distorted guitar.
Bass:	Bass and wood bass.
Strings:	Stringed instruments, such as violin and cello. Also includes other orchestral sounds, such as contrabass, harp and timpani.
Ensemble:	Strings ensemble sounds.
Brass:	Various brass instruments, such as trumpet and trombone, as well as brass ensemble sounds.
Reed:	Reed instrument sounds, such as saxophone and clarinet.
Pipe:	Air reed instruments, such as flute, recorder and shakuhachi.
Synth lead:	Synthesizer lead sounds.
Synth pad:	Synthesizer pad sounds.
Synth effects:	Various synthesizer sound effects and miscellaneous pitched sounds.
Ethnic:	World, ethnic and folk music instrument sounds.
Percussive:	Percussion sounds.
SFX:	Special sound effects.
Model excl.:	Voices belonging to the MU100 Model Exclusive Voice bank.
Drum:	Drum and SFX Kits.

NOTE

The Voice Category buttons can also be used to select Voices on an optional Plug-in board (when it has been selected first with the [SELECT] button). Depending on the board, however, certain categories may not be available. Also, the Model excl. category features the original Voices of the board, which do not conform to the GM standard.

3 Use the [VALUE ⊖/⊕] buttons or data dial to select the desired Voice from within the current category.
The selected bank and Voice numbers start from the lowest number and "wrap around" at the beginning and end.
Try selecting different Voices for the other Parts using the same operation.

Details

The MU128 features two different Voice maps: MU Basic and MU100 Native.

- *MU Basic — This Voice map maintains compatibility with the widest range of XG tone generators.*
- *MU 100 Native — This Voice map (selected as the default at the factory) includes the upgraded Voices and Voices utilizing new waveforms not included on older XG tone generators.*

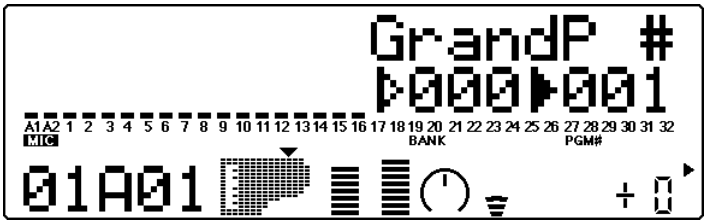
These two Voice maps have the same order and number of the Voices. However, the actual sounds and overall balance may differ for each map when playing back identical song data, since the actual character of some of the Voices differs greatly.
When playing back song data created on or for other XG tone generators, try switching between the two different maps to achieve the optimum playback condition for the song.
The map setting can be changed in the Utility mode's System parameters (page 161).
The MU128 includes additional Voices for both of the two maps that are not included on the MU100.

Manually Selecting Voice Banks and Voices

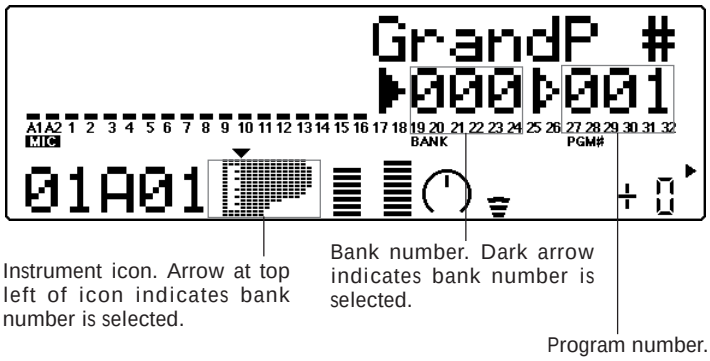
Operation

1 Select a Part.
Use the **[PART ⊖/⊕]** buttons.

For this example, select Part 1. Press the appropriate button until "01A1" appears in the PART section of the display.



2 Select the bank number.
Use the **[SELECT ◀/▶]** buttons to highlight the bank number parameter (as shown below).

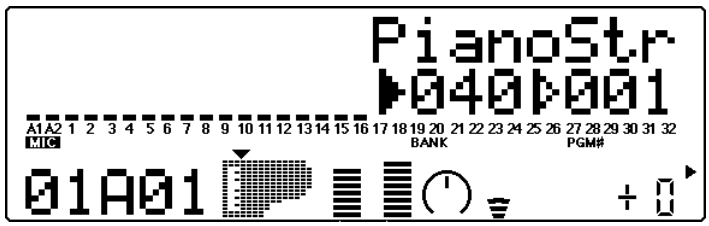


Instrument icon. Arrow at top left of icon indicates bank number is selected.

Bank number. Dark arrow indicates bank number is selected.

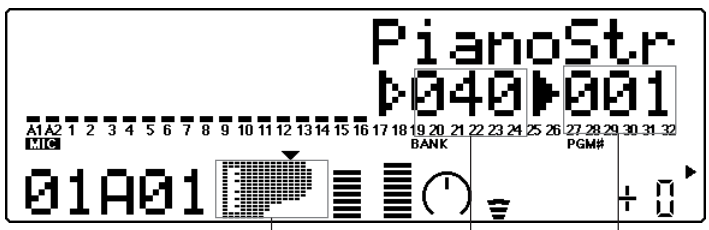
Program number.

3 Change the bank number.
Use the **[VALUE ⊖/⊕]** buttons or data dial. Notice that the bank numbers "jump" as they are selected — the MU128 skips bank numbers that have the same Voice as bank "000."



In the XG mode, several banks of Voices are available. Each bank contains up to 128 different Voices, for a total of 1149 Voices.

4 Select the program (Voice) number.
Use the **[SELECT ◀/▶]** buttons to highlight the program number parameter (as shown below).

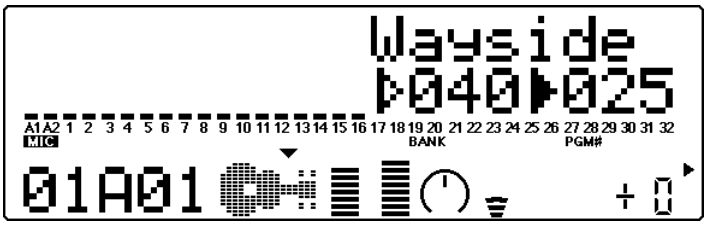


Bank number.

Instrument icon, indicating the type of Voice. Arrow at top right of icon indicates program number is selected.

Program number. Dark arrow indicates program number is selected.

5 Change the program number.
Use the **[VALUE ⊖/⊕]** buttons or data dial. In the example display below, Voice number 25 has been selected.



6 Play the Voice.

Play this new Voice from the connected MIDI keyboard. (Make sure that the keyboard is transmitting on channel 1.) If you've carefully followed all instructions up to now, the "level meter" of the Part should move — and you should be able to hear the sound of the MU128 as you play. Try selecting other Voice banks and Voices and play them as well. Each Voice bank contains some different Voices, some of which are variations, some unique.

Details

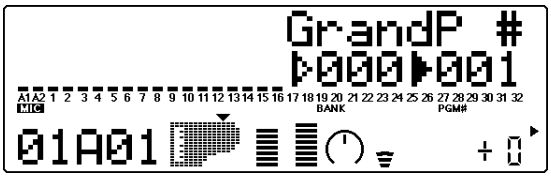
- *The MU128's Voices and program numbers follow the GM (General MIDI) format. This means that you can select a Voice type by its number, then select Voice variations by bank. For example, all the nylon guitar Voices are at program number 25.*
- *In the XG mode, the Voices are conveniently organized in the banks according to their type. For example, Voices having stereo variations or brighter variations are found in the "Stereo" and "Bright" banks, respectively. (See the "Sound List & MIDI Data" booklet.)*
- *Though the MU128 skips over bank numbers with identical Voices (see step #3 above), it can be set to not skip bank numbers, if desired. (See page 161: Utility mode/System/Display Bank Select.)*

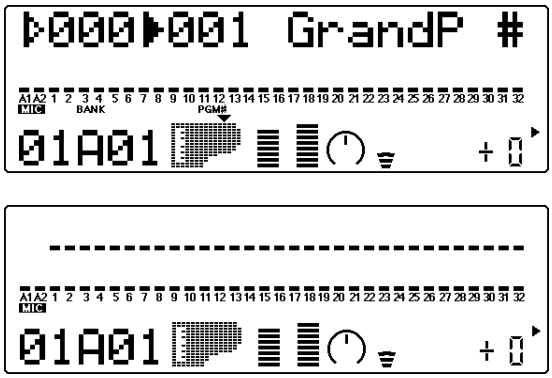
Refer to page 49 for more details about the MU128 voice organization.

Changing the Play Mode Display

The MU128 lets you view the Parts in three ways, depending on your preference.

Press the **[PLAY]** button repeatedly.
Each press of the **[PLAY]** button switches among the three displays below.





Selecting Voices From a MIDI Keyboard

You can also select Voices remotely from a connected MIDI keyboard. Though the actual operation may differ depending on the keyboard used, the general procedure is the same. These instructions also apply to use with a computer. (Refer to the owner's manual of your specific instrument or software for detailed instructions.)

Operation

1 Make the necessary settings on the keyboard.
Make sure that the keyboard is set to transmit over the desired MIDI channel (the same as that of the selected Part), and that it is set up to send Program Change messages.

2 Select a program number on the keyboard.
The Voice number and name on the MU128 will change, and will be the same number as the program number you selected on your keyboard.

Details

- *Depending on what keyboard you are using to control the MU128, you may need to be careful in selecting program numbers. The MU128's program numbers start at "001," but some keyboards have different numbering systems. For example, some start at "0" — which means that selecting "25" on the keyboard will select Voice 026 on the MU128.*
- *Parts 10, 26, 42 and 58 are reserved for playing drum "kits." This is the default factory setting for all of the Multi modes (XG and TG300B). For more information on drum Parts, see page 65.*

About the Parts and Voices of the MU128

This section covers basic information about the Parts and Voices of the MU128. It's not necessary to absorb all this information at once; yet if you familiarize yourself with the concepts and details of this section, you'll be on your way to quickly mastering the operations of the MU128.

Parts

When the Sound Module mode is set to "XG" or "TG300B," the tone generator section of the MU128 is fully multi-timbral and is made up of 64 independent Parts. By assigning different MIDI channels to each of these 64 Parts, you can play back complex song data having up to 64 separate and simultaneous instrument tracks.

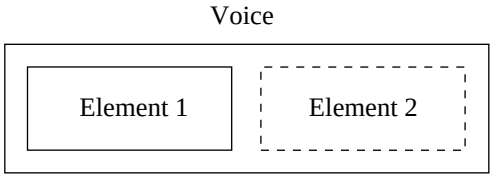
The Parts are designated by their Part group letters (A - D) and numbers (01 - 16), as well as their individual Part numbers (1 - 64). The chart below shows the Part numbers and their default MIDI channel settings.

Part Number	1 ~ 16	17 ~ 32	33 ~ 48	49 ~ 64
Part Group	A01 ~ A16	B01 ~ B16	B16 ~ C16	D01 ~ D16
MIDI Channel (default)	A01 ~ A16	B01 ~ B16	B16 ~ C16	D01 ~ D16

When the Sound Module mode is set to "PFM," the MU128 effectively functions as four tone generators, playing back up to four Parts over a single MIDI channel.

Voices

Voices are the individual instrument sounds of the MU128. The MU128 features a total of 1342 Normal Voices and 47 Drum Voice "kits." (The number of the Voices that can be used differs depending on the selected Sound Module mode.) A Voice is actually comprised of one or two sound elements, the "building blocks" of the sound.



Normal Voices and Drum Voices

The MU128 features two types of Voices: Normal and Drum.

Normal Voices

Normal Voices are pitched — in other words, the pitch of the Voice changes according to the keys of the keyboard. A Normal Voice is made up of a maximum of two sound elements. Voices having two elements include: thick sounds that cannot be created by a single element, Voices in which the sound changes depending on how strongly the keys are played, or layered Voices in which two sounds are blended together (for example, piano and strings). For details on how many elements specific Voices use, refer to the Voice List of Normal Voices in the "Sound List & MIDI Data" booklet.

Drum Voices

The Drum Voice is a special Voice containing only drum and percussion sounds, and each individual sound is assigned to a specific key of the keyboard (in the range of C#-1 — C5). For details on which drum sounds are assigned to which keys, refer to the Drum Map charts in the "Sound List & MIDI Data" booklet.

Maximum Simultaneous Sounds (Polyphony)

The maximum polyphony of the MU128, or the amount of sounds that can be generated simultaneously, is 128. This number actually refers to the amount of elements used. If you use many two-element Voices in your song data, the number of available simultaneous sounds may be less than expected.

When the MU128 receives more MIDI data than can be played back with the maximum polyphony, the earliest played notes will stop sounding to let more recently received notes play. This is called "last note priority."

Selecting the Voices

Voice selection on the MU128 is done by using three different numbers: bank select MSB, bank select LSB, and the specific program number.

The bank select MSB and LSB values determine the Voice bank. A single Voice bank can contain up to 128 Voices, each of which can be selected by a program number.

The bank select MSB and LSB values are used differently depending on which Sound Module mode is selected (as explained below).

Use of bank select MSB and LSB when the Sound Module mode is set to "XG" or "PFM"

When the Sound Module mode is set to "XG" or "PFM," the Voices are divided into large groups, selectable by the bank select MSB values shown below.

Bank select MSB = 0 — XG Voices
These are the Voices conforming to the GM System Level 1 standard and its expanded set of Voices. They can be played back to common effect for all XG-compatible tone generators.

Bank select MSB = 48 — MU100 Exclusive Voices
Only the MU100 and MU128 contain these Voices. The order of the Voices by program number assignments does not conform to the GM standard.

NOTE
Banks having an MSB value of 48 are used for original tone generator Voices which do not conform to the GM standard in the XG Voice map. When playing back song data using any of these Voices on an XG-compatible tone generator other than the MU128 (or the MU100/100R), the Part using one of these Voices will not sound.

Bank select MSB = 64 — SFX Voices
These are sound effect Voices. They are included in the Normal Voices and can be played back in pitch.

Bank select MSB = 126 — SFX Kits
These are also sound effects. They are included in the Drum Voices. A different sound is assigned to each note number.
These are not available when the Sound Module mode is set to "PFM."

Bank select MSB = 127 — Drum Kits
These are Drum Kits, and are not available when the Sound Module mode is set to "PFM."

When Sound Module mode is set to "XG" or "PFM"
(Drum and SFX Kits cannot be selected in "PFM")

Normal Voices		BankSelect MSB	BankSelect LSB
	XG Voices	0	0~127
	MU100 Exclusive Voices	48	0~120
	SFX Voices	64	0
Drum Voices		BankSelect MSB	BankSelect LSB
	Drum Kits	127	0
	SFX Kits	126	0

The bank select LSB values apply only when the bank select MSB value is set to 0 or 48 — these are used for selecting variation Voices. (Additional MSB values are available when an XG Plug-in board is installed.)

For a bank select MSB value of 0, there are expanded sets of XG Voices featuring Voice variations under general categories such as Stereo, Bright and Sweep. Each of these variation banks is selected with a different LSB value. The basic map for the 128 Voices in each variation bank is the same as the GM System Level 1 standard, as found in the basic Voices (when bank select LSB = 0). Therefore, you can select the desired Voice by specifying the program number, then select the desired type of Voice variation by specifying the bank select LSB (as shown in the chart below).

For example, the basic Voice at program number 49 is "Strings1," and you can select variations on the Strings Voice by changing the bank select LSB value while keeping the same program number. The variation bank name (e.g., Stereo, Bright, etc.) indicates how the variation Voices differ from the basic set of Voices.

Shaded portions in the chart below indicate Voices that are the same as the basic ones in bank 0.

Bank Select LSB							
Bank127				~		~	
:	:	:	:		:		:
Bank64 (Other Waves)				~	70s Str	~	
:	:	:	:		:		:
Bank40 (Tutti)	PianoStr		ElGrPno2	~	Orchestr	~	
:	:	:	:		:		:
Bank3 (Stereo)				~	S.Strngs	~	
Bank1 (Key Scale Panning)	GrndPnoK	BritPnoK	ElGrPnoK	~		~	
Bank0 (Basic GM Voice set)	GrandPno	BritePno	El.Grand	~	Strings1	~	Gunshot
	1	2	3	~	49	~	128

Program Number

Use of bank select MSB and LSB when the Sound Module mode is set to "TG300B"

The bank select LSB value is set to a fixed number and the bank is selected by changing the bank select MSB value. The bank select MSB is used to select the variation Voices; however, unlike the XG Voices, individual banks are not organized into specific variation categories.

When Sound Module mode is set to "TG300B"

Normal Voices		BankSelect MSB	BankSelect LSB
	GM Voice set and variation set of Voices	0~41	—
	C/M Voices*	126, 127	—
Drum Voices		BankSelect MSB	BankSelect LSB
	Drum Kits	—	—

* The C/M Voice set is included to provide multi-timbral compatibility for computer music systems and song data that predate the GM System Level 1 standard.

Part Mode

The Part mode is used to determine whether the selected Part uses Normal Voices or Drum Voices. It also lets you select a particular drum setup for editing the Drum Voice. This is done in the Multi Part Edit mode (page 120).

Normal mode and Drum mode

The Part mode features two settings: Normal mode and Drum mode.
In the Normal mode (“normal”), Normal Voices can be selected.
In the Drum mode (“drum,” “drumS1 - S4”), Drum Voices can be selected.

NOTES

- *When the Sound Module mode is set to “PFM,” the Part mode is fixed to normal and cannot be changed. (The Part Mode parameter is not displayed.)*
- *When using the Voice Category buttons to select Drum and Normal Voices, the Part mode is automatically changed to the appropriate mode. Pressing one of the Voice Category buttons [Piano] - [Model excl.] automatically sets the Part mode to Normal, and pressing the [Drum] button automatically sets the Part mode to Drum (“drum,” “drumS1 - S4”).*

About Drum Setups

The Drum Voice cannot be edited directly on the MU128. First, assign one of the drum setups to a Part, then edit the selected setup. Editing of drum setups is done in the Multi Part Edit mode (page 126).

The MU128 has four internal drum setups (“drumS1 - S4”), and each can be assigned to different Parts and have different settings for the drum sounds. However, if the same drum setup is selected simultaneously for more than one Part, editing the drum setup in one Part will automatically change all the other Parts to which the same drum setup is assigned.

By setting the Part mode to “drum” for more than one Part, you can have different Drum Voices assigned to each of these Parts. However, the Drum Voices for Parts set to “drum” cannot be edited.

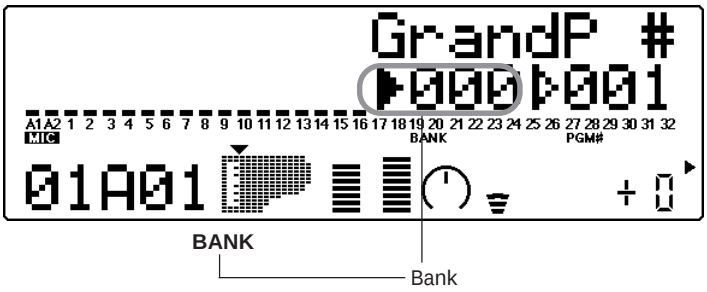
How to Select a Voice

Any MU128 Voice can be selected by specifying two numbers: the bank number and the program number.

The method of selecting Voices differs depending on the selected Sound Module mode or Part mode. (pages 55-57.) The operation of changing the bank number and the program number is explained first, followed by instructions for selecting Voices in each of the Sound Module modes.

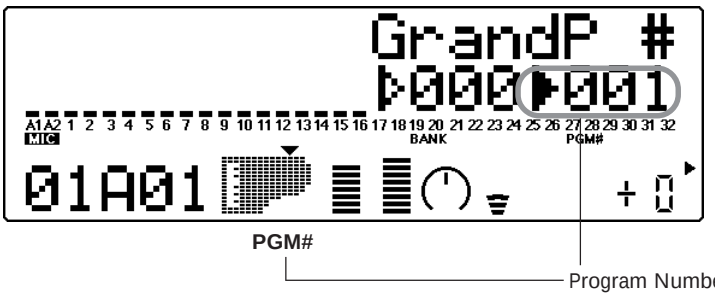
Operation

1 From the Single Part controls of the Multi Play mode or Performance Play mode, use the [SELECT ◀/▶] buttons to move the cursor to the bank number parameter.



2 Change the bank number by using the [VALUE −/+] buttons or data dial.

3 Press the [SELECT ▶] button once to move the cursor to the program number parameter.



4 Select the program number by using the [VALUE −/+] buttons or data dial.

Details

- *Voices (and Voice banks) can also be selected by using the Voice Category buttons (page 43).*

Selecting Voices when the Sound Module mode is set to "XG" or "PFM"

When the Part mode is set to "normal"

The bank select MSB is set to 0 as the default factory setting, and the bank select LSB value (default setting of 000) is indicated in the display. In this condition, the bank number can be changed over the range of 000 - 127. Changing the program number lets you select individual XG Voices.

Increasing the bank number value past 127 (with the [VALUE ⊖/⊕] buttons or data dial) selects bank number 000. This is not the same as bank 000 in the range above; it is the first bank in the range for the bank select MSB value of 48 (changed from 0 above). The bank select LSB is displayed in the bank number, but the bank select MSB value is not shown. However, the new bank select MSB is indicated by the "MU100" icon in the bit map window in the display.

In this condition, the bank number can be changed over the range of 000 - 120. Changing the program number lets you select individual MU100 Exclusive Voices.

Increasing the bank number value past 120 (with the [VALUE ⊖/⊕] buttons or data dial) selects the SFX bank. Here, the MSB value changes from 48 to 64. The "SFX" icon is shown in the display. Changing the program number lets you select individual SFX Voices.

When Sound Module mode is set to "XG" or "PFM" and Part mode is set to "normal"

[VALUE⊖] BANK [VALUE⊕]

Bit Map Window	Bank Number	BankSelect MSB	BankSelect LSB	Voice Type
Instrument icon	000~127	0	0~127	XG Voices
MU100 icon	000~120	48	0~120	MU100 Exclusive Voices
SFX icon	SFX	64	0	SFX Voices

NOTE

The "Silence" Voice name indicates that no Voice is assigned for the currently selected bank.

When the Part mode is set to "drum" (XG mode only)

The bank number in the display indicates the bank select MSB value. (The bank select LSB is fixed at 0.)

Move the cursor to the bank number parameter, then use the [VALUE⊖/⊕] buttons to select bank 126 or 127. Change the program number to select the desired SFX kit or Drum Voice.

When Sound Module mode is set to "XG," and Part mode is set to "drum"

[VALUE⊖] BANK [VALUE⊕]

Bit Map Window	Bank Number	BankSelect MSB	BankSelect LSB	Voice Type
Drum icon	126	126	0	SFX Kits
Drum icon	127	127	0	Drum Kits

Selecting Voices when the Sound Module mode is set to "TG300B"

When the Part mode is set to "normal"

The bank number in the display indicates the bank select MSB value. (The bank select LSB is fixed at 0.) In this condition, the bank number can be changed over the range of 000 - 041. Changing the program number lets you select individual GM format Voices and their variations. To select C/M Voices, set the bank number to 126 or 127.

When Sound Module mode is set to "TG300B," and Part mode is set to "normal"

[VALUE⊖] BANK [VALUE⊕]

Bit Map Window	Bank Number	BankSelect MSB	BankSelect LSB	Voice Type
Instrument icon	000~041	0~41	—	GM Voice set and Variation Voices
C/M icon	126, 127	126, 127	—	C/M Voices

When the Part mode is set to "drum"

The bank number is fixed and cannot be changed. Change the program number to select the desired Drum Voice or SFX kit.

When Sound Module mode is set to "TG300B," and Part mode is set to "drum"

Bit Map Window	Bank Number	BankSelect MSB	BankSelect LSB	Voice Type
Drum icon	000	—	—	Drum kits

Details

- *To select Voices from an external MIDI device, first use the control change numbers 0 and 32 to specify the bank select MSB and LSB values, respectively, then specify the desired program change number.*
- *The value range of the program change messages is 0 - 127 and is offset by 1 from the actual program numbers on the MU128 (1 - 128). Depending on the sequencer or MIDI device you are using, this means you may have to subtract 1 from the desired MU128 Voice number to determine the necessary program change number.*
- *When the cursor is at the bank number parameter, you can check the MSB, LSB, and program change values for the currently selected Voice by pressing the [ENTER] button twice rapidly (Show MIDI Data function). For more information, see page 171.*

When selecting the Voices with the Voice Category buttons and the [VALUE ⊖/⊕] buttons or data dial, Voices in the selected category are called up in succession, skipping unrelated bank numbers and program numbers.

The Voices included in each Voice category are shown below. Also refer to the Voice List and Drum Map charts in the "Sound List & MIDI Data" booklet.

	In XG and Performance (PFM)modes	In TG300B mode
[Normal Voices]		
Piano	Program numbers 1 - 8*1	Program numbers 1 - 8*3
Chrom.perc.	Program numbers 9 - 16*1	Program numbers 9 - 16*3
Organ	Program numbers 17 - 24*1	Program numbers 17 - 24*3
Guitar	Program numbers 25 - 32*1	Program numbers 25 - 32*3
Bass	Program numbers 33 - 40*1	Program numbers 33 - 40*3
Strings	Program numbers 41 - 48*1	Program numbers 41 - 48*3
Ensemble	Program numbers 49 - 56*1	Program numbers 49 - 56*3
Bass	Program numbers 57 - 64*1	Program numbers 57 - 64*3
Reed	Program numbers 65 - 72*1	Program numbers 65 - 72*3
Pipe	Program numbers 73 - 80*1	Program numbers 73 - 80*3
Synth lead	Program numbers 81 - 88*1	Program numbers 81 - 88*3
Synth pad	Program numbers 89 - 96*1	Program numbers 89 - 96*3
Synth effects	Program numbers 97 - 104*1	Program numbers 97 - 104*3
Ethic	Program numbers 105 - 112*1	Program numbers 105 - 112*3
Percussive	Program numbers 113 - 120*1	Program numbers 113 - 120*3
SFX	Program numbers 121 - 128*2 and all Voices in the bank where MSB is set to 64. Program numbers 121 - 128*3	Program numbers 121 - 128*3
Model excl.	All Voices in the banks where MSB is set to 48.	All Voices in banks 126 and 127.
[Drum Voices]		
Drum	All Drum and SFX Kits in the banks where MSB is set to 126 or 127. (XG Drum Map Voices)	Drum Kits (TG300B Drum Map Voice)

*1 Excepting Voices in the banks where MSB is set to 64, 48, 126, or 127.
*2 Excepting Voices in the banks where MSB is set to 48, 126, or 127.
*3 Excepting Voices in banks 126 and 127.

Using the Voice Category buttons to select Voices also lets you automatically change the Part mode (Normal/Drum) according to the selected Voice category.

When an optional Plug-in board is selected, the Voices of the board are assigned to the appropriate Voice Category buttons in the same way as shown above. However, certain categories may not be available (depending on the board), and some of the Voices may be assigned to categories they do not perfectly match. The original Voices of the board which are not included in the XG format are assigned to the Model excl. button.

Editing in the Multi Mode

This section takes you step-by-step through an example editing session in the Multi mode. The operations and techniques you learn here enable you to perform any editing operation in the Multi mode.

There are two separate sections of the Multi mode that are devoted to editing: the Single/All Part controls, and the Edit menus.

In this section, you'll learn how to:

- **Select a Part for editing.**
- **Use the Single Part controls — to change the MIDI channel of a Part, and change its Volume and Pan settings.**
- **Use the Edit menu parameters — to change the filter and EG (Envelope Generator) settings of a Part.**
- **Use the Drum Setup controls — to change the Part settings for a drum kit.**

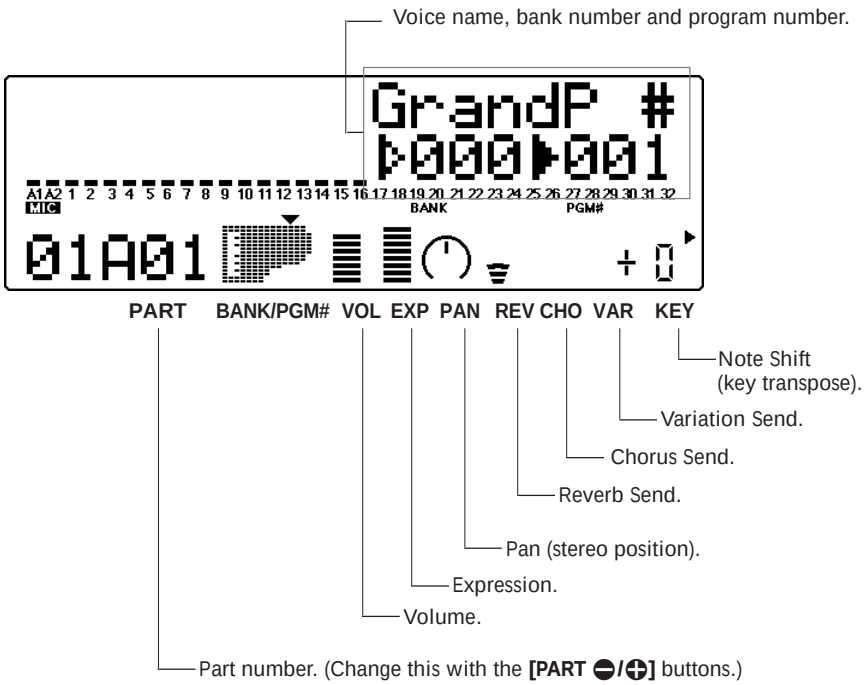
Hints

- ***Editing Parts, not Voices***
  It is important to remember that in editing you are not changing the Voice itself, but rather the Part the Voice is assigned to. This means that when you change the Voice of the Part, the edited settings apply to the new voice, whether they're appropriate or not.
- ***Saving your edits***
  Keep in mind that any edits you make in the Multi mode are automatically saved as the power on defaults. In other words, the next time you turn on the power, the previous condition of all Parts is automatically recalled. If you want to save one "set" of edits (for example, for use with a specific song) before creating another set, you must first save the current setup to a sequencer or MIDI data filer. (For details, see page 162.)

Single Part Controls

You can make changes to each individual Part by using the Single Part controls. These are displayed in the Multi Play mode, and give you at-a-glance confirmation and control of the important basic settings of the selected Part. If the Multi mode was active when you last turned the power off, the next time you turn the power on, the Single Part controls are automatically called up.

Let's take a look at the Play display again:



Each of these settings are made independently for each Part. For example, each Part could have a different Volume setting, or a different Pan setting. Try going through the brief sections below and making some changes in the Part controls yourself.

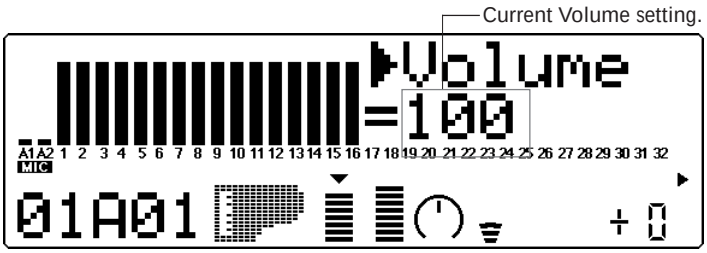
Changing the Volume and Pan settings of a Part

Here, we'll change the Volume and Pan settings of one Part's Voice.

Operation

1 Select the desired Part.
Use the **[PART ⊖/⊕]** buttons to select Part 1.

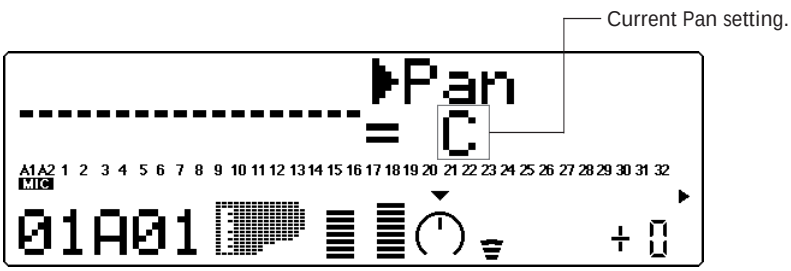
2 Select the desired control.
Use the **[SELECT ◀/▶]** buttons to select the Volume control.



3 Change the setting.
Use the **[VALUE ⊖/⊕]** buttons or data dial, and play the keyboard as you edit so you can hear the change in the sound.

Now, let's change the Pan setting for the Part:

4 Select the desired control.
Use the **[SELECT ◀/▶]** buttons to select the Pan control.



5 Change the setting.
Use the **[VALUE ⊖/⊕]** buttons or data dial to change the setting, and play the keyboard again as you make changes.

6 Return to "home base."
Pressing the **[EXIT]** button from any of the Single Part controls automatically returns to the Voice name/program number display. This is a convenient way to instantly return to "home base" from a "distant" control.

On Your Own...

If you want to, try making changes to some of the other Part controls. The procedure is the same:

1) Select a Part with the **[PART ⊖/⊕]** buttons.
2) Select a control for editing with the **[SELECT ◀/▶]** buttons.
3) Change the setting with the **[VALUE ⊖/⊕]** buttons or data dial.
4) Use the **[EXIT]** button as needed to return to "home base" — Voice name and number.

Hint

*You can easily edit the same control for different Parts. To do this, simply remain at the selected control and use the **[PART ⊖/⊕]** buttons to change the Part to be edited.*

For more information on the specific Part controls, see page 104.

All Part controls

The instructions in the above section show you how to change the settings for individual Parts; these are the Single Part controls. The All Part controls, on the other hand, let you change certain global settings affecting all the Parts.

To select the All Part controls, simultaneously press both **[PART ⊖/⊕]** buttons. (For more information on the All Part controls, see page 109.)

Edit Menu Parameters

The Edit menu parameters provide more detailed and advanced controls over the Parts. These are powerful tools that let you subtly enhance or fine-tune the sound of a Voice — or radically change its character for some wild and unique sounds.

Changing the Filter and EG Settings of a Part

Operation

1 Select the desired Part.
Use the **[PART ⊖/⊕]** buttons. Also, for the sake of these instructions, select the "SquareLd" Voice, #081. (page 45.)

