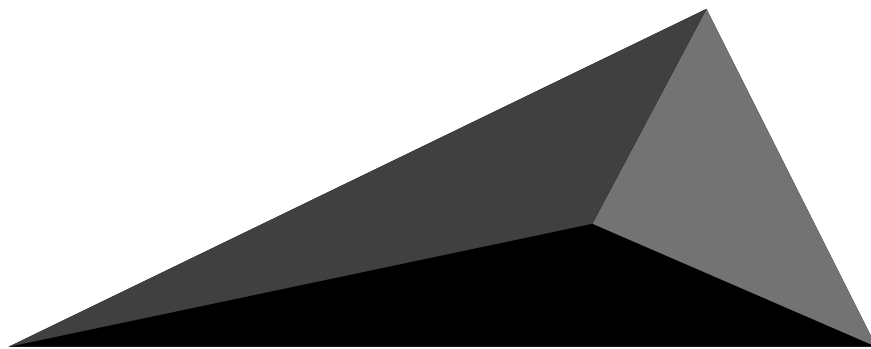


Parameter Guide



T R I N I T Y
M U S I C W O R K S T A T I O N D R S
TRINITY / TRINITY V3 / TRINITY V3 pro / TRINITY V3 proX
TRINITY plus / TRINITY pro / TRINITY proX



Advanced Control Combined Synthesis System



Multi Oscillator Synthesis System



TouchView
Graphical User Interface

KORG

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

IMPORTANT SAFETY INSTRUCTIONS

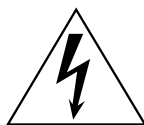
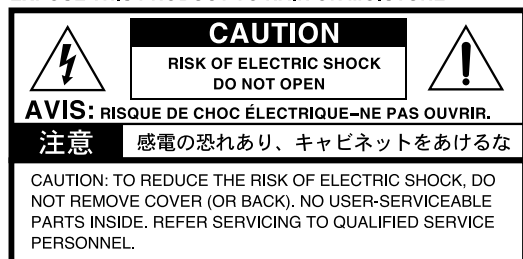
WARNING—When using electric products, basic precautions should always be followed, including the following:

- 1) Read all the instructions before using the product.
- 2) Do not use this product near water—for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
- 3) This product should be used only with a cart or stand that is recommended by the manufacturer.
- 4) This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period 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.
- 5) The product should be located so that its location or position does not interfere with its proper ventilation.
- 6) The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
- 7) The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
- 8) The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
- 9) Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
- 10) The product should be serviced by qualified service personnel when:
 - a) The power-supply cord or the plug has been damaged; or
 - b) Objects have fallen, or liquid has been spilled onto the product; or
 - c) The product has been exposed to rain; or
 - d) The product does not appear to operate normally or exhibits a marked change in performance; or
 - e) The product has been dropped, or the enclosure damaged.
- 11) Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

SAVE THESE INSTRUCTIONS

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.



The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER —Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product—if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

THE FCC REGULATION WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the user's authority to operate this equipment.

CE mark for European Harmonized Standards

CE mark which is attached to our company's products of AC mains operated apparatus until December 31, 1996 means it conforms to EMC Directive (89/336/EEC) and CE mark Directive (93/68/EEC).

And, CE mark which is attached after January 1, 1997 means it conforms to EMC Directive (89/336/EEC), CE mark Directive (93/68/EEC) and Low Voltage Directive (73/23/EEC).

Also, CE mark which is attached to our company's products of Battery operated apparatus means it conforms to EMC Directive (89/336/EEC) and CE mark Directive (93/68/EEC).

IMPORTANT NOTICE FOR THE UNITED KINGDOM

WARNING—THIS APPARATUS MUST BE EARTHED

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

- the wire which is coloured green and yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol \oplus , or coloured green or green and yellow.
- the wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
- the wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Back-up Battery

The TRINITY uses a back-up battery to prevent memory loss when the power is turned off. If the display shows "Battery Low", the battery should be replaced. Consult the nearest Korg Service Center or dealer.

TRINITY Series Precaution

Data in memory may sometimes be lost due to incorrect user action. Be sure to save important data to floppy disk.

Korg will not be responsible for damages caused by data loss.

Trademarks

MS-DOS is a registered trademark of Microsoft Corporation.

All trademarks or registered trademarks are the property of their respective holders.

About the TRINITY's manuals

How the TRINITY's manuals are organized and how to use them

This page explains the contents of each manual, and how to use them. First you should read the **Basic Guide**, and learn the basic ideas and procedures that you need to know.

These manuals assume that you have a basic knowledge of synthesizers and MIDI.



The TRINITY's manuals discuss the **TRINITY**, **TRINITY V3**, **TRINITY V3 pro**, and **TRINITY V3 proX**. If the Solo synthesizer option is installed in your instrument, read any references to "bank M" as "bank S."

- * In the TRINITY's manuals, parameter names, values are merely examples and may not always match the actual display you are working on.

Basic Guide

"**STEP 1**" explains each item on the front and rear panels, how to make connections, basic operation, and how each mode operates.

"**STEP 2**" explains the basics of playing the **TRINITY** (selecting sounds, playing the demo songs, and convenient performance functions).

"**STEP 3**" explains the basics you need to know before editing your own sounds.

Other information on troubleshooting and MIDI is also provided.

- ☞ After you finish reading **STEP 2**, read **STEP 3** as necessary. The **Basic Guide** explains the basics of operation. To take full advantage of the **TRINITY**, you will need to thoroughly understand the contents of the **Basic Guide**, and then get plenty of hands-on experience, operating the **TRINITY** to learn for yourself how the sounds change.

Parameter Guide

The Parameter Guide explains the operation, settings, and points that you need to be aware of for each parameter, organized by the tab pages of each mode.

- ☞ Refer to this guide when an unfamiliar parameter appears, or when you want to learn about the functions of the **TRINITY series** in more detail.

Effect Guide

For each of the effects, this guidebook explains the parameter settings and points that you need to be aware of.

- ☞ Refer to the Effect Guide when an unfamiliar parameter appears, or when you want to learn about the function of the selected effect in more detail.

MOSS-TRI DSP Synthesizer Guide

This explains the setting and operation of the **bank M** program parameters on the **TRINITY V3**, **TRINITY V3 pro** and **TRINITY V3 proX**, organized by each tab page.

Solo Synthesizer Guide

This explains the setting and operation of the **bank S** program parameters on the **TRINITY V3**, **TRINITY V3 pro** and **TRINITY V3 proX**, organized by each tab page.

Voice Name List, Voice Name List for V3

This contains name lists of the preloaded (factory preset) combinations, programs, multi-samples, and drum samples.

- ☞ Refer to these lists when you wish to see a list of the preloaded sounds.

How to use this Parameter Guide

The explanatory material in this manual is formatted as follows.

(Example)

2. Program Edit mode

Mode name, page no. → **Program Edit P1**
 Here you can make basic settings for a program, and make basic settings for the oscillator(s) that will be used.

Page no. → **1-1: Prog Basic (Program Basic)**

Tap key no. →

Tab name →

LCD screen

Page menu di

Page menu

1-1a: Program Name

The name of the program selected in Program Play mode will be displayed.
 Press the text edit button to access a screen in which you can change the program name (⇨ Basic Guide, page 6).

Symbol indicating important information →

If you wish to write the renamed program, be sure to use the Write Program operation (⇨ Basic Guide, page 23). If you select another program or turn the power off, your renamed program name will be lost.

1-1b: Category

You can assign two categories to each program. In Program Play mode, Combination Play mode, and Sequencer mode you can search for a program using these categories.

A (Category A) [Keyboard...Drums/Perc.]
 With the factory settings, this will be the instrument name, but you can modify it in Global mode "4-1: Category Program A" (⇨ page 141 in this manual).

B (Category B) [User Category P01...P16]
 The factory set category names can be modified in Global mode "4-2: Category Program B" (⇨ page 141 in this manual).

Parameter val (adjustable ra)

1-1c: Oscillator Mode [single/double/drums]

Select the basic type of the program; whether it will use 1 oscillator, 2 oscillators, or a drum kit.

If you modify this setting, you may need to re-select the multisample (or drum kit) in "1-2: OSC Basic."

If **single** is selected, the program will use 1 oscillator (Oscillator 1, Filter 1, Amplifier 1). The program will be able to play up to 32 notes simultaneously.

If **double** is selected, the program will use 2 oscillators (Oscillator 1/2, Filter 1/2, Amplifier 1/2). This allows you to create a more complex sound, but the program will only be able to play up to 16 notes simultaneously.

- Other symbols used in this manual



This symbol appears at the left of explanatory material related to MIDI.



This mark appears at the right of the parameter name for parameters which can be selected as a source for Alternate Modulation.

- In this manual, "CC#" is an abbreviation of Control Change Number.
- Numbers related to MIDI messages in square brackets [] are in hexadecimal notation.

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1. Program Play mode

Program Play P1

The programs available for selection on the **TRINITY series** will depend on the model you have, on whether the Playback Sampler/Flash ROM option has been added, and on whether the MOSS-TRI option is installed. For details refer to the Basic Guide, page 9, "[BANK] key". If no optional items have been installed, the **TRINITY** provides **256 programs** (0–127 in each bank A and B). The **TRINITY V3**, the **TRINITY V3 pro**, and the **TRINITY V3 proX** provide **320 programs** (0–127 in each bank A and B, and 0–63 in bank M).

A list of the factory preset programs is given in the **Voice Name List**.

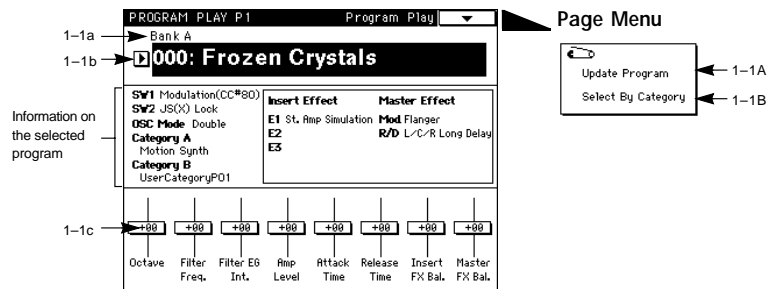
1-1: Program Play

Here you can select programs and make simple edits.

The center of the LCD shows the functions of the front panel SW1/SW2 switches, the program category, and information about the selected program (oscillator mode, etc.).

When you select a Performance Editor function (1-1c), Performance Editor information will appear in the center right of the LCD.

MIDI In Program Play mode, all MIDI data is transmitted on the **Global MIDI Channel** specified in Global mode "1-1c: MIDI Channel/Local Control On/Note Receive" (☞ page 130 in this manual).



1-1a: Bank

[Bank A...M]

Use the front panel [BANK] key to select the bank.

Banks A, B, C, and D are the **ACCESS tone generator programs**, and bank M is for the **MOSS tone generator programs**.

On the **TRINITY series**, banks C and D can be selected only if Playback Sampler/Flash ROM option is installed. Bank M can be selected only if the MOSS-TRI option is installed.

1-1b: Program Number/Program Name

[0...127]

Use the VALUE controller or a foot pedal to select programs.

For details on using a foot pedal to select programs, or using Program Change messages from an external MIDI device to select programs, refer to Basic Guide page 13 "2. Select and play a program."

If the MOSS-TRI option is installed, you can select programs 0–63 from bank M. If the Playback Sampler/Flash ROM option is installed as well, you can select programs 0–127 from bank M.

1-1c: Performance Editor

The Performance Editor allows you to edit major parameters without having to move to Program Edit mode. This is a "macro" editing function which simultaneously modifies multiple parameters

within a program, and provides an easy way to shape the overall character of the sound. This can be used when you wish to adjust the sound as you play, or to make rough settings when creating an original sound.

Edits you perform here will affect the values of the program parameters in the edit buffer. When you select a Performance Editor function (1-1c), the Performance Editor data will be displayed in the center right of the LCD, and you can see the value changes that result from your editing. If you want to keep your edits, use the Program Write operation. (⇒ Basic Guide, page 23)



The Performance Editor adjusts the values that are set for the program parameters. The Performance Editor cannot modify a value beyond the range of the program parameters. Since these are rough edits, the balance between parameters may sometimes be affected.



If you check the Global mode “2-1a: Filter” (⇒ page 136 in this manual) parameter Enable Exclusive, parameter changes will be transmitted as MIDI Exclusive messages each time you operate the Performance Editor.

If these messages are received by another **TRINITY series** instrument (on which the Enable Exclusive parameter is checked), that instrument will execute the corresponding Performance Editor operations.

Octave

[−3...0...+3]

A setting of +1 will raise the pitch 1 octave. It is not possible to raise the pitch above 4', or to lower the pitch below 32'.

Filter Freq. (Filter Cutoff Frequency)

[−10...0...+10]

A setting of +1 will raise the cutoff frequency value by 5.

Filter EG Int. (Filter EG Intensity)

[−10...0...+10]

With a setting of +1, the value of the parameters that adjust the depth of modulation applied by the Filter EG to the cutoff frequency will each be increased by 5, causing the Filter EG to have a greater influence on the cutoff frequency.

This parameter will not change the polarity (sign) of the parameter values. For example, if the Performance Editor value is set to −2, the parameter values will be decreased by 10, but if the original parameter value is 8, the resulting parameter value will be 0 and not −2.

Amp Level

[−10...0...+10]

A setting of +1 will increase the output level value by 5, producing a louder volume.

Attack Time

[−10...0...+10]

A setting of +1 will increase the Amp EG attack time values by 5. For your reference, the LCD will also display the attack time of the filter EG.

Release Time

[−10...0...+10]

A setting of +1 will increase the Filter EG and Amp EG release time values by 5.

Insert FX Bal. (Insert Effect Dry/FX Balance)

[−10...0...+10]

A setting of +1 will increase the value of the FX side by 5, so that the insert effect will be applied more deeply.

Master FX Bal. (Master Effect Dry/FX Balance)

[−10...0...+10]

A setting of +1 will increase the value of the FX side by 5, so that the master effect will be applied more deeply.

Octave	Octave of Oscillator 1, 2
Filter Freq.	Cutoff Freq of Filter 1A, 1B, 2A, 2B
Filter EG Int.	Filter EG Intensity of Filter 1A, 1B, 2A, 2B Filter EG Int Mod By Velocity of Filter 1A, 1B, 2A, 2B Alternate Modulation Intensity of Filter 1, 2
Amp Level	Output Level of Amp 1, 2
Attack Time	Attack Time of Amp 1, 2
Release Time	EG Release Time of Filter 1, 2 EG Release Time of Amp 1, 2
Insert FX Bal.	Dry/FX Balance of Insert Effect
Master FX Bal.	Dry/FX Balance of Master Effect

▼ Page Menu Command

1-1A: Update Program

This writes the edited program into the currently selected program number.

Be sure to write important programs. If you turn the power off or select another program before writing the data, it cannot be recovered.

Refer to Basic Guide page 23, "9. Writing a Program or Combination".

1-1B: Select By Category

This allows you to select programs using the categories that were specified in Program Edit mode.

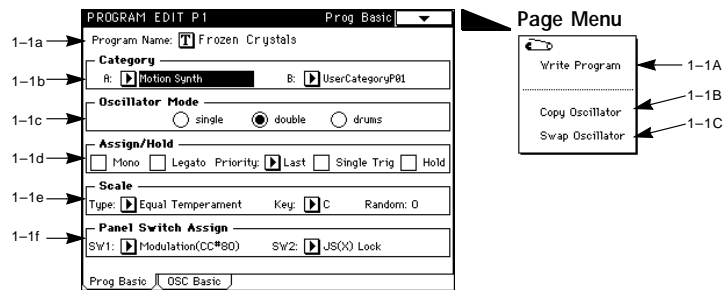
For details refer to Basic Guide page 26, "11. Selecting by category."

2. Program Edit mode

Program Edit P1

Here you can make basic settings for a program, and make basic settings for the oscillator(s) that will be used.

1-1: Prog Basic (Program Basic)



1-1a: Program Name

The name of the program selected in Program Play mode will be displayed.

Press the text edit button to access a screen in which you can change the program name (⇨ Basic Guide, page 6).



If you wish to write the renamed program, be sure to use the Write Program operation (⇨ Basic Guide, page 23). If you select another program or turn the power off, your renamed program name will be lost.

1-1b: Category

You can assign two categories to each program. In Program Play mode, Combination Play mode, and Sequencer mode you can search for a program using these categories.

A (Category A)

[Keyboard...Drums/Perc.]

With the factory settings, this will be the instrument name, but you can modify it in Global mode "4-1: Category Program A" (⇨ page 141 in this manual).

B (Category B)

[User Category P01...P16]

The factory set category names can be modified in Global mode "4-2: Category Program B" (⇨ page 141 in this manual).

1-1c: Oscillator Mode

[single/double/drums]

Select the basic type of the program; whether it will use 1 oscillator, 2 oscillators, or a drum kit.



If you modify this setting, you may need to re-select the multisample (or drum kit) in "1-2: OSC Basic."

If **single** is selected, the program will use 1 oscillator (Oscillator 1, Filter 1, Amplifier 1). The program will be able to **play up to 32 notes simultaneously**.

If **double** is selected, the program will use 2 oscillators (Oscillator 1/2, Filter 1/2, Amplifier 1/2). This allows you to create a more complex sound, but the program will only be able to **play up to 16 notes simultaneously**.

If **drums** is selected, the program uses 1 oscillator as when single is selected, but a drum kit will be used instead of a multisample for Oscillator 1.

1-1d: Assign/Hold

Assign

Mono

If Mono is **checked**, the program will be monophonic.

If Mono is **not checked**, the program will be polyphonic.

Monophonic means that the program will produce only 1 note at a time. Polyphonic means that chords can be played.

Legato

This setting will be available only if Mono is checked.

If Legato is **checked**, the program will be single-triggered.

If Legato is **not checked**, the program will be multi-triggered.



If single triggering is used, there may be cases in which the correct pitch is not produced, depending on the multisample and the keyboard position.

Priority

This setting will be available only if Mono is checked.

It determines which note will sound when two or more keys are pressed simultaneously.

Priority will be given to the lowest note for a setting of **Low**, to the highest note with a setting of **High**, and to the last-pressed note with a setting of **Last**.

Single Trig (Single Trigger)

This setting will be available only if Mono is not checked (i.e., for a **polyphonic** program).

If this is **checked**, repeated strikes of the same note will be sounded only after the previous note is turned off, meaning that notes will not overlap.

Hold

[On/Off]

If Hold is **checked**, Hold will be On.

If Hold is **not checked**, Hold will be Off.

When **Hold is On**, the sound will continue as though the key remained pressed even after the key is released. Unless the "5-2 (5-4): Amp 1(2) EG" setting for Amp EG Sustain Level is set to 0, the sound will continue sounding.

This setting is appropriate for drums, so if you have selected "drums" for "1-1c: Oscillator Mode" you should set **Hold On**. For normal programs, set **Hold Off**.

1-1e: Scale

Type (Scale Type)

[Equal Temperament...All Range User Scale]

This selects the basic scale of the internal tone generator. Settings for the User Scales can be made in Global mode 3-1: User Scale" (☞ page 140).

Equal Temperament is the most commonly used scale. Each chromatic step is spaced at an equal interval.

Pure Major is a scale in which the principal major chords of the selected key will be perfectly in tune.

Pure Minor is a scale in which the principal minor chords of the selected key will be perfectly in tune.

Arabic is a scale that includes 1/4 tones and is used in Arabian music.

Pythagoras is a scale derived from musical theories of ancient Greece, and is especially suitable for melodic playing.

Werkmeister is an equal tempered scale that was used in the later Baroque period.

Kirnberger is a scale that was developed in the 18th century, and used mainly by harpsichords.

Slendro is a scale which divides the octave into 5 notes, and is used in Indonesian Gamelan music. When the Scale Key is set to C, use the notes C, D, F, G, and A. (The other keys are tuned to equal temperament.)

Pelog is a scale which divides the octave into 7 notes, and is used in Indonesian Gamelan music.

When the Scale Key is set to C, use the white keys. (The black keys are tuned to equal temperament.)

Octave User Scale allows you to specify in Global mode "3-1b: Octave Notes" (☞ page 140 in this manual) the tuning of each note in an octave. The default setting is the scale used for combination A054: Real Harp Gliss.

Stretch is a tuning for acoustic piano.

All Range User Scale allows you to specify in Global mode “3-1a: All Notes” (☞ page 140 in this manual) the tuning of each note in the entire range (C-1 to G9).

Key (Scale Key)

[C...B]

Specify the tonic note of the selected scale.

Random

[0...7]

As this value is increased, the pitch at which a note is sounded will become increasingly erratic.

Normally you will set this to **0**.

This setting is useful when you wish to simulate instruments which tend to have a naturally inaccurate pitch, such as analog synthesizers or acoustic instruments.

1-1f: Panel Switch Assign

These settings assign the functions of the front panel switches SW1 and SW2 (assignable panel switches 1 and 2).

SW1

[JS(X)Lock...Modulation (CC #80)]


SW2

[JS(X)Lock...Modulation (CC #81)]

The same functions are available for assignment to SW1 and SW2 (except for Modulation), as follows.

If you use one of these switches to **Lock** a controller such as the joystick, ribbon controller, or aftertouch, the selected controller will lock (LED lit) or unlock (LED unlit) each time you press SW1 (or SW2).

If you press SW1 (or SW2) while operating a controller, the controller value will be fixed at the current value, and will not change further. For example if you select JS(+Y) Lock, and press SW1 (or SW2) when the joystick has been moved away from you, the joystick (+Y) movement will be locked (held) at that position, so that modulation will continue to apply even after the joystick is returned to its normal position. By moving the joystick in the (-Y) direction you can then apply two types of modulation at once.


 When a controller is locked, that controller will not transmit MIDI messages, but the corresponding MIDI message will still be received.

With a setting of **Octave Up**, the pitch will alternate between a pitch of one octave higher (LED lit) and the normal pitch (LED unlit) each time you press SW1 (or SW2).


With a setting of **Octave Down**, the pitch will alternate between a pitch of one octave lower (LED lit) and the normal pitch (LED unlit) each time you press SW1 (or SW2).

With a setting of **Portamento Off**, the portamento effect will alternate on (LED unlit) and off (LED lit) each time you press SW1 (or SW2).

This is available only for the bank M programs.

 CC#65 will be transmitted each time this is turned on/off (OFF value is 0, ON value is 127).

If **Modulation** is selected, the switch can be the source for Alternate Modulation or Effect Dynamic Modulation. This is the only function which differs between SW1 and SW2; SW1 is CC#80, and SW2 is CC#81.

 CC#80 (or CC#81) will be transmitted each time the switch is turned on/off (OFF value is 0, ON value is 127).



Portamento Off will have no effect unless you are using a program from bank M (selected in Program Play mode). On a **TRINITY** in which the MOSS-TRI option is not installed, the Portamento OFF is just to turn portamento on/off on an external device.

▼ Page Menu Command

1-1A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, "9. Writing a program or combination."

1-1B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

1-1C: Swap Oscillator

This command exchanges the settings of oscillator 1 and 2 within the program being edited.



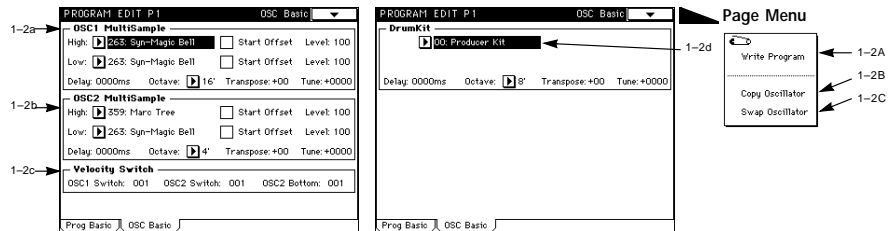
If Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

1-2: OSC Basic (Oscillator Basic)

Here you can select the multisample or drum kit (the basic waveform that is the core of the program) used by oscillators 1 and 2. **375 types** of multisamples and **12 types** of drum kits are available for selection.

The screen on the left shows the LCD when “1-1c: Oscillator Mode” is set to “double.” If “single” is selected, “1-2b: OSC2 Multisample” will not be displayed.

The screen on the right shows the drum kit display that appears when “1-1c: Oscillator Mode” is set to “drums.”



1-2a: OSC1 Multisample

This selects the multisample.

You can select different multisamples for High and Low, and use velocity to switch between them. You can also adjust the sample's start point and level for High and Low.

High

[0...374]

The multisample selected here will be sounded by velocities greater than the OSC1 Switch setting in “1-2c: Velocity Switch.” If you do not wish to use velocity to switch multisamples, set “OSC1 Switch” to 1, and select only the High multisample.



Since each multisample has an upper limit for the range that it can sound, playing very high notes may sometimes produce no sound.

Low

[0...374]

The multisample selected here will be sounded by velocities less than the OSC1 Switch setting in “1-2c: Velocity Switch.”

Start Offset

This determines the point from which a multisample will be started when it is played.

If this is **checked**, the multisample will be started from the point fixed for each multisample.

If this is **unchecked**, the multisample will be started from the beginning of the waveform.

Level (Multisample Level)

[0...127]

This sets the level of the multisample.



For some multisamples, high settings of this value may cause the sound to distort when chords are played. In such cases, lower the level.

Delay (Delay Time)

[0ms...5000ms, KeyOff]

This sets the delay from the Note-on until the sound begins.

With a setting of **KeyOff**, the sound will begin at Note-off. This is useful for recreating certain nuances such as the sound of the keys being released on a harpsichord. In this case, set the Sustain Level of the Amp EG to 0.

Octave

[32'...4']

This sets the basic pitch in steps of one octave. The standard octave of each multisample is 8'.

Transpose	[−12...+12]
Sets the pitch in chromatic steps over a range of ±1 octave.	
Tune	[−1200...+1200]
Adjusts the pitch in units of 1 cent (a chromatic step = 100 cents) over a range of ±1 octave. To change the pitch more than a chromatic step, you will normally use the Transpose setting. However if you wish to produce an intentionally “stretched” sound (like the sound produced by using pitch bend to raise the pitch), use the Tune setting.	

1-2b: OSC2 Multisample

These parameters will appear if “1-1c: Oscillator Mode” is set to **double**. This multisample will not sound for velocity values less than the value specified in “1-2c: Velocity Switch” for OSC2 Bottom.

For the function and settings of these parameters, refer to “1-2a: OSC1 Multisample”.

1-2c: Velocity Switch

OSC1 Switch (OSC1 Velocity Switch) [1...127]

This velocity value will determine the point at which the High and Low multisamples specified for oscillator 1 in “1-2a: OSC1 Multisample” will be switched.

Velocities above the value specified here will sound the High multisample.

OSC2 Switch (OSC2 Velocity Switch) [1...127]

This parameter will be displayed if “1-1c: Oscillator Mode” is set to **double**.

This velocity value will determine the point at which the High and Low multisamples specified for oscillator 2 in “1-2b: OSC2 Multisample” will be switched.

Notes with velocity values higher than this setting will sound the multisample specified for High.

OSC2 Bottom (OSC2 Velocity Switch Bottom) [1...127]

This parameter will be displayed if “1-1c: Oscillator Mode” is set to **double**.

Velocities above the value specified here will sound the multisample of oscillator 2.



If this value is set higher than the OSC2 Switch setting, the Low multisample of oscillator 2 will never sound.

1-2d: OSC1 Drumkit

Drumkit [0...12]

Selects the drumkit.

Delay (Delay Time) [0ms...5000ms, KeyOff]

This sets the delay time from note-on until when the note sounds. With a setting of **KeyOff**, the sound will begin at note-off. In this case, set the Amp EG Sustain Level to 0.

Octave [4'...32']

Specify the basic pitch of the oscillator in steps of one octave. When using a drumkit, be sure to set this parameter to **8'**.



When editing a drumkit program, be absolutely sure to set this parameter to **8'**. With other settings, the keyboard assignments of the drumkit will be thrown off.

Transpose [−12...+12]

This will adjust not the pitch but the location of the assigned drum kit.

If you do not need to change this, leave it set at **0**.

Tune [−1200...+1200]

This adjusts the pitch in units of 1 cent.

Pitch settings for each drum sound in a drum kit can be made in Global mode “5-1: Drumkit” (page 143 in this manual).

▼ Page Menu Command

1-2A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, "9. Writing a program or combination."

1-2B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

1-2C: Swap Oscillator

This command exchanges the settings of oscillator 1 and 2 within the program being edited.



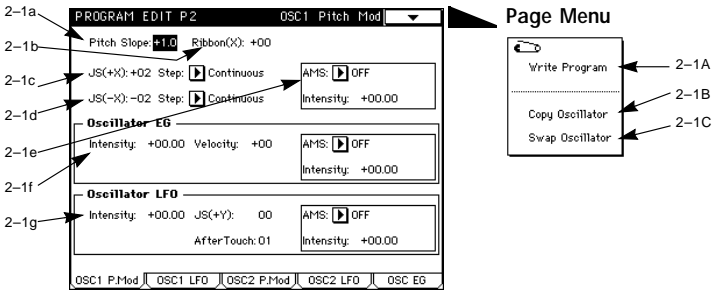
If an Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

Program Edit P2

The **TRINITY series** contains two oscillators. Here you can make pitch modulation settings for oscillators 1 and 2.

2-1: OSC1 Pitch Mod (Oscillator Pitch Modulation)

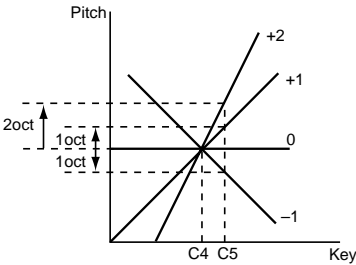
These settings determine the relation between keyboard position and the pitch of oscillator 1 ("2-1a"), and make settings for six controllers that can affect the pitch of oscillator 1 ("2-1b" through "2-1g").
"2-1b" through "2-1e" adjust the depth of pitch control for each controller. "2-1f" adjusts the amount of pitch change produced by the oscillator EG. "2-1g" controls the amount of pitch change produced by the oscillator LFO.



2-1a: Pitch Slope [-1.0...+2.0]

Normally this will be set at +1.0.
With positive (+) settings, playing higher on the keyboard will produce increasingly higher pitches. With negative (-) settings, playing higher on the keyboard will produce increasingly lower pitches.
With a setting of 0, keyboard position will not affect the pitch, and all keys will play the C4 pitch.

Keyboard tracking settings and the resulting pitch



2-1b: Ribbon (X) [-12...+12]

This determines how the ribbon controller will affect the pitch. One octave is 12 units.
Pressing on the right half of the ribbon controller will raise the pitch with positive (+) settings, and lower the pitch for negative (-) settings. For example, if this is set to +12 and you press the right end of the ribbon controller, the pitch will rise one octave. If this is set to -12 and you press the right end of the ribbon controller, the pitch will fall one octave.
Since the pitch will be normal at the center of the ribbon controller, you can press and release on the right half of the ribbon controller to simulate the hammering-on techniques used by a guitarist.

2-1c: JS (+X)

These settings determine how the pitch will change when the joystick is moved toward the right.

Intensity [−60...+12]

12 units are equal to one octave.

For example if this is set to +12 and you move the joystick all the way to the right, the pitch will rise one octave.

Step [Continuous, 1/8...12]

Each unit of 1 is a semitone. Normally this will be set to **Continuous**.

If **Continuous** is selected, the pitch will change smoothly when the joystick is moved toward the right.

If a setting other than **Continuous** is selected, the pitch will change in increments of the specified interval.



Since the Intensity parameter determines the range of pitch change, there will be no pitch change if the Step setting is larger than the Intensity setting.

2-1d: JS (−X)

These settings determine how the pitch will change when the joystick is moved toward the left.

Intensity [−60...+12]

12 units are equal to one octave.

For example with a setting of −60, moving the joystick all the way to the left will lower the pitch five octaves. This produces an effect similar to pressing the vibrato arm of a guitar (be sure to set Step to Continuous).

Step [Continuous, 1/8...12]

Each unit of 1 is a semitone. Normally this will be set to **Continuous**.

For details refer to “2-1c: JS(+X).”

2-1e: Alternate Modulation

These settings determine how the Alternate Modulation Source will modulate the pitch.

AMS (Alternate Modulation Source) [OFF...Tempo]

Select the source which will modulate the pitch of oscillator 1.

With a setting of **OFF**, modulation will not be applied.

Intensity [−12.00...+12.00]

This determines the depth of the modulation applied to pitch.

With a setting of 0, no modulation will be applied.

If AMS is set to **Tempo** and this parameter is set to +12.00, the pitch will rise one octave when the tempo which is input (♩=120 is standard) is increased to twice its speed.

If AMS is set to **EG** or **LFO**, the pitch can be modified to a maximum of ±1 octave. (The LFO can add an additional ±1 octave of adjustment to the offset.) For example if AMS is set to **Filter LFO**, you can apply vibrato that is synchronized to the filter wah effect, and this parameter will control the depth of vibrato.

If AMS is set to a controller (**Joy Stick (+Y)**, etc.), positive (+) settings of Intensity will raise the pitch, and negative (−) settings will lower the pitch. The range of this pitch change is a maximum of 1 octave.

In this way, AMS and Intensity work together to determine how the pitch is modulated.

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 “8. Appendix” in this manual and to page 33 “About alternate modulation” in the Basic Guide.

2-1f: Oscillator EG

These settings (Intensity, Velocity, and Alternate Modulation) affect the depth of the pitch modulation produced by the oscillator EG settings of “2-5: OSC EG.”

Intensity [-12.00...+12.00]

With a setting of **12.00**, the change will be a maximum of \pm one octave.

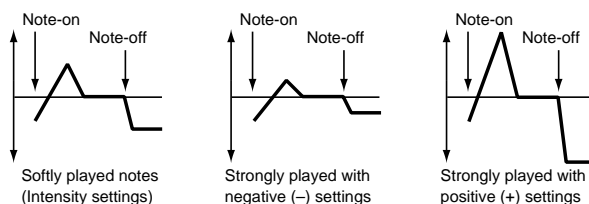
Velocity [-99...+99]

With positive (+) settings, the pitch change will increase beyond the width specified by Intensity as you play more strongly (maximum ± 1 octave).

With negative (-) settings, the pitch change will decrease below the width specified by Intensity as you play more strongly (maximum ± 1 octave).

Regardless of whether this parameter is set to a positive (+) or a negative (-) value, the settings of Intensity will be approached as you **play more softly**.

Pitch change (level)



Alternate Modulation

AMS (Alternate Modulation Source) [OFF...Tempo]

Select the source that will control the depth of the pitch modulation produced by the oscillator EG. With a setting of **OFF**, there will be no modulation.

Intensity [-12.00...+12.00]

If AMS is set to **Controller**, setting this parameter to a positive (+) **value** will deepen the pitch modulation produced by the oscillator EG. Negative (-) **values** will invert the effect.

If AMS is set to **SW1** or **SW2**, you can turn the switch On to apply modulation only when desired. If the value of this parameter plus the value of the above Oscillator EG Intensity totals 0, modulation will be turned off when you turn the switch On.

If AMS is set to **Tempo**, setting this parameter to a positive (+) **value** will cause modulation to deepen as the tempo is increased. However if the tempo is decreased below 120 ($\varphi=120$), modulation will be applied with inverted polarity. If you do not want to apply modulation with inverted polarity, make adjustments to the above (Oscillator EG) Intensity as well. With negative (-) settings, the effect will be reversed.

If AMS is set to **Note Number**, setting this parameter to a positive (+) **value** will cause modulation to deepen as the note number increases (as you play higher notes). However if the note number decreases below C4 (lower notes), modulation will be applied with inverted polarity. If you do not want to apply modulation with inverted polarity, make adjustments to the above (Oscillator EG) Intensity as well. With negative (-) settings, the effect will be reversed.

If AMS is set to **Controller** and this parameter is set to **+12.00**, you can apply ± 1 octave of pitch modulation when the oscillator EG is not applying pitch modulation. If AMS is **Note Number**, ± 1 octave of pitch modulation will be applied when you move two octaves (if AMS is Note Number) or when the **tempo** doubles (if AMS is Tempo).

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 “8. Appendix” in this manual and to page 33 “About alternate modulation” in the Basic Guide.

2-1g: Oscillator 1 LFO

These settings (Intensity, JS(+Y), After Touch, and Alternate Modulation) affect the pitch modulation produced by the oscillator 1 LFO settings of “2-2: OSC1 LFO.”

Intensity [-12.00...+12.00]

With a setting of **12.00**, a maximum of ± 1 octave of pitch modulation will be applied.

JS(+Y) (Joy Stick (+Y)) [0...99]

Higher settings of this value will cause more modulation to be applied by the oscillator 1 LFO when the joystick is pushed away from you.

Aftertouch [0...99]

Higher settings of this value will cause more pitch modulation to be applied by the oscillator 1 LFO when pressure is applied to the keyboard.

Alternate Modulation

AMS (Alternate Modulation Source) [OFF...Filter1 LFO]

Select the source that will control the depth of the pitch modulation produced by oscillator 1 LFO. With a setting of **OFF**, there will be no modulation.

Intensity [-12.00...+12.00]

If AMS is set to **EG** or **LFO**, the depth of modulation can be controlled over the full range. If the EG or LFO level passes into the negative (-) range, the polarity of the modulation will be inverted. If AMS is set to **Controller**, setting Intensity to a positive (+) **value** will make modulation deeper, and to a negative (-) **value** will make it shallower.

If AMS is set to **SW1** or **SW2**, setting this parameter to a positive (+) **value** and turning the switch On will allow you to apply modulation only when desired. If the sum of this value and the Intensity value of the Oscillator 1 LFO Intensity of the previous page is 0, modulation will be turned off when the switch is turned on.

If AMS is set to **Tempo**, setting this parameter to a positive (+) **value** will cause modulation to deepen as the tempo is increased. However if the tempo is decreased below 120 (♩=120), modulation will be applied with inverted polarity. If you do not want the polarity to be inverted, you must also make adjustments to the Oscillator 1 LFO Intensity on the previous page. With negative (-) settings, this will be reversed.

If AMS is set to **Note Number** and this parameter is set to a positive (+) **value**, modulation will deepen as the note number increases (i.e., as you play higher notes). However if the note number is below C4, modulation will be applied with inverted polarity. If you do not want the polarity to be inverted, you must also make adjustments to the Oscillator LFO Intensity on the previous page. With negative (-) settings, this will be reversed.

If AMS is set to **Note Number**, ±1 octave of pitch modulation will be applied when you move two octaves. If AMS is set to **Tempo**, ±1 octave of pitch modulation will be applied when the tempo doubles.

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 "8. Appendix" in this manual and to page 33 "About alternate modulation" in the Basic Guide.

▼ Page Menu Command

2-1A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, "9. Writing a program or combination."

2-1B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

2-1C: Swap Oscillator

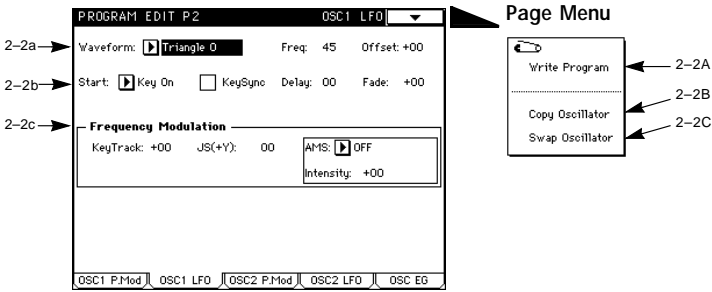
This command exchanges the settings of oscillator 1 and 2 within the program being edited.



If an Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

2-2: OSC1 LFO (Oscillator 1 LFO) AMSource

Here you can make settings for the LFO that applies cyclic changes (vibrato) to the pitch of oscillator 1. The depth of the effect that these LFO settings will have on the pitch of oscillator 1 is adjusted in “2-1g: Oscillator 1 LFO” (⇨ page 14 in this manual).



2-2a: Waveform/Freq (Frequency)/Offset

Waveform

[Triangle 0...Random6]

Selects the LFO waveform.

The numbers at the right of each waveform name indicate the phase (height) at which the waveform starts (except for Random).

Random 1-3 are sample & hold waveforms.

Random 1 is a conventional sample & hold waveform that changes level randomly at fixed intervals.

Random 2 will change level randomly at random intervals.

Random 3 will change between the maximum level and the minimum level at random intervals (i.e., a pulse wave with random width).

Random 4-6 are smoothed versions of Random 1-3. They can be used to simulate the natural instability of acoustic instruments.

LFO waveforms

Triangle	0		Triangle wave	Rectangle	0		Square wave
Triangle	90			Rectangle	180		
Triangle	180			Sine	0		Sine wave
Triangle	270			Sine	180		
Up Saw	0		Sawtooth wave ↑	Guitar			Guitar vibrato
Up Saw	180			Random	1	Random	
Down Saw	0		Random	2			
			Random	3			
Down Saw	180		Random	4			
			Random	5			
			Random	6			

Freq (Frequency)

[0...99]

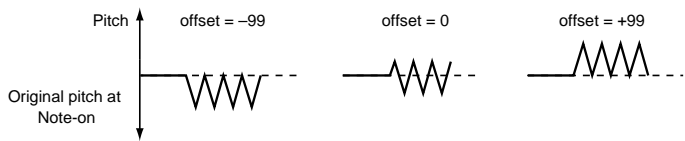
Specify the LFO frequency.

A setting of 99 is the fastest.

Offset [-99...+99]

With a setting of **0**, vibrato will be applied while keeping the original frequency (at Note-on) at the center of the vibrato. With a setting of **+99**, vibrato will be applied only in the upward direction, similar to the way in which vibrato occurs on a guitar.
For the Guitar waveform, the modulation will be only in the positive direction even if the Offset is set to 0.

Offset settings and vibrato pitch change



2-2b: Start/KeySync/Delay/Fade

Start [Key On, Key Off, Both]

This specifies the time at which the LFO will take effect. This setting is closely dependent on the Fade setting, so refer to the explanation for Fade as well.

If **Key On** is selected, the LFO will begin taking effect at note-on. Normally you will set this to Key On.

If **Key Off** is selected, the LFO will begin taking effect at note-off.

If **Both** is selected, the LFO will begin taking effect at note-on, and will stop taking effect at note-off.

KeySync (Keyboard Sync) [On/Off]

If this is **checked** it will be **On**; the LFO will start each time you play a note, and an independent LFO for each key will be used.

If this is **un-checked** it will be **Off**; the LFO effect begun by the first-played note will continue to apply to subsequently played notes. (In this case, Delay and Fade will apply only to the first-started LFO.)

Delay [0...99]

This determines the time from the Note-on (or Note-off) until the LFO begins to take effect. If KeySync is **Off**, the Delay setting will affect only the first-started LFO.

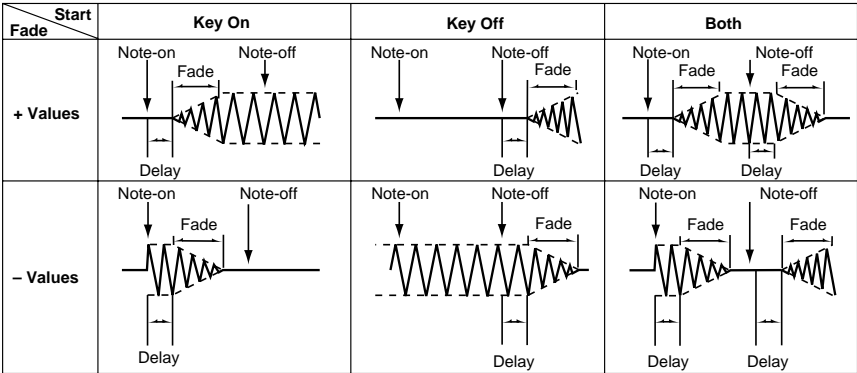
Fade [-99...+99]

With positive (+) settings, this will set the LFO Fade In Time; i.e., the time from when the LFO begins to take effect until it reaches maximum amplitude.

With negative (-) settings, this will set the LFO Fade Out Time; i.e., the time over which the LFO amplitude decreases from maximum down to 0.

If KeySync is **Off**, this will affect only the first-started LFO.

How the LFO is affected by Start and Fade settings (with KeySync On)



2-2c: Frequency Modulation

These settings (KeyTrack, JS(+Y), Alternate Modulation) affect the speed of the oscillator 1 LFO.

KeyTrack (Keyboard Tracking) [-99...+99]

With positive (+) settings, the oscillator 1 LFO will become faster as you play higher on the keyboard.

With a setting of +33, the LFO speed will double as you play one octave higher on the keyboard, and will be halved as you play one octave lower on the keyboard. Similarly, with a setting of +66, the LFO speed will be increased to 4 times (decreased to 1/4th), and with a setting of +99 to 8 times (decreased to 1/8th).

With negative (-) settings, the oscillator 1 LFO will become slower as you play higher on the keyboard. The relation between the parameter value and the change in speed will be the opposite from positive values.

With a "1-2: OSC" setting (⇨ page 9 in this manual) of 8' the center key will be C4.

JS (+Y) (Joy Stick (+Y)) [0...99]

The higher this value is set, the faster the oscillator 1 LFO speed will become when you push the joystick away from you.

With a setting of 99, the LFO speed will be increased by approximately 64 times when the joystick is pushed all the way forward.

Alternate Modulation

AMS (Alternate Modulation Source) [OFF...Tempo]

Select the source that will control the frequency of the oscillator 1 LFO.

With a setting of OFF, there will be no modulation.

Intensity [-99...+99]

The time-related parameters of the LFO ("2-2a: Freq", "2-2b: Delay, Fade") can be temporarily changed by the selected Alternate Modulation Source.

With settings of 16, 33, 49, 66, 82, and 99, the LFO time-related parameters will be multiplied respectively by up to 2, 4, 8, 16, 32, and 64 times (or decreased by 1/2, 1/4, 1/8, 1/16, 1/32, or 1/64).

If AMS is set to EG or LFO, the maximum available range of control allows the time-related parameters to be modified over a range from 1/64th to 64 times their original values. (The LFO allows an additional offset to be specified.)

If AMS is set to Controller, positive (+) values of this parameter will allow time-related parameters to be shortened, to a maximum of 1/64th of their original time values. With negative (-) values, time-related parameters will be lengthened, to a maximum of 64 times the original values.