2 Call up the Edit menu.
Press the **[EDIT]** button.



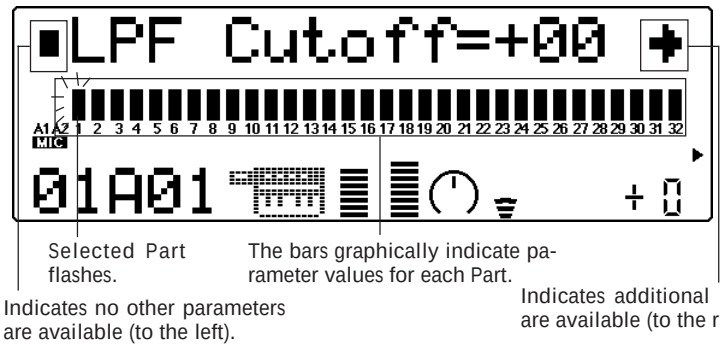
3 Select "FILTER" in the display.
Use the **[SELECT ◀/▶]** buttons. The Edit menu has five items: FILTER, EG (Envelope Generator), EQ (Equalizer), VIBRATO, and OTHERS. The "flag" next to the item flashes when selected.

Details

- *When a drum Part is selected, the EQ menu item is replaced by "DRUM." (See page 65 for information on editing drum Parts.)*

4 Call up the Filter parameters.
Press the **[ENTER]** button.

5 Select the “LPF Cutoff” parameter.
Use the **[SELECT ◀/▶]** buttons.



Selected Part flashes.

The bars graphically indicate parameter values for each Part.

Indicates no other parameters are available (to the left).

Indicates additional parameters are available (to the right).

6 Adjust the value while listening to the sound.
Hold down a note on the connected keyboard and turn the data dial to adjust the value, swinging between the maximum (+63) and minimum (-64) values. Notice how the timbre of the sound changes. Before going to the next step, set LPF Cutoff to “+63.”

7 Select “LPF Reso” and change the value.
Use the **[SELECT ◀/▶]** buttons. Then, do the same as you did in the last step, holding a note and changing the value with the data dial.

Hint
Try holding notes or chords in different octaves of the keyboard as you adjust the parameters, since the Filter effects depend on the pitch or frequency of the sound.

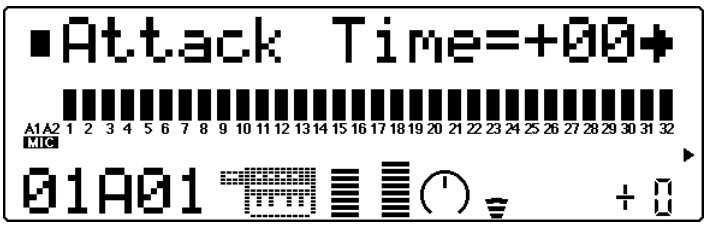
Details
The effect of the Filter parameters also differs depending on the selected Voice. (For more information on the Filter parameters, see page 111.)

Now, let’s change one of the EG parameters:

8 Go back to the Edit menu.
Press the **[EXIT]** button.

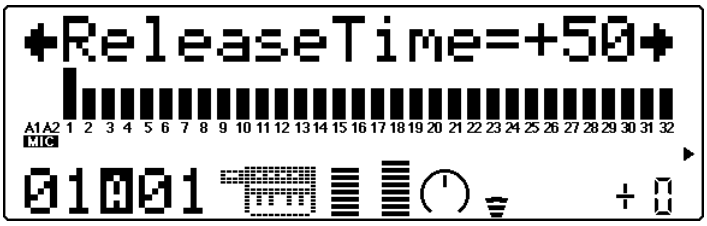
9 Select and call up “EG.”
Use the **[SELECT ◀/▶]** buttons to select “EG,” then press the **[ENTER]** button.

10 Select the “Attack Time” parameter.
Use the **[SELECT ◀/▶]** buttons.



11 Adjust the value while listening to the sound.
Try setting this to around "+30" and play the keyboard. Notice how the attack of the sound has become slower.

12 Select and adjust the "Release Time" parameter.
Use the **[SELECT ◀/▶]** buttons, then set this to around "+50."



Play some notes on the keyboard and release them. Notice how the sound sustains after you release each key.

Details
The effect of the EG parameters differs depending on the selected Voice. (For more information on the EG parameters, see page 113.)

On Your Own...

While you're at it, try making changes to some of the other Edit parameters. The procedure is the same:

1) Select the desired Part with the **[PART ⊖/⊕]** buttons.
2) Call up the Edit menus by pressing the **[EDIT]** button.
3) Select the desired menu with the **[SELECT ◀/▶]** buttons, and press **[ENTER]**.
4) Select the desired parameter with the **[SELECT ◀/▶]** buttons, and change the value with the **[VALUE ⊖/⊕]** buttons or data dial.
5) Use the **[EXIT]** button as needed to return to the Edit menu.

Hint
You can select different Parts (by using the **[PART ⊖/⊕]** *buttons) at any point in the editing session, no matter which Edit menu or parameter is selected. This lets you quickly shuttle among the various parts and effectively edit the desired parameters. The selected Part is always indicated at the bottom left of the display.*

For more information on the specific Edit parameters, see page 111.

Editing Drum Kits — with the Drum Setup Controls

The Drum Setup controls provide a comprehensive set of tools for controlling and changing the drum kit Voices. These parameters can be set individually for each sound in a Drum Part. Up to four of your original editing setups can be permanently stored.

Unless you've set them otherwise, Parts 10, 26, 42 and 58 are automatically set to play a Drum Part and the MIDI channel for all of them is set to 10. (General MIDI song data is standardized for playing drum/percussion sounds over channel 10.)

For the sake of these instructions, we'll simply select Part 10 and edit the existing Drum Part. However, you can set up additional Drum Parts on any of the Part numbers; refer to the box section below.

Remember that once a Part is assigned a Drum Part, different drum kit Voices can be selected. (Refer to the "Sound List & MIDI Data" booklet.)

Assigning a Drum Part

This operation allows you to assign a Drum Part to any of the Part numbers — letting you use two or more different drum kits within the same song.

1. Select the desired Part.
   Use the **[PART ⊖/⊕]** buttons.

2. Call up the Edit menu.
   Press the **[EDIT]** button.

3. Select and call up the OTHERS menu.
   Use the **[SELECT ◀/▶]** buttons, then press [ENTER].

4. Select the Part Mode parameter.
   Use the **[SELECT ◀/▶]** buttons.

5. Set the parameter to "drumS1."
   Use the **[VALUE ⊖/⊕]** buttons or data dial. As long as you select one of the "drum sets" (drumS1 – drumS4), any edits you make will automatically be saved to the selected set.

Details
The "normal" setting is for normal Voices; the "drum" setting selects the Drum Part, but cannot be edited. (For more information on the Part Mode, see page 120.)

6. Press the **[EXIT]** button.
   Press it once to return to the Edit menus, twice to return to the Play display.

Making Changes to Individual Drum Sounds — the "Drum" Parameters

The Drum parameters provide extraordinary flexibility, since they allow you to make independent settings for the individual drum/percussion sounds in a Drum Part. We'll explore a couple of the possiblilities here:

Operation

1 Select "DRUM" from the Edit menus (with the **[SELECT ◀/▶]** buttons) and press **[ENTER]**.



2 Select "E3: Conga L."
Play E3 on the connected MIDI keyboard, or use the **[PART ⊖/⊕]** buttons to select "E3."

Details
*In the Drum parameters you cannot use the **[PART ⊖/⊕]** buttons to select a Part; they are reserved for selecting notes/sounds only.*

3 Select the Pitch Coarse parameter, and set it to "-22."
Use the **[SELECT ◀/▶]** buttons to select the parameter, then the **[VALUE ⊖/⊕]** buttons or data dial. This setting creates a deep log drum sound.



4 Select the Velocity Pitch Sensitivity parameter (VelPchSens), and set it to "+12."
Again use the **[SELECT ◀/▶]** buttons, then the **[VALUE ⊖/⊕]** buttons or data dial. Play the key softly to strongly and notice how the pitch changes according to key velocity.



5 Select "F#3: Timbale L."
Play F#3 on the connected keyboard, or use the **[PART ⊖/⊕]** buttons to select "F#3."

6 Select the LPF Cutoff parameter, and set it to –40.

7 Select the LPF Resonance (LPF Reso) parameter, and set it to +63.

8 Select the Velocity LPF Sensitivity parameter (VelLPFSens), and set it to +16.
Play the key softly to strongly and notice how key velocity changes the timbre of the sound for a "wah-wah" effect.

More Drum Editing

Try some of the other parameters in the edit menus (FILTER, EG, VIBRATO, OTHERS) on your own and hear how they affect the drum sounds. Keep in mind that these are applied to the entire Part, and cannot be set individually for each sound.

As a springboard for further exploration, try editing the following parameters in the OTHERS menu:

1. With a drum Part selected, call up the OTHERS parameters.
   Press **[EDIT]**, select "OTHERS," then press **[ENTER]**.

2. Select "PitBndCtrl" and set the value to +24.
   Play with the pitch bend wheel on the connected keyboard while playing different keys.

3. Select "MW LFOPMod" and set the value to 090.
   Play with the modulation wheel on the connected keyboard while playing different keys.

Select and change other parameters in the same way.

NOTE
Some of the parameters (such as Release Time in the EG menu) may not have any affect on the drum sounds at all. Also, the effect of a parameter may differ depending on the specific drum sound. (For more information on editing Drum Parts, see page 126)

On Your Own...

1) Select a Drum Part with the **[PART ⊖/⊕]** buttons.
2) Call up the Edit menus by pressing the **[EDIT]** button.
3) Select the "DRUM" menu with the **[SELECT ◀/▶]** buttons, and press **[ENTER]**.
4) Select the desired drum sound, either by playing the corresponding key of the MIDI keyboard or by using the **[SELECT ◀/▶]** buttons.

Details
*If you wish, you can alternately disable/enable this keyboard entry function by pressing the **[MUTE/SOLO]** button (while the "DRUM" menu is selected).*

5) Select the desired parameter with the **[SELECT ◀/▶]** buttons, and change the value with the **[VALUE ⊖/⊕]** buttons or data dial.
6) Use the **[EXIT]** button as needed to return to the Edit menu.

Hint
Use of a connected MIDI keyboard is an exceptionally fast and convenient way to edit Drum Parts. It not only lets you quickly shuttle among the various sounds while editing, it also lets you hear the sound being edited and see the sound name.

For more information on the specific Drum parameters, see page 126.

Editing in the Performance Mode

The Performance mode is an exceptionally powerful and flexible mode that allows you to combine four different Voices (including both A/D inputs) and play them from a single MIDI channel.

The potential applications of the Performance mode are enormous, and we'll touch on some of the main ones here. As the name suggests, the Performance mode is primarily intended for live performance situations. The four Voices can be played altogether in a huge, "fat" layer, or can be split across the keyboard in different zones, or can be switched according to key velocity.

A total of 200 Performances are available: 100 Preset, which are reserved for only factory settings, and 100 Internal, to which you can save your own original Performances.

This section takes you step-by-step through an example editing session in the Performance mode. The operations and techniques you learn here enable you to perform any editing operation in the Performance mode.

As with the Multi mode, the Performance mode has two separate sections that are devoted to editing: the Single/All Part controls, and the Edit menus.

In this section, you'll learn how to:

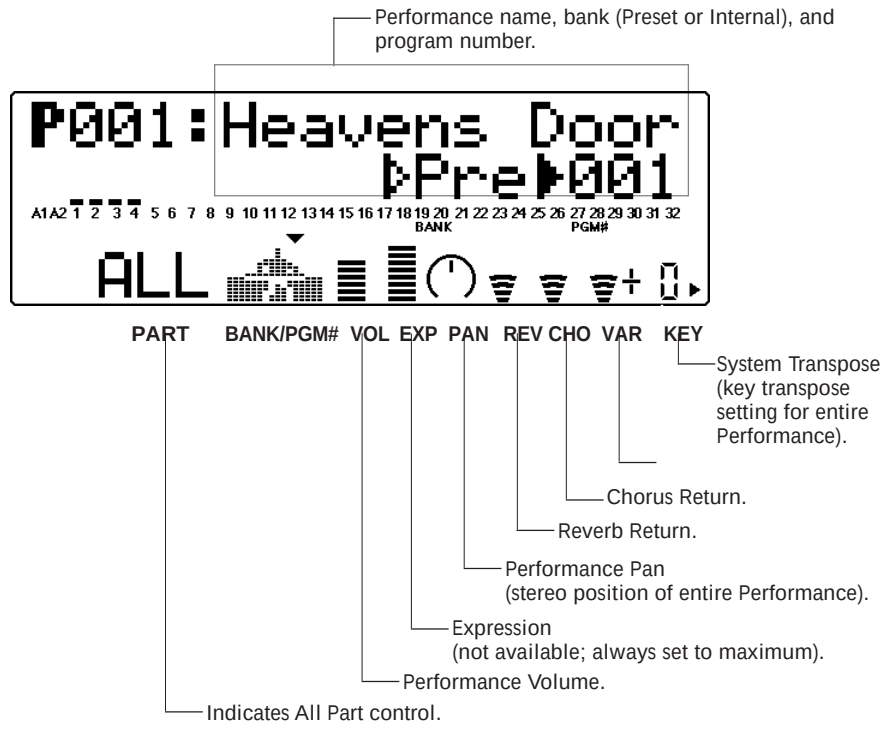
- **Use the All Part controls — to transpose the overall key of a Performance.**
- **Use the Single Part controls — to select different Voices for the Performance.**
- **Use the Edit menu parameters to create a "fat" two-Voice sound.**
- **Use the Mute/Solo button for effective editing.**
- **Set up a keyboard split — with individual Voices playable from different sections of the keyboard.**
- **Set up a Performance for "playing" filter sweeps with the modulation wheel on your keyboard.**
- **Save your original Performance.**

All Part Controls

You can make changes to the overall Performance by using the All Part controls. These are displayed in the Performance Play mode, and give you at-a-glance confirmation and control of some important basic settings of the selected Performance.

In the Performance mode, the All Part controls are automatically called up whenever you turn the power on or select the Performance mode.

Let's take a look at the All Part Performance Play display:



For more information on the All Part controls, see page 132.

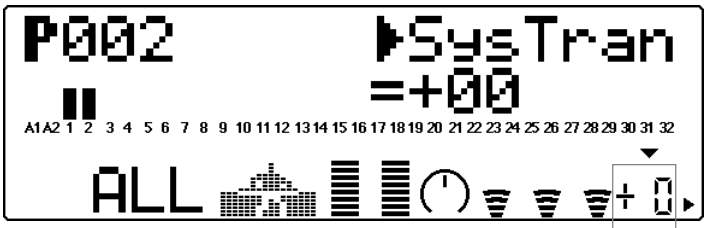
Transposing the Overall Key of a Performance

In this example, you'll change the System Transpose setting for the "Rich Piano" Performance. This All Part control is useful for instantly changing the key to match the range of a vocalist, or for ease in playing difficult keys.

Operation

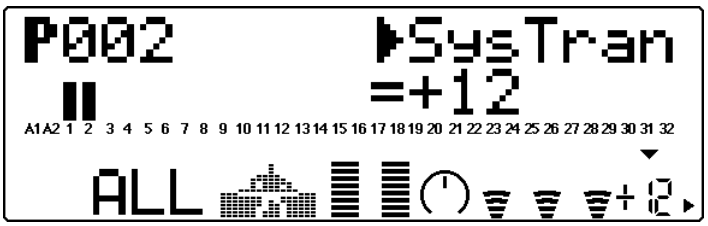
1 Select the "Rich Piano" Performance.
First select the Preset bank ("Pre"), then select Performance number 002 ("Stereo Grand"). (For instructions on selecting Performances, see steps #4 and #5 on pages 39 and 40.)

2 Select the System Transpose control.
Use the **[SELECT ▶]** buttons to move the cursor arrow to the appropriate control. ("SysTran" appears in the display.)



Current System transpose setting (in semitones).

3 Change the System Transpose setting as desired.
Use the **[VALUE ⊖/⊕]** buttons or data dial. (The "+00" setting is normal; ±"12" is up/down one octave.)



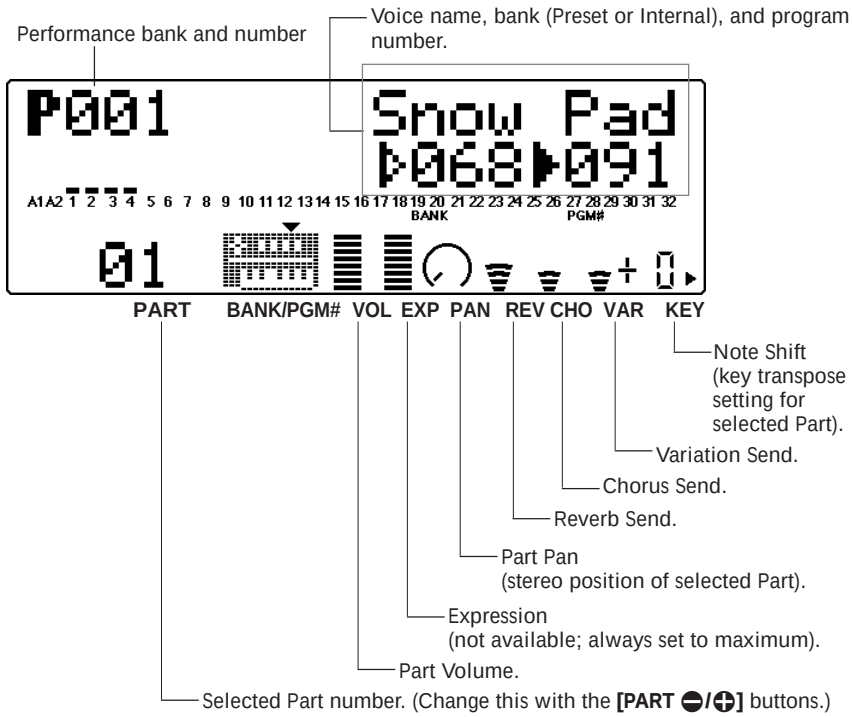
Play the connected keyboard and try other transpose settings as you play.

Single Part Controls — Selecting Different Voices for the Performance

In this next section, you'll use the Single Part controls to change the Voice settings of the Performance.

Operation

1 Call up the Single Part controls.
Simultaneously press both **[PART ⊖/⊕]** buttons.



For more information on the Single Part controls, see page 134.

2 Select the desired Part.
Use the **[PART ⊖/⊕]** buttons.

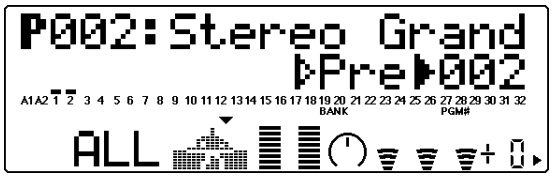
Keep in mind that you should select only from the active Parts — the ones with a dark bar in the display. Other Parts can be selected however, they will not sound in the Performance.

3 Select the desired bank and Voice.
Do this in the same way as you did in the Multi mode. (pages 43 and 45.)

Details
Drum Parts are not available in the Performance mode. However, percussive Voices (numbers 113 – 120) can be selected.

When editing a Performance:

• Decide how many Parts you want.
When creating a Performance, choose a preset that uses the same number of Parts (Voices) you intend to use. (You can easily tell how many Parts a Performance has by looking at the "level meters"; a dark bar appears above the Part numbers that are active.)



Two active Parts

• Start with a similar sound.
When editing, it's a good idea to start with a sound that's relatively similar to the one you intend to create. For example, if you want to create an soft, ethereal strings pad, you probably wouldn't start with a brash preset such as "Dance Chord"! This is not a hard and firm rule, however, since each preset is only a basic "template" over which you can easily change Voices and create a completely different sound.

On Your Own...

If you want to, try making changes to some of the other Part controls. The procedure is the same:

1) Select a Part with the **[PART ⊖/⊕]** buttons.
2) Select a control for editing with the **[SELECT ◀/▶]** buttons.
3) Change the setting with the **[VALUE ⊖/⊕]** buttons.
4) Use the **[EXIT]** button as needed to return to "home base." (When editing in Single Part, pressing once returns to Voice name and number; pressing once again returns to All Part.)

For more information on the specific Part controls, see page 134.

Edit Menu Parameters — Creating a Two-Voice Layer

Editing a Performance is almost identical to editing Parts in the Multi mode. The Edit menu tree is slightly different, and certain parameters are different as well. (For a full list and description of Performance Edit parameters, see page 137.)

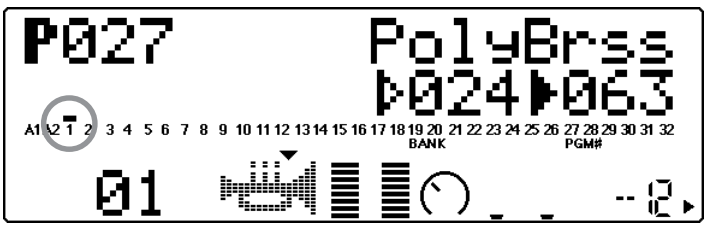
In the following instructions, you'll use the Edit menu parameters to create a two-Voice Performance and "fatten" the sound using Detune.

Operation

1 Select the desired Performance.
For this example, select the Preset bank, then Performance number 027, "Jump-off."

2 Select Part 1.
Call up the Single Part controls (simultaneously press both **[PART ⊖/⊕]** buttons), then select Part 1.

3 Solo the selected Part.
Press the **[MUTE/SOLO]** button twice (or repeatedly until the display below appears) to solo the selected Part.



Dark bar indicates Part 1 is being soloed.

Using Mute/Solo for effective editing:

The **[MUTE/SOLO]** button is a convenient tool, especially in editing Performances. Make sure that the Single Part controls are selected, then use the button to switch among the following three conditions. (In All Part, the **[MUTE/SOLO]** button simply mutes/un-mutes all Parts.)

Mute: Lets you hear what the other Parts of the Performance sound like, minus the selected Part.

Solo: Lets you hear what the selected Part sounds like by itself.

Normal: Lets you hear all Parts together.

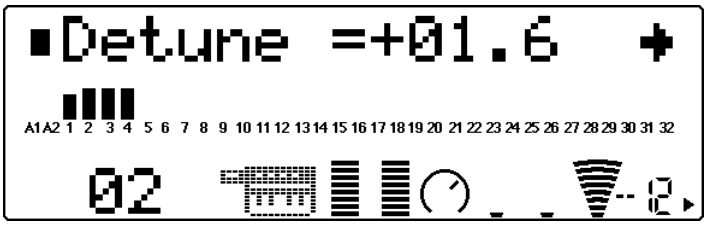
Use this function regularly as you edit the sound. While you're editing, you should solo the Part, so you can clearly hear the changes. Make sure to frequently use Normal (all Parts on), so you can hear the total effect of your edits.

For more on Mute/Solo, see page 95.

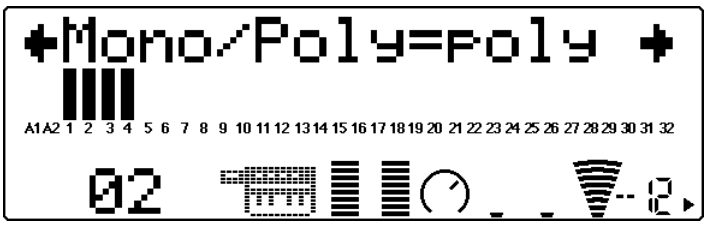
4 Select Part 1 and select a new Voice for it: “HeavySyn” (082).

5 Select Part 2 and select the “HeavySyn” Voice for it as well.

6 Select the “OTHERS” parameters.
Press the **[EDIT]** button. From the first Edit menu, select and call up “PART,” then select and call up “OTHERS.”



First Edit menu.



Second Edit menu.

7 Select and set the Detune parameter for Part 2.
Use the **[SELECT ◀]** buttons to select the parameter, then the **[VALUE ⊖/⊕]** buttons or data dial. With Part 2 selected, increase this to “+2.2.”

8 Set the Detune parameter for Part 1.
Keep the display at the Detune parameter and select Part 1. Decrease this setting to “–2.2.”

This produces a “fat” layered sound. You can check how much this changes the sound by exiting to the Single Part display and using **[MUTE/SOLO]** button to listen to the Parts by themselves and together.

Now, try changing some other parameters.

9 Exit to the second Edit menu and call up the “VIBRATO” parameters.
Press the **[EXIT]** button once, then select and call up the “VIBRATO” parameters.

10 Change the Vibrato Rate, Depth, and Delay settings.
Select one of the Parts and set the Vibrato parameters as follows:

Rate:	+15
Depth:	+04
Delay:	+15

This produces a delayed vibrato for Part 1; in other words, the vibrato effect starts after the keys have been held for a while. Notes played staccato have no vibrato.

11 Exit back to the Single Part control display.
Press the **[PLAY]** button.

Setting Up a Keyboard Split

In the following steps, you'll assign two different Parts to separate sections of the keyboard.

Operation

1 Select Part 2 and select a new Voice for it: "NewAgePd" (089).
From the Single Part display, use **[PART ⊖/⊕]** buttons to select Part 2. Then select Voice 089 in the normal way. (Keep Part 1's Voice set to "HeavySyn," 082, as set in step #4 of "Creating a Two-Voice Layer" above.)

2 Change the Note Limit High setting for Part 1.
The Note Limit parameters determines the range of notes over which the Part will sound. To set this:
1) In Edit menu select and call up the "PART" menu, then do the same with the "OTHERS" menu.
2) Select Part 1.
3) Select and change the "NoteLimitH" setting to "B2." (Leave the "NoteLimitL" setting unchanged.)

3 Change the Note Limit Low setting for Part 2.
1) Select Part 2.
2) Select and change the "NoteLimitL" setting to "C3." (Leave the "NoteLimitH" setting unchanged.)

Playing notes below middle C on the keyboard plays the synth bass sound, while notes above middle C play the "New Age" pad.

Hint
*You may want to raise the octave setting of Part 1. To do this, exit to Single Part, select Part 1, then use the **[SELECT ▶]** buttons to select the Note Shift control. For a higher "HeavySyn" Voice, set this to "+00.")*

If you wish to save this newly created Performance, refer to "Saving Your Original Performance" on page 78.

On Your Own...

While you're at it, try making changes to some of the other Edit (part) parameters. The procedure is the same:

1) Call up the Edit menus by pressing the **[EDIT]** button.
2) Select "PART" with the **[SELECT ◀/▶]** buttons, then press **[ENTER]**.
3) Select the desired menu with the **[SELECT ◀/▶]** buttons, and press **[ENTER]**.
4) Select the desired Part with the **[PART ⊖/⊕]** buttons.
5) Select the desired parameter with the **[SELECT ◀/▶]** buttons, and change the value with the **[VALUE ⊖/⊕]** buttons or data dial.
6) Use the **[EXIT]** button as needed to return to the Edit menu.

Using the Assignable Controller in a Performance

In this section, you'll set up a Performance in which the modulation wheel on your connected keyboard can be used to "play" dynamic filter sweeps. This is done with the Assignable Controller functions. Here, we'll simply show you what steps to follow; for more detailed information on the Assignable Controller and using it in the Multi mode, refer to page 79.

Operation

1 Select the "Dark Pad" Performance (Preset #025).

2 Select and call up "COM" (Common) from the first Edit menu.

3 From the Common menu, select the "AC1 CC No." parameter and set it to "01."
Use the **[SELECT ◀/▶]** buttons, then use the **[VALUE ⊖/⊕]** buttons or data dial.

4 Select the "AC1FilCtrl" parameter and set it to "+63."

5 Select Part 1 and change some of its Filter settings.
The Filter settings determine how the Part responds to the "**AC1FilCtrl**" setting above. To set these:
1) In Edit menu select and call up the "PART" menu, then do the same with the "FILTER" menu.
2) Select Part 1.

3) Select and change these parameters:
LPF Cutoff: –64
LPF Reso: +50

Provided your connected keyboard has a modulation wheel (most do), and all other settings are appropriate, you can create wide, dynamic filter sweeps by holding notes and moving the modulation wheel.

Saving Your Original Performance

Once you've edited a Performance, you can give it a different name and save it for future recall. The MU128 has 100 Internal memory locations for your original Performances.

For instructions on naming a newly created Performance, see page 138.

Operation

1 Press the **[EDIT]** button.

2 Select "STORE."



Either Preset or Internal Performances can be edited, but they can only be saved to the Internal bank.

3 Select a different Internal number, if desired.
Use the **[VALUE ⊖/⊕]** buttons or data dial.

4 Press the **[ENTER]** button to save the Performance, or press the **[EXIT]** button to cancel.

NOTE
If the contents of the internal bank of Performances has been changed, you can use the Initialize function to restore the internal Performances to their factory settings.
Keep in mind that doing this automatically erases any original Performances in the internal memory. For this reason, you should save any important Performance data to a MIDI data filer (such as the Yamaha MDF3) before executing the Initialize function.

Assignable Controller (AC1)

The Assignable Controller (AC1) is one of the more powerful features of the MU128 — it gives you extraordinarily flexible and expressive real-time control over the Voices.

In this section, you'll:

- **Learn about MIDI controllers and control numbers, and how they can affect the Voices.**
- **Set up your system for using the Assignable Controller.**
- **Try out some specific controller application examples, such as:**
  - *** Varying degrees of brightness on a Part**
  - *** Filter sweep and "wah" effects**
  - *** "Expression pedal" control of volume**
  - *** Variable filter control of specific drum sounds**

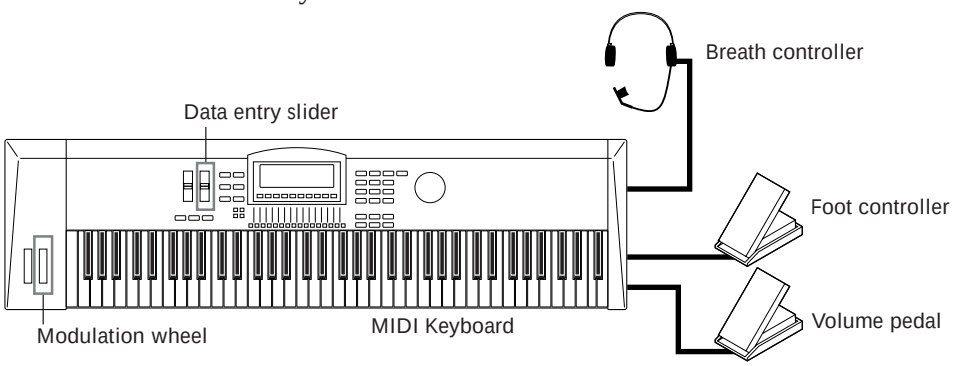
Hint

A good way to introduce yourself to some of the Assignable Controller applications is to explore the Performances — many of them feature Assignable Controller settings that let you change some aspect of the sound (usually with the modulation wheel on the connected keyboard). (Refer to the "Sound List & MIDI Data" booklet, and select/play Performances that mention "MW" in the "Comments" section of the lists.)

Controllers and Control Numbers

In the MIDI world, "controllers" are used to change some aspect of the sound. In this section, we'll work with "continuous" controllers — so named because they let you add musical, expressive effects that change smoothly over time (such as crescendos and decrescendos).

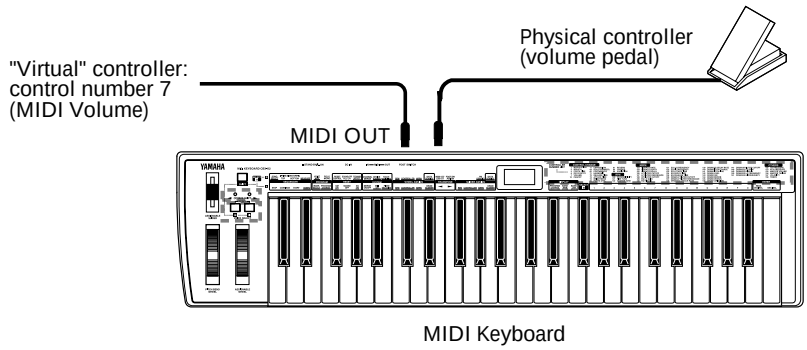
The illustration below shows some continuous controllers you're likely to see on a MIDI keyboard.



NOTE

Your own MIDI instrument may not have all the controllers shown in the illustration.

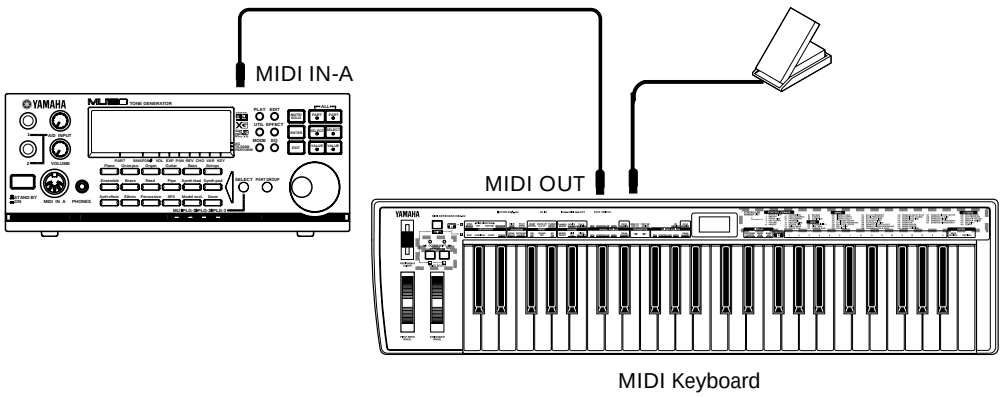
The actual, physical means of controlling (such as foot pedals, modulation wheels, etc. on a connected keyboard) are generally assigned to specific "virtual" control numbers. A few examples of these include the modulation wheel (at control number 1), foot controller (control number 4), and volume pedal (control number 7).*



**** On some instruments, the control number for the physical controllers is fixed; some instruments allow you to assign a different control number to the existing control. (Refer to the owner's manual of your instrument for details. Also for more on control numbers, see the "Sound List & MIDI Data" booklet.)***

Control Numbers and the Actual Sound

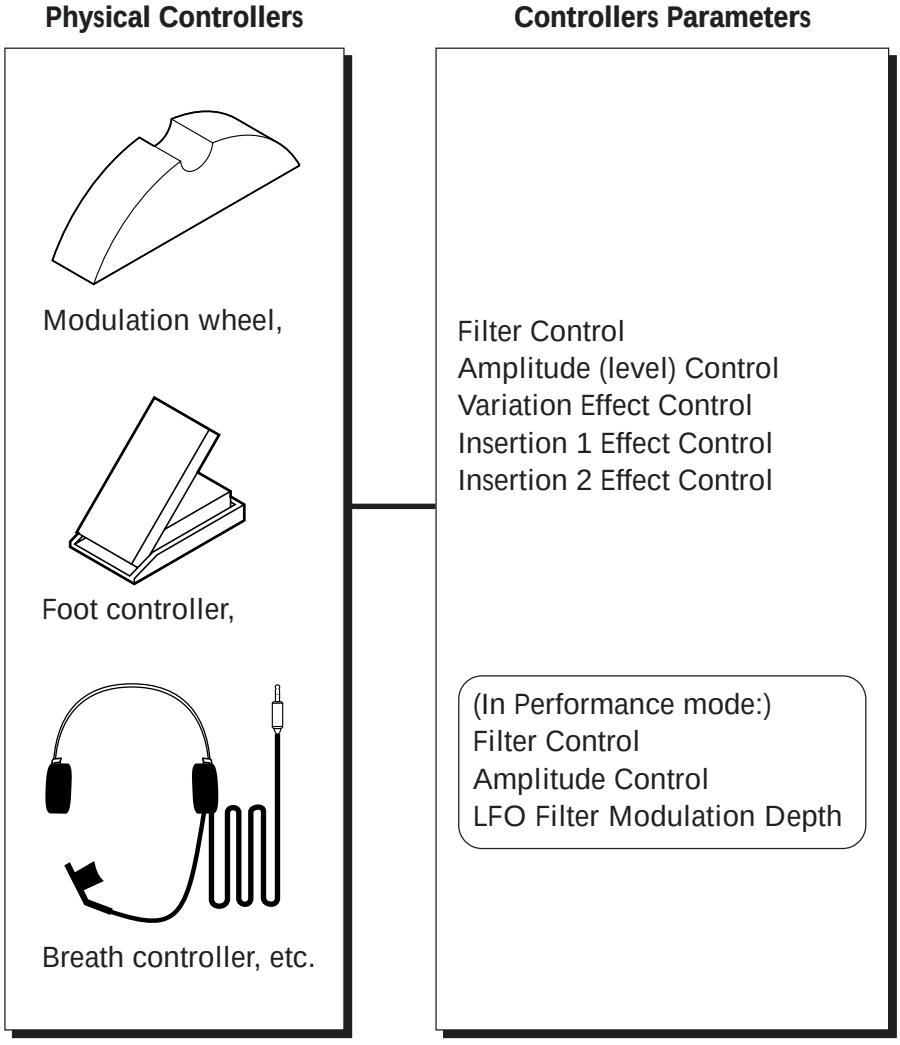
The control numbers described above are in turn assigned to some specific aspect of the sound on the connected tone generator (for example, to volume, pitch modulation, dry/wet balance of an effect, etc.). As you might expect, control number 7 (Volume) affects the volume of the connected tone generator.



In this example, the foot controller of a keyboard controls the volume on the MU128.

Assigning the Assignable Controller

The Assignable Controller on the MU128 lets you specify the control number to be used and determine which aspect or aspects of the sound will be affected. It also lets you set the degree to which the controller affects the sound.

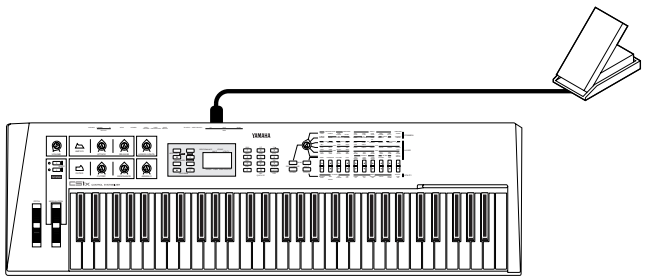


The best way to understand all this is to go through some actual examples, so go on to the next section and set up your system:

Using the Assignable Controller — Setting Up

Operation

1 Set up the MIDI keyboard or instrument.
Connect the foot controller to the appropriate jack, and make sure that the instrument is set to transmit over MIDI channel 1. (If your instrument doesn't have a foot controller, use another controller as described in the next step.)



CS1X

2 Select the desired Part.
From the Multi Play mode, use the **[PART ⊖/⊕]** buttons. For the sake of these instructions, select Part 1.

3 Call up and set the Assignable Controller number.
The control number of your instrument's controller must match the Assignable Controller control number. In this example and all the following instructions in this section, we'll use the foot controller. Since the foot controller is control number 4, the Assignable Controller must be set to "04."
To do this:
1) Press the **[EDIT]** button.
2) Use the **[SELECT ◀/▶]** buttons to select "OTHERS," then press **[ENTER]**.
3) Use the **[SELECT ◀/▶]** buttons to select "AC1 CC No."
4) Set the value to "04" with the **[VALUE ⊖/⊕]** buttons or data dial.

If you don't have a foot controller, you can use another controller, such as the modulation wheel (01) or volume pedal (07) — making sure that the Assignable Controller number matches.

Keep in mind that this setting applies only to the selected Part. Other Parts can have separate control number settings.

Modulation Wheel

The modulation wheel is the most common controller, and can be found on nearly every MIDI keyboard. It is usually used to produce LFO effects (regular wavering of the sound, like vibrato and tremolo). Since it is so common, the MU128 features various parameters that are reserved strictly for modulation wheel control.

In the Multi mode, the modulation wheel can control Pitch LFO. The Performance mode features both Pitch LFO and Filter LFO. For more information on these parameters, see pages 124 and 139.

Using the Assignable Controller — Some Applications

Changing the Brightness on a Piano Voice

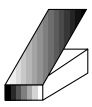
Though you can use the Equalizer (page 116) to adjust the brightness of a Part's Voice, you may find it convenient to be able to change the character of the sound "on the fly," as you play. This uses the AC1 Filter Control parameter. Try this with the Grand Piano Voice (001:GrandP #).

Operation

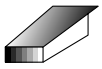
1 Call up the Edit menu.
From the Multi Play mode, press the **[EDIT]** button.

2 Select and call up "OTHERS."
Use the **[SELECT ◀/▶]** buttons, then press **[ENTER]**.

3 Select "AC1FilCtrl" and set it to "+63."
Use the **[SELECT ◀/▶]** buttons to select the Filter Control parameter, then set the value with the **[VALUE ⊖/⊕]** buttons or data dial. Playing the Part at the minimum pedal position results in mellow "lounge" piano sound; maximum position results in a bright "rock'n'roll" piano.



Minimum position — mellow sound.



Maximum position — bright sound.

4 Try the setting on other Voices.
Exit to the Multi Play mode display (press the **[PLAY]** button) and select other Voices, trying out the new setting, and moving the foot controller up and down as you play. Try out some of these Voices, and notice how the sound changes:

SynBass2 (040), Saw Ld (082), Warm Pad (090) — for a "wah" filter sweep effect.

SynVoice (055), NewAgePd (089) — for gradually fading in a breathy sound.

For details on the AC1 Filter Control parameter, see page 124.

Details
Keep in mind that the degree and character of the AC1 Filter Control depends also on the Filter parameter settings for the Part (see page 111). Some Voices may not change at all unless these parameters are set appropriately. However, all of the example Voices above should clearly change in response to AC1 (if the Filter parameters are all at their default setting of 00).

Resetting the parameter values

The simple operation below lets you instantly restore the factory preset values. Since it automatically cancels any edits you've made, you should use it with care.

1. Press the **[MODE]** button.

2. Select a different mode, then re-select the original one.
For example, if you were editing in the XG mode, use the **[SELECT ◀/▶]** buttons to move the cursor to "TG300B," then back to "XG."

Doing this automatically resets all Part settings to the factory-programmed condition and cancels any edits you made in the Multi mode (including whatever Voices you selected).

Expressive Volume Control of a Part

This example shows you how to use the foot controller as an expression pedal. This may come in handy when use of MIDI Volume (#7) or Expression (#11) is unavailable.

Operation

1 Select the desired Part and Voice.
Keep the settings you made to Part 1 (in the last example), and select a new Part/Voice for this example. From the Multi Play mode, select Part 2 with the **[PART ⊖/⊕]** buttons. (This should be set to MIDI channel 2; set the MIDI channel on the connected keyboard accordingly.) A good Voice for this application would be PercOrg# (018); select this with the **[VALUE ⊖/⊕]** buttons or data dial.

2 Set the Assignable Controller number for the Part.
Set this to "04." (Refer to step #3 in "Using the Assignable Controller — Setting Up" above.)

3 From the "OTHERS" parameters, select "AC1AmpCtrl" and set it to "+63."
Use the **[SELECT ◀/▶]** buttons to select the Amplitude (level) Control parameter, then set the value with the **[VALUE ⊖/⊕]** buttons or data dial.

Now, play the organ sound and use the foot controller to play expressive volume swells. For details on the AC1 Amplitude Control parameter, see page 125.

Expressive Control of Individual Drum Sounds

In this example, the foot controller is used to produce expressive timbre changes and filter sweeps on selected drum sounds, using the Filter Control parameter.

Operation

1 Select a Drum Part.
Select Part 10 with the **[PART ⊖/⊕]** buttons, and make sure that the connected keyboard is set to transmit over MIDI channel 10.

2 Set the Assignable Controller number for the Part.
Set this to "04." (Refer to step #3 in "Using the Assignable Controller — Setting Up" above.)

3 Set the AC1 Filter Control to "+63."
Since you've called up the "OTHERS" parameters in the previous step, select "AC1FilCtrl" (with the **[SELECT ◀/▶]** buttons) and set it to "+63" (with the **[VALUE ⊖/⊕]** buttons or data dial).

4 Select the "DRUM" parameters.
Call up the Edit menu, then select "DRUM" (with the **[SELECT ◀/▶]** buttons) and press **[ENTER]**.

5 Select "A3: Cabasa."
Play A3 on the connected keyboard, or use the **[PART ⊖/⊕]** buttons to select "A3."

6 Set some of the filter parameters for the Cabasa sound.
Select using **[SELECT ◀/▶]** button and set the two parameters below as indicated:
LPF Cutoff: –40
LPF Reso: +60

Now, play the sound and move the foot controller as you play. Notice how this gives you dynamic, expressive control over the timbre of the selected sound — without affecting the other sounds of the drum kit.

Hints

- *Since virtually all sequencers record controller data as well as note data, you can record these expressive sound changes into your song tracks — either while you record the notes themselves, or separately for a previously recorded track.*
- *The negative values of the AC1 parameters let you control the sound by moving the controller in the opposite direction. For example, moving the foot controller to the minimum position produces the greatest change in the sound.*
  An application of this might be to create a pedal-controlled crossfade between two Parts.
  To do this:
  1) Set two Parts to the same MIDI channel. (page 119.)
  2) Set each Part to a different Voice.
  3) Set the "AC1AmpCtrl" parameter for one Part to "–64," and the same parameter for the other Part to "+64."
- *The Assignable Controller can also be used to control one parameter of a selected effect.*

On Your Own...

While you're at it, try making some of your own settings. The procedure is the same:

1) Select the desired Part and Voice.
2) Call up the Edit menus by pressing the **[EDIT]** button.
3) Select "OTHERS" with the **[SELECT ◀/▶]** buttons, then press **[ENTER]**.
4) Set the Assignable Controller number for the Part.
5) Select the appropriate parameters with the **[SELECT ◀/▶]** buttons.
   - If you are using the AC1 Filter Control, make sure to appropriately set other filter settings. (in "FILTER" parameters, page 111, and/or "DRUM" parameters, page 126.)
   - Select the AC1 parameters in the "OTHERS" parameters. (In the Performance mode, these are in the "COMMON" parameters; see page 137.)
   - If you are using a Drum Part, select the desired drum sound, either by playing the corresponding key or by using the **[PART ⊖/⊕]** buttons.
6) Change the value, with the **[VALUE ⊖/⊕]** buttons or data dial.
7) Use the **[EDIT]** button as needed to return to the Edit menu.

Effects

To complement the huge variety of Voices and the 64-Part multi-timbral capacity, the MU128 features a built-in multi-effect processor with seven independent digital effects: Reverb, Chorus, Variation, Insertion 1 and 2, Part EQ, and Multi EQ. (In this section, we'll examine the first five; EQ is covered on page155.)

These high-quality effects provide an enormous amount of sound processing power and flexibility. Combine these with the Part controls in the Multi mode, and you have a "virtual" 64-channel mixer at your disposal, with per-channel EQ (Part EQ), master EQ (Multi EQ), and five effect sends — complete with seven independent effect units!

The following instructions assume that the XG mode is selected (page 42). However, using effects in the Performance mode and the other modes is done in virtually the same way.

In this section, you'll learn how to:

- **Set the Reverb Type and adjust the amount applied to a Part.**
- **Set the Chorus Type and adjust the amount applied to a Part.**
- **Use the Variation effects to apply distortion to a Part.**

Using Reverb and Chorus

Judicious use of Reverb creates a sense of space and enhances the realism of the Voices. The selected Reverb Type is applied to all Parts; however, the amount of Reverb for each Part can be adjusted. This lets you add special textures to the mix of a song, such as "drenching" one Part in Reverb while another Part is kept "dry."

The Chorus effect section features a variety of pitch modulation effects. These let you subtly enhance or "fatten" the sound, or completely transform the sound in wild and unique ways. As with Reverb, only one Chorus Type can be used for all Parts; however, the amount of Chorus for each Part can be adjusted.

Operation

1 First, set the Send and Return controls to appropriate levels.
Before you actually change the Reverb or Chorus settings, you should set the Send and Return controls, in order to properly hear the effect and the changes you make.

To do this:

1) Select the desired Part from the Multi Play mode Single Part display. (Use the **[PART ⊖/⊕]** buttons.)
2) Select "RevSend" (Reverb Send) or "ChoSend" (Chorus Send) with the **[SELECT ◀/▶]** buttons, and set it to "40" or higher.
3) Select the All Part display (by pressing both **[PART ⊖/⊕]** buttons).
4) Select "RevRtn" (Reverb Return) or "ChoRtn" (Chorus Return) with the **[SELECT ◀/▶]** buttons, and set it to "60" or higher.

2 Call up the Effect Edit mode.
Press the **[EFFECT]** button.

3 Select and call up the desired effect section.
Select "REV" (Reverb) or "CHO" (Chorus) with the **[SELECT ◀/▶]** buttons and press **[ENTER]**.

4 Select and change the Type parameter.
Use the **[SELECT ◀]** button to select "Type," then change the setting with the **[VALUE ⊖/⊕]** buttons or data dial.

5 Edit other parameters as desired.
Once you've selected a Reverb or Chorus Type, you can adjust the other parameters.
For Reverb, try changing the Reverb Time and HPF Cutoff and listen to how the changes affect the Reverb sound. For Chorus, the parameters differ depending on the selected Chorus Type. Use the **[SELECT ◀/▶]** buttons to select the parameter, then adjust the value with the **[VALUE ⊖/⊕]** buttons or data dial.

For a list of Reverb Types and other information on Reverb, see page 147. For a list of the available parameters for each Reverb Type, refer to the "Sound List & MIDI Data" booklet.

For a list of Chorus Types and other information on Chorus, see page 148. For a list of the available parameters for each Chorus Type, refer to the "Sound List & MIDI Data" booklet.

Applying Distortion to a Part — Using the Variation Effects

The Variation effect section provides a wealth of additional effects. With a total of 70 different Types, it features some of the same effects found in the Reverb, Chorus and Insertion sections. This is not mere redundancy; it allows you to use two Types of Reverb or Chorus on different Voices. For example, you may want to have a Symphonic effect on one Voice and Phaser on another. Variation also gives you many special effects not found in the Reverb and Chorus sections, such as Delay, Gate Reverb, Wah and Pitch Change.

The Variation effect can be applied either to all Parts (as with Reverb and Chorus), or to a single selected Part (as described below).

Operation

1 Set Variation Connection to "INS" (Insertion).
To use Variation with a single Part, the Variation Connection parameter should be set to Insertion.

To do this:

1) Press the **[EFFECT]** button.
2) Select "VAR" (with the **[SELECT ◀/▶]** buttons) and press **[ENTER]**.
3) Select "VarConnect" (with the **[SELECT ▶]** button), and change the setting to "INS" (with the **[VALUE −/+]** buttons or data dial).

2 Select the desired Part and set its Variation Send control to "on."

To do this:

1) Return to the Multi Play mode Single Part display (press the **[PLAY]** button), then select the desired Part (with the **[PART −/+]** buttons).
2) Select "VarSend" (with the **[SELECT ◀/▶]** buttons), and set it to "on" (with the **[VALUE−/+]** buttons or data dial).

3 Return to the Variation parameters, select the Distortion Type, and make other necessary settings.

To do this:

1) Press the **[EFFECT]** button.
2) Select "VAR" (with the **[SELECT −/+]** buttons) and press **[ENTER]**.
3) Select "Type" (with the **[SELECT ◀]** button), and change the setting to "DISTORTION" (with the **[VALUE −/+]** buttons or data dial).

4) If you cannot hear the Distortion effect clearly, select the "Dry/Wet" parameter (with the **[SELECT ◀/▶]** buttons) and adjust it (with the **[VALUE ⊖/⊕]** buttons or data dial) until the sound is appropriate.
5) Using the same method (as in step #4), select and adjust other important Distortion parameters as needed, such as "Drive" and "OutputLvl" (Output Level).

Now, play the Part and hear how Distortion affects the sound. Select other Types and play with them as well.

The Variation parameters differ depending on the selected Variation Type. For a list of Variation Types and other information on Variation, see page 149. For a list of the available parameters for each Variation Type, refer to the "Sound List & MIDI Data" booklet.

Details

- *When Variation is set for use with a single Part (Insertion), only Variation Send is available. (The Dry/Wet parameter in Variation Edit effectively performs the same function as Variation Return in this case; see page 150.) Also, Variation Send can be set to "on" for only one Part.*
- *When Variation is set for use with all Parts (System), both Variation Send and Return must be set to appropriate values. (The operation is the same as step #1 in "Using Reverb and Chorus" above.)*

For more information, refer to "About the Effect Connections — System and Insertion" on page 152.

Insertion 1 and 2 Effect Sections

The Insertion 1 and 2 sections provide additional signal processing power. Each of the Insertion sections can be applied to a single selected Part, and each features 43 effect Types.

For a list of Insertion Types and other information on Insertion, see page 151. For a list of the available parameters for each Insertion Type, refer to the "Sound List & MIDI Data" booklet.

Equalizer (EQ)

The MU128 features an extensive set of equalization controls that give you comprehensive control over the tone quality — both of individual Parts and over the entire instrument sound.

In this section, you'll learn how to:

- ▶ **Use the Part EQ edit parameters to adjust the tone of a specific Part.**
- ▶ **Use the Multi EQ to adjust the overall tone of the MU128.**

Adjusting the Tone of a Specific Part — Part EQ

The Part EQ parameters give you two-band (low and high frequencies) control over the sound of individual Parts. These can be used in both the Multi mode and the Performance mode.

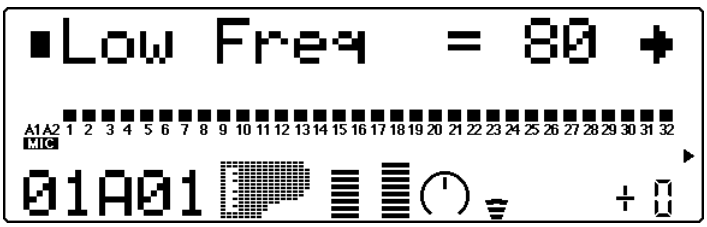
NOTE
When a Drum Part is selected, the EQ menu is not available. However, the same EQ parameters can be adjusted for each individual drum sound in the "DRUM" menu. (See page 129.)

Operation

1 Select the desired Part.
From the Multi mode Single Part display, use the **[PART ⊖/⊕]** buttons to select the desired Part (excepting Drum Parts).

2 Call up the EQ parameters.
Press the **[EDIT]** button, then select "EQ" (with the **[SELECT ◀/▶]** buttons) and press the **[ENTER]** button.

3 Select the general frequency range — low or high.
In this example, we'll boost the bass of the Part, so select "Low Freq" (Low Frequency) with the **[SELECT ◀/▶]** buttons.



4 Set the specific frequency to be adjusted.
For this example, set the Low Frequency value to “315” (Hz).

5 Select the Low Gain parameter and adjust the value.
For this example, set the Low Gain value to “+35.” Play the Voice (especially in the lower octaves) and hear how the sound has changed.

NOTE
Depending on the Voice selected for the Part (and depending in which octave you play the Voice), you may or may not hear very much change in the sound at certain frequencies.

If you want, try adjusting the High Frequency/Gain parameters as well.

EQ in the Performance Mode

The EQ settings of individual Parts in the Performance mode can be adjusted in the same way:

1) Select a Part (in the Single Part controls).
2) Press the **[EDIT]** button.
3) Select “PART”, then press the **[ENTER]** button.
4) Select “EQ”, then press the **[ENTER]** button, and edit the parameters as shown in steps #3 – #5 above.

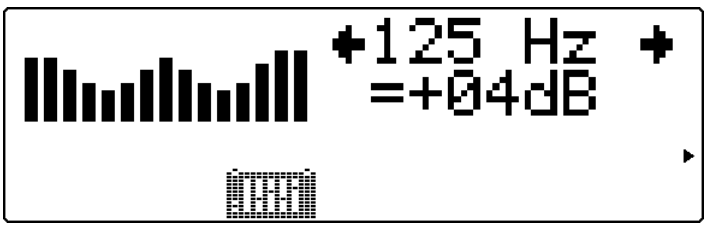
Adjusting the Overall Tone — Multi EQ

The Multi EQ section gives you five-band control (at specific frequencies) over the entire sound of the MU128. Special presets are also available for instantly changing the tone to suit different types of music.

Operation

1 Call up the "EQ TYPE" parameter and select the desired EQ preset.
First press the **[EQ]** button, then use the **[SELECT ◀/▶]** buttons to select the parameter. Then use the **[VALUE ⊖/⊕]** buttons or data dial to select the desired preset.

2 If desired, change the values of the five different bands.
Use the **[SELECT ◀/▶]** buttons to select the parameter, then change the value with the **[VALUE ⊖/⊕]** buttons or data dial.



The changes you make to a selected EQ preset are maintained even when the power is turned off. However, selecting another preset automatically cancels your original settings.

For more information on the Equalizer effects, see page 155. Also, refer to the Multi Mode Equalizer Lock parameter (page 158).

Mute/Solo

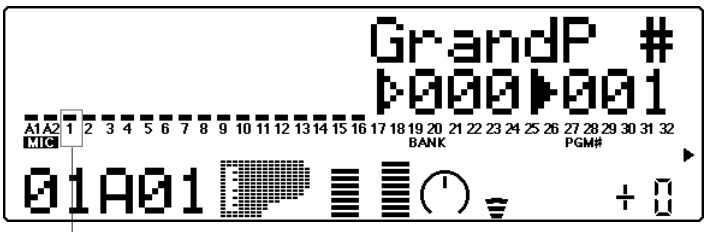
The MU128 has convenient Mute and Solo functions for selectively muting or soloing any of the 64 normal Parts and the two A/D Parts. This is especially useful when playing back several Parts from a connected computer or sequencer. Mute lets you silence one Part to hear how all of the other Parts sound without it. Solo lets you isolate a single Part, to hear how that Part sounds by itself.

In the Performance mode, Mute and Solo are especially effective tools that help you as you edit the Parts, since they allow you to better hear how the changes you make affect specific Voices as well as the overall sound of the Performance.

Using Mute/Solo

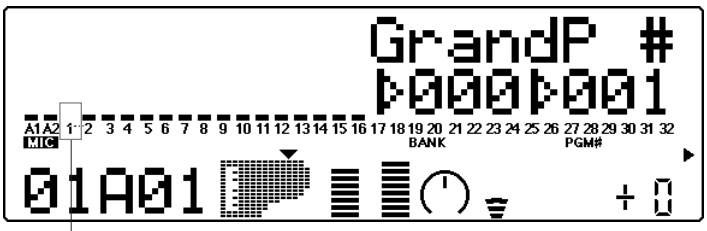
Operation

1 Select the desired Part.
Make sure the Single Part mode is active (page 59), then use the **[PART ⊖/⊕]** buttons to select the Part.

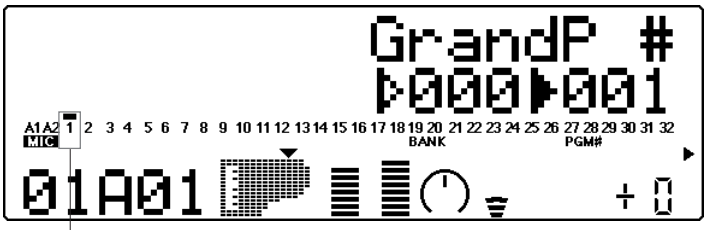


Selected Part number.

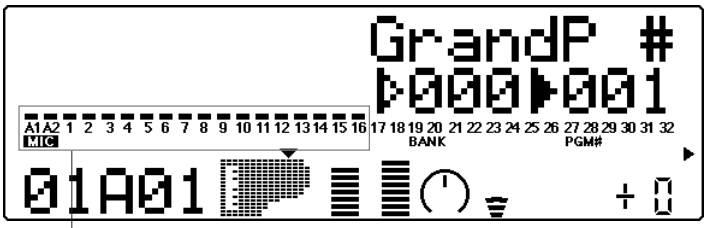
2 Press the **[MUTE/SOLO]** button.
While playing the keyboard (or during playback of a song from a sequencer), press the **[MUTE]** button. Each press cycles through the three functions: Mute, Solo and Normal operation.



The selected Part is muted, while all other Parts sound normally.



The selected Part is soloed, while all other Parts are muted.



All Parts sound normally.

A/D Inputs

The MU128 features a special A/D (Analog-to-Digital) input function that allows you to connect up to two different external signals (microphone, electric guitar, CD player, etc.), and mix those signals with the MU128's Voices. A/D input is perfect for singing along with your keyboard performance, since it allows you to blend the two signals without the need for an external mixer. Or you can use it to sing or play guitar over backing tracks played from a MIDI sequencer.

There are two A/D Parts (A/D1 and A/D2) and they can be manipulated in much the same way as the other parts — for example, they can have independent Volume, Pan, and effect send settings. What's more, you can control certain parameters automatically via a connected MIDI sequencer.

The two A/D Parts include several specially programmed presets, complete with proper gain settings and suitable effects — using the built-in effects of the MU128.

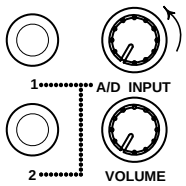
In this section, you'll learn how to:

- **Set up the MU128 for using the A/D inputs.**
- **Call up the A/D input presets.**

Using the A/D Inputs

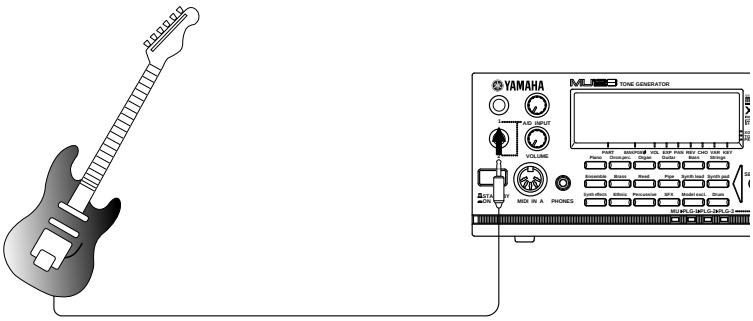
Operation

1 Turn down the A/D INPUT VOLUME control on the front panel.

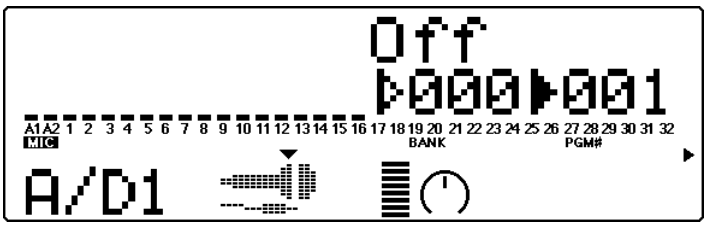


1 ***CAUTION***
Before connecting an external input, always turn the VOLUME control down.

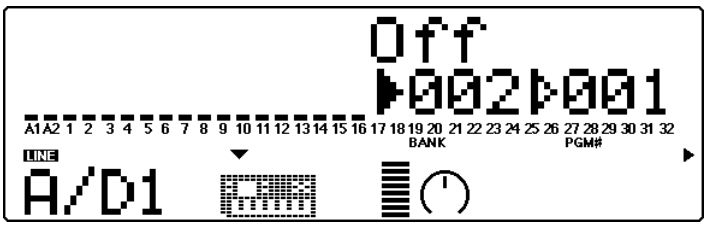
2 Connect the microphone or instrument to one of the A/D INPUT jacks.
For this example, connect to the A/D INPUT 1 jack. (Depending on the equipment being used, appropriate conversion adaptors may be necessary; the A/D INPUT jacks accept 1/4" phone plugs.)



3 Select the corresponding Part.
Use the **[PART ⊖/⊕]** buttons. Since you connected to the A/D INPUT 1 jack above, select Part A/D1 in this step.

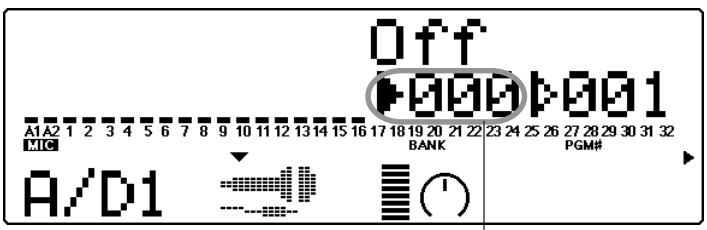


4 Select the appropriate bank of presets.
Do this in the normal way, using the **[SELECT ◀/▶]** buttons to highlight the bank number parameter, then using the **[VALUE ⊖/⊕]** buttons to change the bank.



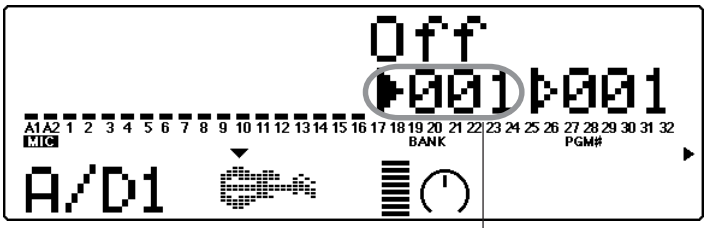
The selected bank determines the type of input and sets the appropriate gain level. Each bank/type is indicated by an icon in the LCD:

Bank 000



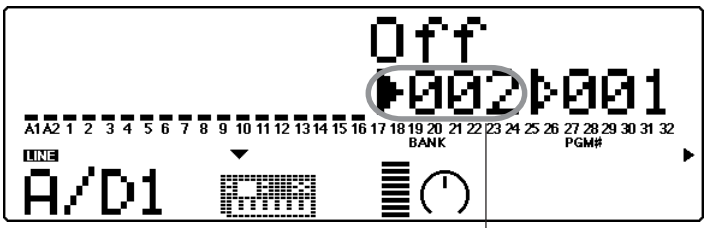
For input of a microphone (or other mic level instruments).

Bank 001



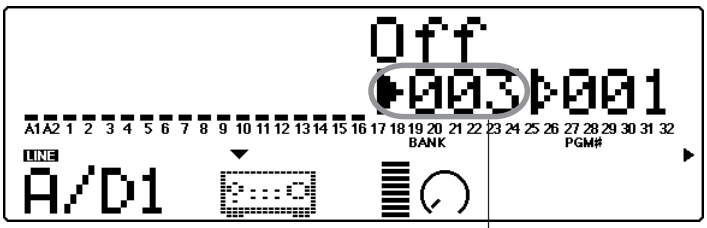
For input of an electric or electric/acoustic guitar (or other mic level instruments).

Bank 002



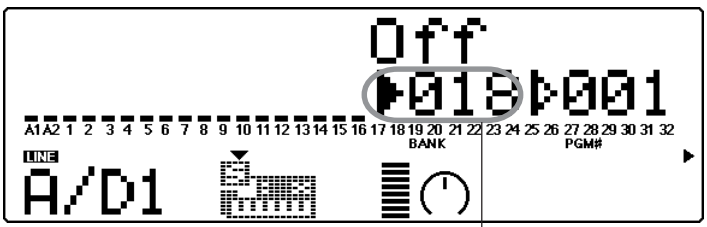
For input of a keyboard (or other line level instruments, such as tone generators, rhythm machines, etc.).

Bank 003



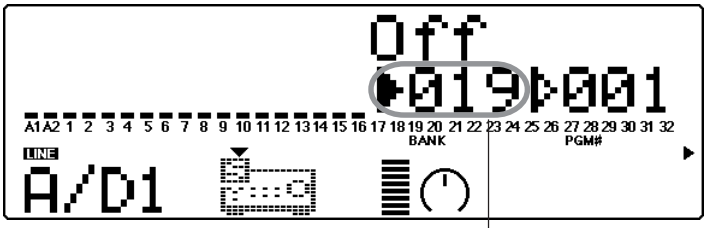
For input of audio equipment (such as CD players, cassette decks, etc.).

Bank 018



For input of a stereo keyboard (or other stereo signals from line level instruments, such as tone generators, rhythm machines, etc.).

Bank 019



For input of stereo audio equipment
(such as CD players, cassette decks, etc.).

CAUTION
Do not use line level signals (such as from keyboards, etc.) with the mic level banks. The signal may be too high, resulting in damage to the MU128.

5 Select the desired preset.
Do this in the normal way (as you selected Voices), using the **[SELECT ◀/▶]** buttons to highlight the program number parameter, then using the **[VALUE ⊖/⊕]** buttons to select the preset.