If AMS is set to SW1 or SW2, the time-related parameters can be shortened to as little as 1/64th or lengthened to as great as 64 times their original value.

If AMS is set to Tempo, a setting of +16 for this parameter will cause the time-related parameters to be shortened to half their original value when the tempo is doubled. This allows LFO speed to track the tempo.

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 "8. Appendix" in this manual and to page 33 "About alternate modulation" in the Basic Guide.

▼ Page Menu Command

2-2A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, "9. Writing a program or combination."

2-2B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

2-2C: Swap Oscillator

This command exchanges the settings of oscillator 1 and 2 within the program being edited.



If an Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

2-3: OSC2 Pitch Mod (Oscillator 2 Pitch Modulation)

This page will be displayed if “1-1c: Oscillator Mode” is set to **double**.

Makes settings related to keyboard and pitch, and for the six controllers which can affect the pitch of oscillator 2.

For details on the parameters, refer to “2-1: OSC1 Pitch Mod.”

2-4: OSC2 LFO (Oscillator 2 LFO)

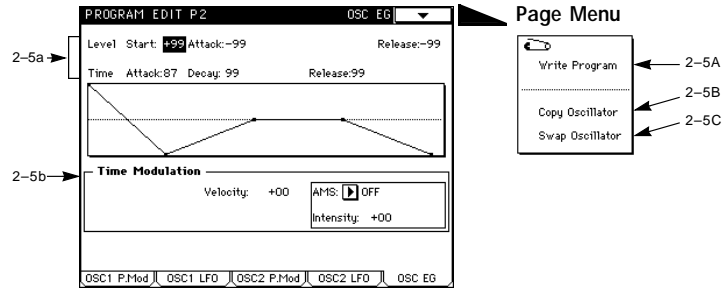
This page will be displayed if “1-1c: Oscillator Mode” is set to double.

Makes settings for the LFO that will cyclically modulate the pitch of oscillator 2. Settings in “2-3g: Oscillator LFO” will determine the depth of the effect that the LFO will have on the pitch of oscillator 2.

For details on the parameters, refer to “2-2: OSC1 LFO.”

2-5: OSC EG (Oscillator Envelope Generator) AMSource

This page contains settings for the oscillator EG that creates time-variant changes in the pitch of oscillators 1 and 2. The depth of the pitch change produced by this EG is adjusted in “2-1f(2-3f): Oscillator EG.”



2-5a: OSC EG

Makes Level and Time settings to specify how the pitch will change over time.

Level

The operation of this parameter depends on the setting of “2-1f(2-3f): Oscillator EG” Intensity. For example with a setting of +12.00, a setting of +99 will raise the pitch one octave, and -99 will lower the pitch one octave.

Start (Start Level) [-99...+99]

Sets the pitch level at which the sound will begin at the time of Note-on.

Attack (Attack Level) [-99...+99]

Sets the pitch level that will be reached when the Attack Time has elapsed.

Release (Release Level) [-99...+99]

Sets the pitch level that will be reached when the Release Time has elapsed.

Time

Specifies the times over which the pitch will change.

Attack (Attack Time) [0...99]

Sets the time from note-on until the pitch specified by the Attack Level is reached.

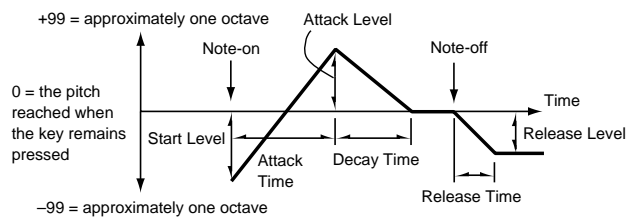
Decay (Decay Time) [0...99]

Sets the time from when the Attack Level is reached until the normal pitch is reached.

Release (Release Time) [0...99]

Sets the time from note-off until the pitch specified by the Release Level is reached.

Settings for time-variant pitch change (when EG Intensity = +12.00)



2-5b: Time Modulation

Specifies how the OSC EG Times set in “2-5a: OSC EG” will be affected by Velocity and Alternate Modulation.

Velocity

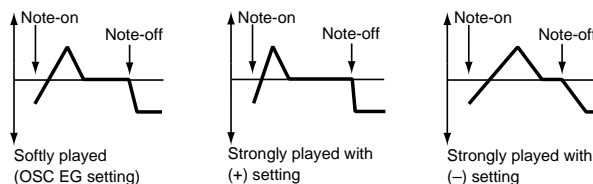
[−99...+99]

With positive (+) settings, Oscillator EG times will become shorter as you play more strongly.

With negative (−) settings, Oscillator EG times will become longer as you play more strongly.

Regardless of whether the value is positive (+) or negative (−), the Oscillator EG Times set for OSC EG will be approached as you **play less strongly**.

Pitch change (time)



Alternate Modulation

AMS (Alternate Modulation Source)

[OFF...Filter1 LFO]

Select the source that will affect Oscillator EG Times.

If OFF is selected, Oscillator EG Times will not be affected.

Intensity

[−99...+99]

EG Times between each point will be determined by the Alternate Modulation value at the moment that each point is reached. For example, the Alternate Modulation value at the moment that the Attack Level is reached will determine the Decay Time.

If this parameter is set to values of **16, 33, 49, 66, 82, and 99**, the EG times will be multiplied respectively by 2, 4, 8, 16, 32, and 64 (or 1/2, 1/4, 1/8, 1/16, 1/32, and 1/64).

If AMS is set to **EG** or **LFO**, the maximum available range of control allows the EG times to be modified over a range from 1/64th to 64 times their original values. (The LFO allows an additional offset to be specified.)

If AMS is set to **Controller**, positive (+) settings of this parameter will allow EG times to be shortened, to a maximum of 1/64th of their original time values. With negative (−) settings, EG times will be lengthened, to a maximum of 64 times the original values.

If AMS is set to **SW1** or **SW2**, the EG times can be shortened to as little as 1/64th or lengthened to as great as 64 times their original value.

If AMS is set to **Tempo**, setting this parameter to **+16** will cause the EG times to be shortened to half their original value when the tempo is doubled. This allows EG speed to track the tempo.

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 “8. Appendix” in this manual and to page 33 “About alternate modulation” in the Basic Guide.

▼ Page Menu Command

2-5A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, "9. Writing a program or combination."

2-5B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

2-5C: Swap Oscillator

This command exchanges the settings of oscillator 1 and 2 within the program being edited.



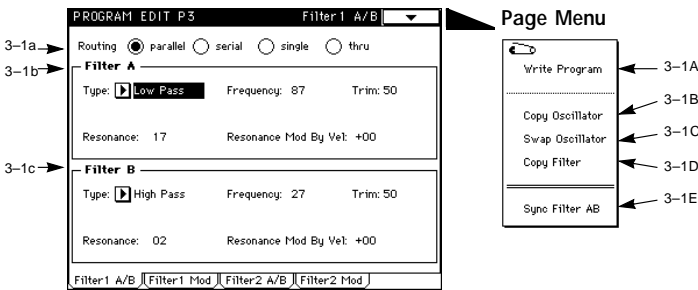
If an Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

Program Edit P3

The **TRINITY series** provides two filters; filter 1 for oscillator 1, and filter 2 for oscillator 2. Each of these filters actually consists of two filters; i.e., filter 1A and 1B, and filter 2A and 2B. If “1-1c: Oscillator Mode” is set to **single**, filter 1 will be used. If it is set to **double**, filters 1 and 2 will be used. Filter settings are made in Program Edit P3 and P4.

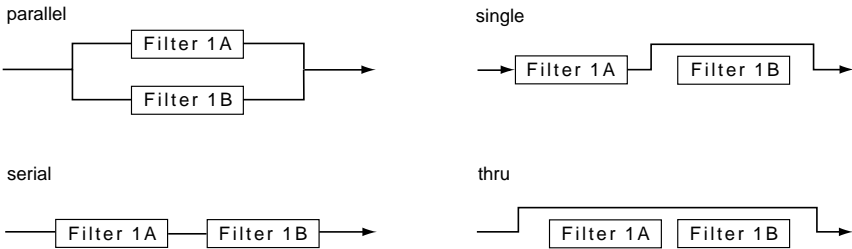
3-1: Filter 1 A/B (Filter 1A/Filter 1B)

Here you can specify the connections for filters 1A and 1B, and make basic settings.



3-1a: Routing (Filter Routing) [parallel/serial/single/thru]

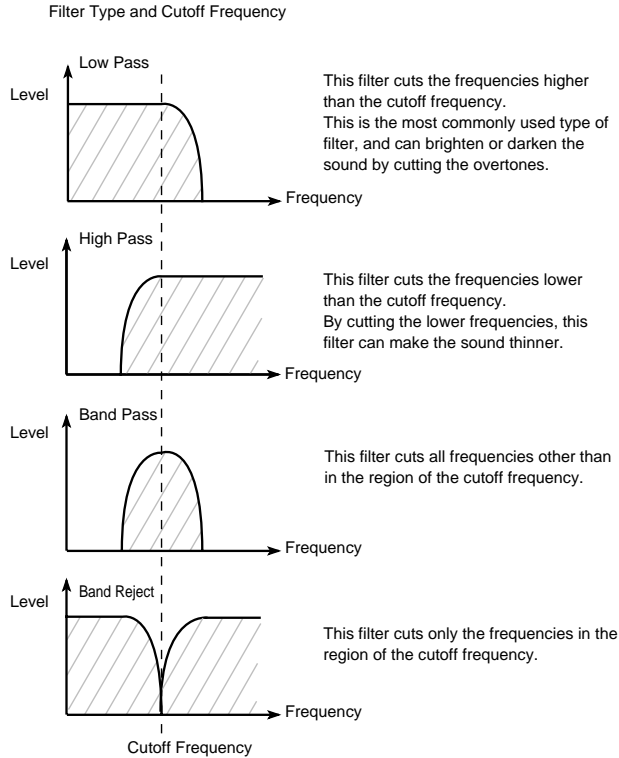
Specifies how filters 1A and 1B will be connected (refer to the diagram below). If you wish to use Band Pass filters to create two peaks, select **parallel**. If you wish to use Band Reject filters to create two valleys, select **serial**. In this case, setting filters 1A and 1B to the same settings will cause the cutoff slope to be more narrow. If you wish to use only filter 1A, select **single**.



3-1b: Filter 1A

Makes basic settings for filter 1A.

Type (Filter Type)	[Low Pass, High Pass, Band Pass, Band Reject]
Frequency (Cutoff Frequency)	[0...99]
Resonance	
Resonance Mod By Vel	
Trim	

**Trim****[0...99]**

Sets the level at which the audio signal output from oscillator 1 is input to filter 1A.



With high settings of this value, or if the Resonance value is high, or when chords are played, the sound may be distorted. Adjust the volume in "5-1a: Amplifier Level."

Resonance**[00...31]**

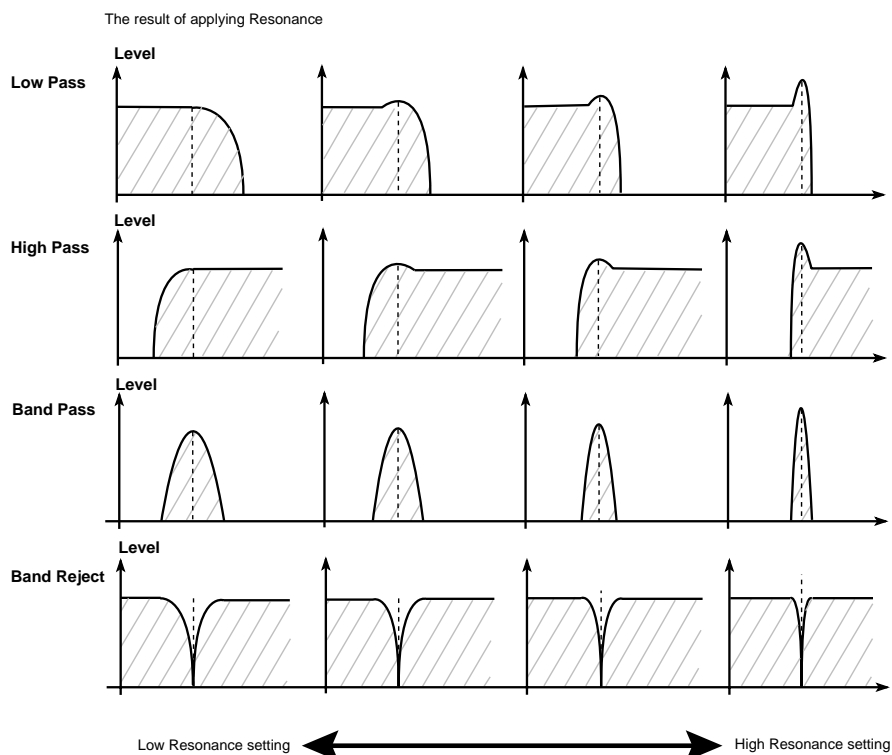
This setting emphasizes the overtones in the region specified by Frequency, adding tonal character to the sound. Higher settings will produce a stronger effect.

Resonance Mod By Vel (Resonance Modulation By Velocity)**[-99...+99]**

This determines how velocity will control the amount of Resonance.

With positive (+) settings, playing more strongly will cause the resonance effect to become closer to the effect specified by the Resonance setting, and playing more softly will decrease the resonance effect.

With negative (-) settings, playing more strongly will decrease the resonance effect, and playing more softly will cause the resonance effect to become closer to the amount specified by the Resonance setting.



3-1c: Filter 1B

These parameters will be displayed if “1-1c: Oscillator mode” is set to double, and “3-1a: Routing” is set to parallel or serial.
For details refer to “3-1b: Filter 1A.”

▼ Page Menu Command

3-1A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, “9. Writing a program or combination.”

3-1B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

3-1C: Swap Oscillator

This command exchanges the settings of oscillator 1 and 2 within the program being edited.



If an Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

3-1D: Copy Filter

This command copies the settings of filter 1A to filter 1B, or the settings of filter 1B to filter 1A.

3-1E: Sync Filter AB (check command)

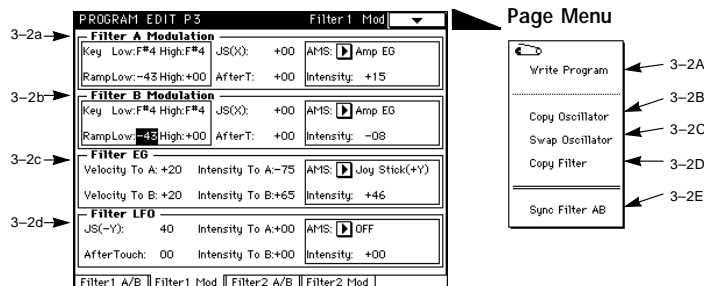
If this is checked, filters 1A and 1B will be edited simultaneously. (When you edit one filter, the settings of the other filter will also change.)

By setting "3-1a: Routing" to serial and making the same settings for filters 1A and 1B, you can create a sharper filter cut.

3-2: Filter 1 Mod (Filter 1 Modulation)

Here you can modify the sound by applying modulation to the cutoff frequency of filter 1 (oscillator 1).

This tab page will be displayed if “3-1a: Routing” has a setting other than thru. If this setting is single, the parameters for filter 1B will not be displayed.



3-2a: Filter 1A Modulation

These settings specify how Keyboard Tracking, Joy Stick (X), Aftertouch, and Alternate Modulation will affect the cutoff frequency of filter 1. (This will produce a “wah” effect.)

Cutoff Freq Key Track (Cutoff Frequency Keyboard Track)

The following Key and Ramp parameters will specify how keyboard position affects the cutoff frequency (refer to the diagram on the next page).

Key (Keyboard Track Keys)

Specify the note numbers at which keyboard tracking will begin to apply. Between the Low and High settings, the cutoff frequency will change in correspondence to the keyboard location (pitch).

- Low (Low Key) [C-1...G9]

Keyboard tracking will apply to the range below the specified note number.

The note number can also be specified from the keyboard.

- High (High Key) [C-1...G9]

Keyboard tracking will apply to the range above the specified note number.

The note number can also be specified from the keyboard.

Ramp (Ramp settings)

Specify the angles of the keyboard tracking.

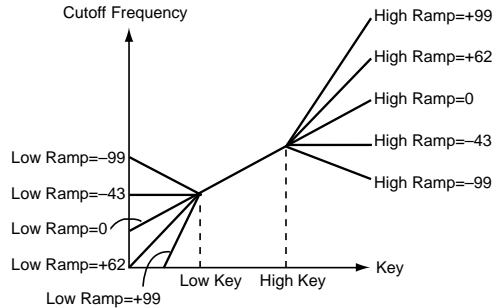
- Low (Lower Ramp) [-99...+99]

- High (Higher Ramp) [-99...+99]

With a setting of +62, the angle of change (i.e., slope or tilt) for the cutoff frequency will be the same as the keyboard location (pitch). This means that the oscillation that occurs when the resonance (“3-1b: Filter 1A”) is raised will track the keyboard position.

With a setting of -43, the cutoff frequency will have no slope; i.e., the cutoff frequency will be the same for all notes.

How keyboard position and the Ramp settings affect the cutoff frequency



JS (X) (Joy Stick (X))

[−99...+99]

With positive (+) settings, moving the joystick to the right will raise the cutoff frequency and brighten the sound.

With negative (−) settings, moving the joystick to the right will lower the cutoff frequency and darken the sound.

Aftertouch

[0...99]

The operation of this parameter will depend on the filter selected by the Type setting of “3-1: Filter 1 A/B.”

For example with a Low Pass filter, positive (+) settings of this parameter will cause the cutoff frequency to be raised when you press down on the keyboard, brightening the sound.

With a setting of Low Pass, negative (−) settings of this parameter will cause the cutoff frequency to be lowered when you press down on the keyboard, darkening the sound.

Alternate Modulation

AMS (Alternate Modulation Source)

[OFF...Tempo]

Select the source which will control cutoff frequency modulation for filter 1A.

With a setting of OFF, modulation will not be applied.

Intensity

[−99...+99]

Alternate Modulation can modify the cutoff frequency over a range nearly equivalent to the range of human hearing.

If AMS is set to **EG** or **LFO**, the pitch can be modified to a maximum of ± 8 octaves. (The LFO can add an additional ± 8 octaves of adjustment to the offset.)

If AMS is set to a **controller**, positive (+) settings of this parameter will raise the cutoff frequency, and negative (−) settings will lower the cutoff frequency. The range of this change is a maximum of 10 octaves.

If AMS is set to **SW1** or **SW2**, the cutoff frequency can be modified up to 10 octaves.

If AMS is set to **Tempo**, an Intensity setting of +10 will raise the cutoff frequency 1 octave when the tempo doubles in speed.

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 “8. Appendix” in this manual and to page 33 “About alternate modulation” in the Basic Guide.

3-2b: Filter 1B Modulation

These parameters will be displayed if “1-1c: Oscillator mode” is set to double, and “3-1a: Routing” is set to parallel or serial.

These settings specify how Keyboard Tracking, Joy Stick (X), Aftertouch, and Alternate Modulation will affect the cutoff frequency of filter 1B.

For details refer to “3-2a: Filter 1A Modulation.”

3-2c: Filter 1 EG

These settings specify the depth of the effect produced by the filter 1 EG (make settings in “4-1: Filter 1 EG”) that creates time-variant changes in the cutoff frequency of filter 1A and 1B.

Velocity To 1A

[-99...+99]

With positive (+) settings, the Filter 1 EG will change the cutoff frequency more greatly as you play more strongly.

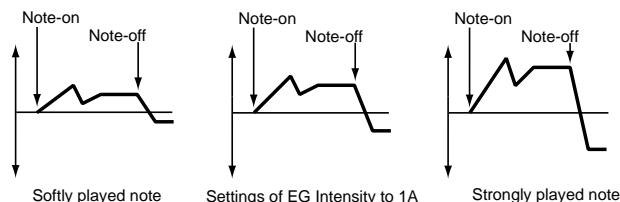
With negative (-) settings, the Filter 1 EG will operate in inverted polarity to change the cutoff frequency more greatly as you play more strongly.

Velocity To 1B

[-99...+99]

Refer to the above explanation for "Velocity To 1A."

Change in cutoff frequency (for positive (+) settings)

**Intensity To A**

[-99...+99]

Adjust the depth with which the Filter EG (set in "4-1: Filter 1 EG") will affect the cutoff frequency of filter 1A and 1B.

With positive (+) settings, positive (+) EG levels set in "4-1a: Filter 1 EG Level/Time" will brighten the sound, and negative (-) levels will darken the sound.

With negative (-) settings, positive (+) EG levels set in "4-1a: Filter 1 EG Level/Time" will darken the sound, and negative (-) levels will brighten the sound.

Intensity To B

[-99...+99]

Refer to the above explanation for "Intensity To A."

Alternate Modulation**AMS (Alternate Modulation Source)**

[OFF...Tempo]

Select the source which will control modulation depth of the cutoff frequency of filter 1A and 1B. With a setting of **OFF**, modulation will not be applied.

Intensity

[-99...+99]

Refer to "2-1f: Oscillator EG." The operation is essentially the same.

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 "8. Appendix" in this manual and to page 33 "About alternate modulation" in the Basic Guide.

3-2d: Filter 1 LFO

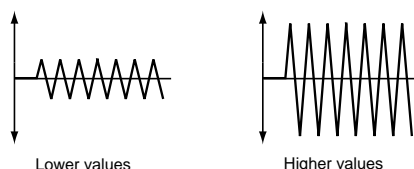
These settings adjust the depth of the cyclic change applied by the LFO (set in 4-2: Filter 1 LFO) to the cutoff frequency of filters 1A and 1B.

JS(-Y) (Joy Stick (-Y))

[0...99]

As this setting is increased, moving the joystick toward you will cause the filter 1 LFO to have an increasingly greater effect.

Change in cutoff frequency

**Aftertouch**

[0...99]

As this setting is increased, pressing down on the keyboard will cause the filter 1 LFO to have an increasingly greater effect.

Intensity To A

[-99...+99]

Adjust the depth with which the Filter 1 LFO will affect the cutoff frequency of Filter 1A. With negative (-) settings, the polarity will be inverted.

Intensity To B

[-99...+99]

Refer to the above explanation for "Intensity To A."

Alternate Modulation**AMS (Alternate Modulation Source)**

[OFF...Filter1 LFO]

Select the source which will adjust the depth of cutoff frequency modulation for both filters 1A and 1B.

With a setting of **OFF**, modulation will not be applied.

Intensity

[-99...+99]

Refer to "2-1g: Oscillator LFO." The operation is essentially the same.

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 "8. Appendix" in this manual and to page 33 "About alternate modulation" in the Basic Guide.

▼ Page Menu Command**3-2A: Write Program**

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, "9. Writing a program or combination."

3-2B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

3-2C: Swap Oscillator

This command exchanges the settings of oscillator 1 and 2 within the program being edited.



If an Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

3-2D: Copy Filter

This command copies the settings of filter 1A to filter 1B, or the settings of filter 1B to filter 1A.

3-2E: Sync Filter AB (check command)

If this is checked, filters 1A and 1B will be edited simultaneously. (When you edit one filter, the settings of the other filter will also change.)

By setting "3-1a: Routing" to serial and making identical settings for filters 1A and 1B, you can create a sharper filter cut.

3-3: Filter 2 A/B (Filter 2A/Filter 2B)

This page will be displayed if “1-1c: Oscillator Mode” is set to **double**.

Here you can make settings to specify how filters 2A and 2B are connected, and their basic settings.

Refer to “3-1: Filter 1 A/B.”

3-4: Filter 2 Mod (Filter 2 Modulation)

This page will be displayed if “1-1c: Oscillator Mode” is set to **double**.

Here you can make settings to specify how modulation is applied to filter 2 (for oscillator 2) to affect the sound.

Refer to “3-2: Filter 1 Mod.”

Program Edit P4

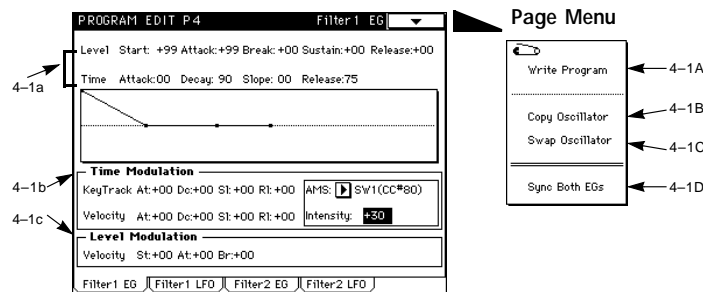
The **TRINITY series** provides a Filter EG and a Filter LFO that can modulate the cutoff frequency of the filters in filter 1 and 2.

Filter settings are made in Program Edit P3 and P4.

4-1: Filter 1 EG

Makes settings for the EG that will modify the cutoff frequencies of filters 1A and 1B.

These settings are adjusted by the settings in “3-2c: Filter EG” to determine the depth of the effect on filter 1 cutoff frequency.



4-1a: Filter 1 EG

Makes settings for Level and Time to specify how the filter 1 EG will produce time-variant control.

Level

The operation of this parameter will depend on the filter Type selected in “3-1: Filter 1 A/B.” For example if a Low Pass filter is selected, positive values of EG Intensity will cause the sound to brighten with positive (+) settings of this parameter, or darken with negative (-) settings of this parameter.

Start (Start Level) [-99...+99]
Specifies the amount of change to the cutoff frequency that will be in effect at Note-on.

Attack (Attack Level) [-99...+99]
Specifies the amount of change to the cutoff frequency that will be in effect after the Attack Time has elapsed.

Break (Break Point Level) [-99...+99]
Specifies the amount of change to the cutoff frequency that will be in effect after the Decay Time has elapsed.

Sustain (Sustain Level) [-99...+99]
Specifies the amount of change to the cutoff frequency that will be in effect after the Slope Time has elapsed until Note-off.

Release (Release Level) [-99...+99]
Specifies the amount of change to the cutoff frequency that will be in effect after the Release Time has elapsed.

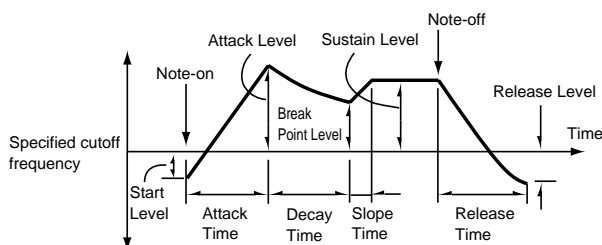
Time

Makes time-related settings.

Attack (Attack Time) [0...99]
Specifies the time from Note-on until the Attack Level is reached.

Decay (Decay Time) [0...99]
Specifies the time from when the Attack Level is reached until the Break Point Level is reached.

- Slope (Slope Time)** [0...99]
Specifies the time from when the Decay Time elapses until the Sustain Level is reached.
- Release (Release Time)** [0...99]
Specifies the time from Note-off until the Release Level is reached.



4-1b: Time Modulation

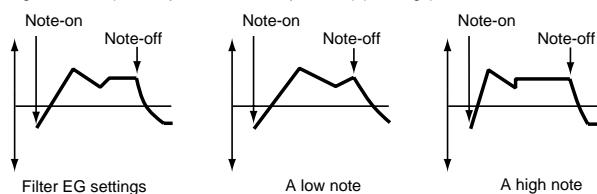
Specifies how the EG times of filter 1 specified in "4-1a: Filter 1 EG" will be modified by Keyboard Tracking, Velocity, and Alternate Modulation.

Keyboard Track

With positive (+) settings, EG times will become shorter as you play notes increasingly above C4.
With negative (-) settings, EG times will become longer as you play notes increasingly above C4.
With a setting of 0, the EG times will be as specified in "4-1a: Filter 1 EG."

- At (Attack Time)** [-99...+99]
Adjusts the Attack Time.
- Dc (Decay Time)** [-99...+99]
Adjusts the Decay Time.
- Sl (Slope Time)** [-99...+99]
Adjusts the Slope Time.
- Rl (Release Time)** [-99...+99]
Adjusts the Release Time.

Changes in Time (all four parameters with positive (+) settings)

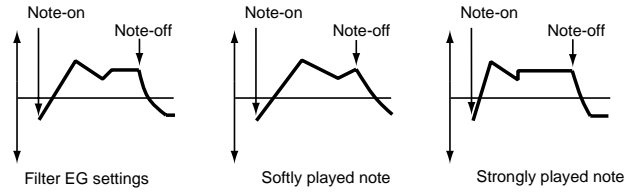


Velocity

With positive (+) settings, EG times will be shortened as you play more strongly. With negative (-) settings, EG times will be lengthened as you play more strongly.
With a setting of 0, the EG times will be as specified in "4-1a: Filter 1 EG."

- At (Attack Time)** [-99...+99]
Adjusts the Attack Time.
- Dc (Decay Time)** [-99...+99]
Adjusts the Decay Time.
- Sl (Slope Time)** [-99...+99]
Adjusts the Slope Time.
- Rl (Release Time)** [-99...+99]
Adjusts the Release Time.

Changes in Time (all four parameters with positive (+) settings)



Alternate Modulation

Unlike the modulation settings that allow Keyboard Tracking and Velocity to affect EG times, Alternate Modulation cannot be set independently for each EG Time (Attack/Decay/Slope/Release Time).

AMS (Alternate Modulation Source)

[OFF...Tempo]

Selects the source which will control filter 1 EG times.
With a setting of **OFF**, modulation will not be applied.

Intensity

[–99...+99]

Refer to “2-5b: Time Modulation.”

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 “8. Appendix” in this manual and to page 33 “About alternate modulation” in the Basic Guide.

4-1c: Level Modulation

Specifies how the filter 1 EG levels set in “4-1a: Filter 1 EG” will be modified.

Velocity

With positive (+) settings, EG levels will be raised as you play more strongly. With negative (–) settings, EG levels will be lowered as you play more strongly.
With a setting of **0**, the EG levels specified in “4-1a: Filter 1 EG” will be used.

St (Start Level)

[–99...+99]

Adjusts the Start Level.

At (Attack Level)

[–99...+99]

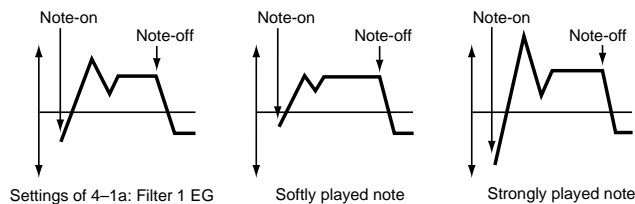
Adjusts the Attack Level.

Br (Break Point Level)

[–99...+99]

Adjusts the Break Point.

Changes in Filter 1 EG (with all four at positive (+) settings)



▼ Page Menu Command

4-1A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, "9. Writing a program or combination."

4-1B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

4-1C: Swap Oscillator

This command exchanges the settings of oscillator 1 and 2 within the program being edited.



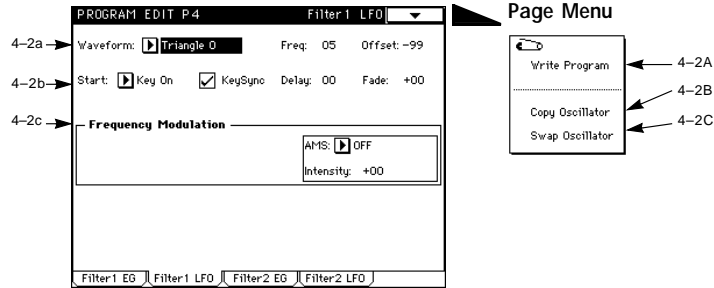
If an Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

4-1D: Sync Both EGs (check command)

If this is checked, the filter 1 EG and the filter 2 EG will be edited simultaneously. (When you edit one EG, the settings of the other EG will also change.)

4-2: Filter 1 LFO AMSource

Here you can make settings for the LFO that applies cyclic changes to the cutoff frequency of filter 1 (wah effect). The depth of the effect that these LFO settings will have on the cutoff frequency of filter 1 is adjusted in “3-2d: Filter LFO”.



4-2a: Waveform/Freq/Offset

Waveform

[Triangle 0...Random6]

Selects the LFO waveform. For the LFO waveforms that are available, refer to the explanation in “2-2a: OSC1 LFO”.

Freq (Frequency)

[0...99]

Specifies the LFO frequency. A setting of **99** is the fastest.

Offset

[-99...+99]

For details refer to the explanation of Offset in “2-2a: OSC1 LFO”.



If the setting is **+99** and the cutoff frequency is fully raised, there will be no wah effect.

4-2b: Start/KeySync/Delay/Fade

For details on these settings, refer to “2-2b: Start/KeySync/Delay/Fade”.

Start

[Key On, Key Off, Both]

This specifies the time at which the LFO will take effect. This setting is closely dependent on the Fade setting, so refer to the explanation for Fade as well.

If **Key On** is selected, the LFO will begin taking effect at note-on. Normally you will set this to **Key On**.

If **Key Off** is selected, the LFO will begin taking effect at note-off.

If **Both** is selected, the LFO will begin taking effect at note-on, and will stop taking effect at note-off.

KeySync

[On/Off]

If this is **checked** it will be **On**; the LFO will start each time you play a note, and an independent LFO for each key will be used.

If this is **un-checked** it will be **Off**; the LFO effect begun by the first-played note will continue to apply to subsequently played notes. (In this case, Delay and Fade will apply only to the first-started LFO.)

Delay

[0...99]

This determines the time from Note-on (or Note-off) until when the LFO begins to take effect. If KeySync is **Off**, the Delay setting will affect only the first-started LFO.

Fade

[-99...+99]

With positive (+) settings, this will set the LFO Fade In Time; i.e., the time from when the LFO begins to take effect until when it reaches maximum amplitude.

With negative (–) settings, this will set the LFO Fade Out Time; i.e., the time over which the LFO amplitude decreases from maximum down to 0.

If KeySync is **Off**, this will affect only the first-started LFO.

4-2c: Frequency Modulation

These settings allow Alternate Modulation to affect the speed of the filter 1 LFO.

Alternate Modulation

AMS (Alternate Modulation Source) [OFF...Filter1 LFO]

Selects the source that will control the frequency of the oscillator 1 LFO.

With a setting of **OFF**, there will be no modulation.

Intensity [–99...+99]

Refer to “2-2c: Frequency Modulation.”

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 “8. Appendix” in this manual and to page 33 “About alternate modulation” in the Basic Guide.

▼ Page Menu Command

4-2A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, “9. Writing a program or combination.”

4-2B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

4-2C: Swap Oscillator

This command exchanges the settings of oscillator 1 and 2 within the program being edited.



If an Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

4-3: Filter 2 EG

This page will be displayed if “1-1c: Oscillator Mode” is set to **double**.

Here you can make settings for the filter EG that will create time-variant changes in the cutoff frequency of filter 2.

Refer to “4-1: Filter 1 EG”.

4-4: Filter 2 LFO

This page will be displayed if “1-1c: Oscillator Mode” is set to **double**.

Here you can make settings for the LFO that will create cyclic changes in the cutoff frequency of filter 2 (a wah effect).

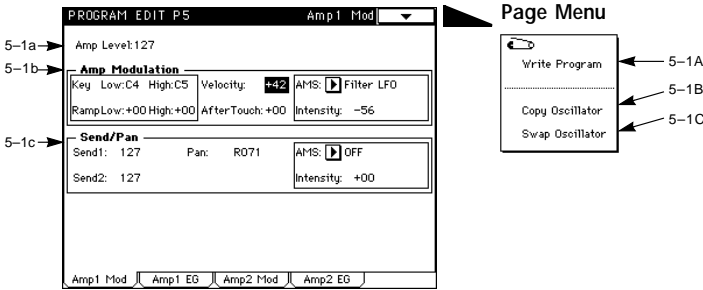
Refer to “4-2: Filter 1 LFO”.

Program Edit P5

The TRINITY series provides two amps; amp 1 for oscillator 1, and amp 2 for oscillator 2.

5-1: Amp 1 Mod (Amplifier 1 Modulation)

Here you can make settings for the volume of oscillator 1 and how it will change.



5-1a: Amplifier Level [0...127]

Sets the volume of oscillator 1.

5-1b: Amplifier Modulation

Specifies how the volume of oscillator 1 will be affected by Keyboard Tracking, Velocity, After-touch, and Alternate Modulation.

Amplifier Keyboard Tracking

The following Key and Ramp parameters specify how keyboard position will affect the volume (refer to the diagram on the following page).

Key (Keyboard Tracking Keys)

Specify the note numbers at which keyboard tracking will begin to apply. Keyboard tracking will not affect the volume of the notes between Low and High.

• Low (Low Key) [C-1...G9]

Keyboard tracking can be specified for the range below the specified note number. Note numbers can also be input from the keyboard. For details refer to Basic Guide page 8 "5. Setting a parameter".

• High (High Key) [C-1...G9]

Keyboard tracking will apply to the range above the specified note number. Note numbers can also be input from the keyboard. For details refer to Basic Guide page 8 "5. Setting a parameter".

Ramp (Ramp settings)

Specify the angles of the keyboard tracking.

• Low (Lower Ramp) [-99...+99]

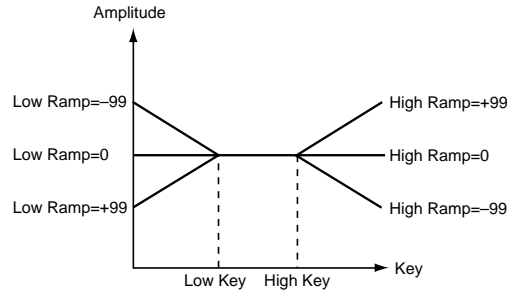
With positive (+) settings, playing below the specified Low note number (Keyboard Track Key) will produce progressively louder levels, and with negative (-) settings will produce progressively quieter levels.

• High (Higher Ramp)

[-99...+99]

With positive (+) settings, playing above the specified High note number (Keyboard Track Key) will produce progressively louder levels, and with negative (-) settings will produce progressively quieter levels.

The effect of keyboard position and Ramp settings

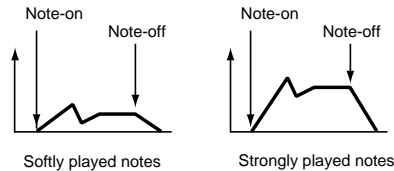


Velocity

[-99...+99]

With positive (+) settings, the volume will become louder as you play more strongly.
With negative (-) settings, the volume will become quieter as you play more strongly.

Changes in volume (with positive (+) settings)



Aftertouch

[-99...+99]

With positive (+) settings, the volume will become louder as you press on the keyboard. With a setting of +99, you can produce a change of up to 8 times the volume. However if the EG settings etc. have already set the volume at maximum, it will not be possible to increase the volume further.

With negative (-) settings, the volume will decrease as you press on the keyboard.

Alternate Modulation

AMS (Alternate Modulation Source)

[OFF...Tempo]

Selects the modulation source.

With a setting of **OFF**, modulation will not be applied.

Intensity

[-99...+99]

Since the volume is determined by multiplying the volume change produced by the Amp EG with the values of Alternate Modulation, etc., low levels of the Amp EG will mean that the modulation applied by Alternate Modulation will also be low.

If AMS is **EG** or **LFO**, a maximum of 8 times the amount of change can be applied from a volume of 0. (The LFO allows an additional offset.) If you wish to use another EG (pitch EG or filter EG) to control the volume, set each of the Amp EG levels to the maximum value (99).

If AMS is set to a **controller**, positive (+) settings of this parameter will raise the volume, and negative (-) settings will lower the volume. The range is a maximum of 8x.

If AMS is set to **SW1** or **SW2**, the volume can be adjusted by a maximum of 8x.

If AMS is **Tempo** and the Intensity is +33, doubling the tempo will raise the volume 2x (double). However if the EG settings etc. have already set the volume at maximum, it will not be possible to increase the volume further.

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 "8. Appendix" in this manual and to page 33 "About alternate modulation" in the Basic Guide.

5-1c: Send/Pan

Send and Pan values are applied at each Note-on.

Send

Send 1/Send 2 [0...127]

This sets the input level for the master effects when an insert effect is not used.

If you are using an insert effect, set the master effect input level using the "6-1b: Width/Send 1,2" Send 1,2 parameter.

Pan (Panpot) [OFF, L000...C064...R127]

This sets the panning for input to the insert effect.

If you are not using an insert effect, this sets the panning to output jacks 1/L/MONO and 2/R.

With a setting of **OFF**, the sound will not be output to 1/L/MONO and 2/R.

L is left, **C** is center, and **R** is right.

Alternate Modulation

AMS (Alternate Modulation Source) [OFF...Tempo]

Selects the modulation source that will move the panning of amp 1 relative to the Pan setting.

With a setting of **OFF**, pan will not be modulated.

Intensity [-99...+99]

If AMS is set to a **controller**, positive (+) settings of this parameter will move the pan toward the right, and negative (-) settings will move it toward the left.

If AMS is set to **SW1** or **SW2**, positive (+) settings of this parameter will allow sounds normally sounded at the left to be sounded at the center or right. Negative (-) settings of this parameter will allow the opposite movement, toward the left. In either case, positive (+) settings will move the sound toward the right, and negative (-) settings toward the left. The amount of movement is 90 degrees for a setting of **50**, and 180 degrees for a setting of **99**.

If AMS is set to **Tempo**, positive (+) settings of this parameter will cause the sound to move toward the right as the tempo is sped up. However if the tempo is slower than 120 (♩=120), the sound will move toward the left. Negative (-) settings of this parameter will reverse this movement. For example with a setting of **+99**, a sound that was located at the far left will be at the far right when the tempo is doubled (♩=240).

If AMS is **Note Number**, positive (+) settings of this parameter will cause the sound to move toward the right as the note number rises (i.e., as you play higher notes). However note numbers below C4 (lower notes) will move the sound toward the left. Negative (-) settings of this parameter will produce the opposite movement. For example with a setting of **+99**, a sound that was located at the far left will be at the far right when a note two octaves above (C6) is played.

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 "8. Appendix" in this manual and to page 33 "About alternate modulation" in the Basic Guide.

▼ Page Menu Command

5-1A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, "9. Writing a program or combination."

5-1B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

5-1C: Swap Oscillator

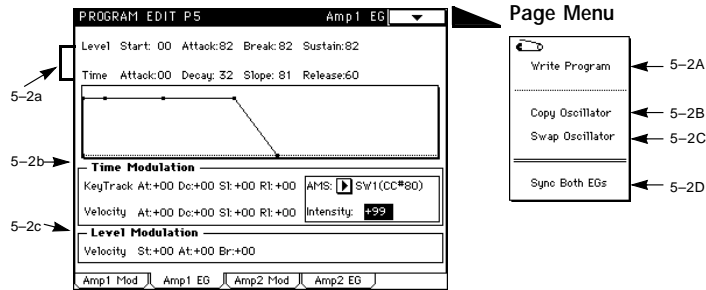
This command exchanges the settings of oscillator 1 and 2 within the program being edited.



If an Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

5-2: Amp 1 EG (Amplifier 1 EG) AMSOURCE

These settings determine how the volume of oscillator 1 will change over time.



5-2a: Amplifier EG

Makes Level and Time settings to specify the time-variant change produced by the amp EG.

Level

Start (Start Level) [0...99]

This is the volume level at Note-on. If you want the sound to have an immediate attack, set this parameter to a high value.

Attack (Attack Level) [0...99]

Specifies the volume level reached when the Attack Time has elapsed.

Break (Break Point Level) [0...99]

Specifies the volume level reached when the Decay Time has elapsed.

Sustain (Sustain Level) [0...99]

Specifies the volume level maintained from when the Slope Time has elapsed until Note-off.

Time

Attack (Attack Time) [0...99]

Specifies the time over which the volume will change from Note-on to the Attack Level. If the Start Level is 0, this setting will determine how quickly the sound begins.

Decay (Decay Time) [0...99]

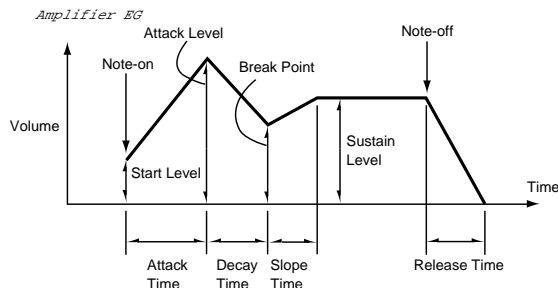
Specifies the time over which the volume will change from the Attack Level to the Break Point Level.

Slope (Slope Time) [0...99]

Specifies the time over which the volume will change from the Break Point Level to the Sustain Level.

Release (Release Time) [0...99]

Specifies the time from Note-on until the volume reaches 0.



5-2b: Time Modulation

Specifies how the EG times of amp 1 EG specified in "5-2a: Amplifier EG" will be modified by Keyboard Tracking, Velocity, and Alternate Modulation.

Keyboard Tracking

With positive (+) settings, amp EG times will become shorter as you play notes higher than C4.
With negative (-) settings, EG times will become longer as you play notes higher than C4.
With a setting of 0, the settings made in "5-2a: Amplifier" will apply.

At (Attack Time) [-99...+99]

Adjusts the Attack Time.

Dc (Decay Time) [-99...+99]

Adjusts the Decay Time

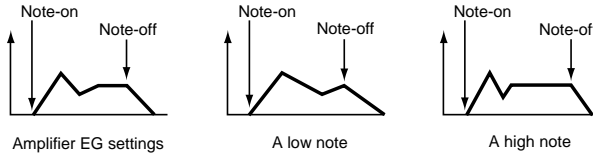
Sl (Slope Time) [-99...+99]

Adjusts the Slope Time.

RI (Release Time) [-99...+99]

Adjusts the Release Time.

Changes in Time (all four parameters with positive (+) settings)



Velocity

With positive (+) settings, EG times will be shortened as you play more strongly. With negative (-) settings, EG times will be lengthened as you play more strongly.
With a setting of 0, the settings made in "5-2a: Amplifier" will apply.

At (Attack Time) [-99...+99]

Adjusts the Attack Time.

Dc (Decay Time) [-99...+99]

Adjusts the Decay Time.

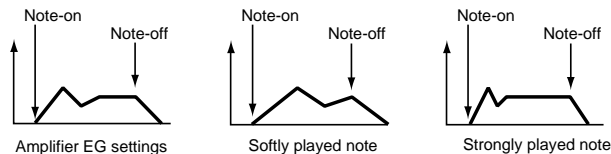
Sl (Slope Time) [-99...+99]

Adjusts the Slope Time.