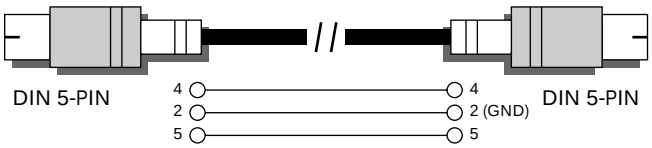
The available presets have been specially programmed to suit the type of input selected. For example, presets for Mic input include Karaoke and Vocal; Guitar input presets include Tube, Stack and Phaser. Explore some of these settings on your own with a microphone and different instruments. (For a list of all available A/D input presets, refer to the "Sound List & MIDI Data" booklet.)

6 Turn up the level.
If the connected source has a volume control, first set it to an appropriate level, then slowly bring up the A/D INPUT VOLUME control on the MU128 while playing the instrument (or singing into the microphone), until the level is appropriate.

MIDI/Computer Connecting Cables

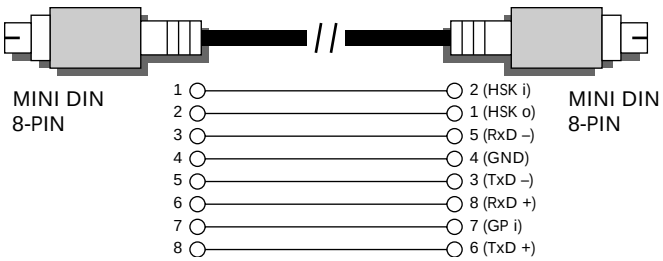
MIDI

Standard MIDI cable. Maximum length 15 meters.



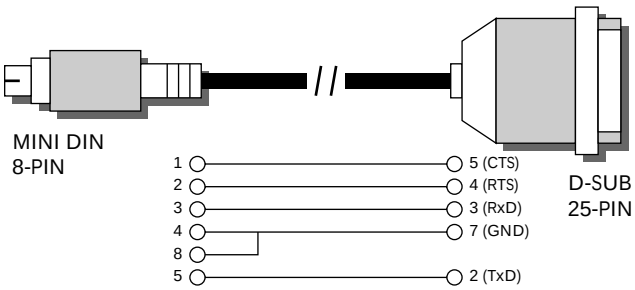
Mac

Apple Macintosh Peripheral cable (M0197). Maximum length 2 meters.



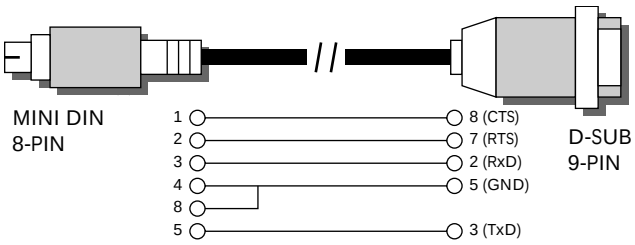
PC-1

8-pin MINI DIN to D-SUB 25-pin cable. If your PC-1 type computer has a 9-pin serial port, use the PC-2 type cable. Maximum length 1.8 meters.



PC-2

8-pin MINI DIN to D-SUB 9-pin cable. Maximum length 1.8 meters.



This concludes your basic tour of the important functions of the MU128. To find out more about how to best use your MU128, look through the **Reference** section that follows and try out some of the functions and operations that interest you.

REFERENCE

The Reference section of this manual covers in detail all of the functions of the MU128. Refer to it when you need information about a specific function, feature or operation.

Multi Mode

In the Multi mode, the MU128 performs as a multi-timbral tone generator capable of playing up to 64 Parts simultaneously, over 64 MIDI channels. Normally, the MU128 should be set to Multi mode when using it with a sequencer and General MIDI song data. There are two Multi modes: XG and TG300B. (For information on selecting these, see pages 43 and 170.)

Part Controls 104
Single Part Control 105
All Part Control 109
Multi Edit Mode 111
Filter (FIL) 111
Envelope Generator (EG) 113
Equalizer (EQ) 116
Vibrato 117
Others 118
Drum Setup Controls 126

Part Controls

The Part controls in the Play mode give you tools for adjusting the basic sound and settings for each Part. The MU128 lets you adjust the various settings for each Part individually (Single Part control) or together (All Part control). Each of these types is explained in greater detail below.

NOTE
When the Sound Module mode is changed (page170), all settings in each mode will be initialized to their factory values. However, you can use the Dump Out function to save your settings to a MIDI data storage device. (See page 162.)

Single Part Control

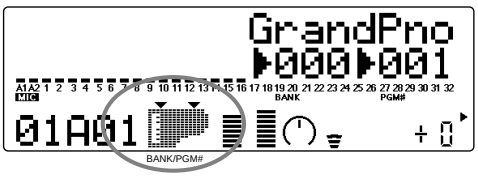
The Single Part controls include: Bank Number, Program Number, Volume, Expression, Pan, Reverb Send, Chorus Send, Variation Send and Note Shift. For basic information on using the Single Part control, see page 59.

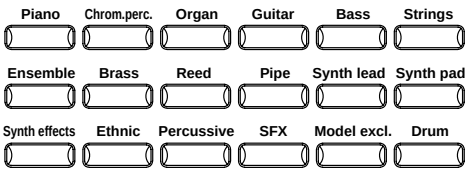
Voice Category

When both BANK and PGM# are indicated by cursors, Voices in the current Voice category can be selected.

In this condition, using the [VALUE ⊖/⊕] buttons or data dial changes the bank number and the program number, and only those Voices that belong to the specified Voice category are displayed and selected.

To select the desired Voice category, press the appropriate Voice Category button.





The various Voice categories group together all Voices which are the same type or share certain characteristics. All the internal Voices of MU128 are divided into eighteen different Voice categories.

The Piano - Model excl. buttons select the Normal Voices and the Drum button selects the Drum Voice.

For more details on each Voice category, see page 44.

NOTES

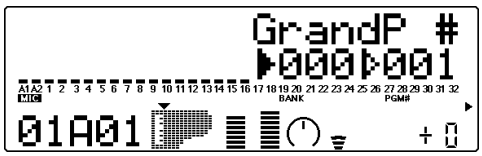
- *The Voices selected with the Model excl. button are original Voices unique to the MU128 and MU100, and do not conform to the GM standard in the XG Voice map. When playing back song data using any of these Voices on an XG-compatible tone generator other than the MU128 (or the MU100/100R), the Part using one of these Voices will not sound.*
- *When selecting the Plug-in board with the [SELECT] button, the Model excl. category features the original Voices of the board, which do not conform to the XG format.*

Bank Number

Settings:

Part	Available banks		
A/D1			000~003, 018, 019
A/D2			000~003
A01~16 B01~16 C01~16 D01~16	When part mode is set to "normal"	When Sound Module mode is set to "XG"*	000, 001, 003, 006, 008, 012, 014, 016~022, 024~029, 032~043, 045,048, 052~054, 064~091, 096~101, 126,127 When MU100 icon is shown: 000, 008, 016, 024, 048, 056, 064, 072, 080, 088, 096, 104, 120 When SFX icon is shown: SFX
		When Sound Module mode is set to "TG 300B"*	000~012, 014~019, 024~027, 029~035, 040, 041, 126, 127
	When Part mode is set to "drum"	When Sound Module mode is set to "XG"	126, 127
		When Sound Module mode is set to "TG 300B"	000

* If the Display Bank Select parameter (page 161) is set to "1", banks whose Voices are indentical to those in the basic bank are not selected.



This determines the bank number of the selected Part's Voice. (Refer to the **SOUND LIST & MIDI DATA** booklet.)

Once you've selected a Voice, you can easily select the related variation Voices by changing the bank number. For example, if program number 001, GrandPno (Grand piano), has been selected, changing the Voice bank calls up variation piano Voices, such as MelloGrP (Mellow grand piano), PianoStr (Piano strings), etc.

For information on the Part mode, see page 120; for information on the Sound Module mode, see page 170.

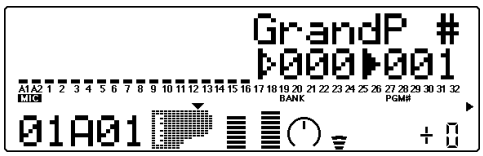
NOTES

- *The MU100 icon appears in the display to indicate the MU100 exclusive Voices, and the SFX icon indicates the SFX Voices.*
- *MU100 exclusive Voices are original Voices unique to the MU128 and MU100, and do not conform to the GM standard in the XG Voice map. When playing back song data using any of these Voices on an XG-compatible tone generator other than the MU128 (or the MU100/100R), the Part using one of these Voices will not sound.*

Program (Voice) Number

Settings:

A/D1 (A/D Input part):	001 — 013
A/D2 (A/D Input part):	001 — 005
Normal part:	001 — 128



This determines the Voice for the selected Part. (Refer to the **SOUND LIST & MIDI DATA** booklet.)

NOTE

When a variation bank number (one other than 000) is selected, a square cursor (■) at the program number parameter indicates that the current Voice is not a variation Voice, but is identical to the same numbered Voice in bank 000.

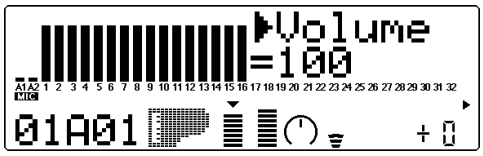
Details

When the A/D1 or A/D2 Part is selected:

- *Specifying the bank number and the program number lets you easily call up the most suitable input gain and effect settings for the input signal.*
- *When the Variation Connection parameter for an effect (page 150) is set to "SYS," the Variation Send parameter (page 108) can be used to simultaneously apply the same effect to both A/D1 and A/D2.*
- *Setting the bank number of the A/D1 Part to 018 or 019 calls up the stereo setting, which configures the input source and effect so that the A/D input 1/2 terminals are used as stereo left/right, allowing you to apply the effect set for the A/D1 Part to both the left and right signals. In this condition, [***] is shown in the bank number and the program number of the A/D2 Part to indicate that the Part cannot be independently set.*
- *If A/D Part Lock parameter (page 158) is set to on, the A/D Part settings cannot be controlled from an external MIDI device.*
- *To change the input source/gain settings and effect type for the A/D1 and A/D2 Parts by an external MIDI device, use the Show MIDI Data function (page 171) to determine and transmit the corresponding system exclusive message.*

Volume

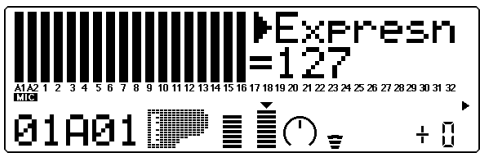
Range: 000 — 127



This determines the Volume setting for the selected Part's Voice.

Expression (Expresn)

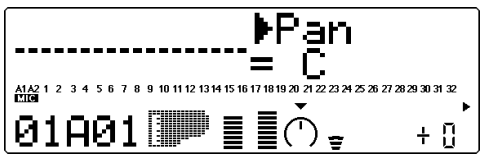
Range: 000 — 127



This determines the Expression setting for the selected Part's Voice.

Pan

Settings: Rnd (Random),
L63 — C — R63



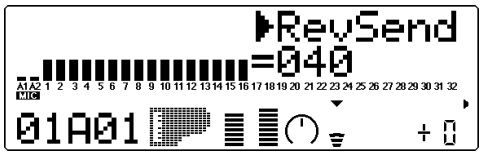
This determines the stereo position of the selected Part's Voice. A setting of "Rnd" (Random) randomly assigns the Voice to a pan position. This is useful when you want to have different Voices sound from different random parts of the stereo image.

NOTE

The Random setting has no effect on Parts to which Insertion effects have been assigned. Random is also unavailable for the A/D1 and A/D2 Parts.

Reverb Send (RevSend)

Range: 000 — 127



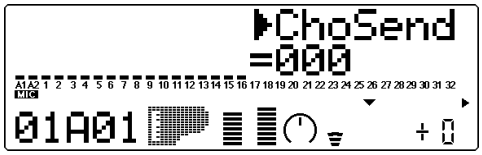
This determines the level of the selected Part's Voice that is sent to the Reverb effect. A value of 000 results in a completely "dry" Voice sound.

NOTES

- *Keep in mind that the Reverb effect must be properly enabled and set for this parameter to work as intended. (See page 88.)*
- *Also keep in mind that the overall Reverb effect depends on the Reverb Return setting in the All Part controls (page 109).*

Chorus Send (ChoSend)

Range: 000 — 127



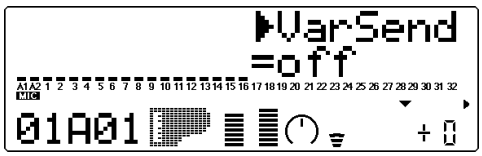
This determines the level of the selected Part's Voice that is sent to the Chorus effect. A value of 000 results in a completely "dry" Voice sound (no Chorus effect).

NOTES

- *Keep in mind that the Chorus effect must be properly enabled and set for this parameter to work as intended. (See page 88.)*
- *Also keep in mind that the overall Chorus effect depends on the Chorus Return setting in the All Part controls (page 109).*

Variation Send (VarSend)

Settings: off, on (when **Variation Connection** is set to **INS**);
000 — 127 (when **Variation Connection** is set to **SYS**)



When the Variation Connection parameter (page 150) is set to "INS," this determines whether the Variation effect is applied to the selected Part or not. Also, since the Variation effect cannot be used simultaneously on several Parts (for "INS"), only the last Part for which this parameter has been set to on will have the Variation effect.

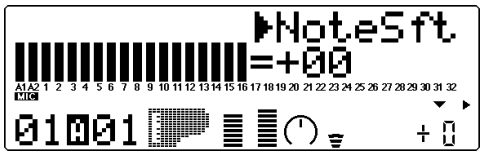
When the Variation Connection parameter (page 150) is set to "SYS," this determines the level of the selected Part's Voice that is sent to the Variation effect.

A setting of "off" or "000" results in no Variation effect being applied to the Voice.

NOTE
When the Variation Connection parameter (page 150) is set to "SYS," keep in mind that the overall Variation effect depends on the Variation Return setting in the All Part controls (page 110).

Note Shift (NoteSft)

Range: –24 — +24 semitones



This determines the key transposition setting for the Part's Voice.

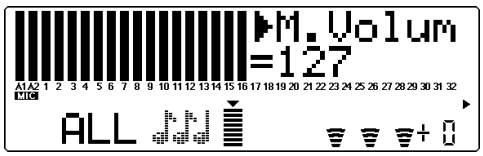
NOTES
- *This parameter is unavailable for the A/D1 and A/D 2 Parts.*
- *Keep in mind that the overall key transposition of all the Parts' Voices is also affected by the Transpose parameter in the All Part controls (page 110).*

All Part Control

The All Part controls include: Master Volume, Master Attenuator, Reverb Return, Chorus Return, Variation Return and Transpose.
Keep in mind that these controls affect all Parts equally, and either add to or subtract from their individual values. For example, if Note Shift on one Part is set to –12, and Transpose (in All Part) is set to +12, that Part's pitch value will actually be 0 or normal. For basic information on using the All Part controls, see page 61.

Master Volume (M.Volum)

Range: 000 — 127

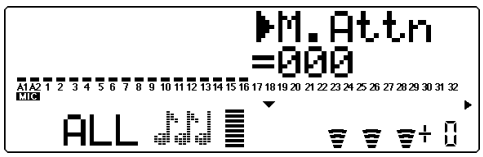


This determines the overall Volume of the Parts, while maintaining individual level settings for each Part made in the Single Part controls.

NOTE
When the Variation effect is used as a System effect (page 153), you may have to adjust the Variation Return parameter (page 110) as well as the Master Volume parameter, to achieve the desired balance.

Master Attenuator (M.Attn)

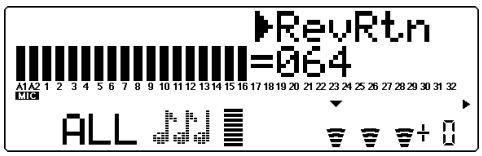
Range: 000 (maximum volume) — 127 (minimum volume)



This determines the level of all Parts, but functions as an attenuator; the greater the value, the lower the volume. This is useful when you are playing several songs and want to keep their overall level consistent.

Reverb Return (RevRtn)

Range: 000 — 127

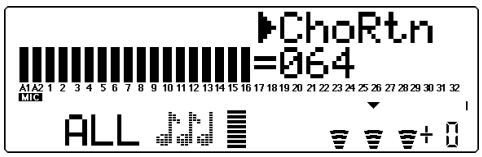


This determines the amount of Reverb return in the overall mix.

NOTE
Keep in mind that the overall Reverb effect also depends on the Reverb Send setting (page 107) in the Single Part controls.

Chorus Return (ChoRtn)

Range: 000 — 127

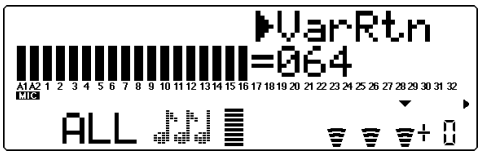


This determines the amount of Chorus return in the overall mix.

NOTE
Keep in mind that the overall Chorus effect also depends on the Chorus Send setting (page 107) in the Single Part controls.

Variation Return (VarRtn)

Range: 000 — 127



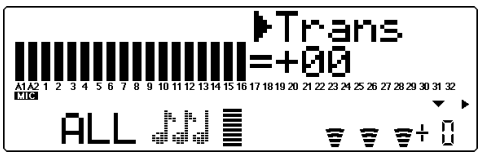
This determines the amount of Variation return in the overall mix. Variation Return is only available when the **Variation Connection** parameter is set to **SYS**. (See page 150.)

NOTES

- *Keep in mind that the amount of the Variation effect also depends on the Variation Send setting in the Single Part controls (page 108).*
- *When the Variation Connection parameter (page 150) is set to "INS," [***] is shown in the display to indicate that this parameter cannot be set. (Keep in mind that Variation Connection is set to "INS" as the factory default.)*

Transpose (Trans)

Range: –24 — +24 semitones



This determines the overall Transpose setting of the Parts.

NOTE

This parameter has no effect for Parts set to the Drum mode, or for the A/D Parts.

Multi Edit Mode

The Multi Edit mode features various parameters for controlling the Filter, the EG (Envelope Generator), the EQ, and Vibrato. It also features a variety of other miscellaneous controls grouped in the Others parameters. When a Drum Part is selected, Drum-related parameters are also available.
For basic information on using the Multi Edit mode, see page 58.

Filter

Path: [EDIT] button → "FILTER"

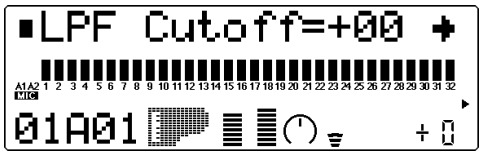
Filter

- LPF Cutoff Frequency
- LPF Resonance
- HPF Cutoff Frequency

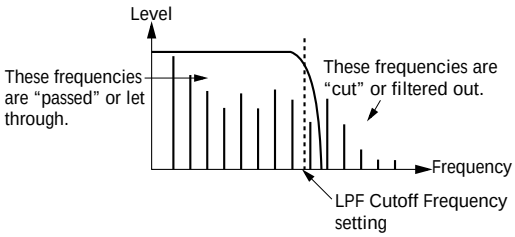
The MU128 features a digital filter that can be used to change the timbre of the Voices. The filter is affected (together with the level) by the EG (Envelope Generator), which allows you to change the timbre over time as well. (See **EG**, page 113.)

LPF Cutoff Frequency (LPF Cutoff)

Range: –64 — +63

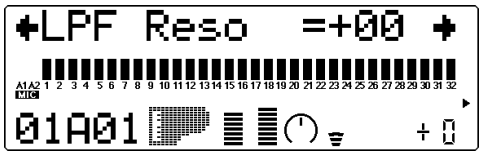


This determines the cutoff frequency of the low pass filter (LPF). The LPF filters out frequencies higher than the cutoff point and "passes" the lower frequencies. Lower cutoff values create a deeper, more rounded tone, while higher values create a brighter tone.

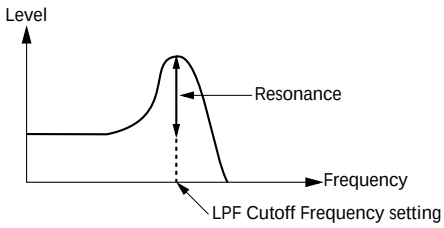


LPF Resonance (LPF Reso)

Range: –64 — +63

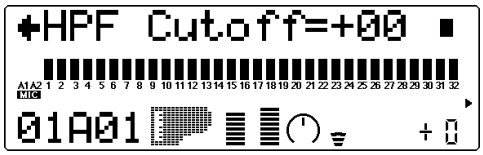


This determines the amount of filter resonance or emphasis of the LPF Cutoff Frequency above. Higher values make the filter effect more pronounced and stronger, creating a resonant peak around the cutoff frequency.

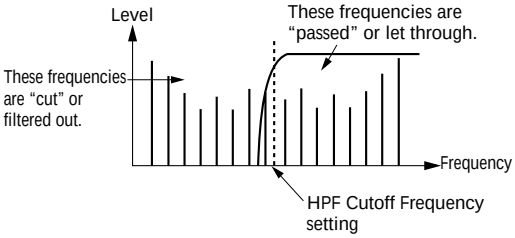


HPF Cutoff Frequency (HPF Cutoff)

Range: –64 — +63



This determines the cutoff frequency of the high pass filter (HPF). The HPF filters out frequencies lower than the cutoff point and "passes" the higher frequencies. Lower cutoff values preserve the fundamental and lower overtones of the sound, while higher values create a thinner, brighter tone.



Envelope Generator (EG)

Path: [EDIT] button → "EG"

EG (Envelope Generator)

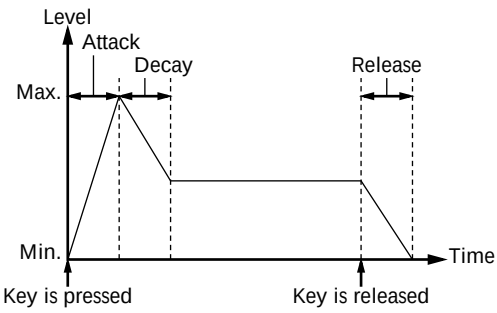
Level/Filter EG Parameters 114
- EG Attack Time
- EG Decay Time
- EG Release Time

Pitch EG Parameters 114
- Pitch EG Initial Level
- Pitch EG Attack Time
- Pitch EG Release Level
- Pitch EG Release Time

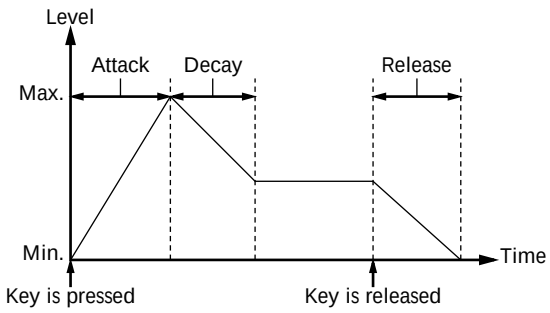
The EG parameters allow you to shape the sound of a Part's Voice — or, in other words, set how the level and timbre of the Voice changes over time. This section also includes independent Pitch Envelope Generator (PEG) parameters for controlling how the pitch of a Part's Voice changes over time.

The relationship of the main EG parameters — Attack, Decay and Release — are shown in the illustration below. These parameters not only affect the sound level, but also the timbre (with the Filter parameters; see page 111).

1) Short Attack, Decay, Release times:



2) Long Attack, Decay, Release times:



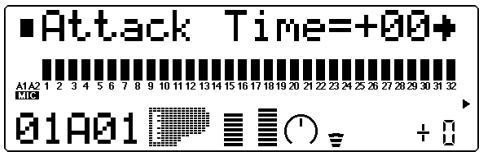
Even though the key is held for the same length of time in both examples, the sound of the second example slowly reaches full volume and decays over a longer time. It also sustains longer after the key is released.

Keep in mind that the EG parameters affect each other, and are affected by how long a note is held. For example, if Decay is set to a low value and the note is held for a long time, you may not be able to hear changes made to the Release parameter.

Level/Filter EG Parameters

EG Attack Time

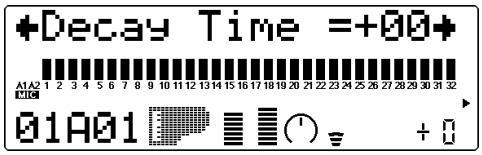
Range: –64 — +63



This determines the Attack Time of the EG, or how long it takes for the sound to reach full volume when a note is played. For the Filter, this determines how long it takes for the sound to be affected by the maximum Filter values.

EG Decay Time

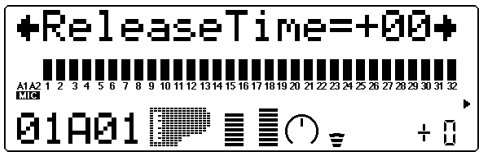
Range: –64 — +63



This determines the Decay Time of the EG, or how rapidly the sound dies out as a note is held. For the Filter, this determines how long it takes for the Filter effect to die out.

EG Release Time

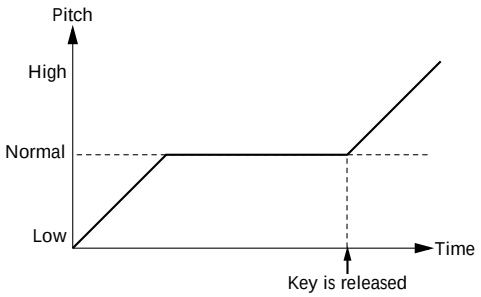
Range: –64 — +63



This determines the Release Time of the EG, or how long the sound sustains after a note is released. For the Filter, this determines how long the Filter effect continues after a note is released.

Pitch EG Parameters

The Pitch EG parameters determine how the pitch of a Part's Voice changes over time. This lets you produce subtle or pronounced pitch changes as a note is played. In the example Pitch EG settings below, a played note is gradually bent up to its normal pitch, and kept there as the note is held. When the note is released, the pitch rapidly climbs up.

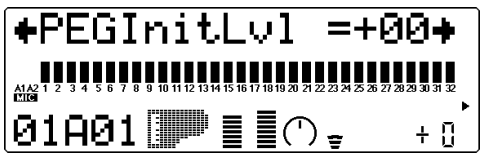


NOTE

The Pitch EG parameters may have little or no effect, depending on the particular Voice used and the settings made to the main EG parameters.

Pitch EG Initial Level (PEGInitLvl)

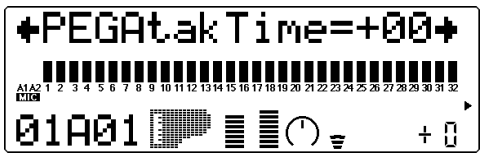
Range: –64 — +63



This determines the initial pitch of the Part's Voice, when the note is first played. A setting of 00 corresponds to normal pitch.

Pitch EG Attack Time (PEGAtakTime)

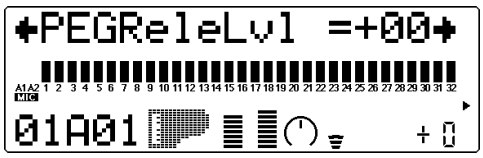
Range: –64 — +63



This determines the Attack Time of the Pitch EG, or how long it takes for the pitch to return to normal (from the pitch value set in Initial Level above).

Pitch EG Release Level (PEGReleLvel)

Range: –64 — +63



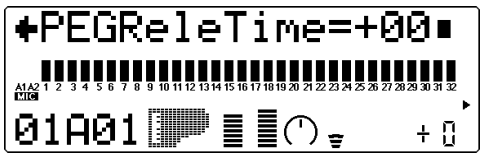
This determines the final pitch of the Part's Voice, or the pitch that is reached after the note is released. A setting of 00 corresponds to normal pitch.

NOTE

The Pitch EG Release Level and Time parameters may have no effect if the Voice itself does not sustain after the note is released. (Short percussive Voices may fall into this category.) Also make sure that the main EG Release Time is set to an appropriate value so that the sound sustains.

Pitch EG Release Time (PEGReleTime)

Range: –64 — +63



This determines the Release Time of the Pitch EG, or how long it takes for the pitch to change to the pitch value set in Release Level above.

Equalizer (Part EQ)

NOTE
This menu is not available when the Drum Part is selected. However, the Drum Part EQ can be set for each of the individual parts in the Drum Setup Controls (page 129).

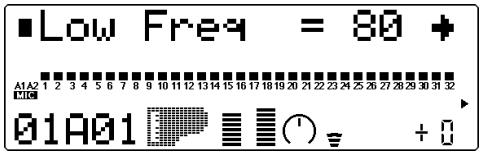
Path: [EDIT] button → "EQ"

EQ (Equalizer)
- EQ Low Frequency
- EQ Low Gain
- EQ High Frequency
- EQ High Gain

The Part EQ parameters let you adjust and set the tonal quality of an individual Part's Voice, such as boosting the bass sound, or making it brighter. This is a two-band equalizer with wide frequency variation for each band, and is independent of the overall EQ controls (page 155).

EQ Low Frequency (Low Freq)

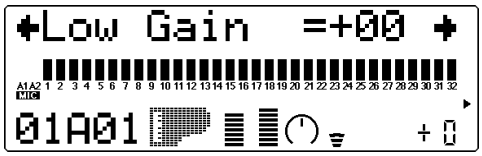
Range: 32 Hz — 2.0 kHz



This determines the frequency which is boosted or cut (in the Low Gain parameter below) for each Part.

EQ Low Gain

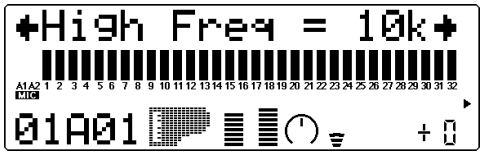
Range: –64 — +00 — +63



This determines the level of the selected frequency (in "Low Freq" above). Positive values boost the level of the selected frequency and negative values attenuate it.

EQ High Frequency (High Freq)

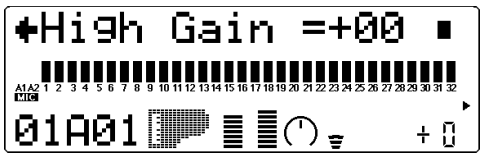
Range: 500 Hz — 16 kHz



This determines the frequency which is boosted or cut (in the High Gain parameter below) for each Part.

EQ High Gain

Range: –64 — +00 — +63



This determines the level of the selected frequency (in "High Freq" above). Positive values boost the level of the selected frequency and negative values attenuate it.

Vibrato

Path: [EDIT] button → "VIBRATO"

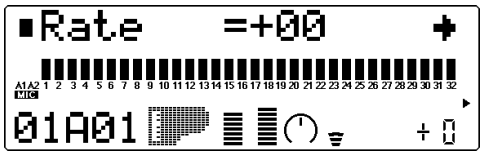
Vibrato

- Vibrato Rate
- Vibrato Depth
- Vibrato Delay

Vibrato produces a quavering, vibrating sound in the Part's Voice, by regularly modulating the pitch. You can control the speed and depth of the Vibrato, as well as the time it takes before the Vibrato effect is applied.

Vibrato Rate

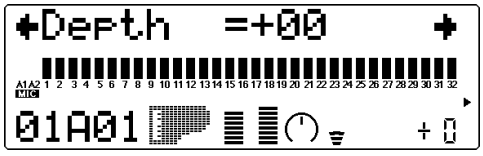
Range: –64 — +63



This determines the speed of the Vibrato effect. Higher values result in a faster Vibrato sound.

Vibrato Depth

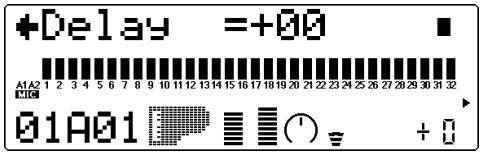
Range: –64 — +63



This determines the depth of the Vibrato effect. Higher values result in a stronger, more pronounced Vibrato sound.

Vibrato Delay

Range: –64 — +63



This determines the delay in the onset of the Vibrato effect. Delay is effective especially on stringed instrument Voices. For example, violin players often use delayed vibrato, especially while playing long notes. The Delay parameter is useful in recreating this effect, producing a more natural, lifelike sound. Higher values result in a longer Delay time.

Others

Path: [EDIT] button → "OTHERS"

Others

Receive Channel 119
- Receive Channel

Detune 120
- Detune

Assignment Parameters 120
- Part Mode
- Mono/Poly Mode

Portamento Parameters 121
- Portamento Switch
- Portamento Time

Note Limit Parameters 122
- Note Limit Low
- Note Limit High

Dry Level 122
- Dry Level (VarConnect=SYS)

Velocity Sensitivity Parameters 122
- Velocity Sensitivity Depth
- Velocity Sensitivity Offset

Velocity Limit Parameters 123
- Velocity Limit Low
- Velocity Limit High

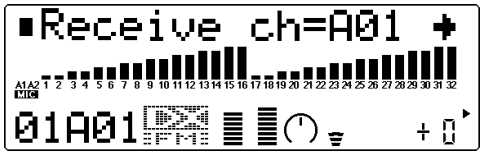
Pitch Bend, Modulation Wheel, Assignable Controller 123
- Pitch Bend Control
- MW LFO Pitch Modulation Depth
- AC1 Control Change Number
- AC1 Filter Control
- AC1 Amplitude Control

The Others section of parameters contains miscellaneous controls, including those related to tuning, Part Mode, velocity, portamento, note range, etc.

Receive Channel

Receive Channel

Range: A01 — 16, B01 — 16, C01 — 16, D01 — 16, off



This determines the MIDI receive channel for each part.

Parts set to channels A01 - 16 receive MIDI data from the MIDI IN-A terminal (when the HOST SELECT switch is set to “MIDI”), or MIDI data via Port 1 of the TO HOST terminal (when the HOST SELECT switch is set to “Mac,” “PC-1,” or “PC-2”).

Parts set to channels B01 - 16 receive MIDI data from the MIDI IN-B terminal (when the HOST SELECT switch is set to “MIDI”), or MIDI data via Port 2 of the TO HOST terminal (when the HOST SELECT switch is set to “Mac,” “PC-1,” or “PC-2”).

Parts set to channels C01-16 receive MIDI data via Port 3 of the TO HOST terminal (when the HOST SELECT switch is set to “Mac,” “PC-1,” or “PC-2”).