RI (Release Time) [-99...+99]

Adjusts the Release Time.

Changes in Time (all four parameters with positive (+) settings)



Alternate Modulation

Unlike the modulation settings that allow Keyboard Tracking and Velocity to affect EG times, Alternate Modulation cannot be set independently for each EG Time (Attack/Decay/Slope/Release Time).

AMS (Alternate Modulation Source) [OFF...Filter1 LFO]

Selects the source which will control amp 1 EG times.
With a setting of **OFF**, modulation will not be applied.

Intensity [-99...+99]

For details refer to the explanation of Intensity in "2-5b: Time Modulation".

For details on how Alternate Modulation and the other AMS functions operate, refer to page 157 “8. Appendix” in this manual and to page 33 “About alternate modulation” in the Basic Guide.

5-2c: Level Modulation

These settings affect the amp 1 EG levels that are set in “5-2a: Amplifier EG”.

Velocity

With positive (+) settings, volume levels will be raised as you play more strongly.
 With negative (–) settings, volume levels will be lowered as you play more strongly.
 With a setting of **0**, the settings made in “5-2a: Amplifier” will be used.

St (Start Level) [–99...+99]

Adjusts the Start Level.

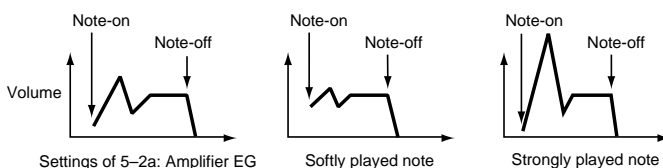
At (Attack Level) [–99...+99]

Adjusts the Attack Level.

Br (Break Point Level) [–99...+99]

Adjusts the Break Point Level.

Changes in volume (with all three at positive (+) settings)



▼ Page Menu Command

5-2A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, “9. Writing a program or combination.”

5-2B: Copy Oscillator

This command copies the settings of oscillator 1 or 2 from the specified program to the oscillator of the program being edited. You may also select a program from another bank as the copy source.



When copying Oscillator 2 to Oscillator 1, if Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is selected for Oscillator 2 AMS, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

5-2C: Swap Oscillator

This command exchanges the settings of oscillator 1 and 2 within the program being edited.



If an Oscillator 2 with AMS settings of Filter 1 EG, Amp 1 EG, Oscillator 1 LFO, or Filter 1 LFO is used for Oscillator 1 as a result of a Swap Oscillator command, the settings will be automatically converted from Filter 1 EG to Filter EG, from Amp 1 EG to Amp EG, from OSC 1 LFO to OSC LFO, and from Filter 1 LFO to Filter LFO.

5-2D: Sync Both EGs (check command)

If this is **checked**, the Amp 1 EG and the Amp 2 EG will be edited simultaneously. (When you edit one EG, the settings of the other EG will also change.)

5-3: Amp 2 Mod (Amplifier 2 Modulation)

This page will be displayed if “1-1c: Oscillator Mode” is set to **double**.
Here you can specify the volume of oscillator 2.

5-4: Amp 2 EG (Amplifier 2 EG) **AMSource**

This page will be displayed if “1-1c: Oscillator Mode” is set to **double**.
Here you can specify how the volume of oscillator 2 will change over time.

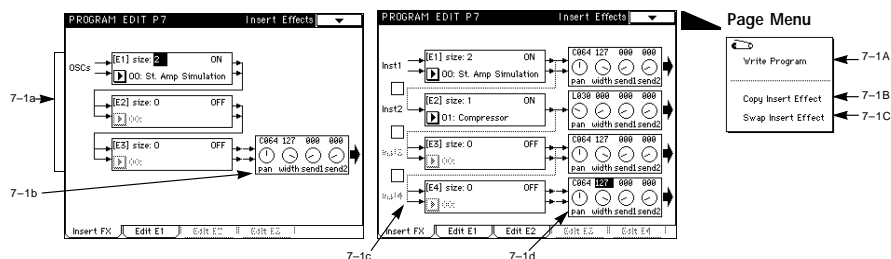
Program Edit P7

7-1: Insert Effects

Here you can make settings for the insert effects.

The graphic at left is the LCD screen when “1-1c: Oscillator Mode” is set to **single** or **double**.

The graphic at right is the LCD screen when “1-1c: Oscillator Mode” is set to **drums**.



7-1a: Insert Effect Setting

Selects the Insert Effects that the program will use.

Size

[0, 1, 2, 4]

The Size you select will determine the insert effects that will be available.

A setting of 0 is “No Effect” and effects cannot be selected.

A setting of 1-4 allows you to select an insert effect in Effect Select.



The Size settings of [E1]–[E3] must total 4 or less. (It is not possible to make settings that total 5 or more.)

Effect On/Off

[OFF/ON]

Turn the effect on/off.

With a setting of **OFF**, effects will be bypassed. If a size 1 effect is selected, the dry sound will also be mono. If you want the pan setting (“5-1c: Send/Pan”) of a stereo oscillator to be effective, set the Size parameter to 2 or greater.



Independently from this setting, you can turn off all insert effects using the MIDI message Effect 2 Control (CC#92). The effects will be off for a value of 0, and on for values of 1-127.

Effect Select

Selects the insert effect. The effects that can be selected will depend on the Size setting. The parameters of the effect you select here can be set in “7-2: Edit E1” through “7-5: Edit E4”.

For details on each effect, refer to the separate **Effect Guide**.

7-1b: Pan/Width/Send 1, 2

Pan (Panpot)

[L000...C064...R127]

Adjusts the pan after the sound passes through the insert effects.

Width

[0...127]

Adjusts the left/right spread of the sound after passing through the insert effects. Higher values will spread the effect wider to left and right.

Send 1,2

[0...127]

Adjusts the send level to the master effects.

7-1c: Insert Effect Setting

Selects the insert effects used by the drumkit.

Settings for each drum sound for insert effect on/off and Inst 1-4 (these will be the [E1]-[E4] inputs) are made in Global mode "5-1: Drumkit" (page 143 in this manual).

The check boxes in the left of the LCD screen specify the connections of [E1]-[E4]. If a box is **checked**, the effects immediately above and below it are connected in series.

Size

[0,1,2,4]

The size will determine the insert effects that can be selected.

If **0** is selected, the display will indicate No Effect, and effects cannot be selected.

If **1-4** is selected, you can select insert effects in Effect Select.



The size settings for [E1]-[E4] must total **4 or less**. (It is not possible to make settings that total 5 or more.

Effect On/Off

[OFF, ON]

Turns the effect on/off.

With a setting of **OFF**, effects will be bypassed. If a size 1 effect is selected, the drum sounds will be mono. If you want the pan setting (Global mode "5-1e: Drumsample Setup") to be effective, set the Size parameter to 2 or more.



Independently of this setting, the MIDI message Effect 2 Control (CC#92) to turn all insert effects off. The effects will be off with a value of 0, and will have their original settings with values of 1-127.

Effect Select

Selects the insert effect. The effects available for selection will depend on the Size setting. The parameters of the effect you select here are set in "7-2: Edit E1" through "7-5: Edit E4." For details on each effect, refer to the separate "Effect Guide."

7-1d: Pan/Width/Send 1,2

Makes settings for each effect [E1]-[E4]. However if the effects are connected in series, these settings affect the signal after the effects.

Pan (Panpot)

[L000...C064...R127]

Adjusts the pan of the sound after passing through the insert effect.

Width

[0...127]

Adjusts the left/right spread of the sound after passing through the insert effect.

Send 1,2

[0...127]

Adjusts the send level to the master effects.

▼ Page Menu Command

7-1A: Write Program

This command writes an edited program into the specified program number of the specified bank. Be sure to write important programs. If you turn the power off or select a different program before writing, the data cannot be recovered.

For details refer to Basic Guide page 23, "9. Writing a program or combination."

7-1B: Copy Insert Effect

This command copies insert effect settings from a specified program, combination or song to the insert effect of the program currently being edited.

7-1C: Swap Insert Effect

This command exchanges insert effect settings within the program currently being edited.

7-2: Edit E1 (Edit Insert Effect 1)

7-3: Edit E2 (Edit Insert Effect 2)

7-4: Edit E3 (Edit Insert Effect 3)

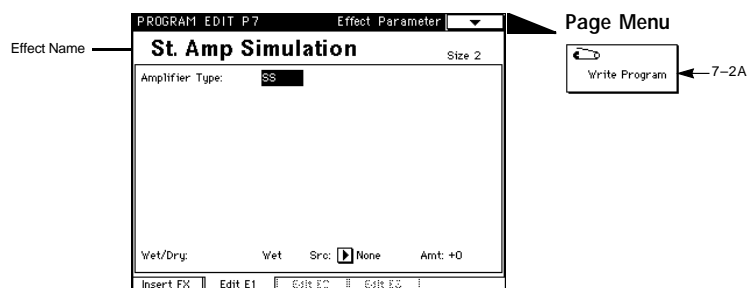
7-5: Edit E4 (Edit Insert Effect 4)

These pages will be displayed if an insert effect is selected in “7-1a: Insert Effect Setting”.

Here you can make settings for insert effect parameters.

For details on the effect parameters, refer to the separate **Effect Guide**.

MIDI Effect Dynamic Modulation will be controlled on the Global MIDI channel.



▼ Page Menu Command

7-2A: Write Program

This writes the edited program into the specified program number of the specified bank.

Be sure to write important programs. If you turn the power off or select another program before writing the data, it cannot be recovered.

Refer to Basic Guide page 23, “9. Writing a Program or Combination”.

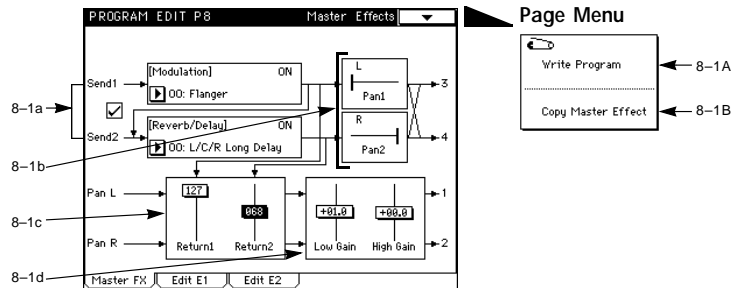
Program Edit P8

8-1: Master Effects

Here you can make master effects settings, and set the levels of the effects that are output from the output jacks of the TRINITY (1/L/MONO, 2/R, 3, 4).

Pan L and Pan R are the pan settings set in "7-1: Insert Effect".

The Send 1, 2 displayed at left are the send levels that were set in "7-1b". However if insert effects [E1], [E2], [E3], and [E4] are all set to a Size of 0, this will be the send setting of "5-1c: Send/Pan".



8-1a: Master Effect Setting

Makes settings for modulation-type effects and delay/reverb-type effects.

The check box at the left of the LCD screen sets the connections of [Modulation] and [Reverb/Delay]. When the box is **checked**, [Modulation] and [Reverb/Delay] are connected in series. In this case, the right output of [Modulation] will be sent to [Reverb/Delay].

Effect On/Off

[ON/OFF]

Turns the master effects on/off.

MIDI Independently of this setting, [Modulation] can be turned off by the MIDI message Effect 4 Control Change (CC#94) and [Reverb/Delay] can be turned off by Effect 5 Control Change (CC#95). In both cases, a value of 0 is off. With values of 1-127, the original settings will be used. The Global MIDI channel is used for these messages.

Effect Select

Selects the master effects. A modulation-type effect can be selected for [Modulation], and a reverb/delay-type effect can be selected for [Reverb/Delay].

The settings for the effects selected here are made in "8-2: Edit E1" and "8-3: Edit E2".

For details on the effects, refer to the separate **Effect Guide**.

8-1b: Pan 1/2

[OFF, L...50:50...R]

Adjust the panning of output jacks 3, 4.

With a setting of OFF, the sound will not be sent to output jacks 3 and 4.

8-1c: Return 1, 2

[0...127]

Adjust the level of the audio signal sent from [Modulation] and [Reverb/Delay] to output jacks 1/L/MONO and 2/R.

Output jacks 1/L/MONO and 2/R will output the audio signals from Pan L and Pan R mixed with the output of [Modulation] and [Reverb/Delay] adjusted by these Return 1, 2 settings.

8-1d: Low/High Gain

Adjust the tone of the audio signals output from the output jacks 1/L/MONO and 2/R, in [dB].

Low Gain

[−18.0...+18.0]

Adjusts the level of the low frequency range.

High Gain

Adjusts the level of the high frequency range.

▼ Page Menu Command

8-1A: Write Program

This writes the edited program into the currently selected program number.

Be sure to write important programs. If you turn the power off or select another program before writing the data, it cannot be recovered.

Refer to Basic Guide page 23, "9. Writing a Program or Combination".

8-1B: Copy Master Effect

This command copies the master effect settings from a specified program, combination or song to the master effect of the program currently being edited.

8-2: Edit E1 (Edit Master Effect 1 [Modulation])

8-3: Edit E2 (Edit Master Effect 2 [Reverb/Delay])

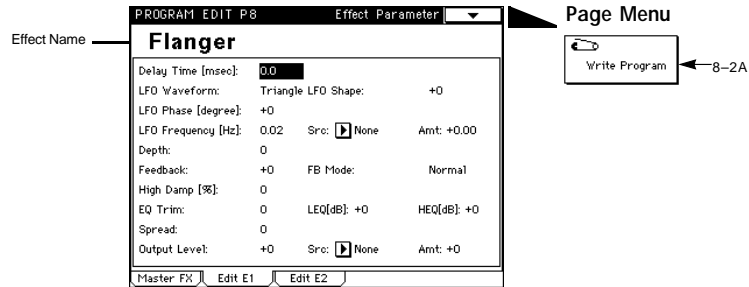
Here you can make settings for master effect parameters.

This will be displayed when you have selected a modulation-type or reverb/delay-type effect for [Modulation] or [Reverb/Delay] in “8-1a: Master Effect Setting”.



Effect dynamic modulation is controlled on the Global MIDI channel.

For details on the effect parameters, refer to the separate **Effect Guide**.



▼ Page Menu Command

8-2A: Write Program

This writes the edited program into the currently selected program number.

Be sure to write important programs. If you turn the power off or select another program before writing the data, it cannot be recovered.

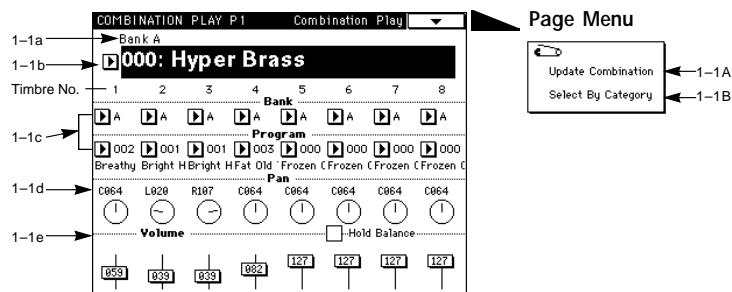
Refer to Basic Guide page 23, “9. Writing a Program or Combination”.

3. Combination Play mode

Combination Play P1

In Combination Play mode you can select factory set (pre-loaded) combinations. The number of combinations available on the **TRINITY series** will depend on whether the Playback Sampler/Flash ROM option is installed. For details refer to page 9 of the Basic Guide. If no options have been installed, the **TRINITY** allows you to select **256 combinations** (0–127 for each bank A and B). A list of the factory preset combination names is included in the separate **Voice Name List**.

1-1: Combination Play



1-1a: Bank (Bank Select)

[Bank A...D]

Use the front panel [BANK] key to select the bank. If the Playback Sampler/Flash ROM option is installed, you can select from banks C and D.

1-1b: Combination Number/Combination Name

[0...127]

Use the VALUE controllers or a pedal switch to select combinations. For details on selecting combinations using a foot switch or using MIDI Program Change messages from an external device, refer to Basic Guide page 15, "3. Select and play a combination".

1-1c: Bank/Program

Selects the program for each timbre 1 through 8.



A bank M program can be selected only for one timbre.

This parameter is also displayed in Combination Edit mode "1-1: Timb Param 1" (see page 57 in this manual), and can be set from either location.



If "1-1d: Timbre Mode" is INT, you can change programs via MIDI.

When you change combinations, timbres whose Timbre Mode is EXT will transmit MIDI messages indicating the bank and program number that you have selected here.

Bank

[A...M]

Selects the Bank for the program assigned to each timbre 1 through 8. Bank M can be selected if the optional MOSS-TRI board is installed.

Program

[0...127]

Selects the program for each timbre 1 through 8.

If the optional MOSS-TRI board is installed, you can select bank M programs 0–63. In addition, if the Playback Sampler/Flash ROM option is installed, you can select bank M programs 64–127.

1-1d: Pan (Panpot)**[OFF, L000...C064...R127]**

Sets the pan position for timbres 1-8. This parameter is also displayed in Combination Edit mode "1-2: Timb Param 2" (⇨ page 59 in this manual) and can be set from either location.

With a setting of **OFF**, there will be no output of the direct dry signal.

With a setting of **PROG**, the pan settings of the program assigned to that timbre will be used.

MIDI When a Pan message (CC#10) is received, the pan will be L000 for a value of 0, C064 for a value of 64, and R127 for a value of 127. (Pan messages will not be received if the setting is PRG or OFF.)

1-1e: Volume**[0...127]**

Adjusts the volumes of timbres 1-8. This parameter is also displayed in Combination Edit mode "1-2: Timb Param 2" and can be set from either location.

MIDI The volume is determined by the product of the volume setting and the Expression value. If the Combination Edit mode parameter "1-1d: Timbre Mode" (⇨ page 58 in this manual) is set to INT, MIDI Expression messages (CC#11) will be received.

If the Combination Edit mode parameter "1-1d: Timbre Mode" is set to EXT, the volume settings will be transmitted as MIDI Volume messages (CC#07) each time you change the combination.

Hold Balance**[On/Off]**

If this is **checked** to turn it On, raising or lowering the volume sliders of any timbre will adjust all the volume sliders proportionately, preserving the volume balance of timbres 1-8. This provides a convenient way to adjust the volume balance of a combination in relation to other combinations. If this is **un-checked** to turn it Off, the volume of each timbre can be adjusted separately.

MIDI When you select a combination on the TRINITY, the combination number will be transmitted on the Global MIDI channel you specified for program changes in the Global mode setting "1-1c: MIDI Channel". At the same time, timbres whose "1-1d: Timbre Mode" parameter is set to EXT will transmit their Program Number and Volume (CC#7) on their MIDI channel as specified in Combination Edit mode "1-1e: MIDI Channel" (⇨ page 58 in this manual).

Operations you perform on the TRINITY (using the keyboard, joystick, ribbon controller, after-touch, switches, pedals) will transmit messages on the Global MIDI channel. At the same time, timbres whose Timbre Mode is set to EXT will transmit the same messages on their own MIDI channel.

If the MIDI channel of an incoming Bank Select or Program Change message matches the MIDI channel of a timbre whose Timbre Mode is INT, that timbre will change programs. However if the channel of an incoming Program Change matches the Global MIDI channel of the TRINITY, the combination will change.

If you do not want the combination to change, either make settings so that the Global MIDI channel does not match the MIDI channel of the incoming Program Change, or make settings for Enable Combination Change in Global mode "2-1a: Filter" (⇨ page 136 in this manual) so that combinations are not changed.

You can also make filter settings in Global mode "2-1a: Filter" (⇨ page 136 in this manual) parameter Enable Bank Change so that only program numbers are changed without affecting the bank.

▼ Page Menu Command**1-1A: Update Combination**

This command writes (saves) an edited combination into the currently selected combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.

For details refer to Basic Guide page 23, "9. Writing programs and combinations".

1-1B: Select By Category

This command allows you to select programs or combinations using the categories specified in Program Edit mode or Combination Edit mode.

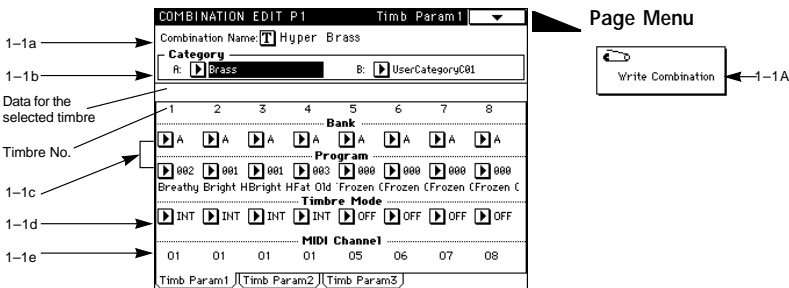
For details refer to Basic Guide page 26, "11. Selecting by category".

4. Combination Edit mode

Combination Edit P1

1-1: Timb Param1 (Timbre Parameter 1)

Here you can make basic settings for a combination, and make basic settings for the program used by each timbre.



Combination Edit mode

1-1a: Combination Name

The name of the combination selected in Combination Play mode will be displayed. If you press the text edit button, a display page will appear in which you can rename the combination (☞ Basic Guide, page 6). The Combination Name is displayed in pages “1-1: Timb Param1” through “1-3: Timb Param3”, and can be edited from any of these pages.

☛ If you wish to keep the new combination name that you assign, be sure to use the Write Combination operation (☞ Basic Guide, page 23) to write it into memory. If you select another combination or turn the power off before writing, the new combination name will be lost.

1-1b: Category

Two categories can be assigned to each combination. When selecting combinations in Combination Play mode, you can search for combinations by category. The Combination Category is displayed in pages “1-1: Timb Param1” through “1-3: Timb Param3”, and can be edited from any of these pages.

A (Category A) [Pad&Lead...Drums/Special FX]
With the factory settings, this will be the name of the instrument group, but you can modify it in “4-3: Category Combination A” of Global mode Timb Param3 (☞ page 142 in this manual).

B (Category B) [User Category C01...C16]
The factory set category names can be modified in “4-4: Category Combination B” of Global mode (☞ page 142 in this manual).

1-1c: Bank/Program

Select the program which will be assigned to each timbre 1-8. Note that a bank M program can be selected only for one timbre. This parameter will also be displayed in Combination Play mode “1-1: Combination Play” (☞ page 55 in this manual) and can be set from either location.

MIDI If “1-1d: Timbre Mode” is INT, programs can be selected via MIDI. When a combination is selected on the TRINITY, timbres whose Timbre Mode is set to EXT will transmit the bank and program number selected here via MIDI.

Bank [A...M]

Selects the bank for each timbre 1-8.

Bank M can be selected if the optional MOSS-TRI board is installed.

Program (Program Select) [0...127]

Selects the program for each timbre 1-8.

If the optional MOSS-TRI board is installed, programs 0-63 can be selected for bank M. In addition, if the Playback Sampler/Flash ROM option is installed, programs 64-127 can be selected for bank M.

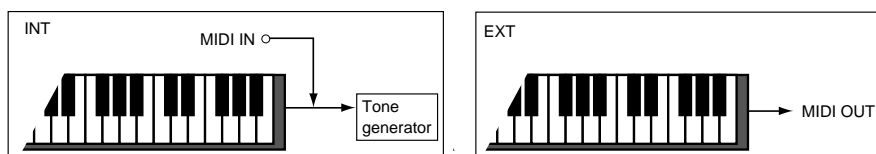
1-1d: Timbre Mode [OFF/INT/EXT]

MIDI This sets the Timbre Mode for timbres 1-8.