Parts set to channels D01-16 receive MIDI data via Port 4 of the TO HOST terminal (when the HOST SELECT switch is set to “Mac,” “PC-1,” or “PC-2”).

Parts set to “off” receive no MIDI channel message data.

HINT

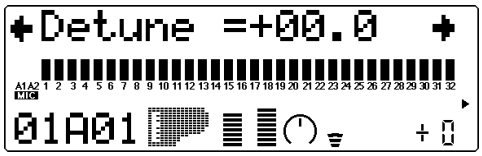
Setting different Parts to the same MIDI channel is a way to build “fat,” richly textured sounds — like the four-Voice sounds created in the Performance mode. The advantage to this method here is that you are not limited to four Voices. The disadvantage is that you can only create and use one of these “monster” sounds at a time. (However, you can store/load your Multi mode settings to/from a computer or data filer; see page 162.)

For example, if you’ve set both Parts 1 and 2 to MIDI channel 1, both of their “level meters” should move together as you play. And, if the two Parts are set to different Voices, you should hear two different Voices sound at the same time. (For instructions on changing the Voice for a Part, refer back to “Selecting and Playing Individual Voices” on page 42)

Detune

Detune

Range: –12.8 — +12.7



This determines the fine tuning of the Part's Voice.

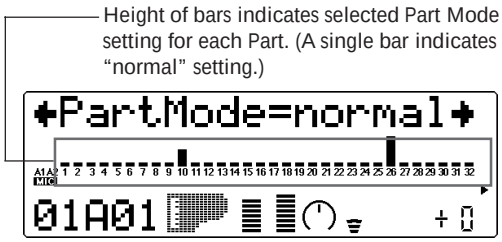
HINT

Detune could be used to slightly detune a Voice compared to the tuning of the rest of the Voices for a richer sound. It could also be used to detune two different Voices being played in unison. For example if two different Parts are set to the same MIDI channel (see Receive Channel above) and same Voice, a naturally thick chorusing effect can be obtained by slightly detuning each Voice in opposite directions here.

Assignment Parameters

Part Mode

Settings: normal, drum, drumS1 — S4



This determines the mode for the Part. A setting of **normal** allows selection of the normal instrument Voices. (See the **SOUND LIST & MIDI DATA** booklet.) The drum setting allows selection of the drum kits. (See the **SOUND LIST & MIDI DATA** booklet.) The **drumS1 — S4** settings are locations for storing specially programmed drum setups. These setups can be edited by using the Drum Setup controls in the Multi Edit mode. (See page ??.) The **drum** and **drumS1 — S4** settings are not available in the Performance mode (all Parts are fixed to "normal").

The Part Mode settings differ depending on the Sound Module mode selected, as described below.

For **XG** mode:

All settings described above are available. When **normal** is selected, any of the basic or the extended set of Voices can be used for the Part.

For **TG300B** mode:

The settings **normal** and **drumS1 — S4** are available; **drum** cannot be selected. When **normal** is selected, either the basic or the extended set of Voices (for the TG300B mode) can be used for the Part.

For **PFM** (Performance) mode:

All four Parts are set to **normal**; none of the **drum** settings are available. Any of the basic or the extended set of Voices can be used for each Part.

NOTES

- *The following are the default factory settings:*

XG mode

Part 10 (A10): drumS1
Part 26 (B10): drumS3
Part 42 (C10): drum
Part 58 (D10): drum
Other parts: normal

TG300B mode

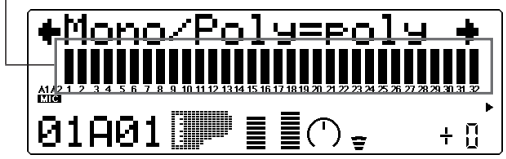
Part 10 (A10), Part 26 (B10), Part 42 (C10), Part 58 (D10): drumS1
Other parts: normal

- *When two or more different Parts are set to the same editable drum setup (**drumS1 — S4**), any edits made to that drum setup automatically affect all those Parts. For example, when two Parts are set to **drumS1**, any changes made to **drumS1** affect both Parts.*

Mono/Poly Mode

Settings: mono, poly

Height of bars indicates selected Mono/Poly Mode setting for each Part. (A single bar indicates “mono” setting, while full height indicates “poly”.)



This determines whether the Part’s Voice is played monophonically (only one note at a time) or polyphonically (up to 128 notes at a time). This parameter is not available when the Part Mode is set to Drum.

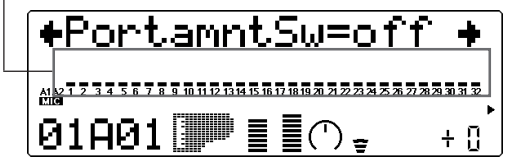
Portamento Parameters

Portamento is a function that creates a smooth pitch glide from one note to another.

Portamento Switch (PortametSw)

Settings: off, on

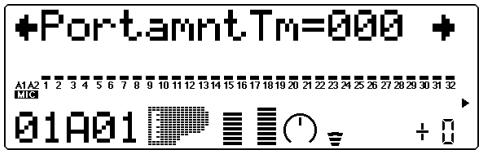
Height of bars indicates selected Portamento Switch setting for each Part. (A single bar indicates “off” setting, while full height indicates “on.”)



This determines whether Portamento is on or off for the Part. (This parameter is not available for Drum Parts.)

Portamento Time (PortametTm)

Range: 000 — 127



This determines the time of the Portamento effect, or how long it takes to glide the pitch from one note to the next. Higher values result in a longer pitch glide time. (This parameter is not available for Drum Parts.)

Note Limit Parameters

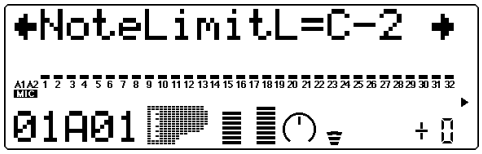
The Note Limit Low and High parameters allow you to set the range of notes for a Part's Voice. Notes outside the range will not be played.

HINT

Note Limit can be used to set up keyboard splits. Set two Parts to the same MIDI channel (see page 119), but give them Note Limit settings so that one Part is played from the left side of the keyboard and the other is played from the right.

Note Limit Low (NoteLimitL)

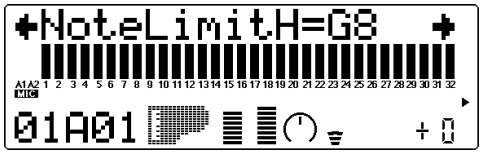
Range: C-2 — G8



This determines the lowest responding note for the Part. Notes below this value will not be played.

Note Limit High (NoteLimitH)

Range: C-2 — G8

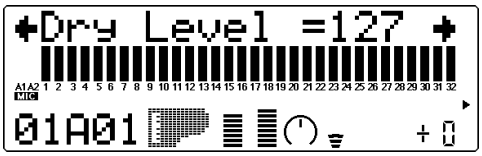


This determines the highest responding note for the Part. Notes above this value will not be played.

Dry Level

Dry Level

Range: 000 — 127

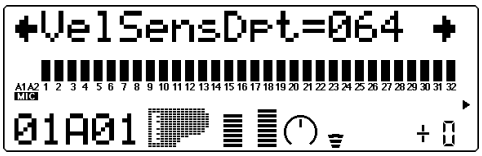


This determines the level of the unprocessed sound of the Voice (sound with no effect processing). This parameter is only available when the **Variation Connection** parameter is set to **SYS**. (See page 150.)

Velocity Sensitivity Parameters

Velocity Sensitivity Depth (VelSensDpt)

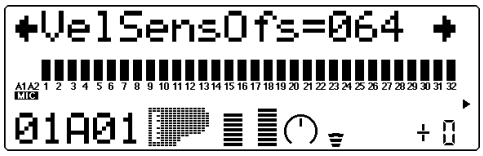
Range: 000 — 127



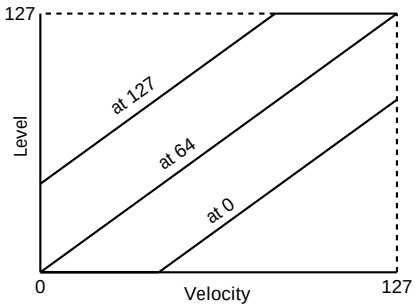
This determines the degree to which velocity affects the Part's Voice. Higher values make the Voice more sensitive to changes in velocity.

Velocity Sensitivity Offset (VelSensOfs)

Range: 000 — 127



This determines the volume range over which velocity affects. For lower values, the velocity affects a volume range from minimum to medium-loud. For higher values, velocity affects a range from medium-soft to maximum.



NOTE

Depending on the Voice used, if Velocity Sensitivity Offset is set to too low of a value, the Voice may not sound, no matter how strong the velocity.

Velocity Limit Parameters

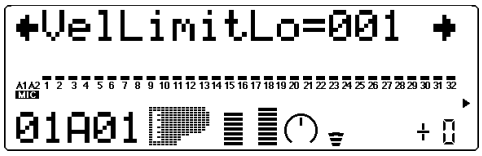
The Velocity Limit Low and High parameters allow you to set the effective velocity range for a Part's Voice. Velocity values outside the range will not be played. (Velocity is generally the strength at which notes are played from a MIDI keyboard.)

HINT

Velocity Limit can be used to set up velocity splits. A velocity split allows you to have one Part's Voice sound when you play the connected keyboard strongly, and a different Voice sound when you play softly. Set two Parts to the same MIDI channel (page 119), but give them different Velocity Limit settings so that one or the other sounds depending on how strongly you play the keyboard.

Velocity Limit Low (VelLimitLo)

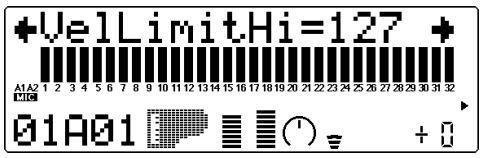
Range: 000 — 127



This determines the lowest velocity value at which the Part's Voice will play. The higher the value, the harder the keyboard must be played for the Voice to sound.

Velocity Limit High (VelLimitHi)

Range: 000 — 127



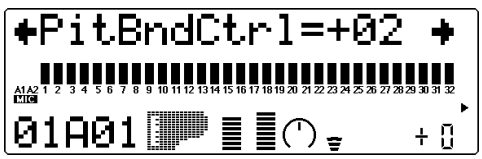
This determines the highest velocity value at which the Part's Voice will play. The lower the value, the less strength needed (in playing the keyboard) to get maximum volume.



Pitch Bend, Modulation Wheel, Assignable Controller

Pitch Bend Control (PitBndCtrl)

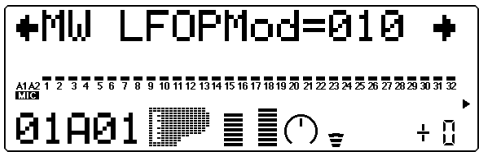
Range: –24 — +24 semitones (+/– 2 octaves)



This determines the Pitch Bend range for the Part's Voice. (Pitch Bend is usually controlled by a pitch bend wheel on a MIDI keyboard.)

Modulation Wheel — LFO Pitch Modulation Depth (MW LFOPMod)

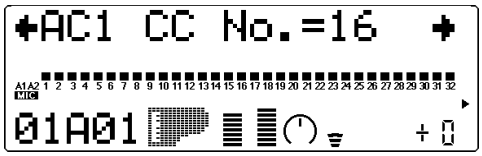
Range: 000 — 127



This determines how widely the pitch is modulated by the LFO (low frequency oscillator). This is generally controlled from a modulation wheel on a MIDI keyboard and produces a vibrato effect. The higher the value, the deeper the pitch modulation, and hence, the more pronounced the vibrato effect.

Assignable Controller 1 Control Change Number (AC1 CC No.)

Range: 00 — 95



This determines which MIDI control change number is assigned to the Assignable Controller (AC1) for the selected Part. AC1 can be used to affect the Filter (below), volume (Amplitude; page 125), LFO (above) or the Variation effect (page 149). Make sure that parameters you don't want to be affected by AC1 are properly set to 0.

HINT

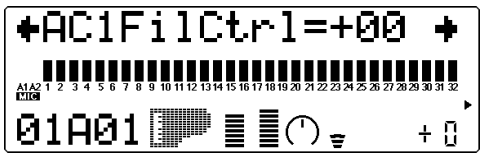
Though this parameter allows you to assign any control change number from 0 to 95, only a few of these are in common use. The controllers most likely to be encountered include:

01 — Modulation wheel or lever
02 — Breath controller
04 — Foot controller
07 — Volume controller

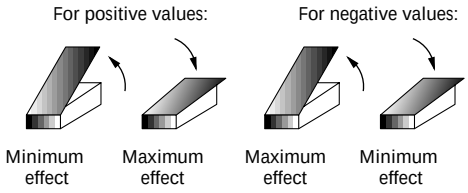
Some or all of these may be available on your MIDI instrument, and can be used to control certain functions on the MU128 in real time. Some MIDI instruments allow you to change the control change number for a particular controller: for example, setting the modulation wheel (normally 01) to control Volume (07). Refer to the owner's manual of your particular instrument for more information.

Assignable Controller 1 Filter Control (AC1 FilCtrl)

Range: –64 — +63



This determines the degree to which Assignable Controller 1 (AC1) affects the Cutoff Frequency of the Low Pass Filter for each Part. For maximum effect, this should be set to one of the extreme values, negative or positive. A setting of 00 results in no control over the Filter, even when AC1 is operated (or control change data is received). Negative settings affect the Filter negatively; in other words, when the controller is at the minimum position, control over the Filter is greatest (see illustration below). (The control number used for AC1 is set in the Assignable Controller 1 Control Change Number parameter above.)

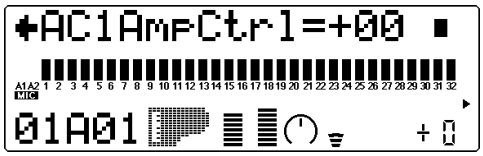


HINT

Positive and negative values can be most effectively used by setting two different Parts to opposite settings. In this way, moving the controller (for example, a foot controller) one way will affect one Part and moving it the opposite way will affect the other Part.

Assignable Controller 1 Amplitude Control (AC1 AmpCtrl)

Range: 64 — +63



This determines the degree to which Assignable Controller 1 (AC1) affects the volume (Amplitude) for each Part. For maximum effect, this should be set to one of the extreme values, negative or positive. A setting of 00 results in no volume control, even when AC1 is operated (or control change data is received). Negative settings affect the volume negatively; in other words, when the controller is at the minimum position, control over the volume is greatest. (The control number used for AC1 is set in the Assignable Controller 1 Control Change Number parameter above.)

NOTE

For more information on using positive and negative values, see the illustration and hint in Assignable Controller 1 Filter Control (page 124).

Drum Setup Controls

The Drum Setup controls allow you to make a wide variety of settings for the drum sounds in a Drum Part. These settings include Pitch controls, Level, Pan, effect send, filter controls and EG (Envelope Generator), among others. Moreover, these parameters can be set to completely independent values for each of the drum sounds in a Part.
The Drum Setup controls can only be called up by first selecting a Part to which a Drum Part is assigned. (For basic information on using the Drum setup controls, see page 65.)

Path: [EDIT] button → "DRUM"

Drum Setup Controls

Pitch Parameters 127
- Pitch Coarse
- Pitch Fine
- Velocity Pitch Sensitivity (VelPchSens)

Level 127
- Level

Pan 127
- Pan

Effect Send Parameters 127
- Reverb Send (Rev Send)
- Chorus Send (Cho Send)
- Variation Send (Var Send)

Filter Parameters 128
- LPF Cutoff Frequency (LPF Cutoff)
- LPF Resonance (LPF Reso)
- Velocity LPF Cutoff Sensitivity (VelLPFSens)
- HPF Cutoff Frequency (HPF Cutoff)

EQ Parameters 129
- EQ Low Frequency (Low Freq)
- EQ Low Gain
- EQ High Frequency (High Freq)
- EQ High Gain

EG Parameters 129
- EG Attack
- EG Decay 1
- EG Decay 2

Assignment 130
- Alternate Group

Note On/Off 130
- Receive Note On (RcvNoteOn)
- Receive Note Off

The Drum Setup parameters are only available when the Part Mode has been set to drumS1 — S4. (See page 120.)

Pitch Parameters

Pitch Coarse

Range: –64 — +63 (XG mode)
0 — 127 (TG300B mode)

This determines the coarse pitch setting of the selected drum sound.

Pitch Fine

Range: –64 — +63

This determines the fine pitch setting of the selected drum sound.

Velocity Pitch Sensitivity (VelPchSens)

Range: –16 — +16

This determines the degree to which pitch changes of the selected drum sound respond to velocity. In other words, you can control how much the pitch of the sound changes by how hard or soft you play the keys of a connected keyboard. Positive values raise the pitch and negative values lower the pitch. A value of 00 results in no pitch change, whatever velocity is received.

Level

Level

Range: 000 — 127

This determines the volume of the selected drum sound.

Pan

Pan

Settings: Rnd (Random), L63 — C — R63

This determines the stereo position of the selected drum sound. A setting of "Rnd" (Random) randomly assigns the drum to a pan position. This is useful when you want to have different drums sound from different random parts of the stereo image.

Effect Send Parameters

Reverb Send (Rev Send)

Range: 000 — 127

This determines the level of the selected drum sound that is sent to the Reverb effect. A value of 000 results in a completely "dry" drum sound, no matter how much Reverb is applied to the Drum Part.

NOTE

Keep in mind that the Reverb effect must be properly enabled and set for this parameter to work as intended. (See page 88.) Also, the parameters Reverb Send in Single Part control (page 107) and Reverb Return in All Part control (page 109) must be set to appropriate values.

Chorus Send (Cho Send)

Range: 000 — 127

This determines the level of the selected drum sound that is sent to the Chorus effect. A value of 000 results in a completely "dry" drum sound, no matter how much Chorus is applied to the Drum Part.

NOTE

Keep in mind that the Chorus effect must be properly enabled and set for this parameter to work as intended. (See page 88.) Also, the parameters Chorus Send in Single Part control (page 107) and Chorus Return in All Part control (page 109) must be set to appropriate values.

Variation Send (Var Send)

Settings: off, on (when Variation Connection is set to INS);
000 — 127 (when Variation Connection is set to SYS)

When the Variation Connection parameter (page 150) is set to "INS," this determines whether the Variation effect is applied to the selected drum sound or not.

When the Variation Connection parameter (page 150) is set to "SYS," this determines the level of the selected drum sound that is sent to the Variation effect.

A setting of "off" or "000" results in no Variation effect being applied to the drum sound.

NOTES

- *Keep in mind that the Variation effect must be properly enabled and set for this parameter to work as intended. (See page 90.)*
- *When the Variation Connection parameter (page 150) is set to "INS," the "Variation Send" parameter in the Single Part controls (page 108) must also be set to on in order to use the Variation effect.*
- *When the Variation Connection parameter (page 150) is set to "SYS," the parameters "Variation Send" in the Single Part controls (page 108) and "Variation Return" in the All Part controls (page 110) must be set to appropriate values.*

Filter Parameters

LPF Cutoff Frequency (LPF Cutoff)

Range: –64 — +63 (XG mode), 000 — 127 (TG300B mode)

This determines the cutoff frequency of the low pass filter (LPF) for the selected drum sound. The LPF filters out frequencies higher than the cutoff point and "passes" the lower frequencies. Lower cutoff values create a deeper, more rounded tone, while higher values create a brighter tone. (For more information, see LPF Cutoff Frequency on page 112.)

LPF Resonance (LPF Reso)

Range: –64 — +63 (XG mode), 000 — 127 (TG300B mode)

This determines the amount of filter resonance or emphasis of the LPF Cutoff Frequency above for the selected drum sound. Higher values make the filter effect more pronounced and stronger, creating a resonant peak around the cutoff frequency. (For more information, see LPF Resonance on page 112.)

Velocity LPF Cutoff Sensitivity (VelLPFSens)

Range: –16 — +16

This determines the degree to which the LPF Cutoff Frequency for the selected drum sound changes in response to velocity. In other words, you can shift the LPF Cutoff Frequency of the filter up or down (and thus change the timbre of the sound) depending on how hard or soft you play the keys of a connected keyboard. Positive values raise the LPF Cutoff Frequency and negative values lower it. A value of 00 results in no frequency change, whatever velocity is received.

HPF Cutoff Frequency (HPF Cutoff)

Range: –64 — +63

This determines the cutoff frequency of the high pass filter (HPF) for the selected drum sound. The HPF filters out frequencies lower than the cutoff point and "passes" the higher frequencies. Lower cutoff values preserve the fundamental and lower overtones of the sound, while higher values create a thinner, brighter tone. (For more information, see HPF Cutoff Frequency on page 112.)

EQ Parameters

EQ Low Frequency (Low Freq)

Range: 32 Hz — 2.0 kHz

This determines the frequency which is boosted or cut (in the Low Gain parameter below) for the selected drum sound.

EQ Low Gain

Range: –64 — +63

This determines the level of the selected frequency (in Low Freq above). Positive values boost the level of the selected frequency and negative values attenuate it for the selected drum sound.

EQ High Frequency (High Freq)

Range: 500 Hz — 16 kHz

This determines the frequency which is boosted or cut (in the High Gain parameter below) for the selected drum sound.

EQ High Gain

Range: –64 — +63

This determines the level of the selected frequency (in High Freq above) for the selected drum sound. Positive values boost the level of the selected frequency and negative values attenuate it.

EG Parameters

EG Attack

Range: –64 — +63 (XG mode),
000 — 127 (TG300B mode)

This determines the Attack Time of the EG (Envelope Generator), or how long it takes for the sound of the selected drum sound to reach full volume when a note is played. (See page 113 for more information about the EG function; also see illustration below.)

EG Decay 1

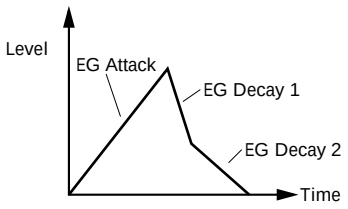
Range: –64 — +63 (XG mode), 000 — 127 (TG300B mode)

This determines the Decay 1 time of the EG, or how rapidly the sound dies down to the Decay 2 level. (See illustration below.) Higher values result in a longer Decay time.

EG Decay 2

Range: –64 — +63 (XG mode), 000 — 127 (TG300B mode)

This determines the Decay 2 time of the EG, or how rapidly the sound dies out completely. (See illustration below.) Higher values result in a longer Decay time.



Assignment

Alternate Group

Settings: off, 001 — 127

This determines the group assignment of the selected drum sound. Drums assigned to the same group cannot be sounded simultaneously. In other words, if one drum in a group is sounding while a second in the same group is played, the first drum sound will be cut off and the second will sound.

HINT

The main use for this parameter is in creating realistic hi-hat sounds. By assigning an open hi-hat and a closed hi-hat to the same group, you can "choke" or stop the open hi-hat sound by simply playing the closed hi-hat — just like pressing the pedal on an actual hi-hat set. Refer to the Drum Map lists in the "Sound List & MIDI Data" booklet to see what other drum sounds are used in this way.

Note On/Off Parameters

Receive Note On (RcvNoteOn)

Settings: on, off

This determines how the selected drum sound responds to MIDI Note On messages. Normally, this should be set to on so that the corresponding drum sound plays when a MIDI Note On message is received. Set this to **off** when you want to keep the selected drum sound from playing.

Receive Note Off

Settings: on, off

This determines how the selected drum sound responds to MIDI Note Off messages. When this is set to on, the selected sound will stop in response to the corresponding MIDI Note Off message. An on setting is good for some sustained sounds (like a whistle), whose duration you want to control or for key-controlled cymbal "chokes." For most drum sounds, however, this should be set to off so that the drum sound plays back in its entirety (is not cut off).

Performance Mode

In the Performance mode, the MU128 performs as a four-Part tone generator, with all Parts controlled over a single MIDI channel. The Performance mode is so named because it's ideally suited to live performance situations. It allows you to play four different Voices at the same time from your MIDI keyboard — either in a layer, or in sophisticated keyboard and velocity splits. It also gives you comprehensive control over each of the four Parts for maximum performance flexibility. A total of 200 Performances are available: 100 Preset and 100 Internal. For basic information on using the Performance Mode, see pages 38 and 70.

NOTE
Drum Parts are not available in the Performance mode.

Performance Part Control 132
All Part 132
Single Part 134
Performance Edit Mode 137
Common 137
Part 140
Copy and Store Operations 142
Copy 142
Store 143
Recall Function 145

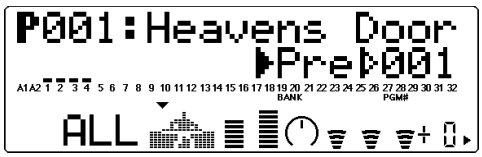
Performance Part Control

All Part

For basic information on using the All Part controls in the Performance mode, see page 70.

Performance Bank

Settings: Pre (Preset), Int (Internal)

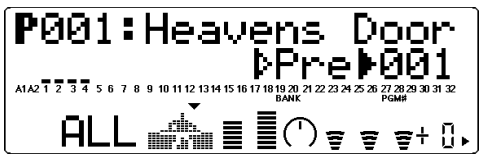


This determines the bank of Performance programs: Preset or Internal. Preset Performances are those that have been created and loaded at the factory; the Internal bank is reserved for user-created Performances.

NOTE
When changing Performance banks, there may be a slight delay before the sound changes.

Performance Number

Range: 001 — 100

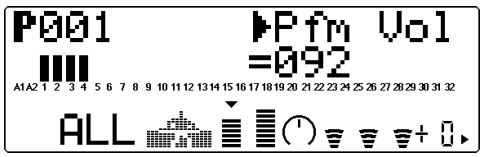


This determines the Performance number.

NOTE
When changing Performance numbers, there may be a slight delay before the sound changes.

Performance Volume (Pfm Vol)

Range: 000 — 127

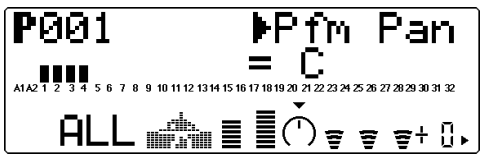


This determines the overall Volume of the Performance.

NOTE
When the Variation effect is used as a System effect (page 153), you may have to adjust the Variation Return parameter (page 133) as well as the Performance Volume parameter, to achieve the desired balance.

Performance Pan (Pfm Pan)

Range: L63 — C — R63

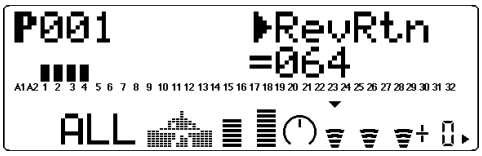


This determines the overall Pan position of the Performance (except for the effect sound).

NOTE
The overall Pan position offsets the individual Pan settings of each Part (page 135). A setting of "C" (center) maintains the individual Pan settings of each Part.

Reverb Return (RevRtn)

Range: 000 — 127

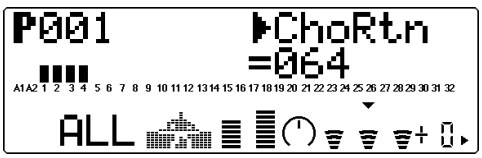


This determines the amount of Reverb return for the Performance in the overall mix.

NOTE
Keep in mind that the overall Reverb effect also depends on the Reverb Send setting (page 135) in the Single Part controls.

Chorus Return (ChoRtn)

Range: 000 — 127

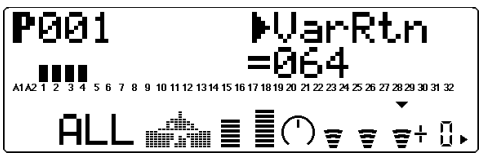


This determines the amount of Chorus return for the Performance in the overall mix.

NOTE
Keep in mind that the overall Chorus effect also depends on the Chorus Send setting (page 135) in the Single Part controls.

Variation Return (VarRtn)

Range: 000 — 127

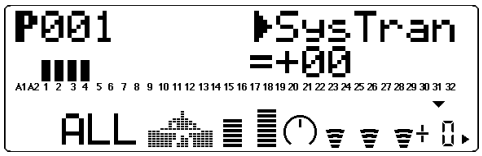


This determines the amount of Variation return in the overall mix of the Performance. Variation Return is only available when the **Variation Connection** parameter is set to **SYS**. (See page 150.)

NOTES
- *Keep in mind that the amount of the Variation effect also depends on the Variation Send setting in the Single Part controls (page 136).*
- *When the Variation Connection parameter (page 150) is set to "INS," [***] is shown in the display to indicate that this parameter cannot be set.*

System Transpose (SysTran)

Range: –24 — +24 semitones



This determines the overall Transpose setting of the Performance.

NOTE
This parameter has no effect on the A/D Parts.

Single Part

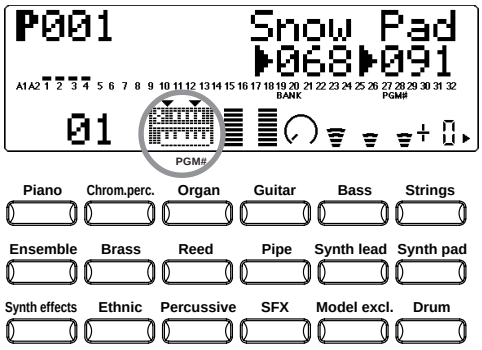
For basic information on using the Single Part controls in the Performance mode, see page 72.

Voice Category

When both BANK and PGM# are indicated by cursors, Voices in the current Voice category can be selected.

In this condition, using the [VALUE ⊖/⊕] buttons or data dial changes the bank number and the program number, and only those Voices that belong to the specified Voice category are displayed and selected.

To select the desired Voice category, press the appropriate Voice Category button.



The various Voice categories group together all Voices which are the same type or share certain characteristics. All the internal Voices of MU128 are divided into eighteen different Voice categories.

The Piano - Model excl. buttons select the Normal Voices. Drum Voices are not available in the Performance mode.

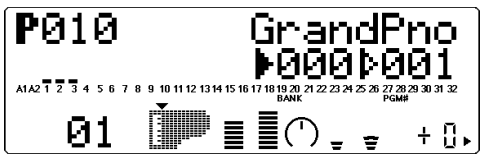
For more details on each Voice category, see page 44.

NOTE
When selecting the Plug-in board with the [SELECT] button, the Model excl. category features the original Voices of the board, which do not conform to the XG format.

Bank Number

Settings:

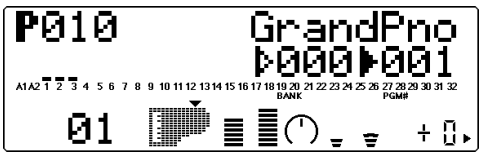
Part	Available banks
01~04	000, 001, 003, 006, 008, 012, 014, 016~022, 024~029, 032~043, 045, 048, 052~054, 064~091, 096~101, 126, 127 When MU100 icon is shown: 000, 008, 016, 024, 048, 056, 064, 072, 080, 088, 096, 104, 120 When SFX icon is shown: SFX
A/D1	000~003, 018, 019
A/D2	000~003



This determines the bank number of the selected Part's Voice. (Refer to the **SOUND LIST & MIDI DATA** booklet.) Once you've selected a Voice, you can easily select the related variation Voices by changing the bank number. For example, if program number 001, GrandPno (Grand piano), has been selected, changing the Voice bank calls up variation piano Voices, such as MelloGrP (Mellow grand piano), PianoStr (Piano strings), etc.

Program (Voice) Number

Range:
01 — 04 part: 001 — 128
A/D1 part: 001 — 013
A/D2 part: 001 — 005

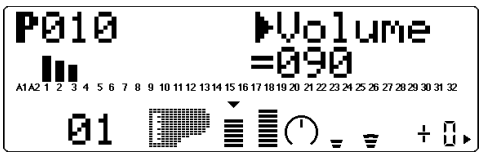


This determines the Voice for the selected Part. (Refer to the **SOUND LIST & MIDI DATA** booklet.)

NOTE
Drum Voices are not available in the Performance mode.

Volume

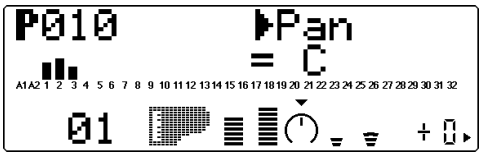
Range: 000 — 127



This determines the Volume setting for the selected Part's Voice.

Pan

Settings: Rnd (Random), L63 — C — R63

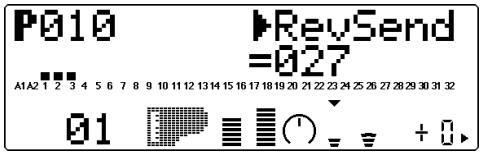


This determines the stereo position of the selected Part's Voice. A setting of "Rnd" (Random) randomly assigns the Voice to a pan position. This is useful when you want to have different Voices sound from different random parts of the stereo image.

NOTE
The Random setting has no effect on Parts to which Insertion effects have been assigned. Random is also unavailable for the A/D1 and A/D2 Parts.

Reverb Send (RevSend)

Range: 000 — 127

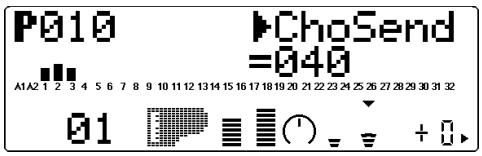


This determines the level of the selected Part's Voice that is sent to the Reverb effect. A value of 000 results in a completely "dry" Voice sound.

NOTES
- *Keep in mind that the Reverb effect must be properly enabled and set for this parameter to work as intended. (See page 88.)*
- *Also keep in mind that the overall Reverb effect depends on the Reverb Return setting in the All Part controls (page 133).*

Chorus Send (ChoSend)

Range: 000 — 127

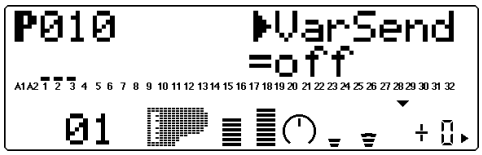


This determines the level of the selected Part's Voice that is sent to the Chorus effect. A value of 000 results in a completely "dry" Voice sound (no Chorus effect).