OFF: The program will not sound. (Nor will MIDI data be transmitted.)

INT: Playing the TRINITY's keyboard will sound the internal tone generator, and the internal tone generator will also sound in response to MIDI messages from external MIDI devices.

EXT: Playing the TRINITY's keyboard will not sound the internal tone generator, but will transmit MIDI messages to control an external MIDI device.



1-1e: MIDI Channel [01...16, Gch]

MIDI This sets the MIDI transmit and receive channel for each timbre 1-8.

If **Gch** is selected, the MIDI channel of the timbre will always match the MIDI channel setting specified in Global mode “1-1: Global Setup” (☞ page 129 in this manual).

If “1-1d: Timbre Mode” is INT, the timbre will transmit MIDI messages on the channel specified by this setting. If the setting is the same as the Global MIDI channel, the TRINITY's keyboard will play the internal tone generator.

If “1-1d: Timbre Mode” is EXT, playing the TRINITY's keyboard will transmit MIDI messages on the MIDI channel specified here. (The same messages will simultaneously be transmitted on the Global MIDI channel as well.)

▼ Page Menu Command

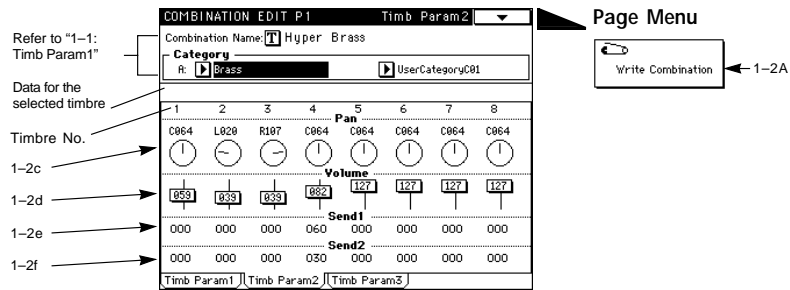
1-1A: Write Combination

This command writes an edited combination into the specified combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.

For details refer to Basic Guide page 23, “9. Writing programs and combinations”.

1-2: Timb Param2 (Timbre Parameter 2)

Here you can make settings related to the output of each timbre.



1-2c: Pan (Panpot)

[OFF, L000...C064...R127, PROG]

Specifies the pan for each timbre 1-8 (the rear panel output jacks 1/L/MONO and 2/R). If an insert effect is being used, make the pan setting in "7-2: Insert Effects."

This parameter is also displayed in Combination Play mode "1-1: Combination Play" (⇨ page 55 in this manual), and can be set from either location.

MIDI If "1-1d: Timbre Mode" is INT, receiving a Panpot message (CC#10) in Combination Play mode will cause the pan setting to change. (However, only if this setting is L000-R127.)

1-2d: Volume

[0...127]

Specifies the volume for timbres 1-8.

This parameter is also displayed in Combination Play mode "1-1: Combination Play" (⇨ page 55 in this manual), and can be set from either location.

MIDI If "1-1d: Timbre Mode" is INT, receiving a Volume message (CC#7) in Combination Play mode will cause the volume setting to change.

If "1-1d: Timbre Mode" is EXT, the volume setting will be transmitted when you select a combination.

1-2e: Send 1

[0...127, PROG]

Specifies the send level (the input level to the master effects) for timbres 1-8. This will also determine the output level to the rear panel outputs 3 and 4.

MIDI If the TRINITY receives a MIDI Effect 3 Level message (CC#93) in Combination Play mode when "1-1d: Timbre Mode" is INT, this setting will change. (But only if this parameter is set to 0-127.)

1-2f: Send 2

[0...127, PROG]

Specifies the send level (the input level to the master effects) for timbres 1-8. This will also determine the output level to the rear panel outputs 3 and 4.

MIDI If the TRINITY receives a MIDI Effect 1 Level message (CC#91) in Combination Play mode when "1-1d: Timbre Mode" is INT, this setting will change. (But only if this parameter is set to 0-127.)

▼ Page Menu Command

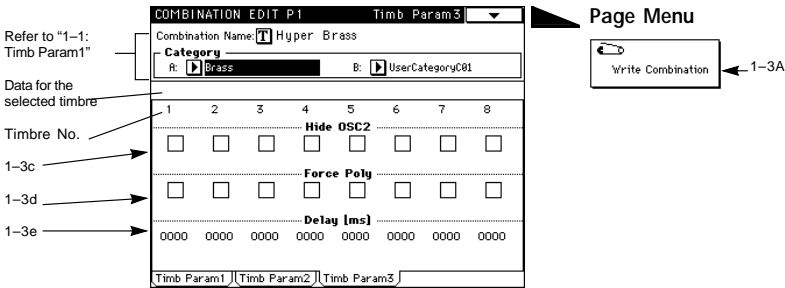
1-2A: Write Combination

This command writes an edited combination into the specified combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.

For details refer to Basic Guide page 23, "9. Writing programs and combinations."

1-3: Timb Param3 (Timbre Parameter 3)

Here you can make settings that affect how each timbre will sound.



1-3c: Hide OSC2

Specifies whether or not oscillator 2 of each timbre 1-8 will be used. This parameter will only affect Double-oscillator programs.
If this is **checked**, OSC2 will not sound.
If this is **un-checked**, the program will sound according to its own settings.

1-3d: Force Poly

Specifies whether or not the Key Assign of each timbre 1-8 will be forced to polyphonic. This parameter will only affect Mono programs
If this is **checked**, the program will be polyphonic.
If this is **un-checked**, the program will use its own Key Assign setting.

1-3e: Delay [ms] (Delay Time)

[0...5000, KeyOff]

Specifies a delay time between Note-on and when each timbre 1-8 will sound.
If this is set to **KeyOff**, the timbre will sound at Note-off. At this time, if the Amp EG Sustain Level is other than 0 for the program being used, the sound will not disappear. Normally this is set to 0.
This setting is useful for recreating certain nuances such as the sound of the keys being released on a harpsichord.

▼ Page Menu Command

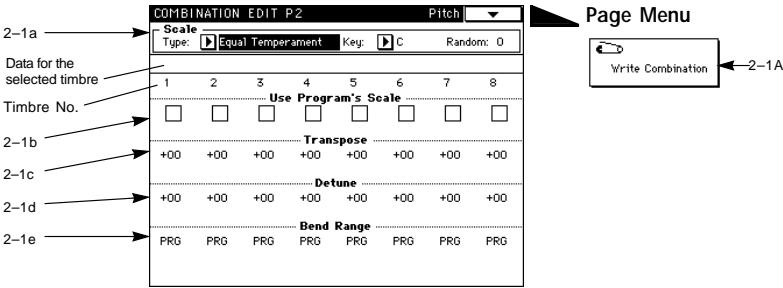
1-3A: Write Combination

This command writes an edited combination into the specified combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.
For details refer to Basic Guide page 23, "9. Writing a program or combination".

Combination Edit P2

2-1: Pitch

Here you can make settings for pitch and scale.



2-1a: Scale

Selects the scale used by the combination.

Type (Scale Type) [Equal Temperament...All Range User Scale]

Selects the scale type. For details refer to Program Edit mode "1-1: Program Basic" (☞ page 5 in this manual).

Key (Scale Key) [C...B]

Specifies the tonic of the selected scale.

Random [0...7]

Higher settings of this value will produce increasing irregularity in the pitch when a note is sounded. This is useful when you wish to simulate instruments that have natural instability in the pitch, such as analog synthesizers or acoustic instruments. Normally you will set this to 0.

2-1b: Use Program's Scale

Specifies the scale used by each timbre 1-8.

If this is **checked**, each program will use its own scale as specified in Program Edit mode "1-1: Program Basic" (☞ page 5 in this manual).

If this is **un-checked**, the combination scale specified in "2-1a: Scale" will be used.

2-1c: Transpose [-24...+24]

Adjusts the pitch of timbres 1-8 in chromatic steps. A setting of 12 equals one octave.

MIDI If "1-1d: Timbre Mode" is INT, the pitch sounded by the TRINITY will be affected. If "1-1d: Timbre Mode" is EXT, the note number of the MIDI Note message that is transmitted will change. For example if two timbres set to EXT are given settings of +4 and +7, playing a C note on the keyboard will cause E and G (on the MIDI channels of each timbre) to simultaneously be transmitted in addition to C (on the Global MIDI channel).

2-1d: Detune [-99...+99]

Adjusts the pitch in steps of 1 cent from the normal pitch.

With a setting of 0, the pitch will be normal.

As this value is increased, the pitch will deviate from the normal pitch.

2-1e: Bend Range

[PRG, -24...+24]

Specifies the range (in chromatic steps) of the pitch change that will occur when the pitch bender is operated.

With a setting of **PRG**, the pitch bend range specified by the program will be used.

With a setting of **-24** to **+24**, the pitch bend range will be as specified here, regardless of the setting of the program.

▼ Page Menu Command

2-1A: Write Combination

This command writes an edited combination into the specified combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.

For details refer to Basic Guide page 23, "9. Writing a program or combination".

Combination Edit P3

Here you can make settings for the keyboard range in which each timbre will sound.

3-1: Key Zone

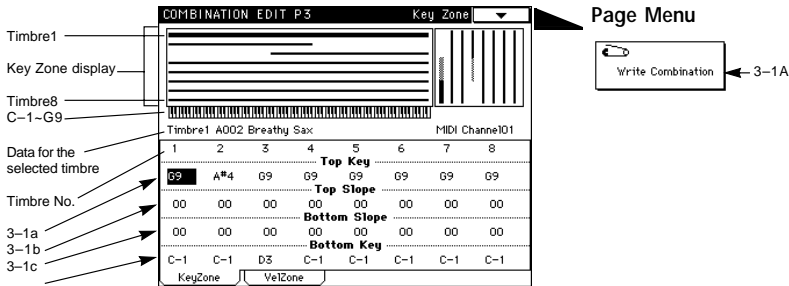
The Top/Bottom Key settings specify the keyboard range in which timbres 1-8 will sound, and the Top/Bottom Slope settings specify how the volume will change. The LCD will show a line to indicate the range in which each timbre will sound, and the area of the slope will be greyed.

If two or more timbres playing different sounds are set so that their ranges do not overlap, you can play different sounds from different ranges of the keyboard. (Key Split)

If you make settings so that the sounds overlap, a single key will produce more than one sound. If you make settings so that the slopes (the greyed portions) overlap, the sounds will overlap, and the mix of the sounds will change as you play across the keyboard. (Positional Crossfade)
On the **TRINITY**, **TRINITY V3** and the **TRINITY plus**, you can specify areas in the range of C2-C7, on the **TRINITY V3 pro**, **TRINITY pro** in the range of E1-G7, and on the **TRINITY V3 proX**, **TRINITY proX** in the range of A0-C8 (when transpose etc. is not used).

MIDI These settings have no effect on MIDI transmission or reception.

! It is not possible to set the Bottom Key above the Top Key within a single timbre. Nor is it possible to make settings that would cause the Top Slope and Bottom Slope to overlap.



3-1a: Top Key

[C-1...G9]

Specifies the top key of the range in which timbres 1-8 will sound. The key setting can also be input from the keyboard.

3-1b: Top Slope

[00...72]

Specifies the key range (12 is one octave) over which the volume will reach the original volume from the Top Key.
This is not effective for the timbres that use Bank M programs.
With a setting of **0**, the Top Key will sound at the original (maximum) volume.
With a setting of **12**, the volume will gradually increase until the key one octave below the Top Key will sound at the original volume.
With a setting of **60**, the volume will gradually increase until the key five octaves below the Top Key will sound at the original volume.

3-1c: Bottom Slope

[00...72]

Specifies the key range (12 is one octave) over which the volume will reach the original volume from the Bottom Key.
This is not effective for the timbres that use Bank M programs.
With a setting of **0**, the Bottom Key will sound at the original (maximum) volume.

With a setting of **12**, the volume will gradually increase until the key one octave above the Bottom Key will sound at the original volume.

With a setting of **60**, the volume will gradually increase until the key five octaves above the Bottom Key will sound at the original volume.

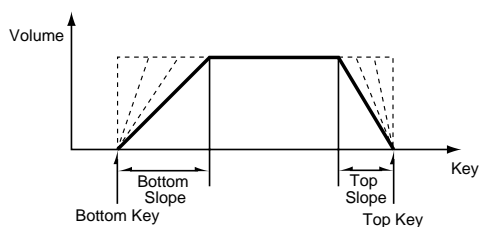
3-1d: Bottom Key

[C-1...G9]

Specifies the bottom key of the range in which timbres 1-8 will sound.

The key setting can also be input from the keyboard.

Volume change as affected by keyboard position



▼ Page Menu Command

3-1A: Write Combination

This command writes an edited combination into the specified combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.

For details refer to Basic Guide page 23, "9. Writing a program or combination".

3-2: Velocity Zone


Here you can set the Top/Bottom Velocity to specify the range of velocities at which each timbre 1-8 will sound, and set the Top/Bottom Slope to specify the range in which the volume will change.

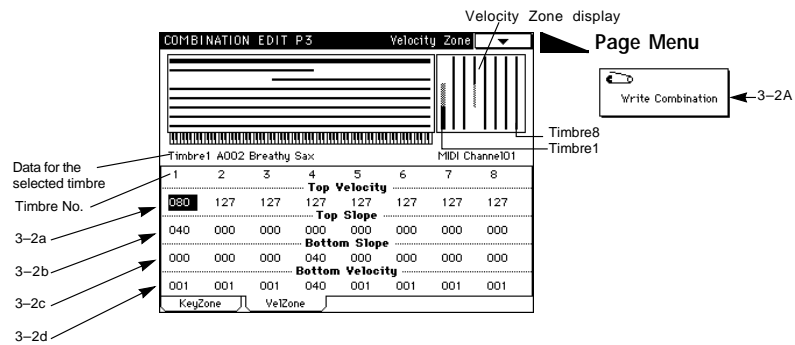
The LCD will show a line to indicate the range of velocities at which each timbre will sound, and the area of the slope will be greyed.

If two or more timbres playing different sounds are set so that their velocity ranges do not overlap, you can play different sounds with notes of different playing strengths. (Velocity Switch)
If you make settings so that the ranges that sound will overlap, different sounds will be mixed (layered).

In addition, if the slopes (the greyed portions) overlap, the sounds will overlap, and the volume balance of the sounds will change as you vary your playing strength. (Velocity Crossfade)

MIDI These settings have no effect on MIDI transmission or reception.

 It is not possible to set the Bottom Velocity above the Top Velocity. Nor is it possible to make settings that would cause the Top Slope and Bottom Slope to overlap.



3-2a: Top Velocity

[1...127]

Specifies the highest velocity value which will sound each timbre 1-8.
The velocity can also be specified from the keyboard.

3-2b: Top Slope

[0...120]

Specifies the range of velocities over which the volume will reach the original volume from the Top Velocity.

This is not effective for the timbres that use Bank M programs.

With a setting of **0**, the note will sound at the original volume for the top velocity.

With a setting of **120**, the volume will decrease as the Top Velocity is approached.

3-2c: Bottom Slope

[0...120]

Specifies the range of velocities over which the volume will reach the original volume from the Bottom Velocity.

This is not effective for the timbres that use Bank M programs.

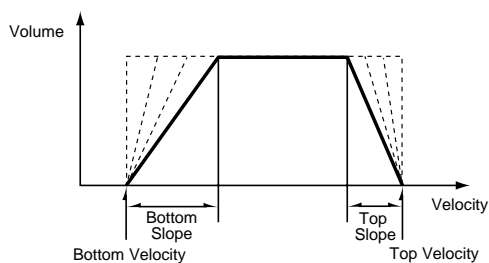
With a setting of **0**, the note will sound at the original volume.

With a setting of **120**, the volume will decrease as the Bottom Velocity is approached.

3-2d: Bottom Velocity**[1...127]**

Specifies the lowest velocity value at which each timbre 1-8 will sound.
The velocity can also be specified from the keyboard.

Volume change as affected by velocity

**▼ Page Menu Command****3-2A: Write Combination**

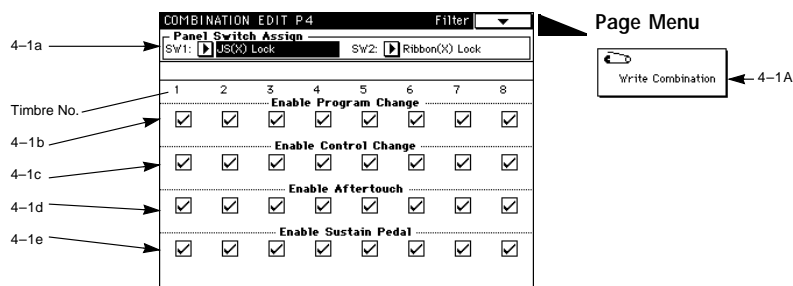
This command writes an edited combination into the specified combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.

For details refer to Basic Guide page 23, "9. Writing a program or combination".

Combination Edit P4

4-1: Filter

Here you can make settings for the assignable switches 1 and 2 located on the front panel, and specify how MIDI messages transmitted and received by timbres 1-8 will be filtered. Filter settings are made separately for each timbre, so even if two timbres are receiving the same MIDI channel, you can make settings so that (for example) pitch bend will apply to one timbre but not the other.



4-1a: Panel Switch Assign

Specify the function of the front panel SW1 and 2 (assignable switches 1,2).

When a combination is being used, the assignable panel switch assignments of each program are ignored, so you need to make settings here.

SW1 [JS (X) Lock...Modulation (CC#80)]

For details refer to Program Edit mode "1-1f: Panel Switch Assign" (☞ page 7 in this manual).

SW2 [JS (X) Lock...Modulation (CC#81)]

For details refer to Program Edit mode "1-1f: Panel Switch Assign" (☞ page 7 in this manual).

4-1b: Enable Program Change

MIDI This setting determines whether or not timbres 1-8 will transmit and receive MIDI Program Change messages.

If this is **checked**, when "1-1d: Timbre Mode" is INT, programs will be selected when MIDI Program Change messages are received. When "1-1d: Timbre Mode" is EXT, Program Change messages will be transmitted on the MIDI channel of each timbre when you select a combination.

If this is **un-checked**, MIDI Program Change messages will neither be transmitted nor received.

The MIDI Program Change message transmit/receive settings for the entire TRINITY are made in Global mode "2-1: Filter, Protect & Data Dump" (☞ page 136 in this manual).

4-1c: Enable Control Change


MIDI This setting determines whether or not timbres 1-8 will transmit and receive MIDI Control Change messages.

If this is **checked**, when "1-1d: Timbre Mode" is INT, MIDI controller messages will be received to control vibrato or volume etc. When "1-1d: Timbre Mode" is EXT, MIDI controller messages will be transmitted on that timbre's MIDI channel when you operate the TRINITY's controllers.

If this is **un-checked**, MIDI controller messages will neither be transmitted nor received.

The MIDI controller message transmission and reception settings for the entire TRINITY are made in Global mode "2-1: Filter, Protect & Data Dump" (☞ page 136 in this manual).

4-1d: Enable Aftertouch


 This setting determines whether or not timbres 1-8 will transmit and receive MIDI Aftertouch messages.

If this is **checked**, when “1-1d: Timbre Mode” is INT, MIDI Aftertouch will be received. When “1-1d: Timbre Mode” is EXT, MIDI Aftertouch messages will be transmitted on that timbre’s MIDI channel when you apply pressure to the TRINITY’s keyboard.

If this is **un-checked**, MIDI Aftertouch messages will neither be transmitted nor received.

The MIDI Aftertouch message transmission and reception settings for the entire TRINITY are made in Global mode “2-1: Filter, Protect & Data Dump” ([see](#) page 136 in this manual).

4-1e: Enable Sustain Pedal

 This setting determines whether or not timbres 1-8 will transmit and receive MIDI Sustain (Damper Pedal) messages.

If this is **checked**, when “1-1d: Timbre Mode” is INT, MIDI Sustain messages will be received to control sustain. When “1-1d: Timbre Mode” is EXT, Sustain messages will be transmitted on that timbre’s MIDI channel when you operate the TRINITY’s damper pedal.

If this is **un-checked**, MIDI Sustain messages will neither be transmitted nor received.

The MIDI Sustain message transmission and reception settings for the entire TRINITY are included in the Control Change settings made in Global mode “2-1: Filter, Protect & Data Dump” ([see](#) page 136 in this manual).

▼ Page Menu Command

4-1A: Write Combination

This command writes an edited combination into the specified combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.

For details refer to Basic Guide page 23, “9. Writing programs and combinations.”

Combination P7

In this page you can make insert effect settings for timbres 1 through 8.

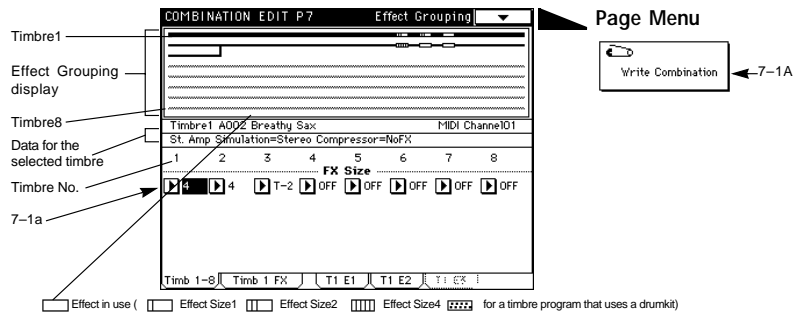
7-1: Effect Grouping

Here you can specify effect grouping. The actual insert effects for each timbre are specified in “7-2: Insert Effects” which follows.

When you specify insert effects in a combination, the total Effect Size for all timbres must be 8 or less. That is, if you wish to use a different insert effect for each timbre, all timbres must be set to an effect size of 1.

It is possible to input the audio signal of a timbre into the insert effect specified for a different timbre. That is, the insert effect of a timbre can be used by two or more timbres; this is called the Grouping function.

We recommend that you make a group for each set of timbres that use similar insert effects, select a timbre to act as the source for the group, and make insert effects for each group. For details refer to the separate **Effect Guide**.



7-1a: FX Size

[OFF, 1, 2, 4, 8, T-1...T-8]

Specifies the Effect Size of the insert effect used by each timbre.

For settings of 1, 2, 4 or 8, make insert effect settings in “7-2: Insert Effects”.

The timbres selected here will be affected by these settings, so first select the timbres here, then specify the insert effects in “7-2: Insert Effects,” and finally set effect parameters in “7-3: Effect Parameter.”

However the total for timbres 1-8 must be 8 or less. For example if two timbres are set to an Effect Size of 4, it will not be possible to make Effect Size settings for any other timbres. (It will not be possible to specify different insert effects for other timbres.)

For settings of T-1 through T-8, you can group timbres with effects specified for another timbre.

For example if you are using a flanger on timbre 3, you could set the Effect Size of timbre 5 to T-3. This would mean that timbre 3 is the grouping source, and the audio signals of timbre 3 and timbre 5 would be input to the flanger specified by timbre 3. This status is also displayed in the LCD.

MIDI Incoming MIDI control messages on a channel that matches the MIDI channel of a timbre will control the insert effect of that timbre. Thus if you wish to use incoming MIDI messages to control an insert effect, match the MIDI channel of the messages to the MIDI channel of the timbre. For details refer to Basic Guide page 64.

▼ Page Menu Command

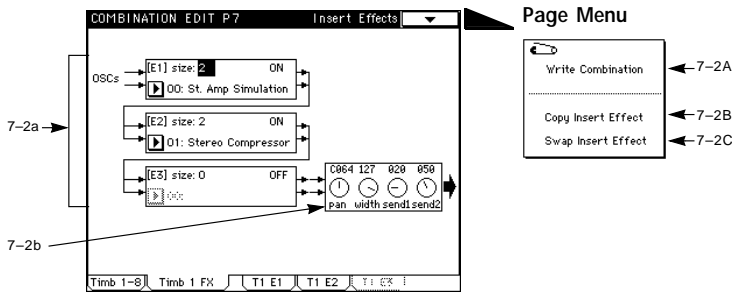
7-1A: Write Combination

This command writes an edited combination into the specified combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.

For details refer to Basic Guide page 23, "9. Writing programs and combinations".

7-2: Insert Effects (Timbre 1-8 Effects)

In this page you can make insert effect settings.



7-2a: Insert Effect Settings

Select the insert effect used by the timbre.

Size [0,1,2,4]

The size will determine the insert effects that can be selected.
A setting of **0** is No Effect, and insert effects cannot be selected.
For settings of **1-4**, you can specify the insert effect in "Effect Select." However the total size of [E1], [E2]... must be less than the value of "7-1a: FX Size."

Effect On/Off [Off, On]

Turn the effect on/off.
With a setting of **Off**, the effect will be bypassed. If an effect of Size 1 is selected, the dry sound will also be in mono. If you want the pan settings (Program Edit mode "1-2c: Pan") of timbres being used in stereo to be valid, set "Size" to a setting other than 1.

MIDI Independently of this setting, a MIDI Effect 2 Control message (CC#92) can turn off the insert effects for all timbres. They will be turned off by a value of 0, and will be returned to the original setting by values of 1-127. The Global MIDI channel is used for these messages.

Effect Select
Select the insert effect. The effects that can be selected will depend on the "Size" setting.
Parameter settings for the effects selected here are made in "7-3: T1 E1" through "7-6: T1 E4".
For details on each effect, refer to the separate **Effect Guide**.

7-2b: Pan/Width/Send 1, 2

Pan (Panpot) [L000...C064...R127]
Adjusts the pan after the effects.

Width [0...127]
Specifies the left/right width of the sound that has passed through the effects. Higher settings will produce a wider left/right spread for the effects.

Send 1, 2 [0...100]
Sets the send level to the master effects.

▼ Page Menu Command

7-2A: Write Combination

This command writes an edited combination into the specified combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.

For details refer to Basic Guide page 23, "9. Writing a program or combination".

7-2B: Copy Insert Effect

This command copies insert effect settings from a specified program, combination or song to the currently selected timbre.

7-2C: Swap Insert Effect

This command exchanges insert effect settings within this page.

7-3: T1 E1 (Timbre 1-8 Edit Insert Effect 1)

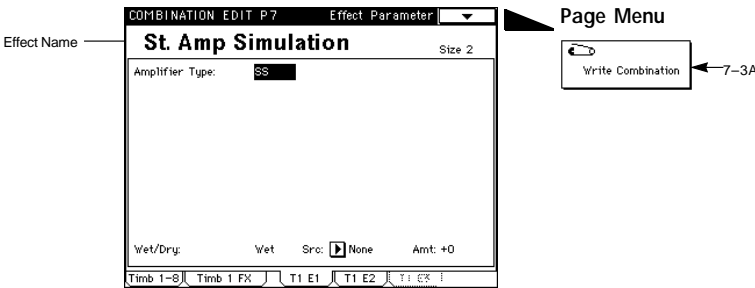
7-4: T1 E2 (Timbre 1-8 Edit Insert Effect 2)

7-5: T1 E3 (Timbre 1-8 Edit Insert Effect 3)

7-6: T1 E4 (Timbre 1-8 Edit Insert Effect 4)

These pages will be displayed if insert effects are selected in “7-2a: Insert Effect Setting.” Here you can make settings for insert effect parameters. For details on effect parameters, refer to the separate **Effect Guide**.

MIDI Effect dynamic modulation occurs on the MIDI channels specified for each timbre.



▼ Page Menu Command

7-3A: Write Combination

This command writes an edited combination into the specified combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data. For details refer to Basic Guide page 23, “9. Writing a program or combination”.

Combination Edit P8

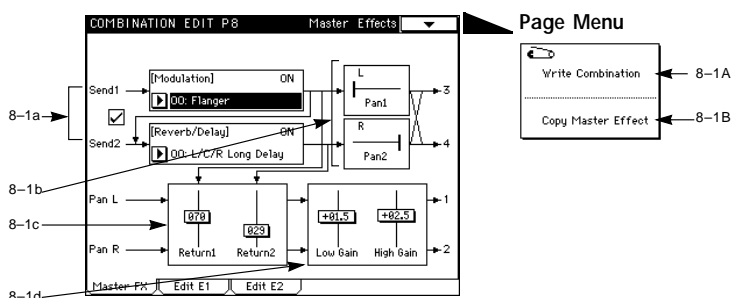
8-1: Master Effects

In this page you can make settings for the master effects, and adjust the level of the audio signals that are output from the TRINITY's output jacks (1/L/MONO, 2/R, 3, 4).

The Send 1, 2 parameters displayed at the left are the send levels specified in "7-1: Effect Grouping." Pan L and Pan R are the pan settings specified in "7-1: Effect Grouping."

However when "7-1a: FX Size" is OFF or if the total Size of the insert effects is 0, these will be the send levels and pan settings made in "1-2: Timb Param2" and in Combination Play mode "1-1: Combination Play" (☞ page 55 in this manual).

For details refer to the separate **Effect Guide**.



8-1a: Effect 1/Effect 2 Setting

Here you can make settings for Effect 1 ([Modulation]) and Effect 2 ([Reverb/Delay]). The check box in the left of the LCD determines how [Modulation] and [Reverb/Delay] will be connected.

If this is **checked**, [Modulation] and [Reverb/Delay] will be connected in series. The right output of [Modulation] will be sent to [Reverb/Delay].

Effect On/Off

[OFF, ON]

Turns the master effects on/off.



Independently of this setting, [Modulation] can be turned off by the MIDI message Effect 4 Control (CC#94), and [Reverb/Delay] can be turned off by Effect 5 Control (CC#95). In both cases, the effect will be turned off by a value of 0, and will be restored to its original settings by values of 1-127. The Global MIDI channel is used for these messages.

Effect Select

Selects the master effects. For [Modulation] you can select a modulation-type effect and for [Reverb/Delay] you can select a reverb/delay-type effect.

Settings for the effects you select here are made in "8-2: Edit E1" and "8-3: Edit E2."

For details on each effect, refer to the separate **Effect Guide**.

8-1b: Pan 1/2

[OFF, L...50:50...R]

Adjusts the pan of output jacks 3 and 4.

With a setting of OFF, the sound will not be output to output jacks 3 and 4.

8-1c: Return 1/2

[0...127]

Adjusts the level of the audio signals sent from [Modulation] and [Reverb/Delay] to output jacks 1/L/MONO and 2/R. The audio signals from Pan L and R will be mixed with the [Modulation] and [Reverb/Delay] outputs adjusted by these Return 1 and 2 levels, and sent from output jacks 1/L/MONO and 2/R.

8-1d: Low/High Gain

Adjusts the tonal character of the audio signal that is output from output jacks 1/L/MONO and 2/R. The units are [dB].

Low Gain [-18.0...+18.0]

Adjusts the level of the low frequency range.

High Gain [-18.0...+18.0]

Adjusts the level of the high frequency range.

▼ Page Menu Command

8-1A: Write Combination

This command writes an edited combination into the currently selected combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.

For details refer to Basic Guide page 23, "9. Writing a program or combination".

8-1B: Copy Master Effect

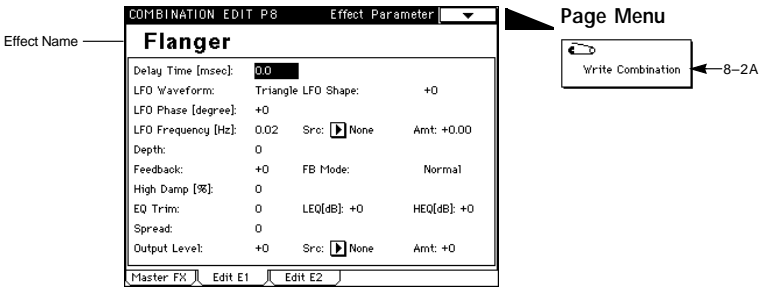
This command copies master effect settings from another program or combination into the master effects of the currently selected combination.

8-2: Edit E1 (Edit Master Effect 1 [Modulation])

8-3: Edit E2 (Edit Master Effect 2 [Reverb/Delay])

Here you can make parameter settings for the master effects.
These pages will be displayed when you select a modulation-type or reverb/delay-type effect for [Modulation] and [Reverb/Delay] in “8-1a: Master Effect Setting”.
For details on effect parameters, refer to the separate **Effect Guide**.

MIDI Effect dynamic modulation occurs on the Global MIDI channel.



▼ Page Menu Command

8-2: Write Combination

This command writes an edited combination into the currently selected combination number. Be sure to write important combinations. If you turn the power off or select another combination before writing, it will not be possible to recover the edited data.
For details refer to Basic Guide page 23, “9. Writing a program or combination”.

5. Sequencer mode

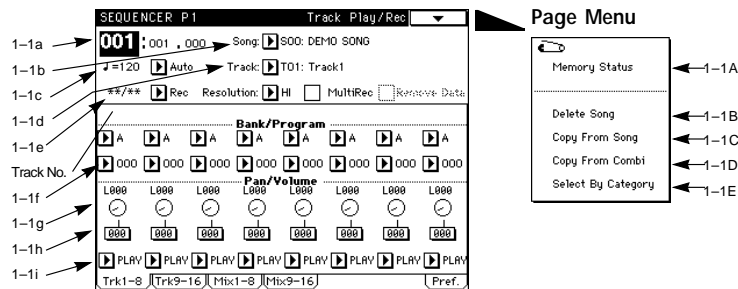
In sequencer mode you can playback and record a song, and edit the recorded data. You can also record and edit patterns.

Sequencer P1

1-1: Track Play/Rec (Track 1-8)

1-2: Track Play/Rec (Track 9-16)

Here you can make basic settings for the entire song, and set the main parameters for each track. For the basic procedure of realtime recording, refer to Basic Guide page 43, "About recording".



1-1a: Location

[001:01.000...999:15.191]

This indicates the current location in the selected song, in units (from left to right) of measures, beats, and clocks.

You can modify this value to move the current location. The display will change during playback, and also in response to the [FF], [REW], and [RESET] keys located on the front panel.

This parameter will be displayed in pages "1-1: Track Play/Rec" to "1-7: Preference," and can be set from any page.

MIDI Each time the location is changed, a Song Position Pointer message will be transmitted. This message can also be received by the TRINITY to change the location of its sequencer.



The range of beats and clocks will depend on the currently specified time signature.

1-1b: Song No.

[00...19]

Selects the song that you wish to record or playback. When the power is turned on, song 0 will be displayed (other songs cannot be selected at first—see below). You may record on **song 0** if you wish.

When you select a new song, a dialog box will appear. If you wish to record that song, press the OK button to allocate memory for the song and initialize its settings.

When the power is turned on, the song memory will be empty. In order to playback the sequencer, you must load data from a floppy disk, or transmit MIDI dump data from an external MIDI sequencer. For details refer to Basic Guide page 56, "9. Saving data".



Each time you select a song, a Song Select message and a Song Position Pointer message will be transmitted. If there are tracks whose Track Status is set to EXT or BOTH, MIDI Bank Select, Program Change, Volume, and Panpot messages will also be transmitted simultaneously on the MIDI channels of those tracks.

When the TRINITY receives a Song Select message, it will change songs.

The song number will be displayed in pages “1-1: Track Play/Rec” to “1-7: Preference,” and can be changed from any page.

1-1c: Tempo

Tempo

[40...240]

Sets the playback tempo of the song.

MIDI If the Global mode “1-1d: MIDI Clock/System Clock” setting (⇐ page 132 in this manual) is Internal, the tempo will be displayed as a numerical value, and you can set it as desired. If the setting is External, the display will indicate EXT, and the playback tempo of the TRINITY’s sequencer will be synchronized to the MIDI Clock messages received from an external sequencer, etc.

Tempo settings will be affected by the Tempo Mode as explained in the following paragraph. The tempo is displayed in pages “1-1: Track Play/Rec” through “1-7: Preference” and can be set from any of these pages.



If you select Tempo as an Alternate Modulation source, ♩=120 will be the central value.

Tempo Mode

[Manual, Auto, Rec]

Manual: The tempo data of the master track will be ignored, and the Tempo setting described above will determine the tempo.

Auto: The playback tempo will change according to the tempo data of the master track. (The tempo cannot be adjusted by the Tempo setting described above.)

Rec: This parameter can be selected after you press the [REC/WRITE] key. Changing the “Tempo” value during real-time recording will allow you to record tempo changes on the master track. (You can also use “5-1C: Event Edit” or “5-1L: Create Control Data” to record tempo changes.)

1-1d: Track

[T01...T16, MTR]

Selects the recording destination track that will be used for single-track recording.

This parameter will be displayed in pages “1-1: Track Play/Rec” through “1-7: Preference” and can be changed from any page.

MIDI When you play the keyboard or operate the controllers of the TRINITY, the internal tone generator will sound according to the settings (program, level, etc.) of the track you select here (if Track Status is INT or BOTH). Other tracks with a matching MIDI channel will also sound simultaneously (if Track Status is INT or BOTH). These messages will also be transmitted on the MIDI channel specified for that track.

For single-track realtime recording, the musical data will be recorded on the track you select here. For multi-track realtime recording, the “1-1i: PLAY/MUTE/REC” settings will determine for each track whether or not recording will take place, regardless of this setting.

Select MTR (Master Track) to edit the master track in the “5-1: Track Edit” page.

1-1e: Meter/Metronome/Resolution/Multi Rec/Remove Data

Meter (Time Signature)

[**/**, 1/4...16/4, 1/8...16/8, 1/16...16/16]

Specifies the time signature.

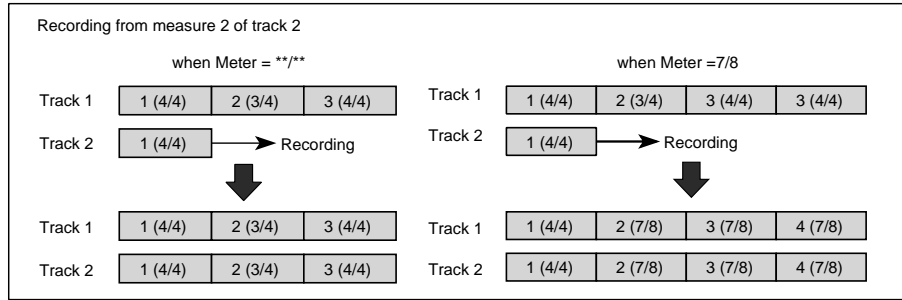
This parameter will be displayed in pages “1-1: Track Play/Rec” through “1-7: Preference” and can be changed from any page.

The time signature can be specified for each measure, and the display will change according to the settings.

During recording, the time signature specified here will be recorded in the master track. If this is set to **/**, the time signature already recorded in those measures (the time signature specified when recording other tracks) will be used.

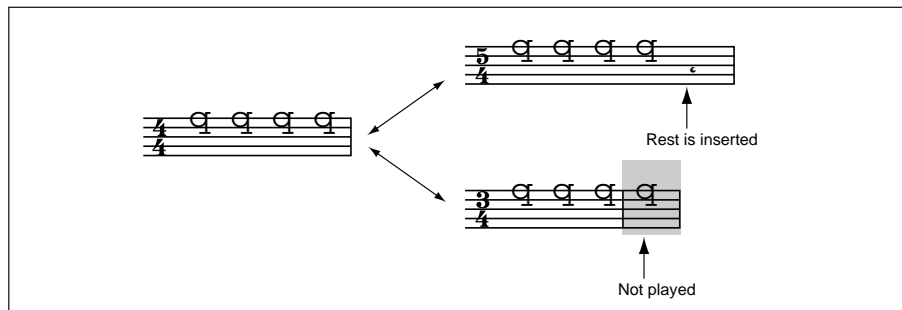
Normally you will set the time signature when recording the first track, and set **/** when recording subsequent tracks.

If you are recording a song that contains changes in time signature, first use Event Edit (“5-1: Track Edit” page menu) to insert time signature data into the measure whose time signature you wish to change, and then record the musical data for each track.



If changing the time signature of previously-recorded data causes extra space to appear in a measure, a rest will be inserted at the end of the measure.

If changing the time signature causes a note to fall outside of a measure, that note will not be played. However the musical data is not erased, and if you change the time signature back to the previous setting, it will once again be played.



Metronome

[OFF, ON, REC]

OFF: The metronome will not sound. However the pre-count when recording will sound.

ON: The metronome will sound constantly.

REC: The metronome will sound during recording, but not during playback.

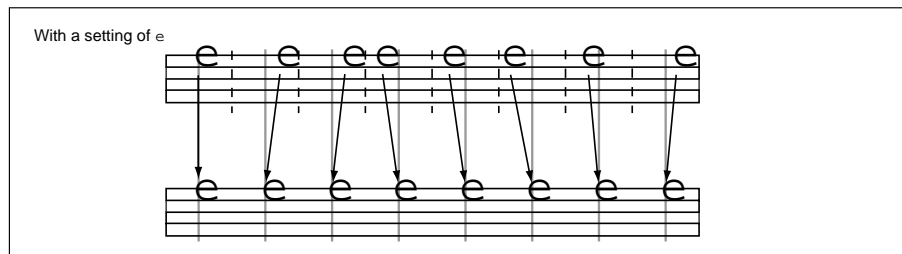
Resolution (Realtime Quantize Resolution)

[HI, 1/3... 1/4]

Specifies how timing will be corrected during realtime recording.

With a setting of HI (High Resolution), timing will not be corrected. Data will be recorded at the maximum resolution (1/192).

With settings of 1/3 to 1/4, data will be recorded at intervals of the specified timing. For example with a setting of 1/3, data will be moved to the nearest 32nd note triplet interval. With a setting of 1/4 data will be moved to the nearest quarter note.



Since all recorded data is moved to the specified timing interval, rough settings of resolution will mean that continuous controllers such as pitch bend will be recorded with a "stair-step" effect.

(The timing of previously-recorded data is not affected.)

To avoid such problems, you can use a Resolution setting of HI for recording and then use "5-1N: Quantize" to adjust the timing only for the desired types of data (Note data, etc.). Alternatively, you can avoid using an excessively rough Resolution setting.

Multi Rec

If this is **checked**, Multi-track Recording mode will be selected.

If you have selected Loop in "1-7h: Recording Setup", this cannot be checked.

MIDI MIDI data of two or more different MIDI channels will be received and recorded simultaneously on separate tracks. In this case, MIDI data of each channel will be recorded on the track of the matching channel whose “1-1i: Track PLAY/MUTE/REC” setting is REC, regardless of the “1-1d: Track” settings.

Use this mode when you are playing back an external multi-track sequencer and wish to record all the MIDI data in one pass.

In this case, we recommend that you set the Global mode “1-1d: MIDI Clock/System Clock” setting (☞ page 132 in this manual) to External, and synchronize to the external sequencer. However, changes in tempo will not be recorded.

If you set the Global “1-1d: MIDI Clock” to Internal, synchronization will not take place; the data will be recorded “blindly,” meaning that changes in tempo will be preserved but that the recorded data will not be aligned with measures or time signatures, and will therefore be difficult to edit later.

If this is **un-checked**, Single-track Recording mode will be selected.

Recording will take place on the track selected by “1-1d: Track.” Use this mode when you wish to record by playing the keyboard and controllers of the TRINITY.

Remove Data

This will be displayed if Loop is selected in “1-7h: Recording Setup.”

If this is **checked**, undesired musical data can be erased from a track. For example during loop recording, you can press notes on the keyboard that you wish to erase, and the specified note(s) will be erased from the data that plays back while you hold down the note(s).

In a similar way, pitch bend data can be erased while you move the joystick in the X (horizontal) direction, or aftertouch data can be erased while you apply pressure to the keyboard.

1-1f: Bank/Program

[A000...M063]

Selects the program used by each track.

If the MOSS-TRI option is installed, you can select programs 0-63 from bank M. In addition, if the Playback Sampler/Flash ROM option is installed, you can select programs 64-127 from bank M and programs 0-127 from banks C and D.



Bank M programs can be used only by a single track.

The programs you specify here will be selected when playback is started. By inserting Bank Select or Program Change messages in the playback data, you can switch programs during a song.



If “2-1d: Track Status” is EXT or BOTH, the program you specify here will be transmitted as a Bank Select and Program Change message when you select the song or when you reset to the beginning of the song.

Also, if the setting is INT or BOTH, program selection will be affected by the Program Change messages that are received.

1-1g: Pan

[OFF, L000...C064...R127, PRG]

Specifies the pan setting (stereo location) of each track.

With a setting of **OFF**, there will be no output of the direct dry signal. (Programs in Bank M will have the same pan setting as that of C064.)

With a setting of **L000-C064-R127**, you can change the pan setting during the song by inserting Pan messages (CC#10) in the musical data. In this case, the panning of already-sounding notes will not be affected, but will take effect from the next note that is played.

If this is set to **PRG**, the pan settings of the program used by that track will apply.



If “2-1d: Track Status” is EXT or BOTH, the pan setting you specify here will be transmitted as a Panpot message (CC#10) when you select the song or when you reset to the beginning of the song. If the setting is INT or BOTH, these messages can also be received to set the pan location.

1-1h: Volume**[0...127]**

Sets the volume of each track.

MIDI If “2-1d: Track Status” is EXT or BOTH, the volume setting you specify here will be transmitted as a Volume message (CC#7) when you select the song or when you reset to the beginning of the song.

The MIDI Volume messages (CC#7) used to modify this setting are for adjusting the volume balance between tracks at the beginning of the song, and should not be used in the main body of the song data. If you wish to modify the volume during the song, use the Expression message (CC#11). In other words, Volume messages (CC#7) should appear in a track only at the beginning of the song (to set the starting volume). Subsequent changes in volume (during playback) should be made using Expression messages (CC#11).

On the **TRINITY series**, the volume of the tone generator is determined by the product of the Volume (CC#7) and Expression (CC#11) values.

1-1i: Track PLAY/MUTE/REC**[PLAY, MUTE, REC]**

This setting allows each track to be temporarily muted, or used for multi-track recording. During playback and Single Track recording, you can select either PLAY or MUTE. During multi-track recording, you can select either PLAY, MUTE, or REC. For details on recording procedure, refer to Basic Guide page 43, “About recording”.