NOTES
- *Keep in mind that the Chorus effect must be properly enabled and set for this parameter to work as intended. (See page 88.)*
- *Also keep in mind that the overall Chorus effect depends on the Chorus Return setting in the All Part controls (page 133).*

Variation Send (VarSend)

Settings:
off, on (when **Variation Connection** is set to **INS**);
000 — 127 (when **Variation Connection** is set to **SYS**)



When the Variation Connection parameter (page 150) is set to "INS," this determines whether the Variation effect is applied to the selected Part or not. Also, since the Variation effect cannot be used simultaneously on several Parts (for "INS"), only the last Part for which this parameter has been set to on will have the Variation effect.

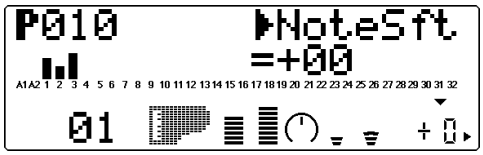
When the Variation Connection parameter (page 150) is set to "SYS," this determines the level of the selected Part's Voice that is sent to the Variation effect.

A setting of "off" or "000" results in no Variation effect being applied to the Voice.

NOTE
When the Variation Connection parameter (page 150) is set to "SYS," keep in mind that the overall Variation effect depends on the Variation Return setting in the All Part controls (page 133).

Note Shift (NoteSft)

Range: –24 — +24 semitones



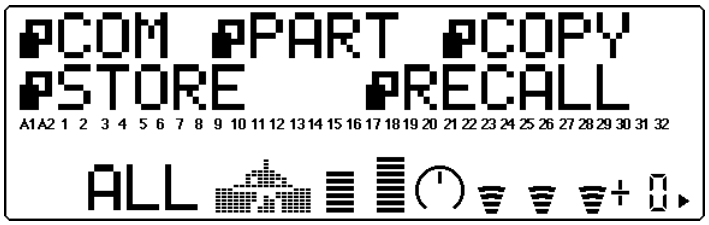
This determines the key transposition setting for the Part's Voice.

NOTES
- *This parameter is unavailable for the A/D1 and A/D2 Parts.*
- *Keep in mind that the overall key transposition of all the Parts' Voices is also affected by the System Transpose parameter in the All Part controls (page 133).*

Performance Edit Mode

The Performance Edit mode features various functions and parameters, grouped in the following sections: Common (related to the Performance as a whole), Part (related to each of the four Parts), and the Copy, Store, and Recall operations.

For basic information on using the Performance Edit mode, see page 69.



Common

Path: [EDIT] button → " COM"

Common ——————————————————————

Performance Name 138
- Performance Name (Perform Name)

Portamento Parameters 138
- Portamento Switch (PortamnSw)
- Portamento Time (PortamnTm)

Modulation Wheel Parameters 138
- LFO Pitch Modulation Depth (MW LEOPMod)
- LFO Filter Modulation Depth (MW LFOFMod)

Pitch Bend 139
- Pitch Bend Control (PitBndCtrl)

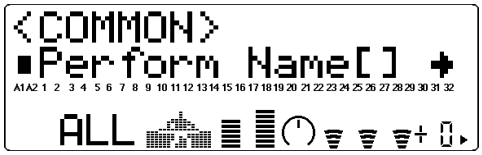
A/D Part 139
- A/D Part

Assignable Controller Parameters 139
- Assignable Controller 1 Control Change Number (AC1 CC No.)
- Assignable Controller 1 Filter Control (AC1 FilCtrl)
- Assignable Controller 1 Amplitude Control (AC1 AmpCtrl)
- Assignable Controller 1 LFO Filter Modulation Depth (AC 1 LFOFMod)

The Common parameters allow you to name a Performance, enable the A/D Parts for a Performance, and set the control change number for realtime parameter control.

Performance Name

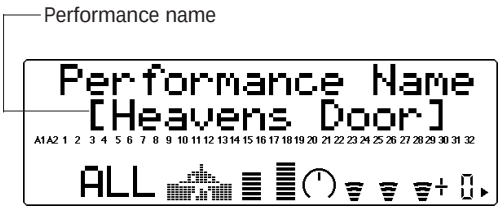
Performance Name (Perform Name)



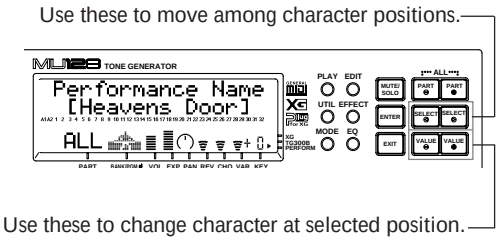
This allows you to give a name to your edited Performance.

Operation

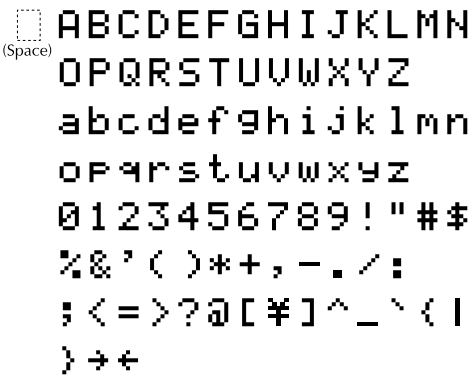
1 From the Performance Name display, press the **ENTER** button.



2 Use the **SELECT** ◀/▶ buttons to select the character position (flashing character) in the name and use the **VALUE** ⊖/⊕ buttons or data dial to change the character at that position.



Up to 12 characters can be used for the Performance name. Available characters include all letters of the alphabet, in both upper and lower case, numbers from 0 to 9, and a variety of miscellaneous characters.



3 Press the **EXIT** button to return to the previous display (or press the **PLAY** button to return to the Play display).

After creating and naming a Performance, you'll probably want to save that Performance for future recall. For instructions on saving a Performance, refer to the Store operation on page 143.

Portamento Parameters

Portamento Switch (PortamnSw)

Same as the corresponding parameter in the Multi Edit mode. (page 121.)

Portamento Time (PortamnTm)

Same as the corresponding parameter in the Multi Edit mode. (page 121.)

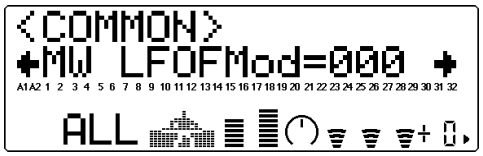
Modulation Wheel Parameters

Modulation Wheel — LFO Pitch Modulation Depth (MW LFOPMod)

Same as the corresponding parameter in the Multi Edit mode. (page 124.)

Modulation Wheel — LFO Filter Modulation Depth (MW LFOFMod)

Range: 000 — 127



This determines how widely the Filter (page 111) is modulated by the LFO (low frequency oscillator). This is generally controlled from a modulation wheel on a MIDI keyboard, and depending on the Voice used, it creates a "swoosh" or "wah-wah" filter sweep effect. Higher values result in deeper filter modulation, creating a more pronounced filter sweep effect.

Pitch Bend

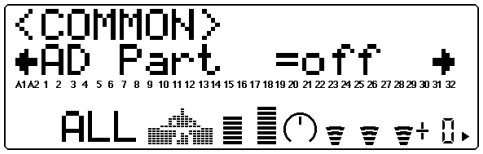
Pitch Bend Control (PitBndCtrl)

Same as the corresponding parameter in the Multi Edit mode. (page 123.)

A/D Part

A/D Part

Settings: off, on



This determines whether A/D Parts are enabled for the Performance or not. When set to "on," Parts 3 and 4 are automatically set as A/D Parts (A/D1 and A/D2).

HINT

You can use the MU128 strictly as an effect processor for the A/D input (for example, your guitar or microphone) by Soloing the appropriate A/D Part (A/D1 or A/D2).

Assignable Controller Parameters

Assignable Controller 1 Control Change Number (AC1 CC No.)

Same as the corresponding parameter in the Multi Edit mode (page 124), with the exception that AC1 in the Performance mode can also control LFO filter modulation (see Assignable Controller 1 LFO Filter Modulation Depth below).

Assignable Controller 1 Filter Control (AC1 FilCtrl)

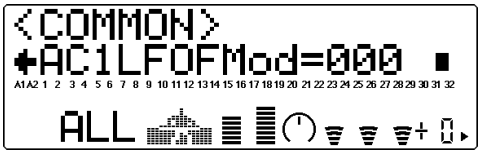
Same as the corresponding parameter in the Multi Edit mode. (page 124.)

Assignable Controller 1 Amplitude Control (AC1 AmpCtrl)

Same as the corresponding parameter in the Multi Edit mode. (page 125.)

Assignable Controller 1 LFO Filter Modulation Depth (AC1LFOFMod)

Range: 000 — 127



This determines the degree to which Assignable Controller 1 (AC1) affects the LFO modulation of the Filter. This creates a regular and continuous "wah-wah" or filter sweep effect. The higher the value, the greater the LFO filter modulation. (The control number used for AC1 is set in the Assignable Controller 1 Control Change Number parameter above.)

Part

Path: [EDIT] button → " PART"

PART

- FILTER
  - LPF Cutoff Frequency
  - LPF Resonance
  - HPF Cutoff Frequency
- EG (Envelope Generator)
  - Level/Filter EG Parameters
    - EG Attack Time
    - EG Decay Time
    - EG Release Time
  - Pitch EG Parameters
    - Pitch EG Initial Level
    - Pitch EG Attack Time
    - Pitch EG Release Level
    - Pitch EG Release Time
- EQ (Equalizer)
  - EQ Low Frequency
  - EQ Low Gain
  - EQ High Frequency
  - EQ High Gain
- Vibrato
  - Vibrato Rate
  - Vibrato Depth
  - Vibrato Delay
- Others
  - Detune
    - Detune
  - Assignment
    - Mono/Poly Mode
  - Note Limit Parameters
    - Note Limit Low
    - Note Limit High
  - Dry Level
    - Dry Level (VarConnect=SYS)
  - Velocity Parameters
    - Velocity Sensitivity Depth
    - Velocity Sensitivity Offset
    - Velocity Limit Low
    - Velocity Limit High

The Part menu contains the Filter, EG, EQ, Vibrato, and Others parameters for the Performance.

Filter

Path: [EDIT] button → "PART" →"FILTER"

The Filter section of Performance Edit parameters are the same as the corresponding parameters in the Multi Edit mode. (page 111.)

EG

Path: [EDIT] button → "PART" → "EG"

The EG section of Performance Edit parameters are the same as the corresponding parameters in the Multi Edit mode. (page 113.)

EQ

Path: [EDIT] button → "PART" → "EQ"

The EQ Performance Edit parameters are the same as the corresponding parameters in the Multi Edit mode (page 116).

Vibrato

Path: [EDIT] button → "PART" →"VIBRATO"

The Vibrato Performance Edit parameters are the same as the corresponding parameters in the Multi Edit mode. (page 117.)

Others

Path: [EDIT] button → "PART" → "OTHERS"

The Others Performance Edit parameters contains miscellaneous controls, including those related to tuning, velocity, note range, etc. With a few omitted parameters, these are the same as the parameters in the Multi Edit mode. (see118.)

Copy and Store Operations

The Copy and Store operations allow you to save and organize the Performances you've created.

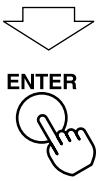
Copy

The Copy operation allows you to copy the settings of one Performance program (Preset or Internal) to another Performance number (Internal only).

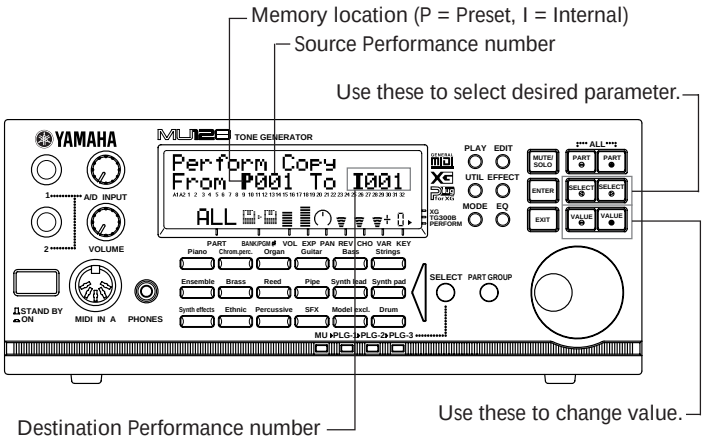
Operation

1 From the Performance Edit menu, use the **SELECT** ◀/▶ buttons to select "COPY." Then, press the **ENTER** button to call up the Copy operation.





2 Use the **SELECT** ◀/▶ buttons to select the desired parameter: memory location, source number or destination number. (The selected parameter flashes.) Then use the **VALUE** ⊖/⊕ buttons or data dial to change the value.



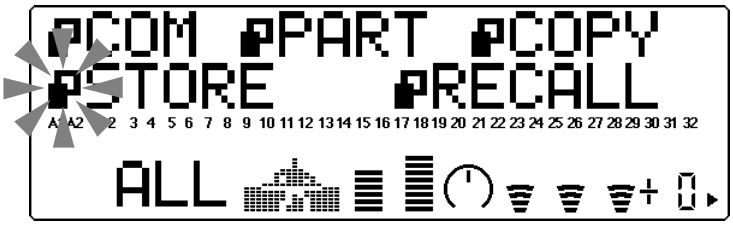
3 Press the **ENTER** button to actually execute the Copy operation. An "Executing..." message flashes in the display during the operation. When the data has been copied, the MU128 returns to the Performance Edit menu.
To cancel the operation without copying, press the **EXIT** button (before pressing **ENTER**).

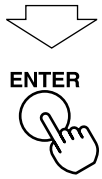
Store

Once you've edited or created a Performance, you can save that new Performance for future recall by using the Store operation. Performances can be saved to any one of the 100 Internal memory locations. With the exception of the Transpose (Note Shift) setting made from the Play screen, all parameter settings in the Play screen and in the Edit, Effect and EQ modes are saved to the selected Performance number.

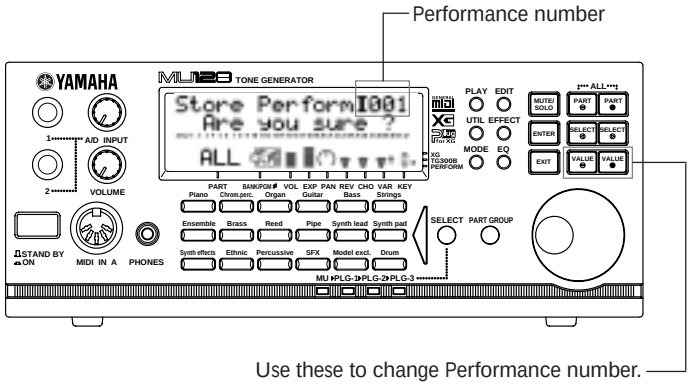
Operation

1 From the Performance Edit menu, use the **SELECT** ◀/▶ buttons to select "STORE." Then, press the **ENTER** button to call up the Store operation.





2 Use the **VALUE** ⊖/⊕ buttons or data dial to change the destination Performance number.



3 Press the **ENTER** button to actually execute the Store operation. An "Executing..." message flashes in the display during the operation. When the data has been stored, the MU128 returns to the Performance Edit menu.

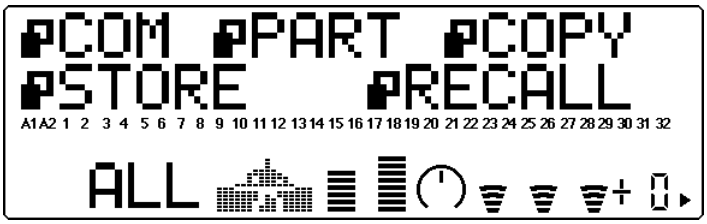
To cancel the operation without saving, press the **EXIT** button (before pressing **ENTER**).

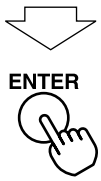
Recall Function

Recall is a convenient function that allows you to recover an accidently deleted Performance. For example, if you are editing a Performance and inadvertently select a different Performance, the edited Performance would normally be lost. By using Recall before turning off the MU128 or editing another Performance, you can recover the previously edited Performance data.

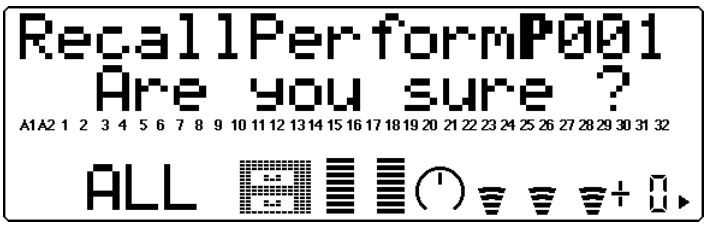
To use Recall:

1 Select RECALL in the Performance Edit Mode menu, then press the **ENTER** button.

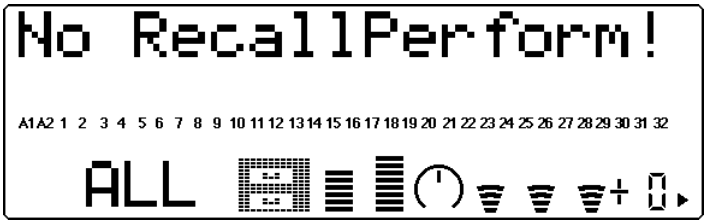




The following display briefly appears:



2 At the "Are you sure?" prompt above, press the **ENTER** button again to execute the function.
If no previously edited Performance data exists, the following display briefly appears, indicating no Performance can be recalled.



Effect Edit Mode

The MU128 features a built-in multi-effect processor with 7 independent digital effects: Reverb, Chorus, Variation, Insertion 1/2, Part EQ, and Multi EQ. The first 5 of these are controlled in the Effect Edit mode.

In this section, only the effect Types and the global parameters common to all Types are covered. For descriptions and details on the parameters for each effect Type, refer to the separate **SOUND LIST & MIDI DATA** booklet.

To enter the Effect Edit mode, press the **EFFECT** button. The following menu appears:



Reverb (REV) **147**
Chorus (CHO) **148**
Variation (VAR) **149**
Insertion 1, 2 (INS 1, 2) **151**
About the Effect Connections — System and Insertion **152**

Reverb (REV)

Reverb recreates the sounds of various performance environments by adding an ambient wash of delays or reflections. Several different types of Reverb effects are available to simulate the ambience of different sized rooms. Explanations of the Reverb Type and Reverb Pan parameters are given below. For descriptions and explanations for all other Reverb parameters, refer to the separate **SOUND LIST & MIDI DATA** booklet.

Type

Settings: NO EFFECT, HALL 1 — 2, ROOM 1 — 3, STAGE 1 — 2, PLATE, WHITE ROOM, TUNNEL, CANYON, BASEMENT



This determines the Reverb Type. Each Reverb Type has different values for the rest of the Reverb parameters; for example, Basement has a Reverb Time of 0.6 seconds, while Canyon has a Reverb Time of 12.0 seconds.

NOTE

*When "**NO EFFECT**" is selected, Reverb is off and none of the other Reverb parameters are available (with the exception of the Reverb Pan parameter).*

HINT

Generally when using Reverb, you can simply select the particular Type needed, and use it without bothering to adjust the other parameters. If fine tuning of the Reverb sound is necessary, delve into the other parameters as needed.

Reverb Pan (RevPan)

Range: L63 — C — R63



This determines the Pan position of the Reverb sound, or where it appears in the stereo image.

For details on the parameters for each Reverb Type, refer to the separate **SOUND LIST & MIDI DATA** booklet.

Chorus (CHO)

The Chorus section uses pitch modulation to create a variety of rich, spacious-sounding effects, including Chorus, Flanger, Symphonic and Phaser. Explanations of the Chorus Type, Chorus Pan, and Send Chorus to Reverb parameters are given below. For descriptions and explanations for all other Chorus parameters, refer to the separate **SOUND LIST & MIDI DATA** booklet.

Type

Settings: NO EFFECT; CHORUS 1 — 4; CELESTE 1 — 4; FLANGER 1 — 3; SYMPHONIC; ENSEMBLE DETUNE; PHASER 1



This determines the Chorus Type. Depending on the Type selected, the specific parameters and values may differ.

Chorus 1 and 2 are used to subtly enhance the sound, and generally make it richer, fatter and warmer. Flanger uses modulation to create an animated, swirling motion effect, and produces a characteristic metallic sound. Symphonic also subtly enhances the sound by making a single instrument Voice sound like several. Phaser is similar to Flanger, but with a stronger and deeper modulation.

NOTE
When NO EFFECT is selected, Chorus is off and none of the other Chorus parameters are available (with the exception of the Chorus Pan and Send Chorus to Reverb parameters).

Chorus Pan (ChoPan)

Range: L63 — C — R63



This determines the Pan position of the Chorus sound, or where it appears in the stereo image.

Send Chorus to Reverb (SendCho → Rev)

Range: 000 — 127



This determines the level of the Chorus signal sent to and processed by the Reverb effect. A setting of 000 results in none of the Chorus-processed signal going to the Reverb.

HINT
Setting this to a relatively high level gives you a more natural sound, since the Chorus-processed sound is also being processed by the reverb.

For details on the parameters for each Chorus Type, refer to the separate **SOUND LIST & MIDI DATA** booklet.

Variation (VAR)

The Variation section provides a wealth of additional effects for processing the Voices of the MU128. It features some of the same effects found in the Reverb, Chorus and Insertion sections. This is not mere redundancy; it allows you to use two types of Reverb, Chorus or other effects on different Voices. For example, you may want to have the Flanger effect on one Voice and Phaser on another. Variation also gives you many special effects not found in the other sections, such as Delay, Gate Reverb, Wah and Pitch Change.

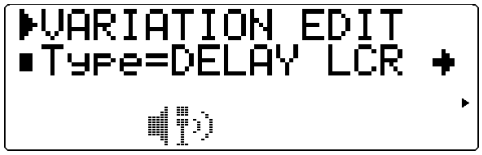
The Variation section of effects can be applied either to a single selected Part or to all Parts, depending on the connection setting: Insertion or System. (See **About the Effect Connections — System and Insertion** on page 152 for more information.)

Explanations of the Variation Type and other common parameters are given below. For specific descriptions of Variation Types and explanations for all other Variation parameters, refer to the separate **SOUND LIST & MIDI DATA** booklet.

Type

Settings: NO EFFECT; HALL 1— 2; ROOM 1 — 3; STAGE 1 — 2; PLATE; WHITE ROOM; TUNNEL; CANYON; BASEMENT; DELAY L,C,R; DELAY L,R; ECHO; CROSS DELAY; ER 1 — 2; GATE REVERB; REVERSE GATE; KARAOKE 1 — 3; CHORUS 1 — 4; CELESTE 1 — 4; FLANGER 1 — 3; SYMPHONIC; ENSEMBLE; DETUNE; AMBIENCE; ROTARY SPEAKER; 2WAY ROTARY SPEAKER; TREMOLO; AUTO PAN; PHASER 1 — 2, DISTORTION; COMP+ DISTORTION; OVER DRIVE; AMP SIMULATOR; 3BAND EQ (MONO); 2BAND EQ (STEREO); AUTO WAH (LFO); AUTO WAH+DIST; AUTO WAH+ODRV; TOUCH WAH 1; TOUCH WAH+DIST; TOUCH WAH+ ODRV; TOUCH WAH 2; PITCH CHANGE 1 — 2; HARMONIC ENHANCER*; COMPRESSOR; NOISE GATE; VOICE CANCEL; TALK MOD; LO-FI; DIST+DELAY; ODRV+DELAY; CMP+DT+DLY; CMP+OD+DLY; WAH+DT+DLY; WAH+OD+DLY; THRU

*The Harmonic Enhancer produces the same effect as its MU series predecessor.



NOTE

*When **NO EFFECT** or **THRU** is selected for the Type, no Variation effect is applied, and only the common parameters shown below are available (with the exception of **Dry/Wet**). The **NO EFFECT** setting cancels the Variation effect. When the Variation Connection is set to **SYS** (System), the sound can be heard with no effect. When the Variation Connection is set to **INS** (Insertion), no sound is output for the Part.*

*When set to **THRU**, the sound of the Part (or Parts) is output without any Variation effect. Generally, when Variation Connection is set to **INS** (Insertion), you should set the Type to **Thru**. When Variation Connection is set to **SYS** (System), you should set the Type to **NO EFFECT.***

Dry/Wet (Insertion connection)

Range: D63>W — (D=W) — D<W63

Adjusts the level balance of original sound (dry, or **D**) and processed sound (wet, or **W**). A setting of (**D=W**) results in an equal balance of dry and wet sound.

NOTE

This parameter may not be available depending on the effect type.

Assignable Controller 1 Variation Control (AC1VarCtrl) (Insertion connection)

Range: — 64 — +100 — +63

Determines the amount of effect the Assignable Controller has on the Variation effect. Each of the Variation effect types have one parameter which can be controlled by the AC1. (For details, see the "Effect Parameter List" of the "SOUND LIST & MIDI DATA" booklet.)

Variation Pan (VarPan) (System connection)

Range: L63 — C — R63

Determines the pan position of the Variation effect.

Send Variation to Chorus (SendVar→Cho) (System connection)

Range: 000 — 127

Determines the amount of Variation effect sound that is sent to the Chorus effect.

Send Variation to Reverb (SendVar→Rev) (System connection)

Range: 000 — 127

Determines the amount of Variation effect sound that is sent to the Reverb effect.

Variation Connection (VarConnect)

Settings: INS (Insertion), SYS (System)

Determines how the Variation effect is connected in the effect chain of the MU128. When set to **SYS** (System), Variation is applied to all Parts, according to the amount of Variation Send set for each Part. When set to **INS** (Insertion), Variation is applied to only the selected Part, set in the Variation Send parameter (pages 108, 128, 136).

NOTE

*The parameters above are common to nearly all the Variation effect types. (Exceptions are described in the separate **SOUND LIST & MIDI DATA** booklet.)*

Insertion 1, 2 (INS 1, 2)

The Insertion 1 and 2 effects provide additional effects for processing individual Parts.

Explanations of the Type, Dry/Wet Balance and Part parameters are given below. For descriptions and explanations for all other parameters, refer to the separate **SOUND LIST & MIDI DATA** booklet.

The Insertion effects are set up for Insertion routing and can be applied only to a single selected Part. Refer to **About the Effect Connections — System and Insertion** on page 152 for more information.

Type

Settings: THRU; HALL 1 — 2; ROOM 1 — 3; STAGE 1 — 2; PLATE; DELAY L,C,R; DELAY L,R; ECHO; CROSS DELAY; KARAOKE 1 — 3; CHORUS 1 — 4; CELESTE 1 — 4; FLANGER 1 — 3; SYMPHONIC; ENSEMBLE DETUNE; ROTARY SPEAKER; TREMOLO; AUTO PAN; PHASER 1; DISTORTION; OVER DRIVE; AMP SIMULATOR; 3BAND EQ (MONO); 2BAND EQ (STEREO); AUTO WAH (LFO); TOUCH WAH 1 — 2, HARMONIC ENHANCER*, COMPRESSOR; NOISE GATE

*The Harmonic Enhancer produces the same effect as its MUseries predecessor.



NOTE

When Thru is selected, no effect is applied, and none of the parameters are available (with the exception of the assignable Controller and the Part parameter).

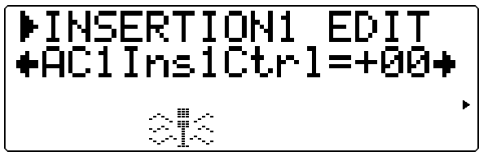
Dry/Wet Balance

Range: D63>W — (D=W) — D<W63

This determines the balance between the direct, unprocessed signal (dry) and the processed sound (wet).

Assignable Controller 1 Insertion 1/2 Control (AC1INS1/2Ctrl)

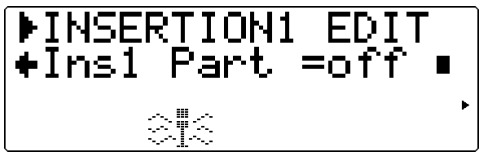
Range: –64 — +63



This determines the degree to which Assignable Controller 1 (AC1) affects the MIDI-controllable parameters of the Insertion effects. Each of the Insertion effect types have one parameter which can be controlled by the AC1. (For details, see the “Effect Parameter List” of the “SOUND LIST & MIDI DATA” booklet.) This parameter is not available in the Performance mode.

Insertion 1, 2 Part (INS 1, 2 Part)

Range: Part 1 — 64, AD01, AD02, off



This determines the Part to which the Insertion effect is applied. Insertion can be applied to only one Part at a time.

About the Effect Connections — System and Insertion

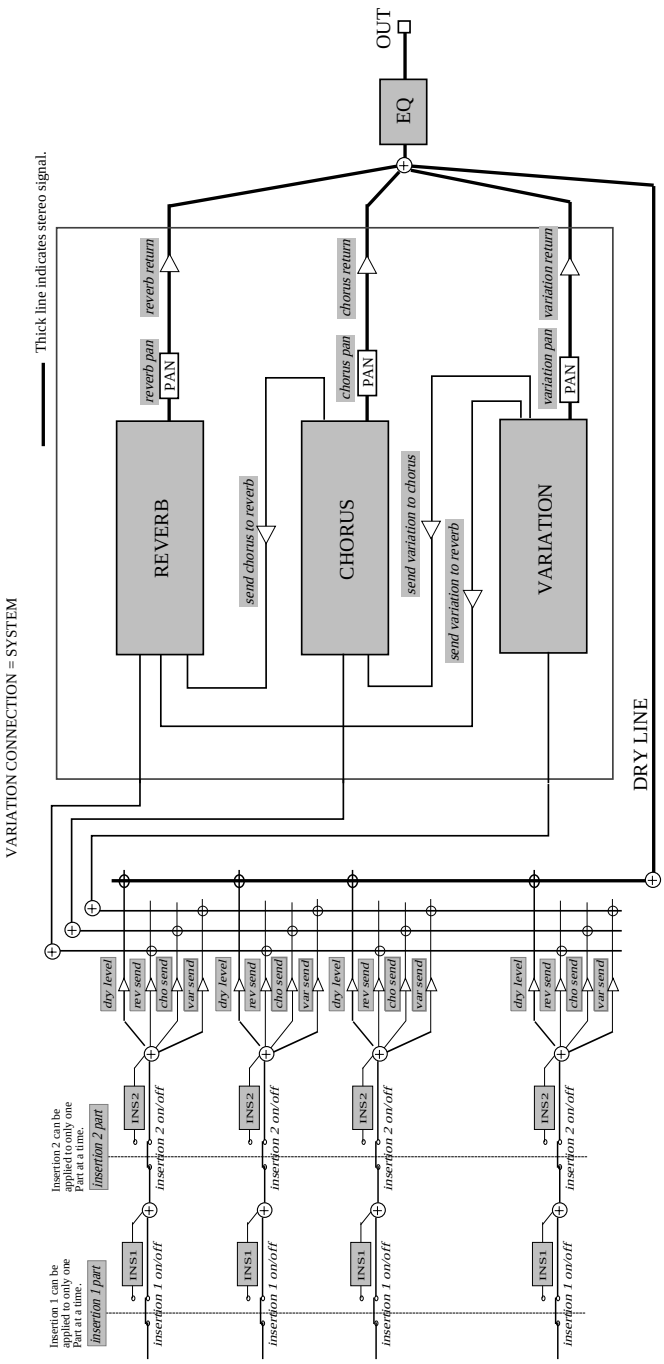
The multi-effects of the MU128 provide not only a wide range of sound processing controls, but also a flexible system for connecting them. Unlike simple effect routing schemes on conventional sound modules that process all voices with the same effects, the MU128 allows you to put independent, special effects on one or two Parts, as well as use overall effects for processing all 64 Parts together. For example, you can have a Distortion effect on a guitar Part and a rotary speaker effect for an organ Part, yet still use ambient effects such as Reverb and Chorus for processing the overall mix.

All the effect sections are connected or routed in one of two ways: **System** or **Insertion**. System applies the selected effect to all 64 Parts, while Insertion applies the selected effect to one specific Part. Reverb, Chorus, and EQ are all System effects, and Insertion 1 and 2 are Insertion effects. The Variation effect section, on the other hand, can be configured for either System or Insertion routing. (This is done from the **Variation Connection** parameter; see page 150.) Since System and Insertion are part of the XG MIDI format, you can create and play back song data using the same flexible effect routings on any tone generator or sound module having the **XG** logo.

NOTE
In the Multi mode, the default setting for Variation Connection is Insertion. In the Performance mode, the default setting differs depending on the selected Performance.

The illustrations and explanations below cover the System and Insertion connections in greater detail.

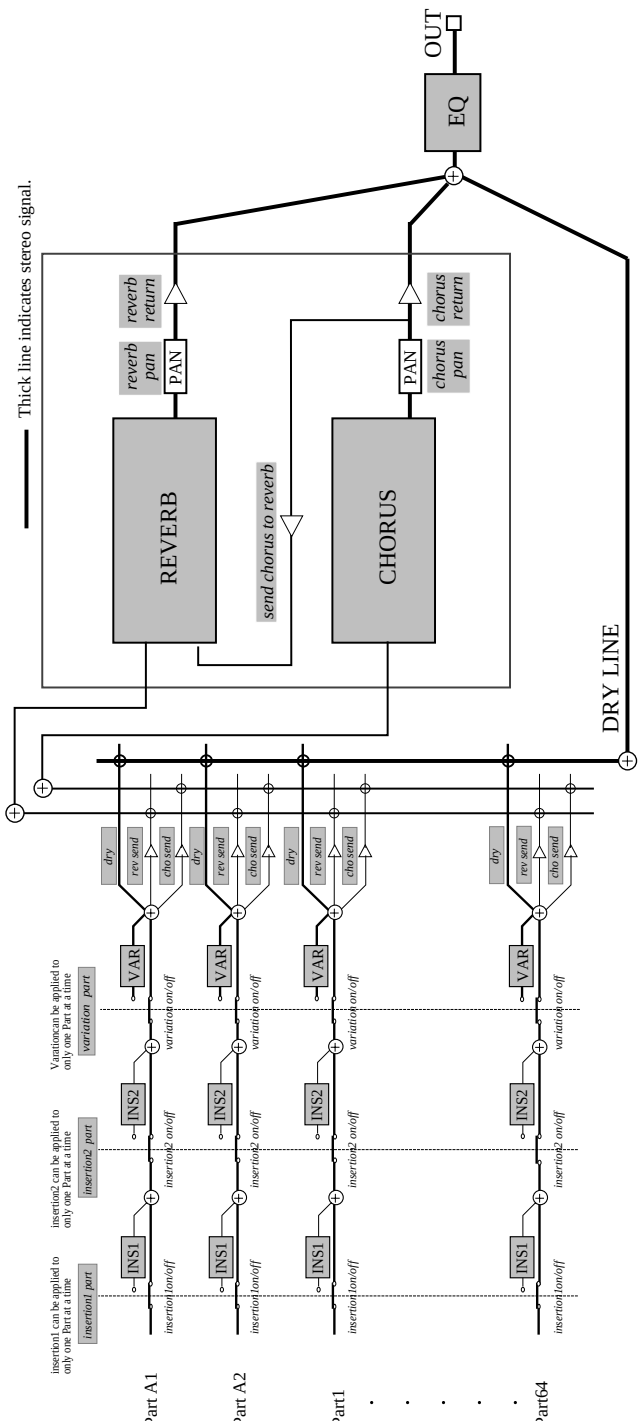
When Variation is set to System:



NOTES

- *The Parts to which Insertion 1, 2 are applied is determined by the **Part** parameter in the Insertion section (page 151).*
- *Even though the System routing applies the selected effect to all Parts, you can control how much the Reverb, Chorus and Variation effects are applied to any individual Part (with the **Reverb Send, Chorus Send** and **Variation Send** parameters in the Single Part controls; see pages 107, 108, 127, 128, 135, 136). For the effects to be properly heard, the **Reverb Return, Chorus Return** and **Variation Return** parameters in the All Part controls must also be set to appropriate values (pages 109, 110,133).*
- *The stereo position of the effects is controlled by the **Reverb Pan**, **Chorus Pan** and **Variation Pan** parameters; see pages 147, 148, 150.*
- *You can set Reverb, Chorus and Variation to be routed in parallel or in serial, and you can determine the amount of Variation effect that is sent to Chorus and Reverb, as well as the amount of Chorus that is sent to Reverb. This is done with the **Send Variation to Chorus** (page 150), **Send Variation to Reverb** (page 150), and **Send Chorus to Reverb** (page 148) parameters. When these are all set to **0**, all three effects are in parallel routing. Higher values for each provide varying degrees of serial routing.*

When Variation is set to Insertion:

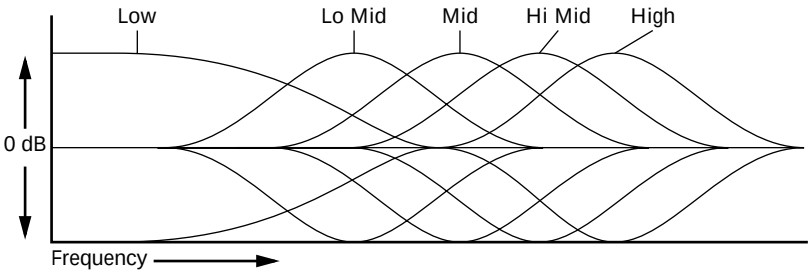


NOTES

- *As with System above, the Parts to which Insertion 1, 2 are applied is determined by the **Part** parameter in the Insertion section (page 151). Also, the Part to which Variation is applied is determined by the **Variation Send** control in the Single Part controls (pages 108, 128, 136).*
- *As with System above, the effects cannot be properly heard unless the **Reverb Send and Chorus Send** parameters in the Single Part controls (pages 107, 127, 128, 135) and the Reverb Return and Chorus Return parameters in the All Part controls (pages 109, 133) are set to appropriate values.*
- *The stereo position of the effects is controlled by the **Reverb Pan** and **Chorus Pan** parameters. (pages 147, 148.)*
- *You can set Reverb and Chorus to be routed in parallel or in serial, and you can determine the amount of Chorus that is sent to Reverb. This is done with the **Send Chorus to Reverb** parameter (page 148). When this is set to **0**, Reverb and Chorus are in parallel routing. Higher values for each provide varying degrees of serial routing.*

Equalizer (Multi EQ) Edit

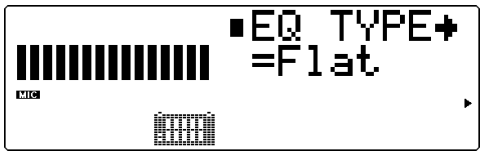
The Equalizer (Multi EQ) Edit parameters allow you to adjust the overall tone of the MU128 sound in five separate frequency bands. EQ presets are also provided for instantly calling up tone settings specially suited for different types of music.



To enter the Equalizer Edit mode, press the **EQ** button.

EQ Type

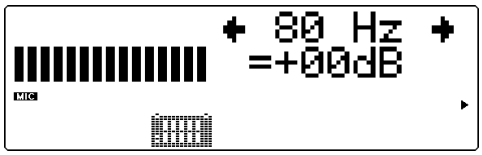
Settings: Flat, Jazz, Pops, Rock, Concert



EQ Type provides five different preset EQ settings, specially programmed for specific types of music. The **Flat** setting is a "flat" EQ preset with no change in equalization. **Jazz, Pops, Rock** and **Concert** each have different EQ settings and frequency bands, specially suited for those types of music.

EQ Frequency Parameters

Flat:	80 Hz, 500 Hz, 1.0 kHz, 4.0 kHz, 8.0 kHz
Jazz:	50 Hz, 125 Hz, 900 Hz, 3.2 kHz, 6.3 kHz
Pops:	125 Hz, 315 Hz, 1.0 kHz, 2.0 kHz, 5.0 kHz
Rock:	125 Hz, 200 Hz, 1.2 kHz, 2.2 kHz, 6.3 kHz
Concert:	80 Hz, 315 Hz, 1.0 kHz, 6.3 kHz, 8.0 kHz
Range:	–12 — +12 dB



The remaining EQ parameters let you set the level of each of the five frequency ranges: low, low-mid, mid, high-mid and high. The bars in the display show the EQ settings as a frequency "curve," with peaks indicating level boosts in the frequency range and valleys indicating level cuts. A setting of 00 dB corresponds to no level change.

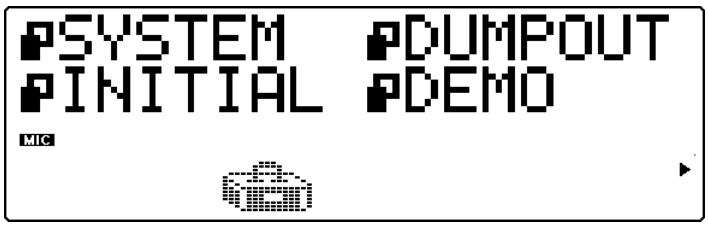
NOTE

Changing the EQ Type automatically restores the default Frequency Parameter settings and cancels any Frequency Parameter settings you have made.

Utility Mode

The Utility mode lets you set functions related to the overall operation of the MU128, such as Master Tune, display contrast and playing of the Demo Song. Included also are utility operations, such as various kinds of data transfer with an external data storage device, and initializing of the MU128 settings.

To enter the Utility mode, press the **UTIL** button. The following menu appears:



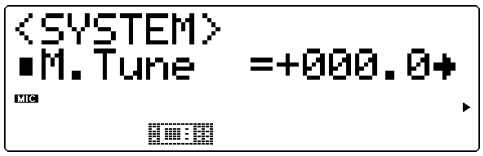
System Functions (SYSTEM) 157
Dump Out Functions (DUMPOUT) 162
Saving and Restoring Data via MIDI 162
Saving and Restoring Data via TO HOST 162
Initialize Functions (INITIAL) 166
Demo Song Play (DEMO) 169

System Functions (SYSTEM)

The System functions provide various controls of the overall operation of the MU128, such as Master Tune, Mute and A/D Part Lock, some MIDI receive filters and a display Contrast control.

Master Tune (M.Tune)

Range: –102.4 — +102.3 cents (approx. +/– 1 semitone)

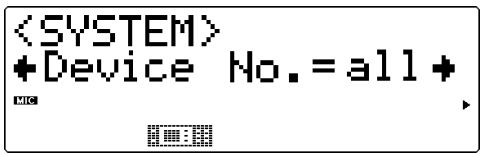


This determines the overall fine tuning of the MU128's Voices. It does not affect the pitch of the individual drum/percussion sounds of the drum kits. Master Tune is especially useful for adjusting the pitch of the MU128 when playing with other instruments. The actual pitch of each Voice depends also on the other pitch related parameters: Note Shift, Transpose (in Play mode) and Detune (in Edit mode).

NOTE
At around 440 Hz, 1 Hz is approximately equal to 4 cents.

Device Number (DevNo.)

Settings: 1 — 16, all



This determines the Device Number for the MU128, a kind of MIDI "identification" number to distinguish between multiple units. For example, if you are using more than one MU128, set a different Device Number for each. This setting only applies to the data dump features. (page 162.) If you have only one MU128, set this to "all."

Performance Receive Channel (PFMRcvCh)

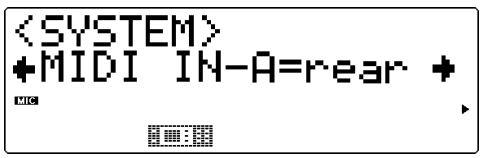
Range: 01 — 16



This determines the MIDI receive channel for the Performance mode. Set this to match the MIDI transmit channel on the connected MIDI device. Also, make sure that the MIDI device is connected to the MIDI IN-A terminal of the MU128 and that the Performance mode is enabled.

MIDI IN-A Terminal

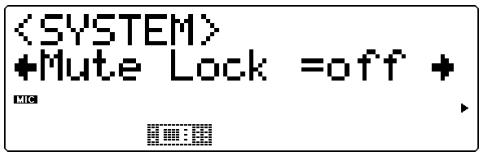
Settings: rear, front



This determines which of the MIDI IN-A terminals is used to receive MIDI data. When set to "rear," the rear panel MIDI IN-A terminal is active; when set to "front," the front panel MIDI IN A terminal is active. Both terminals cannot be used simultaneously. This is set to "rear" as the factory default.

Mute Lock

Settings: off, on



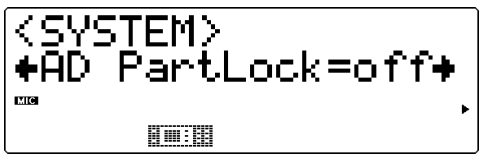
This determines whether or not the Part Mute status of the MU128 is reset when receiving a **GM System On** or **XG System On** message. Generally, this message is automatically transmitted to the MU128 as part of GM or XG song data. When Mute Lock is set to **off**, this resets the Mute status of the Parts on the MU128. If you want to keep the current Mute settings and disable this reset, set Mute Lock to **on**. This setting affects the Multi mode only, and not the Performance mode. (For more information on the Mute function, see page 95.)

Hint

You should set this to "on" when repeatedly playing back song data for which you want to keep certain Parts muted. This prevents the mute settings from being reset each time you play the song.

A/D Part Lock

Settings: off, on



This determines whether or not the current parameter values and Insertion/Variation effect settings of the A/D Parts are reset when receiving a **GM System On** or **XG System On** message. If you want to keep the current parameter values and Insertion/Variation settings of the A/D Parts, set A/D Part Lock to **on**. This parameter has no effect in the Performance mode.

Hint

- *Set this to "off" when playing back XG-compatible song data.*
- *When this is set to "on," all A/D Part settings are maintained, even when "XG System On" or "GM System On" messages are received. This is convenient when playing back song data and using a microphone with the A/D Inputs.*

Multi Mode Equalizer Lock (Mlt EQ Lock)

Settings: off, on



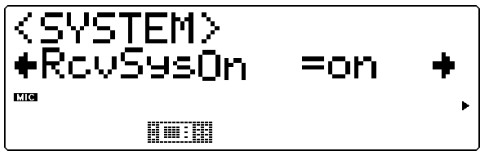
This determines whether the Equalizer settings (page 155) are initialized or change in response to incoming MIDI messages. When this is set to "on," the current Equalizer settings are maintained, ignoring any EQ-related messages that are received with XG System On or GM System On messages, allowing you to protect your original Equalizer settings. When set to "off," the Equalizer changes according to incoming XG/GM System On messages. This setting affects the Multi mode only, and not the Performance mode.

NOTE

This parameter has no effect on the individual Part EQ settings (page 116).

Receive System On (RcvSysOn)

Settings: off, on



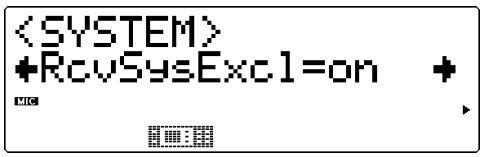
This determines whether **GM System On** or **XG System On** messages are received or not. The on setting allows these messages to be received.

Hint

If you've changed any of the panel settings on the MU128 and wish to keep those changes while playing back song data, setting this to "off" prevents those changes from being cancelled or reset by playing back the song data from the beginning.

Receive System Exclusive (RcvSysExcl)

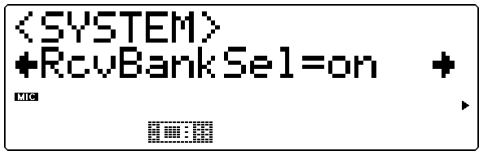
Settings: off, on



This determines whether System Exclusive messages are received or not. System Exclusive messages are data specifically (or "exclusively") related to the MU128. The On setting allows these messages to be received. This should be to On when receiving bulk data from a MIDI data storage device. (page 162.)

Receive Bank Select (RcvBankSel)

Settings: off, on



This determines whether Bank Select messages are received or not. Bank Select messages can be sent from another MIDI device to change the banks of Voices on the MU128. (pages 50-53.) The On setting allows Bank Select messages to be received.

Contrast

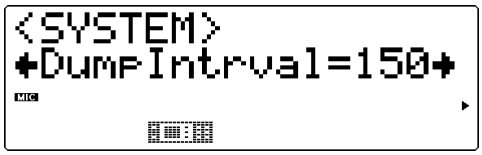
Range: 1 — 8



This determines the contrast of the display. Adjust this as necessary for optimum visibility. (At extreme settings, the display may not be readable.)

Dump Interval (DumpIntrval)

Settings: 50, 100, 150, 200, 300 (ms)



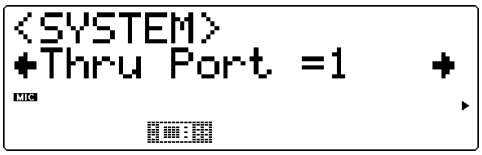
This determines the length of time the MU128 pauses when sending blocks of data in the Dump Out functions. (page 162.) If the receiving device fails to process the data or displays a "buffer full" type message, try setting this parameter to a higher value and send the data again.

NOTE

Setting this to one of the smaller values lets you shorten the data transmit time; however, doing so may result in data errors on the receiving end.

Thru Port

Range: 1 — 8

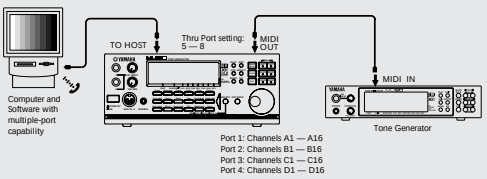


Some MIDI devices and sequencers are capable of transmitting data over several MIDI "ports," effectively breaking the 16-channel barrier. When this data is received via the TO HOST terminal on the MU128, this parameter determines which MIDI port's data will be routed through the MIDI OUT terminal. This allows you to connect another multi-timbral tone generator to the MU128 and play back data over 80 independent MIDI channels — 64 on the MU128 and another 16 on the connected tone generator.

NOTE

The MU128 can receive Cable messages (F5) when the TO HOST terminal is connected to the serial terminal of a computer.

On the MU128, MIDI receive channels A01 - A16 are controlled from Port 1, channels B01 - B16 are controlled from Port 2, channels C01 - C16 are controlled from Port 3, and channels D01 - D16 are controlled from Port 4. If the software you are using can address separate MIDI ports, data can be received over 64 channels simultaneously, allowing 64 parts to be played with only one serial cable. By connecting another multi-timbral tone generator to the MIDI OUT terminal of the MU128 and setting the Thru Port function to a value of 5 or higher, you can play back data over a total of 80 MIDI channels — 64 on the MU128 and another 16 on the connected tone generator.



Display Bank Select (DispBankSel)

Settings: 1 (displays only banks with unique Voices),
2 (displays all banks)



This determines whether the MU128 displays all Voice banks or not when changing banks. (For information on changing banks, see page 43.) When this is set to "1," the MU128 conveniently skips over banks that have the same Voice. In other words, when you step through the available banks, the display stops only on banks for which the Voice is unique or different (for the selected program number). If "2" is selected, all banks are displayed in succession, regardless of whether the Voices are the same or not. The Display Bank Select setting itself cannot be changed by incoming MIDI messages.

Voice Map (Map)

Settings: MU basic, MU100Native



This determines the Voice configuration or assignment for the XG Voice set of the MU128 and is designed for setting compatibility with various song data.

The MU Basic Voice map maintains compatibility with the widest range of XG tone generators. If you are using song data recorded on older XG tone generators, you should use this setting.

The MU100 Native Voice map (selected as the default at the factory) includes the upgraded Voices and Voices utilizing new waveforms and samples not included on older XG tone generators.

These two Voice maps have the same order and number of the Voices. However, the actual sounds and overall balance may differ for each map when playing back identical song data, since the actual character of some of the Voices differs greatly.

When playing back song data created on or for other XG tone generators, try switching between the two different maps to achieve the optimum playback condition for the song.

NOTES

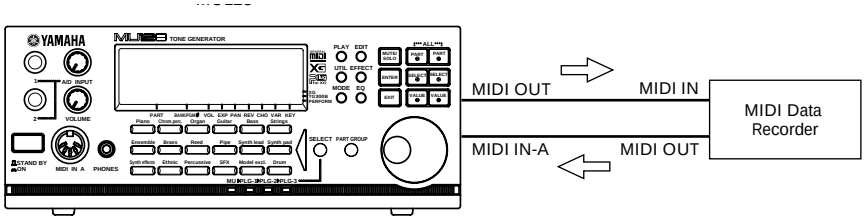
- *Only the Voice map of the basic Voice bank (MSB = 0, LSB = 0) is affected by this parameter. The other variation Voice banks are not affected.*
- *This setting is not affected by incoming XG System On or GM System On MIDI messages.*

Dump Out Functions (DUMPOUT)

The Dump Out functions allow you to save the various settings of the MU128 (such as settings for Parts, Performances, system, etc.) to a MIDI sequencer, computer or a MIDI data recorder (such as the Yamaha MDF3 MIDI Data Filer).

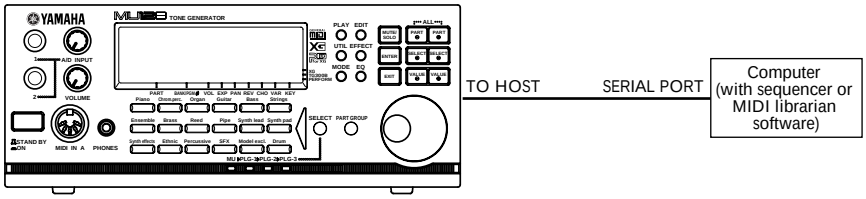
The following illustrations show example connections for the Dump Out functions.

Saving and Restoring Data via MIDI



Bulk Dump data can be sent and received using the MIDI IN and MIDI OUT connections.

Saving and Restoring Data via TO HOST



Bulk Dump data can be sent and received using the TO HOST and SERIAL PORT connections.

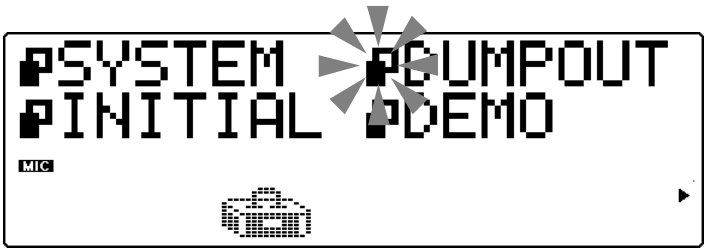
Operation

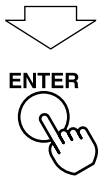
1 Make sure that the MU128 is properly connected to the device and that the **HOST SELECT** switch is properly set.

When using the MIDI terminals, connect the **MIDI OUT** of the MU128 to the **MIDI IN** of the data recorder. (See the illustrations above.) Also, set the **HOST SELECT** switch to **MIDI**.

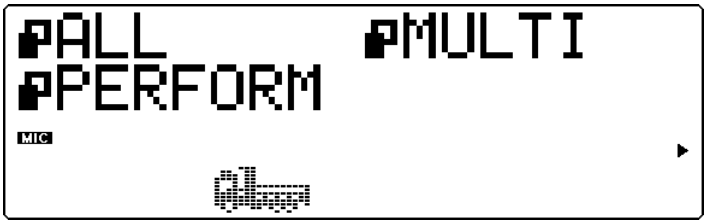
When using the **TO HOST** terminal, make sure that the **HOST SELECT** switch is set corresponding to the device to be used. (Refer to page 35 for more on host computer connections.)

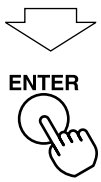
2 Press the **UTIL** button and select "DUMPOUT," then press the **ENTER** button.





3 From the Dump Out menu, select the type of data to be sent: All, Multi or Performance. Then, press the **ENTER** button to call up the selected data dump.





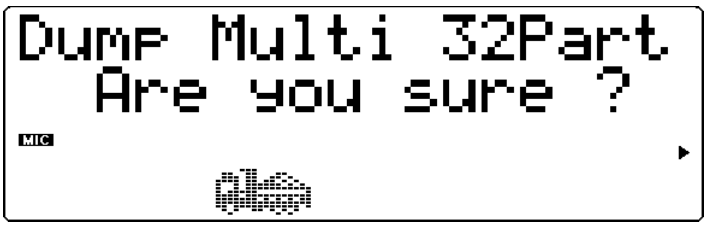
All



This transmits all MU128 data (including Part, Performance, system, and all parameter values) to the connected device.

Multi

Settings: 64 Parts, 32 Parts, 16 Parts, 64 Parts + A/D, 32 Parts + A/D, 16 Parts + A/D



This transmits the selected MU128 Multi Part data (including System, Effect and EQ data) to the connected device. (Use the **VALUE ⊖/⊕** buttons to select the type/amount of data to be transmitted.)

Performance (PERFORM)

Settings: ALL, I 001 — I 100 (Internal Performance numbers)



This transmits the selected MU128 Performance data to the connected device. (Use the **VALUE ⊖/⊕** buttons or data dial to select the type/amount of data to be transmitted.)

4 From the "Are you sure?" prompt, press the **ENTER** button to execute the operation, or press the **EXIT** button to cancel it and return to the Dump Out menu.

A "Transmitting…" message appears in the display during the operation. When the transmission is completed, the MU128 returns to the Dump Out menu.

To reload the data from the data recorder back to the MU128:
Make sure that the devices are properly connected (see the illustrations on page 162), and execute the appropriate data transfer operation from the data recorder. (Refer to the owner's manual of that device for instructions.) The MU128 automatically receives incoming bulk data.

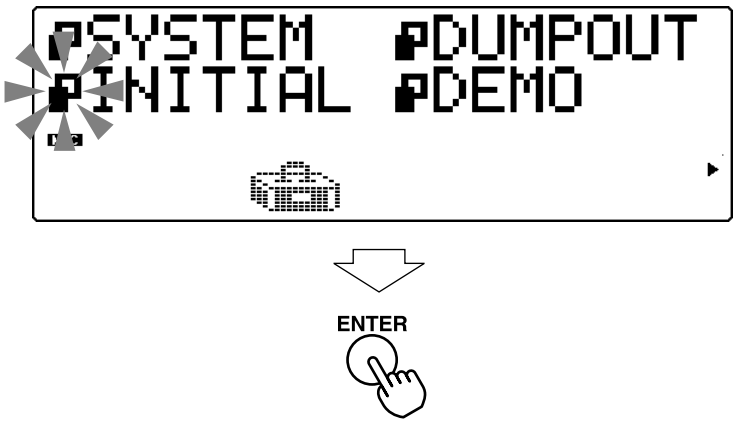
Initialize Functions (INITIAL)

The Initialize functions allow you to restore the factory settings of the MU128.

NOTE
Since the Initialize functions replace existing data, you should save any and all important settings to a MIDI data storage device before using these functions. (page 162.)

Operation

1 Press the **UTIL** button and select "**INITIAL**," then press the **ENTER** button.



2 From the Initialize menu, select the type of data to be initialized: Factory Settings (FactSet), selected Sound Module mode (XG Init, GM Init, PFMInit) or Drum (DrumInit). Then, press the **ENTER** button to call up the selected data initialization.



Factory Settings (FactSet)



This restores the original factory settings of the MU128.

Selected Sound Module Mode:

Extended General MIDI (XG Init)



General MIDI (GM Init)



Performance (PFMInit)



One of the three parameters above will be available, depending on the currently selected Sound Module mode: **XG, TG300B** or **PFM**. Initializing this parameter restores the original settings for the selected mode.

NOTE

For the PFMInit setting, only the currently selected Performance will be initialized.

Drum (DrumInit)

Range: DrumS1 — DrumS4



This restores the original drum settings for the selected Drum Setup S1 — S4. (Use the **VALUE** ⊖/⊕ buttons or data dial to select the desired Drum Setup.)

NOTE
This parameter is not available when the MU128 is set to Performance mode.

3 From the "Are you sure?" prompt, press the **ENTER** button to execute the operation, or press the **EXIT** button to cancel it and return to the previous display.

An "Executing…" message appears in the display during the operation. When the operation is completed, the MU128 returns to the Initialize menu.

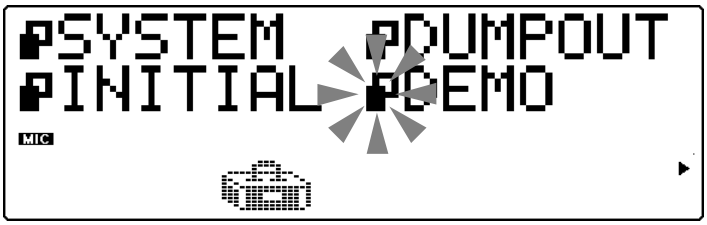
Demo Song Play (DEMO)

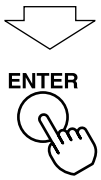
The Demo Song function in the Utility menu allows you to play the built-in Demo Song.

NOTE
All System Setup and Multi Part Edit settings are initialized to their default values when playing back the demo song. Save your important data to a computer or the MDF3 MIDI Data Filer by using the Dump Out functions (page 162).

Operation

1 Press the **UTIL** button and select "DEMO," then press the **ENTER** button.





2 Press the **ENTER** button to start the Demo Song.
The Demo Song starts playing immediately and repeats indefinitely until stopped (in step 3 below).

NOTES
- *During Demo Song playback, no panel controls (with the exception of the EXIT button and the VOLUME control) can be used.*
- *The A/D INPUT jacks cannot be used when playing back the demo song.*

3 To stop playback of the song, press the **EXIT** button.



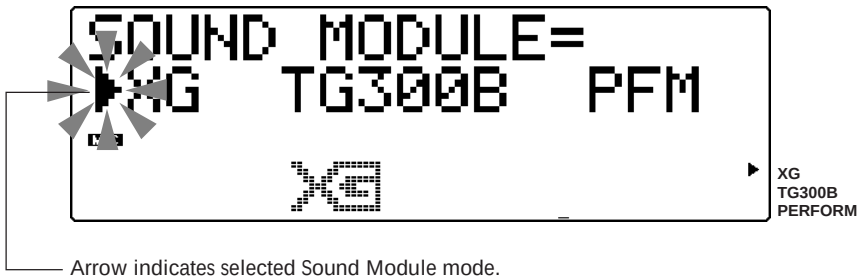
4 To exit from the Demo Song function, press the **EXIT** button again.

Other Functions

Sound Module Mode (MODE)

This lets you select the operating mode of the MU128. Press the **MODE** button, then use the **SELECT** ◀/▶ buttons to select the desired Sound Module mode: **XG**, **TG300B** or **PFM** (Performance). If **XG** or **TG300B** is selected, the MU128 automatically sets itself to the Multi mode. When **PFM** is selected, the MU128 is in the Performance mode. (page 38.)

The bottom right of the display indicates the currently selected Sound Module mode.



Press the **EXIT** button (or any one of the other mode select buttons: **PLAY**, **EDIT, UTIL, EFFECT** or **EQ**) to use the MU128 in the current mode.

NOTES

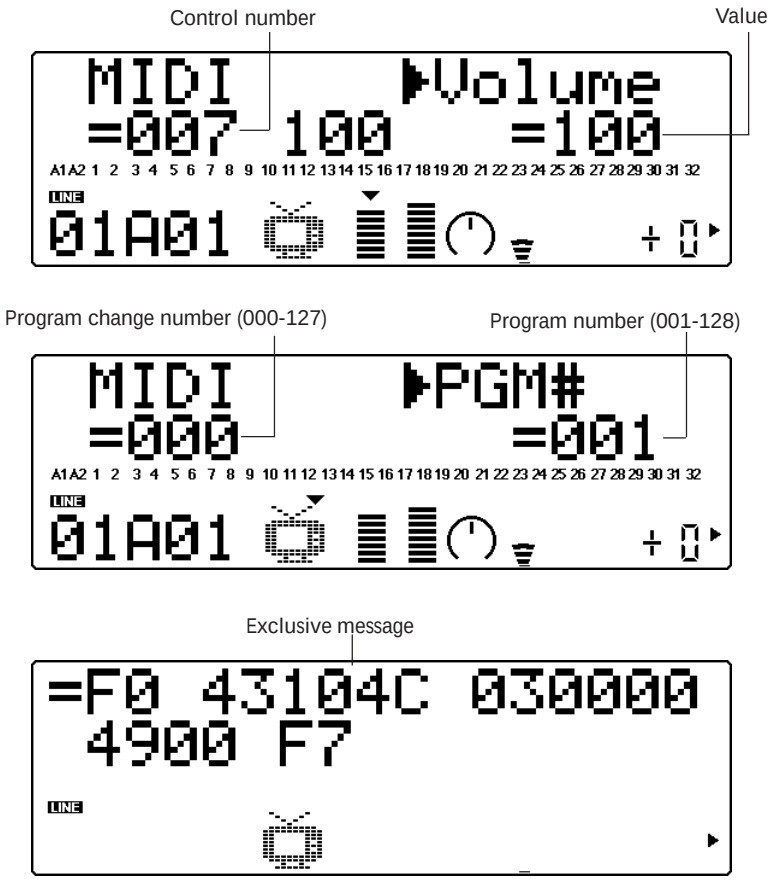
- *If this is set to the Performance mode, the MU128 will not respond to System Exclusive messages (such as XG System On or GM System On) for changing the Sound Module mode to XG or TG300B.*
- *When the Sound Module mode is changed, all settings in each mode will be initialized to their factory values.*

Show MIDI Data

This convenient function lets you instantly view MIDI data for any parameter setting in any mode, and send that data to an external MIDI device. By using this function, you can easily control any of the MU128 parameters from an external MIDI device. When recording song data on a sequencer, you can make changes to various parameters on the MU128 (such as the filter or EG settings of a Part, or changes in the effects) and record those changes to specific measures in the song. In this way, when the song plays back, the settings on the MU128 change automatically as recorded.

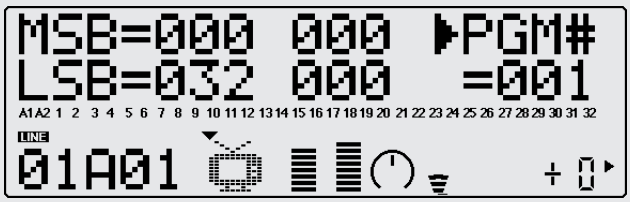
Operation

1 From the display of the desired parameter, double-click the **[ENTER]** button (press it twice quickly). One of three different displays will be shown, depending on the parameter type.



Details

- *The parameter values can be changed also by using the **[VALUE⊖/⊕]** buttons.*
- *When the cursor is at the bank number parameter in the XG mode or TG300B mode, double-click the **[ENTER]** button, so that the two control change messages (bank select MSB, LSB) and the program numbers are displayed.*



2 To transmit the currently displayed message, press the **[ENTER]** button again. The message is transmitted via the MIDI OUT terminal or the TO HOST terminal.

3 Press the **[EXIT]** button to return to the parameter setting display.

Plug-in System

About the XG Plug-in System

This system offers powerful expansion and upgrade capabilities for XG-Plug-in-compatible tone generators, including the MU128.

The XG Plug-in System enables you to equip the MU128 with the latest and most sophisticated technology, ensuring that you keep pace with the rapid and multi-faceted advances in modern music production.

Tone generators or synthesizers compatible with the XG Plug-in System feature special connectors for connecting XG Plug-in boards. The number of connectors available differs depending on the device. The MU128 allows you install up to three XG Plug-in boards and use all of them simultaneously. You can check at a glance whether the XG tone generator or synthesizer is compatible or not — devices compatible with the XG Plug-in System have the XG Plug-in System logo printed on the panel.

The optional PLG100-VL, PLG100-VH, PLG100-DX XG Plug-in boards are currently available commercially, and an even wider variety of boards with various functions, including tone generation and effects, will be available in the near future. These expansion boards also have the XG Plug-in System logo, indicating that they are compatible with the XG Plug-in System. This means that they can be used with not only the MU128, but with all XG-Plug-in-System-compatible tone generators or synthesizers, present and future.

Structure of the XG Plug-in System

The beauty and usefulness of the XG Plug-in System is in its compatibility. When an XG Plug-in board is installed to a compatible XG tone generator, the board and tone generator function together seamlessly, as if the board were actually installed as part of the tone generator's circuitry at the factory! This is why the XG Plug-in System goes far beyond the simple expansion of Voices or effects.

When installing a tone generator type XG Plug-in board (such as the PLG100-VL or PLG100-DX) to the MU128, one Part of the MU128 is assigned to the the board's tone generator, and the digital output of the board is handled in exactly the same way as the other Parts. This means you can apply effects (both system and insertion) and EQ to the new Part. As soon as the board is installed, the appropriate menu for the Plug-in board is automatically added to the MU128, letting you make all settings and parameter changes for the board right from the panel of the MU128 itself.

When installing an effect type XG Plug-in board (such as the PLG100-VH) to the MU128, the board functions as an insertion effect of the MU128. All effect settings and editing can be done right from the panel of the MU128 itself.

Optional XG Plug-in Boards

Three different XG Plug-in boards are currently available commercially: the PLG100-VL, the PLG100-VH, and the PLG100-DX.

PLG100-VL (Virtual Acoustic Plug-in Board)
This XG Plug-in board features a "Virtual Acoustic" monophonic synthesizer that creates Voices with the powerful physical modeling tone generation system. It provides 256 internal Voices, from exceptionally realistic brass and strings Voices to wild and unique instrument sounds. Featuring the same system as the Yamaha VL70-m, the PLG100-VL gives you extraordinary expressive control over the Voices.



PLG100-VH (Vocal Harmony Plug-in Board)

This Plug-in board equips the MU128 with an automatic "harmonizer," letting you instantly and easily apply one-, two- or three-part harmonies to a vocal signal (via a microphone connected to the A/D Inputs). Four different types of Harmony effects are available: Vocoder, Chordal, Detune, and Chromatic. With the Vocoder type, you can "play" the harmony from a connected keyboard, while Chordal lets you control the harmony parts with chord data (from a keyboard or sequencer). Other unique and dynamic effects include natural chorusing, switching between male and female voices, and changing the sonic characteristics of the vocal sound.



PLG100-DX (Advanced DX/TX Plug-in Board)

This XG Plug-in board lets you add vintage FM synthesis Voices to the MU128. The PLG100-DX features the same synthesis engine as the famous Yamaha DX7, with six operators and thirty-two algorithms, and provides a total of 912 stunning preset FM Voices with all their crystalline clarity and pristine punch.

Installing the Plug-in Board

Before Installing the Plug-in Board

Here are some things you should know about the XG Plug-in boards before you install and use them.

In general:

- The XG Plug-in board can be used only when the Sound Module mode is set to “XG” or “PFM” (Performance).
- Tone generator type Plug-in boards (such as the PLG100-VL and PLG100-DX) can be used only for Parts 1 - 16. Set the MIDI receive channel to A01 - A16. (No sound is output when setting to B01 - D16.)
- In order to control the XG Plug-in board from the external MIDI device, use the MIDI IN-A terminal when the HOST SELECT switch is set to “MIDI,” or use port 1 (A01 - A16) when the HOST SELECT switch is at a setting other than “MIDI.”
- Voices on the Plug-in board can be selected in the normal way. However, first you will need to:
  1) Set the Part Assign parameter (so that the board is assigned to the desired Part).
  2) Select the desired Part with the **[PART ⊖/⊕]** buttons.
  3) Select the desired board by pressing the **[SELECT]** button. (page 182.)
- XG Part parameters of the Plug-in board can be set from the Multi Edit mode. However, some parameters may not be available on certain boards. Refer to the owner’s manual of the particular Plug-in board for details.
- When a Plug-in board is installed, the parameters of the board that can be set from the panel of the MU128 can also transmitted to an external MIDI device.

Data Backup:

- The XG Plug-in boards themselves do not have any data backup function. However, the MU128 saves any parameter edits made to an installed XG Plug-in board from the panel of the MU128, and this backup data is sent to the Plug-in board whenever the power is turned on.
- It takes a small amount of time for the MU128 to execute the backup function when editing parameter values of the board (which can normally be edited from the panel) from an external MIDI device. If you edit parameters via MIDI, make sure to wait a short

time before turning off the power, since data may be deleted if you turn off the power before the backup operation is completed.

- When editing any "hidden" parameters on the board (parameters that can only be accessed via MIDI) from an external MIDI device, these parameters will be initialized to their default values once you turn off the power. (The backup function does not apply to these "hidden" parameters.)

Performance Mode:

- XG Plug-in boards can be also used in the Performance mode. However, the parameters of the Plug-in board which can be stored as the performance data are limited to those which can be set from the panel.
- By sending appropriate parameter change messages corresponding to each Plug-in board, the settings of the Plug-in board(s) can be changed from an external MIDI device; however, the display of the MU128 may not match with the actual settings made to the board(s).

Setting the Part Assign Parameter

Before you can use the Voices of a tone generator type XG Plug-in board, you must first assign the board to a Part with the Part Assign parameter.

Part Assign can be set independently for each XG Plug-in board (tone generator type).

Operation

1 Call up the Utility mode by pressing the **[UTIL]** button.

2 Select "PLUGIN" (by using the **[SELECT◀/▶]** buttons), then press the **[ENTER]** button to call up the "PLUGIN SELECT" display.

NOTE
The "PLUGIN" menu is not available if no XG Plug-in board has been installed.

3 Select the desired XG Plug-in board (tone generator type only) with the **[SELECT◀/▶]** buttons, then press the **[ENTER]** button.

4 Select the "PartAssign" parameter with the **[SELECT◀/▶]** buttons, then set the desired Part number with the **[VALUE⊖/⊕]** buttons or data dial.

5 Return to the original display by pressing the **[EXIT]** button several times.

Setting Part Assign from an External MIDI Device

The Part Assign parameter can also be set from an external MIDI device by using the system exclusive message given below.

F0 43 1n 4C 70 PBtype Serial# Part# F7 (hexadecimal)

n: Device number (of the MU128)

PBtype: Indicates the type of XG Plug-in board. For example, the PLG100-DX is "2."

Serial#: This number distinguishes individual boards when more than one of the same type XG Plug-in board are installed. For one board, this is set to "0"; when two of the same type boards are installed, use "0" and "1."

Part#: Part Assign number for the XG Plug-in board.
Range: 00 (Part 1) - 0F (Part 16)
7F turns Part Assign off

Example: When assigning the first PLG100-DX board to Part 3, the message should be:
F0 43 10 4C 70 02 00 02 F7 (hexadecimal)

Selecting Voices of an XG Plug-in board

Once an installed XG Plug-in board has been properly assigned to a Part with Part Assign and the assigned Part has been selected, the board can be selected by using the **[SELECT◀/▶]** buttons. (The appropriate LED PLG-1 - PLG-3 flashes.) The selected board is also indicated in the display by its corresponding icon.

Once the board is selected in this way, you can select and play its Voices in the normal way.

NOTES

- *Unlike the Voices of the MU128 itself, XG Plug-in board Voices are not assigned to all the available program numbers, and many of the program numbers are "empty" with no assigned Voices. When such a program number is selected, "Silence" is shown in the display and the Part does not sound.*
- *When selecting XG Plug-in board Voices by using the Voice Category buttons, certain categories may not be available (depending on the board), and the category name may not match with the type of Voice actually selected. The original Voices of the board which are not included in the XG format are assigned to the Model excl. button.*

Details

XG Plug-in board Voices can be also selected from an external MIDI device by specifying the appropriate bank select MSB (control change #0), bank select LSB (control change #32) and program change messages.

Installing the Plug-in Board

Caution

- *When installing or uninstalling the XG Plug-in board, the System Setup and Multi Part settings of the MU128 are initialized to their default values. Always save your important settings to a computer or MIDI data filer (such as MDF3) by using the Dump Out functions beforehand.*
- *To avoid injury, be careful while handling and installing/uninstalling the XG Plug-in board.*

Operation

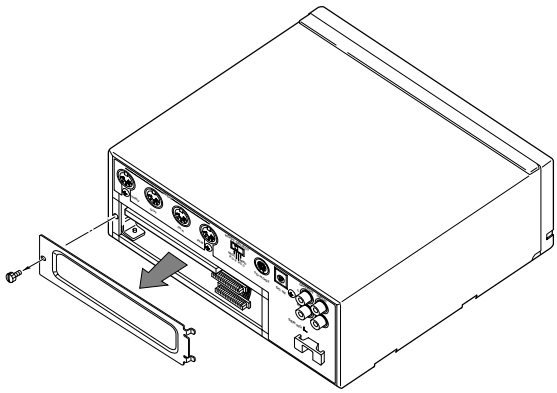
1 Turn off the power of the MU128 and any connected devices. Also remove all connected cables from the MU128, and unplug the power adaptor.

Caution

- *When installing/uninstalling an XG Plug-in board, and the power of the MU128 has been on for some time, make sure to let the installed board(s) cool down for a while after turning the power off.*
- *Make sure to unplug the power adaptor from the MU128 before installing/uninstalling the board. Attempting to install/uninstall the board while power adaptor is still connected may damage the board and/or the MU128.*

2 Remove the large screw from the expansion bay cover on the rear panel, and remove the cover (as shown below).

- *Since the screw is tightened securely at the factory, you may need to use a screwdriver to loosen it at first. Normally, it can be fastened and removed simply by using your fingers.*

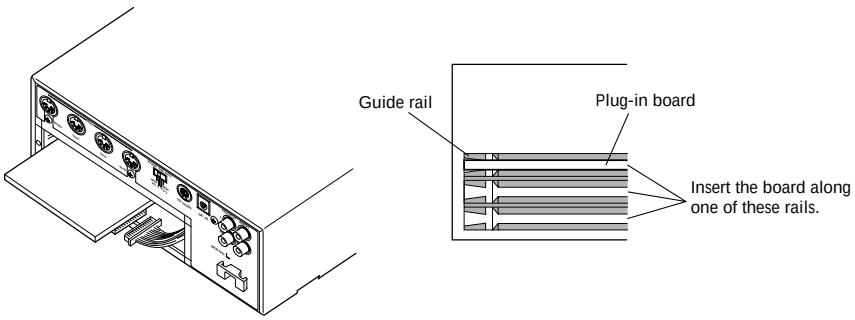


3 Remove the XG Plug-in board from its protective packaging.

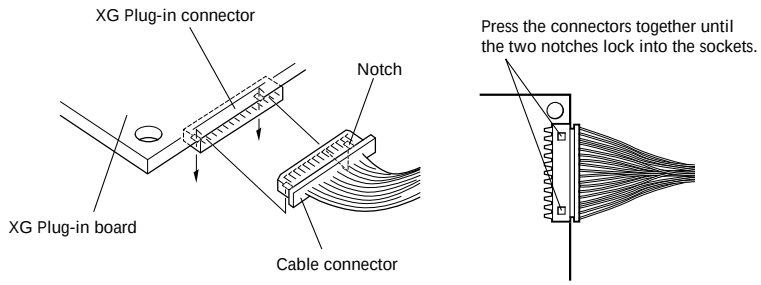
Caution

Before handling the XG Plug-in board, make sure to discharge any static electricity from your body or clothes by touching a grounded metal surface. Also be careful not to touch any of the parts or connectors of the board.

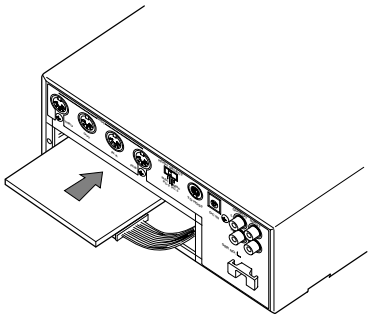
4 Insert the board along the guide rails about two-thirds of the way inside the MU128, with the connector side face down and toward you (as shown below). Make sure to insert it slowly and gently, keeping the edges of the board inside the proper guide rails, as shown in the illustration. With the board in place, plug in one of the three cable connectors to the connector on the XG Plug-in board. Any one of the cable connectors can be used.
The logical board assignment in the MU128 (PLG-1 - 3) is set automatically to the following order: 1) PLG100-VL, 2) PLG100-DX, 3) PLG100-VH.



Carefully plug in the cable connector to the XG Plug-in connector as shown below, matching the two notches on the cable connector with the sockets on the board. Firmly press the connectors together until they lock.

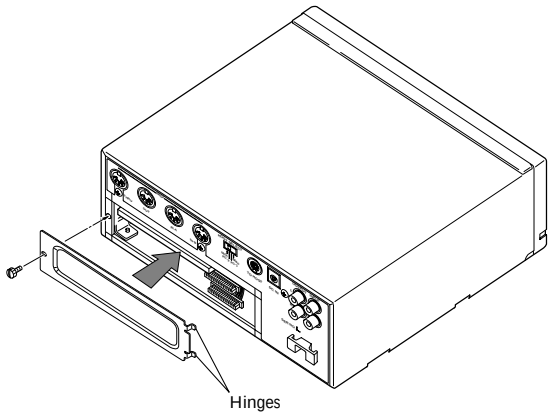


5 Slowly and gently insert the XG Plug-in board the rest of the way into the expansion bay.



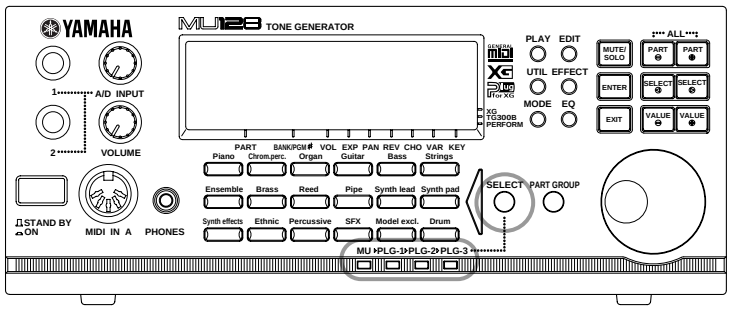
6 Replace the cover with the screw you removed in step #2 above.

Latch the hinges on the cover to the inside of the expansion bay and secure the cover to the rear panel with the screw. Press down hard on the cover as you replace it; the sponge cushion on the back holds the installed board(s) securely in place.



7 When the power to the MU128 is turned on again, the board is automatically installed and ready for operation. The appropriate LEDs on the front panel (PLG-1 - 3) light to indicate the installed XG Plug-in boards.

For tone generator type XG Plug-in boards, you can select the desired board (PLG-1 - 3) by pressing the **[SELECT]** button. (The Part Assign parameter must be set and the assigned Part must be selected first; see page 176.) The icon of the selected board is shown in the display and the corresponding LED at the bottom flashes.



NOTE

In order to use the Voices of an XG Plug-in board (tone generator type), you must first set the Part Assign parameter to assign the board to a Part. (page 177.)

APPENDIX

Troubleshooting

Even though the MU128 is exceptionally easy to use, it may occasionally not function as you expect it to. If that happens, check the possible problems and solutions below before assuming that the instrument is faulty.

Problem	Possible Cause and Solution
No power.	Check that the adaptor is properly plugged into both the MU128 and the AC outlet (page 27.)
No sound.	Check that: ● The panel volume control is set to an appropriate level. ● Other volume-related parameters are set to appropriate levels. (See Volume and Expression in the Single Part controls, page 107, and Master Volume and Master Attenuator in the All Part controls, page 109.) ● Mute or Solo are not active. (See page 95.) If a Part is being muted, or an empty Part is being soloed, you may not get any sound. ● The Variation effect settings are appropriate. No sound will be output at all if Variation Connection is set to INS (page 150), Variation Send is turned on for the Part (page 108), and NO EFFECT is selected for the Variation Type (page 149). The easiest solution in such a case is to turn off Variation Send for the Part. ● The EG Attack Time (page 114) is appropriately short, for short percussive sounds. ● The Velocity Sensitivity Offset (page 123) is appropriate. ● The Note Limit Low and Note Limit High (page 122) settings are appropriate. If the former is set higher than the latter, no sound will be output. ● The Velocity Limit Low and Velocity Limit High (page 123) settings are appropriate. If the former is set too high and the latter too low, no sound may be output.
No sound when playing the MU128 from a computer, sequencer or external keyboard.	Check all MIDI connections, making sure that the MIDI OUT of the external device is connected to the MIDI IN of the MU128, and that the MIDI IN of the external device is connected to the MIDI OUT of the MU128. (page 32.) Or, if you are using the TO HOST terminal with a computer, make sure that the terminal is properly connected to the computer and that the HOST SELECT switch is properly set for your particular computer. (pages 35, 36.) Also, make sure that you have turned on the connected MIDI instrument or computer before turning on the MU128. If you haven't, simply turning the MU128 off and back on again may solve the problem.
Notes are cut off or omitted.	The maximum polyphony of the MU128 may be exceeded. The MU128 can play no more than 128 notes at once. (Though 128 notes may seem to be more than enough, you may run short when playing a connected keyboard along with some densely arranged song data.)
Reverb, Chorus and/or Variation effects cannot be heard.	Check all Reverb-, Chorus- and Variation-related controls: Reverb Send, Chorus Send and Variation Send in Single Part controls (pages 107, 108); Reverb Return, Chorus Return and Variation Return (when Variation Connection is set to SYS) in All Part controls (pages 109, 110). Also check the individual effect settings; if no Type has been selected, or if the parameter settings are too low, there may be no effect sound.
The A/D input sound (mic, guitar, etc.) cannot be heard.	Make sure that the appropriate A/D Part (A/D1 or A/D2) has been turned on and that the A/D INPUT control is set to an appropriate level. Also for best results, make sure that the A/D input type (Mic, Guitar, Keyboard, Audio) is set to match the input you are using (pages 98-100).

Error Messages

Battery Low!

The battery voltage (for internal memory backup) may be too low. Bring the unit to your local Yamaha dealer or any other authorized Yamaha service personnel.

Illegal Data!

A data error resulted during reception of MIDI messages. Try transmitting the data again, or turn the MU128 off and back on again.

MIDI Buffer Full!

Too much MIDI data is being received by the MU128 at one time. Reduce the amount of data being sent to the MU128.

HOST is Offline!

This message appears when the host computer is not turned on, the connecting cable is not properly connected, or the sequencing software is not active.

SysEx Adrs ERROR!

The data of the received System Exclusive message is incorrect. Check the address of the message and try transmitting again.

SysEx Data ERROR!

The data of the received System Exclusive message is incorrect. Check the data of the message (as to whether it requires an MSB or LSB header) and try transmitting again.

SysEx Size ERROR!

The data of the received System Exclusive message is incorrect. Check the size of the message and try transmitting again.

Check Sum ERROR!

The checksum of the received System Exclusive message is incorrect. Check the checksum of the message and try transmitting again.

This Parameter Isn't Excl Data

The selected parameter has no System Exclusive value and cannot be displayed with the Show MIDI Data function.

No Parameter

The selected parameter cannot be displayed with the Show MIDI Data function.

Rcv CH Is OFF!

The selected parameter for use with the Show MIDI Data function cannot be converted to a MIDI message value since the Receive Channel for the Part is off. Set the Receive Channel to an appropriate value.

No RecallPerform!

This message appears if you use the Recall function (page 145) in the Performance Edit mode when there is no edited Performance data to be recalled.

Not Available

Drum Voices cannot be selected when the Sound Module mode is set to “PFM.”

Not Available with PLG

The selected XG Plug-in board does not have Voices for the selected Voice category.

PB Com ERROR!

- An error occurred in the communication between the MU128 and the XG Plug-in board. Turn off the power and check that the board is properly installed.
- The XG Plug-in board was unable to process incoming MIDI data, probably because too much data was received too quickly. If possible, avoid sending unnecessary data and reduce the amount of data sent to the MU128.

Select BANK Or PGM# First

This message appears if you use the Show MIDI Data function when the Sound Module mode is set to “PFM” and both the bank number and program number are selected by the cursors. (The Show MIDI Data function cannot display both values simultaneously.) Move the cursor to one parameter or the other (bank number or program number) and use the Show MIDI Data function to check each value individually.

Select drumS1→4 When You Edit

This message appears if you attempt to edit a Drum Voice for a Part whose Part mode has been set to “drum.” Set the Part mode to one of the drum setups (“drumS1 - S4”) in order to edit the Drum Voice.

Specifications

Tone Generation Method

AWM2 (Advanced Wave Memory 2)

Maximum Simultaneous Polyphony

128-note

Sound Module Modes

XG, TG300B, and Performance

Multi-timbral Capacity

64-Part (on 64 MIDI channels; with dynamic Voice allocation)

Internal Voice/Program Structure

Normal Voices

Total Voices 1342
XG mode 1149
TG300B mode 664

Drum Voices

Total Voices 47
XG mode 37
TG300B mode 10

Performance Programs

Up to four Voices plus all effect settings can be memorized to a Performance.
Preset Programs 100
User Programs 100

Effects

Seven sections of multi-effects: Reverb (12 Types), Chorus (14 Types), Variation (70 Types), Insertion 1/2 (43 Types), Multi EQ (4 Types), and Part EQ (1 Type)

Display

Custom back-lit LCD

Controls

VOLUME control; A/D INPUT level control; Mode select buttons: PLAY, UTIL (UTILITY), MODE, EDIT, EFFECT, EQ; other buttons: MUTE/SOLO, ENTER, EXIT, PART ⊖/⊕, SELECT ◀/▶, VALUE ⊖/⊕ Voice Category buttons, SELECT, PART GROUP; data dial; STAND BY/ON switch

Jacks and Terminals

Front panel: PHONES jack (stereo mini pin), A/D INPUT 1, 2 jacks (1/4" mono), MIDI IN-A terminal

Rear panel: INPUT L, R jacks (Left, Right); OUTPUT L, R jacks (Left, Right); DC IN jack; TO HOST terminal; HOST SELECT switch; MIDI IN-A/B, MIDI OUT, and MIDI THRU terminals; XG Plug-in Board expansion bay

Computer/MIDI Interface

Direct connection to host computer port (RS-232C, RS-422) ; MIDI terminals allow connection to MIDI sequencer or MIDI controller

Data Transfer (Baud) Rate

MIDI — 31,250 bps (bits per second)
Mac — 31,250 bps
PC-1 — 31,250 bps
PC-2 — 38,400 bps

Power Supply

Yamaha PA-6 AC Adaptor (included)

Dimensions (W × D × H)

219.5 × 229.5 × 91.1 mm (8-5/8" × 9" × 3-1/2")

Weight

1.9 kg (4 lbs., 3 oz.)

* *Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.*

Glossary

A/D input Abbreviation for analog-to-digital. The A/D inputs of the MU128 allow you to process analog inputs (such as a microphone, electric guitar, CD player, or another electronic instrument) with the digital effects of the MU128 and mix them with the internal Voices.

Assignable Controller 1 Certain functions on the MU128 (such as the Filter, Volume or Variation effect) can be changed in real time by controllers on a connected MIDI instrument. Assignable Controller 1 lets you determine which controller (for example: modulation wheel, breath controller, foot controller, etc.) is used for that purpose.

AWM2 Abbreviation for Advanced Wave Memory 2, an enhanced version of Yamaha's original tone generation system, featuring digital filters for superior sound.

bank A set of Voices or programs. The MIDI standard supports up to 128 banks, each of which can contain up to 128 Voices or programs.

edit Editing is the process of changing or adjusting the settings of the MU128.

EG Abbreviation for Envelope Generator, a common control on electronic instruments that affects the "shape" (or envelope) of the sound in time. The MU128 provides two types of EGs: one for level and the other for pitch.

Filter A control for affecting the frequency content of a sound. Filters are used to selectively cut or boost certain frequency ranges in the sound — subtly enhancing the sound, or dramatically changing its character. On the MU128, the Filter can be controlled in real time with the Assignable Controller 1.

General MIDI (GM) An addition to the MIDI standard which effectively ensures that any General MIDI-compatible song data can be properly played back on any General MIDI-compatible tone generator. The standard specifies that a GM-compatible tone generator must have at least 24-note polyphony, 16-part multi-timbral capacity and 128 standard voices. The MU128 exceeds this with 128-note polyphony, 64-part multi-timbral capacity and 1342 Voices.

host computer The controlling computer in a computer music system. The host computer is connected to the MU128 (via the TO HOST or MIDI terminals) and runs the software necessary for recording and playing back song data, which is reproduced by the internal sound sources and effects of the MU128.

LFO Abbreviation for low frequency oscillator, which generates a low frequency signal that is used to modulate certain aspects of the sound, such as pitch or level. Chorus, Flanger, Tremolo, Vibrato and other modulation effects use LFOs.

MIDI Acronym for Musical Instrument Digital Interface, a worldwide standard that allows MIDI-compatible instruments and devices to communicate with each other. For the instruments to communicate, they normally must be set to the same MIDI channel.

modulation wheel A controller found on most MIDI keyboards which is normally used to control pitch and other types of modulation. It can be used to control various aspects of the MU128 sound by proper setting of the Assignable Controller 1. (See page 79.)

multi-timbral This refers to the capacity of a tone generator to produce several different sounds at once. The MU128 is a 64-Part multi-timbral tone generator, capable of playing 64 different instrument Voices at once, each over an independent MIDI channel.

Mute The Mute function of the MU128 allows you to silence one Part to hear how all of the other Parts sound without it.

parameter The word "parameter" refers to any adjustable setting of an electronic musical instrument. For example, the Vibrato function of the MU128 has three parameters: Rate, Depth, and Delay.

Part The Voices of the MU128 are assigned to separate Parts, and up to 64 Parts can sound simultaneously. Parts are similar to the various instrumental parts in music: e.g., piano part, guitar part, etc.

Performance In the MU128, "Performance" refers to an operation mode and the programs that are used in that mode. A Performance can contain up to four different Parts, all controllable over the same MIDI channel. The preset Performances of the MU128 are special multi-Part sound programs designed particularly for live performance and studio recording purposes.

Pitch Bend A function found on virtually all MIDI keyboards (usually controlled with a pitch bend wheel) that allows the pitch to be raised or lowered continously. The Pitch Bend Control parameter on the MU128 allows you to set the range over which the pitch can be changed.

polyphony The number of notes that can be sounded simultaneously by an electronic instrument. The MU128 has 128-note polyphony, ensuring that even the most complex song data will play back completely and accurately, with no "note robbing."

port To answer the need for more MIDI channels (the limit is 16), many MIDI interfaces offer two or more MIDI ports, each of which can address 16 MIDI channels. The MU128 is equipped with four independent MIDI ports (A through D), providing 64-channel operation. The four ports are addressable via the TO HOST computer interface.

Portamento A function found on early synthesizers that creates a continuous pitch glide between successively played notes. On the MU128, the time of the pitch glide can be adjusted.

return Related to effect operation, "return" refers to the effect-processed signal that is returned to the overall sound mix. For example, the parameter Reverb Return determines the amount of Reverb-processed signal that is blended with the overall sound mix of the MU128. ("Return" is the companion function of "send" below.)

send Related to effect operation, "send" refers to the signal that is sent to an effect for processing. For example, the parameter Reverb Send determines the degree to which an individual Part is processed with the Reverb effect. ("Send" is the companion function of "return" above.)

sequencer A device used for recording, editing and playing back of MIDI data. Sequencers are generally of two types: "dedicated" sequencer units, and computer-based sequencing software. The MU128 can be used with either type.

Solo The Solo function of the MU128 allows you to isolate a single Part, to hear how that Part sounds by itself.

Sound Module mode The MU128 has three Sound Module modes, and these determine the basic operation of the unit as a tone generator. Two Multi modes (XG and TG300B) and a Performance mode (PFM) are available.

tone generator An electronic instrument that functions as a MIDI-controllable sound source. For the most part, the term "tone generator" refers to those devices that have no keyboard or other controller, but are meant to be connected to and played from a separate keyboard or computer.

Variation In the MU128, "Variation" refers to the special section of various effects, including Reverb, Delay, Chorus, and many others. The Variation effects total 70, and can be used simultaneously with the other effect sections of the MU128: Reverb, Chorus, Insertion 1, 2, and EQ.

velocity The speed at which a note is played (for example, on a keyboard). Normally, the faster (or harder) a key is struck, the higher the corresponding note's velocity — and, hence, the louder the sound produced. The MU128 features a variety of velocity-related parameters that provide extensive control over the velocity response of the Voices, and even allow you to set up sophisticated velocity splits, in which the Voices change in response to playing velocity.

Vibrato Vibrato is a quavering, vibrating sound, and is produced in the MU128 by regularly modulating the pitch of a Voice. The speed and depth of the Vibrato can be adjusted, as well as the time it takes before the Vibrato effect is applied.

Voice The basic sound unit (or sound program) of the MU128. There are a total of 1342 Voices available on the MU128.

XG A format created by Yamaha which significantly improves on the General MIDI standard by providing a greater variety of high-quality Voices and enhanced effect operation.

English

Index

A

A/D input 97
A/D Part 97, 139
A/D Part Lock 158
All Part control 70, 109, 132
Alternate Group (Drum Setup) 130
Assignable Controller 1 ..... 79, 124, 139
Assignable Controller 1 Amplitude Control 125, 139
Assignable Controller 1 Control Change Number 124, 139
Assignable Controller 1 Filter Control 124, 139
Assignable Controller 1 Insertion 1/2 Control 151
Assignable Controller 1 LFO Filter Modulation Depth 139
Assignable Controller 1 Variation Control 150

B

Bank (Performance mode) 39, 134
Bank Number (Multi mode) 43, 45, 105

C

Chorus 148
Chorus Pan 148
Chorus Return (Multi mode) 109
Chorus Return (Performance mode) 133
Chorus Send (Drum Setup) 128
Chorus Send (Multi mode) 107
Chorus Send (Performance mode) 135
Chorus Type 148
Common parameters 137
computer, connecting cables 101
computer, connecting MU128 with 36
computer, IBM PC and clones 36
computer, Macintosh 36
connections, audio 26
connections, MIDI 32
Contrast 159
Copy 142

D

Demo song 30, 169
Detune 120
Device number 157
Display Bank Select 161
Drum Setup controls 126
Dry Level 122
Dry/Wet (Variation) 150
Dry/Wet Balance (Insertion) 151
Dump Interval 160
Dump Out functions 162

E

Effect Edit mode 146
Effect connections (System and Insertion) 152
EG (Envelope Generator) 113,141
EG Attack (Drum Setup) 129
EG Attack Time 114
EG Decay 1 (Drum Setup) 129
EG Decay 2 (Drum Setup) 129
EG Decay Time 114
EG Release Time 114
EQ Frequency parameters 155
EQ High Frequency 116, 129
EQ High Gain 116, 129
EQ Low Frequency 116, 129
EQ Low Gain 116, 129
EQ Type 94,155
Equalizer (EQ) 92, 94, 116, 141, 155
Expression 107

F

Filter 111, 141

H

HPF Cutoff Frequency (Drum Setup) 129
HPF Cutoff Frequency (Multi mode) 112

I

Initialize functions 166
Insertion connection 154
Insertion 1, 2 effects 151
Insertion Part 151
Insertion Type 151

L

Level (Drum Setup) 127
LPF Cutoff Frequency (Drum Setup) 128
LPF Cutoff Frequency (Multi mode) 112
LPF Resonance (Drum Setup) 128
LPF Resonance (Multi mode) 112

M

Master Attenuator 109
Master Tune 157
Master Volume 109
MIDI channel 119
MIDI data flow (diagram) 34, 37
MIDI data storage device 33
MIDI devices, connecting to 32
MIDI IN-A Terminal 157
MIDI keyboard, playing the MU128 with 32
MIDI keyboard, selecting Voices with 48
MIDI, Receive Channel 119
Modulation Wheel — LFO Filter Modulation Depth 139
Modulation Wheel — LFO Pitch Modulation Depth 124, 138
Mono/Poly Mode 121

MU100 Exclusive Voice 44
Multi Edit mode 61,111
Multi mode 58, 104
Multi Mode Equalizer Lock 158
Mute 95
Mute Lock 158

N

Note Limit High 122
Note Limit Low 122
Note Shift (Multi mode) 108
Note Shift (Performance mode) 136

O

Others parameters 118, 141

P

Pan (Drum Setup) 127
Pan (Multi mode) 107
Pan (Performance mode) 135
Part Assign 177
Part Mode 120
Parts, selecting 43
Performance Bank 132
Performance Edit mode 74, 137
Performance Receive Channel 157
Performance mode 69,131
Performance Name 138
Performance Number 132
Performance Pan 132
Performance Part control 132
Performance Volume 132
Performances, selecting Preset or Internal 39
Pitch Bend Control 123, 139
Pitch Coarse (Drum Setup) 127
Pitch EG 114
Pitch EG Attack Time 115
Pitch EG Initial Level 114
Pitch EG Release Level 115
Pitch EG Release Time 115
Pitch Fine (Drum Setup) 127
Plug-in System 173
Portamento Switch 121, 138
Portamento Time 121, 138
Program (Voice) Number (Multi mode) 106
Program (Voice) Number (Performance mode) ... 135

R

Recall Function 145
Receive Bank Select 159
Receive Channel 119
Receive Note Off (Drum Setup) 130
Receive Note On (Drum Setup) 130
Receive System Exclusive 159
Receive System On 159
Resonance (LPF; Drum Setup) 128
Resonance (LPF; Multi mode) 112
Reverb 147
Reverb Pan 147
Reverb Return (Multi mode) 109
Reverb Return (Performance mode) 133
Reverb Send (Drum Setup) 127
Reverb Send (Multi mode) 107
Reverb Send (Performance mode) 135
Reverb Type 147

S

Send Chorus to Reverb 148
Send Variation to Chorus 150
Send Variation to Reverb 150
Show MIDI Data 171
Single Part control (Multi mode) 59, 105
Single Part control (Performance mode) 72, 134
Solo 95
Sound Module mode 6, 170
Store 143
System connection 153
System functions 157
System Transpose 133

T

TG300B mode 21
Thru Port 160
Transpose 110

U

Utility mode 156

V

Variation 149
Variation Connection 150
Variation Pan 150
Variation Return (Multi mode) 110
Variation Return (Performance mode) 133
Variation Send (Drum Setup) 128
Variation Send (Multi mode) 108
Variation Send (Performance mode) 136
Variation Type 149
Velocity LPF Cutoff Frequency 128
Velocity Limit High 123, 136
Velocity Limit Low 123, 136
Velocity Pitch Sensitivity 127
Velocity Sensitivity Depth 122, 136
Velocity Sensitivity Offset 123, 136
Vibrato 117, 141
Vibrato Delay 117
Vibrato Depth 117
Vibrato Rate 117
Voice Map 161
Voice Category 43, 105, 134
Voices, selecting 43, 45, 48
Volume (Multi mode) 107
Volume (Performance mode) 135

X

XG mode 21, 42
XG Plug-in System 173

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