PLAY: If the track contains musical data, it will playback during playback or recording.

MUTE: The track will not playback during playback or recording.

REC: Recording will take place on the track.

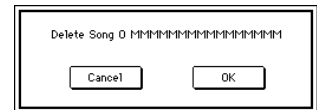
▼ Page Menu Command**1-1A: Memory Status**

This command displays the remaining amount of sequencer memory.

1-1B: Delete Song

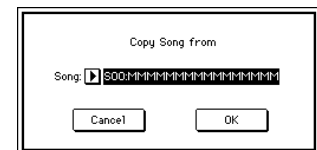
This command deletes the currently selected song. When this command is executed, the musical data, settings, and patterns of the currently selected song will be erased, and the memory area that had been occupied by the song will be freed.

- 1 When this command is executed, the dialog box shown at right will appear.
- 2 To execute the Delete Song command, press the **OK button**. To cancel without executing, press **Cancel**.

**1-1C: Copy From Song**

This command copies all setting data and musical data from a specified song to the currently selected song. When this command is executed, all setting data and musical data of the current song will be erased, and overwritten by the data of the copy source. Before executing, be sure that you are not overwriting important data.

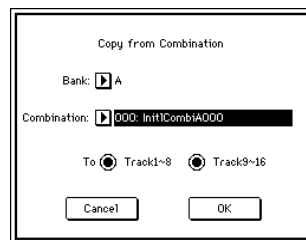
- 1 When this command is executed, the dialog box shown at right will appear.
- 2 Specify the copy source song number.
- 3 To execute the Copy Song command, press the **OK button**. To cancel without executing, press **Cancel**.



1-1D: Copy From Combination

This command copies the parameters from the specified combination to the setting data of the currently selected song. When this command is executed, the setting data of the currently selected song will be erased, and overwritten by the setting data of the combination. Before executing, be sure that you are not overwriting important data.

- 1 When this command is executed, the dialog box shown at right will appear.
- 2 Specify the bank number of the copy source combination.
- 3 Specify the number of the copy source combination.
- 4 Select the copy destination track.
- 5 To execute the Copy From Combination command, press the **OK button**. To cancel without executing, press **Cancel**.



MIDI The Timbre Mode will be copied as the Track Status, so if you copy a combination that includes a timbre whose Timbre Mode is EXT, that track will transmit its data via MIDI each time it is selected or played back.



Combination settings that use bank M cannot be copied to both tracks 1-8 and tracks 9-16.

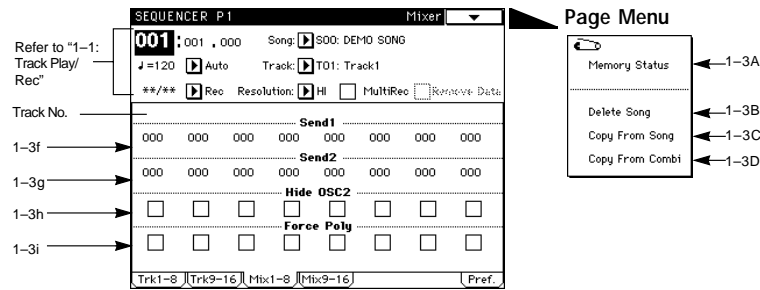
1-1E: Select By Category

This command allows you to select programs for a track using the categories specified in Program Edit mode. For details refer to Basic Guide page 26, "11. Selecting by category."

1-3: Mixer (Track 1-8)

1-4: Mixer (Track 9-16)

In these pages you can make basic settings for the entire song, and specify how each track will be played and output.



1-3f: Send 1 [0...127, PRG]

Specifies the Send 1 level of each track.

With a setting of **PRG**, the Send 1 level setting of the program used by each track will be used. With a setting of **0-127**, an Effect 3 Control message (CC#93) will be inserted into the playback data, allowing the setting to be modified during the song. In this case, the output of the notes already sounding will not change, but the new setting will apply from the next-played note.

[MIDI] If "2-1d: Track Status" is EXT or BOTH, the send levels you specify here (except when PRG is selected) will be transmitted as Effect 3 Control messages (CC#93) whenever the song is selected or reset to the beginning. If the setting is INT or BOTH, Effect 3 Control messages (CC#93) can be received to change the send levels.

1-3g: Send 2 [0...127, PRG]

Specifies the Send 2 level of each track.

With a setting of **PRG**, the Send 2 level setting of the program used by each track will be used. With a setting of **0-127**, an Effect 1 Control message (CC#91) will be inserted into the playback data, allowing the setting to be modified during the song. In this case, the output of the notes already sounding will not change, but the new setting will apply from the next-played note.

[MIDI] If "2-1d: Track Status" is EXT or BOTH, the send levels you specify here (except when PRG is selected) will be transmitted as Effect 1 Control messages (CC#91) whenever the song is selected or reset to the beginning. If the setting is INT or BOTH, Effect 1 Control messages (CC#91) can be received to change the send levels.

1-3h: Hide OSC2

This setting is available only for tracks which are using a program that is set to double mode (using two oscillators). If this setting is **checked**, only oscillator 1 will sound. (i.e., the program will temporarily be in single mode.)

1-3i: Force Poly

This setting is available only for tracks which are using a program that is set to mono mode (which plays only single notes).

If this setting is **checked**, the program will play polyphonically. (i.e., the program will temporarily be set to polyphonic.)

Mono mode settings are made in Program Edit mode "1-1d: Assign/Hold" (☞ page 6 in this manual).

▼ Page Menu Command

1-3A: Memory Status

This command displays the remaining amount of sequencer memory.

1-3B: Delete Song

This command deletes the currently selected song. When this command is executed, the musical data, settings, and patterns of the currently selected song will be erased, and the memory area that had been occupied by the song will be freed.

For details refer to "1-1B: Delete Song."

1-3C: Copy From Song

This command copies all setting data and musical data from a specified song to the currently selected song. When this command is executed, all setting data and musical data of the current song will be erased, and overwritten by the data of the copy source. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1C: Copy From Song."

1-3D: Copy From Combination

This command copies the parameters from the specified combination to the setting data of the currently selected song. When this command is executed, the setting data of the currently selected song will be erased, and overwritten by the setting data of the combination. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1D: Copy From Combination."

1–5: for Audio Track

1–6: for Audio Track

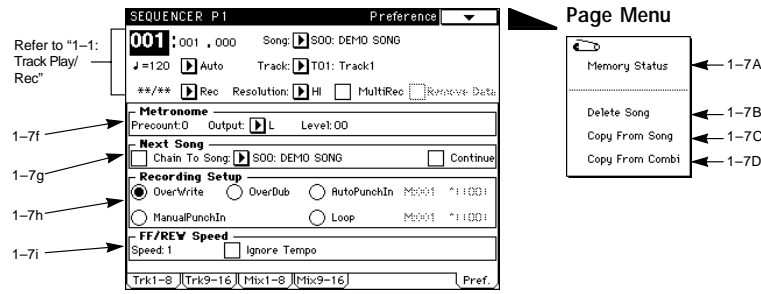
Here you can record audio to the hard disk recorder, and control the audio signal that was recorded.

This is available on **TRINITY series** models in which the HDR-TRI option is installed.

For details on recording using the hard disk recorder, refer to the separate manual for the **HDR-TRI**.

1-7: Preference

Here you can make basic settings that affect the entire song, and settings relating to sequencer operation. For more information on settings that affect the entire song, refer to “1-1: Track Play/ Rec.”



1-7f: Metronome

Metronome settings.

Precount [0...2]

Specifies the number of count-in measures that the metronome will sound before recording begins.

With a setting of 0, recording will begin immediately when you press the [PLAY] key.

Output [L, L+R, R, Send1, Send1+2, Send2]

Specifies the output for the metronome sound.

With a setting of L, the metronome sound will be output from the 1/L/MONO output jack.

With a setting of L+R, it will be output from the 1/L/MONO and the 2/R jacks.

With a setting of R, it will be output from the 2/R jack.

With a setting of Send1, Send1+2, or Send2, it will be output to the master effects, so if you do not want effects to be applied to the metronome sound, turn off the effect in “8-1: Master Effect.”

Level [0...99]

Sets the volume of the metronome.

1-7g: Next Song

Specifies whether or not another song will be selected and played back automatically when the currently selected song finishes playback.

Chain To Song

Specifies whether another song will be selected when the current song finishes playback.

If this is **checked**, the specified song will be selected after the current song finishes playback.

If you want playback to continue automatically with the next song, check the Continue box. If the Continue box is un-checked, the next song will be ready to playback, but will not start playback automatically.

Song [S00...S19]

Selects the song that will playback after the currently selected song.

Continue

Specifies whether playback will continue automatically with the next selected song.

If this box is **checked**, playback will continue automatically.

In this case if the Chain To Song box is also checked, the next specified song will be selected and played back automatically. If the Chain To Song box is un-checked, it will not be played back automatically.

1-7h: Recording Setup

Use the radio buttons to select one of the five methods of realtime recording. For the procedure of each method, refer to Basic Guide page 43, "About recording".

Overwrite

Newly recorded musical data will be written over previously recorded data.

Data existing in the measures at and following the location where you begin recording will be erased, so make sure that you are not erasing important data.

Normally you will use this mode of recording.

Overdub

Newly recorded musical data will be added to the previously recorded data.

Data existing in the measures at and following the location where you begin recording will not be erased, but will be combined with the newly recorded data.

Auto Punch In

When a previously-recorded track contains an area of measures that you wish to re-record, use this method to re-record only the specified measures.

M (Measure)

[1...999]

Specifies the starting and ending measures of the area in which auto punch recording will take place.

Manual Punch In

This is similar to Auto Punch In, in that it allows you to re-record an area in a previously-recorded track. However, you must manually specify (by pressing the [REC] button or a pedal switch) the area in which new recording takes place as you listen to the playback.

Loop

This method allows you to repeatedly play back a specified area of a previously-recorded track, adding or erasing musical data while you listen to the accumulation of previous recording passes. As with Overdub recording, keyboard and controller operations will be added to the previously recorded data.

If you check the Remove Data box in "1-1e: Meter/Metronome/Resolution/Multi Rec/Remove Data," you can erase specified musical data in the area.

If Multi Rec is checked, this parameter can not be selected.

M (measure)

[1...999]

Specifies the starting and ending measures of the area in which loop recording will take place.

1-7i: FF/REW Speed

This setting determines the speed of the fast-forward and reverse that occurs when you press the [FF] or [REW] keys.

Speed

[x2, x3, x4]

Specifies the speed at which fast-forward and reverse will occur relative to the playback tempo.

A setting of x2 is twice the playback speed, x3 is three times, and x4 is four times the playback speed. However if the playback data is dense, the fast-forward and rewind speeds may be slower.

Ignore Tempo

If this is **checked**, the playback tempo and note length etc. will be ignored, and fast-forward and rewind will be done at the maximum speed. The fast-forward and rewind speeds will differ for areas with dense data and areas with sparse data.

If this is **un-checked**, fast-forward and rewind will occur at the speed specified by the Speed setting.

▼ Page Menu Command

1-7A: Memory Status

This command displays the remaining amount of sequencer memory.

1-7B: Delete Song

This command deletes the currently selected song. When this command is executed, the musical data, settings, and patterns of the currently selected song will be erased, and the memory area that had been occupied by the song will be freed.

For details refer to "1-1B: Delete Song."

1-7C: Copy From Song

This command copies all setting data and musical data from a specified song to the currently selected song. When this command is executed, all setting data and musical data of the currently selected song will be erased, and overwritten by the data of the copy source. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1C: Copy From Song."

1-7D: Copy From Combination

This command copies the parameters from the specified combination to the setting data of the currently selected song. When this command is executed, the setting data of the currently selected song will be erased, and overwritten by the setting data of the combination. Before executing, be sure that you are not overwriting important data.

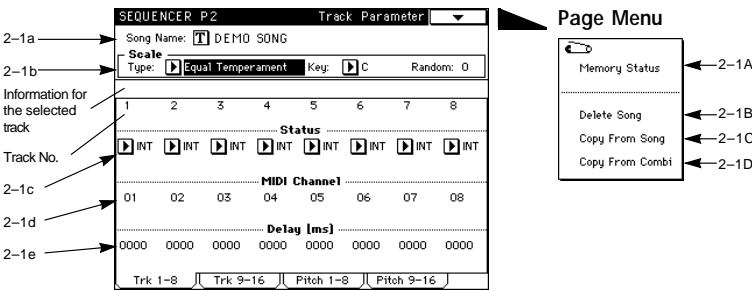
For details refer to "1-1D: Copy From Combination."

Sequencer P2

2-1: Track Parameter (Track 1-8)

2-2: Track Parameter (Track 9-16)

Here you can make settings for the song name, scale, and the MIDI channel of each track.



2-1a: Song Name

Assigns a name to the song.
When you press the text edit button, the song name display will appear (⇨ Basic Guide, page 6). This parameter is also displayed in “2-2: Track Parameter,” and can be edited from either display.
The song name you assign here will be displayed in page 1 (“1-1: Track Play/Rec” to “1-7: Preference”) and page 5 (“5-1: Track Edit” and “5-2: Track Name”).
The song name will be the filename used when the song data is saved to disk as a Standard MIDI File.
The filename can be modified at the time of saving, but by default it will be the first 8 characters of the song name. Characters that can be used in a filename are uppercase letters, numbers, and the underline character “_”, so if the song name contains lowercase letters they will be converted to uppercase, and symbols other than the underline character will be converted to the underline character.
Be aware that the filename will use three characters following a period “.” as the filename extension.

2-1b: Scale

Settings for the scale used by the song. The scale actually used by each track can be either the scale you specify here, or the scale used by the program assigned to each track.
The settings in “2-3c: Use Program’s Scale” specify whether tracks 1-8 will use their program’s scale or the scale you specify here. The settings in “2-3c: Use Program’s Scale” specify whether tracks 9-16 will use their program’s scale or the scale you specify here.
This parameter will also be displayed in “2-2: Track Parameter” and can be changed from either location.

- Type (Scale Type)

[Equal Temperament...All Range User Scale]

For details refer to Program Edit mode “1-1: Program Basic” (⇨ page 5 in this manual).
- Key (Scale Key)

[C...B]

Specifies the tonic key of the selected scale.

Random

[0...7]

Higher settings of this value will produce increasing irregularity in the pitch when a note is sounded. This is useful when you wish to simulate instruments that have natural instability in the pitch, such as analog synthesizers or acoustic instruments.
Normally you will set this to 0.

2-1c: Track Status

[INT, EXT, BOTH]

MIDI This setting determines how tracks will operate. When a sequence is playing back, this setting determines whether the musical data in each track will play the internal tone generator of the TRINITY, or will play an external tone generator.

INT: Musical data recorded in the track will play the internal tone generator, and MIDI messages will not be transmitted to external devices.

If you select a track that is set to INT and operate the keyboard and controllers of the TRINITY, that data will control only the internal tone generator and will not be transmitted via MIDI.

EXT: Musical data recorded in the track will be sent via MIDI, and will not play the internal tone generator.

If you select a track that is set to EXT and operate the keyboard and controllers of the TRINITY, the corresponding MIDI data will be transmitted, but the internal tone generator will not sound.

When you select songs or reset to the beginning of the song, tracks which are set to EXT will transmit Program, Volume (CC#7) and Pan (CC#10) messages.

BOTH: The operations of INT as well as EXT will occur. (The internal tone generator will sound.) Data recorded on the track will sound the internal tone generator, and simultaneously be transmitted via MIDI.

If you select a track that is set to BOTH and operate the keyboard and controllers of the TRINITY, the internal tone generator will sound, and the corresponding messages will simultaneously be transmitted via MIDI.

MIDI messages are transmitted and received on the MIDI channel specified for each track in "2-1d: MIDI Channel." When MIDI messages are received from an external device, messages on the same MIDI channels as the MIDI channels of tracks set to EXT will not be sounded.

Status	Recorded data Operations on the TRINITY		Received data	
	Internal tone generator	MIDI OUT	Internal tone generator	MIDI OUT
INT	○	×	○	—
EXT	×	○	×	—
BOTH	○	○	○	—

○ : Active

×

2-1d: MIDI Channel

[1...16]

MIDI Specifies the MIDI channel on which the track will transmit and receive musical data. The MIDI channel specified here will be the Receive channel if "2-1c: Track Status" is INT, the Transmit channel if the Track Status is EXT, and the Transmit and Receive channel if the Track Status is BOTH.

Tracks which are set to INT and have the same MIDI channel will be played by the same musical data (i.e., the same note and controller messages will play two or more tracks).

Even if the note data and the controller data are recorded in separate tracks, the notes will be affected by the controller data if the MIDI channels are the same for the two tracks.

2-1e: Delay

[0...99]

Specifies the time delay before the internal tone generator will sound after the keyboard is played, the sequencer plays back a note-on event, or a note-on message is received.

Normally you will leave this set to 0.

This setting is valid if "2-1c: Track Status" is INT or BOTH.

▼ Page Menu Command

2-1A: Memory Status

This command displays the remaining amount of free sequencer memory.

2-1B: Delete Song

This command deletes the currently selected song. When this command is executed, the musical data, settings, and patterns of the currently selected song will be erased, and the memory area that had been occupied by the song will be freed.

For details refer to "1-1B: Delete Song."

2-1C: Copy From Song

This command copies all setting data and musical data from a specified song to the currently selected song. When this command is executed, all setting data and musical data of the currently selected song will be erased, and overwritten by the data of the copy source. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1C: Copy From Song."

2-1D: Copy From Combination

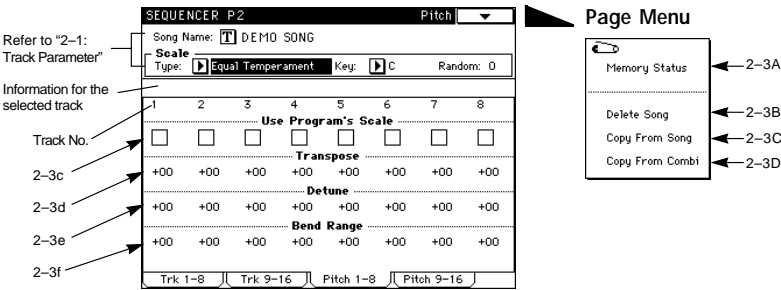
This command copies the parameters from the specified combination to the setting data of the currently selected song. When this command is executed, the setting data of the currently selected song will be erased, and overwritten by the setting data of the combination. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1D: Copy From Combination."

2-3: Pitch (Track 1-8)

2-4: Pitch (Track 9-16)

Here you can specify the song name, the scale, and the pitch of each track.
For details on the song name and scale, refer to “2-1: Track Parameter” (☞ page 89 in this manual).



2-3c: Use Program's Scale

This setting determines the scale used by each track.
If this is **checked**, the scale specified in Program Edit mode “1-1e: Scale” (☞ page 6 in this manual) will be used.
If this is **un-checked**, the scale specified for the song in “2-1b: Scale” will be used.

2-3d: Transpose [-24...+24]

Adjusts the pitch of each track in semitone steps.

MIDI This setting has no effect on the MIDI note data that is transmitted.
This setting will change if a MIDI RPN Coarse Tune message is received.

2-3e: Detune [-99...+99]

Adjusts the pitch of each track in steps of one cent.

MIDI This setting has no effect on the MIDI note data that is transmitted.
This setting will change if a MIDI RPN Fine Tune message is received.

2-3f: Bend Range [PRG, -24...+24]

Specifies the range of pitch change (in semitone steps) that will occur in response to pitch bend messages.

With positive (+) settings, the pitch will rise when the joystick is moved to the right, and will fall when the joystick is moved to the left. With negative (-) settings, the opposite will occur.

MIDI With a setting of **PRG**, the pitch bend range will be determined by the setting of Program Edit mode “2-1: OSC1 Pitch Mod” and “2-3: OSC2 Pitch Mod” (☞ page 12, 20 in this manual); i.e., the setting of the program used by that track.
With a setting of **other than PRG**, pitch bend messages will affect the pitch within the specified range. This setting will change if a MIDI RPN Pitch Bend Range message is received.

▼ Page Menu Command

2-3A: Memory Status

This command displays the amount of remaining sequencer memory.

2-3B: Delete Song

This command deletes the currently selected song. When this command is executed, the musical data, settings, and patterns of the currently selected song will be erased, and the memory area that had been occupied by the song will be freed.

For details refer to "1-1B: Delete Song."

2-3C: Copy From Song

This command copies all setting data and musical data from a specified song to the currently selected song. When this command is executed, all setting data and musical data of the currently selected song will be erased, and overwritten by the data of the copy source. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1C: Copy From Song."

2-3D: Copy From Combination

This command copies the parameters from the specified combination to the setting data of the currently selected song. When this command is executed, the setting data of the currently selected song will be erased, and overwritten by the setting data of the combination. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1D: Copy From Combination."

Sequencer P3

Here you can specify the range of note numbers and velocities for which the internal tone generator will sound by each track.

3-1: Key Zone (Track 1-8)

3-2: Key Zone (Track 9-16)

Set the Top/Bottom Key to specify the range for which each track will sound, and the Top/Bottom Slope to specify the area over which the volume will change.

The LCD will display a solid line to indicate the range of notes that will sound, and the slope areas will be shaded.

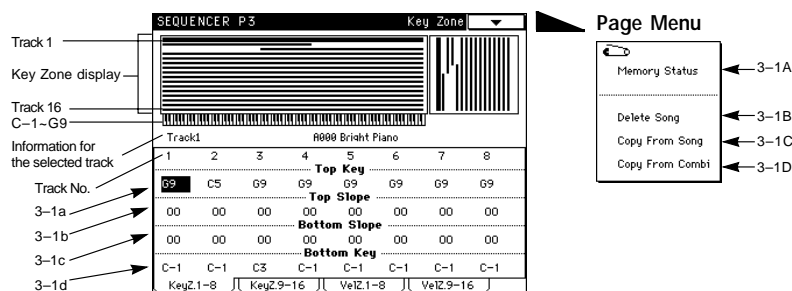
If two or more tracks receiving the same channel are set so that their ranges do not overlap, you can play different sounds from different ranges of the keyboard. (Key Split)

If the slopes (the shaded portions) overlap, the sounds will overlap, and the mix of the sounds will change as you play across the keyboard. (Positional Crossfade)

On the keyboards of the **TRINITY**, **TRINITY V3** and **TRINITY plus**, you can make settings in the range of C2-C7, on the **TRINITY V3 pro**, **TRINITY pro** in the range of E1-G7, and on the **TRINITY V3 proX**, **TRINITY proX** in the range of A0-C8 (when transpose etc. is not used).

MIDI These settings have no effect on MIDI transmission or reception. All incoming note messages will be recorded, and all notes played by the sequencer or keyboard will be transmitted.

! It is not possible to set the Bottom Key above the Top Key. Nor is it possible to make settings that would cause the Top Slope and Bottom Slope to overlap.



3-1a: Top Key

[C-1...G9]

Specifies the top key of the range in which each track will sound.
The key can also be specified from the keyboard.

3-1b: Top Slope

[00...72]

Specifies the key range (12 is one octave) over which the volume will reach the original volume from the Top Key.

This is not effective for the timbres that use Bank M programs.

With a setting of **0**, the Top Key will sound at the original (maximum) volume.

With a setting of **12**, the volume will gradually increase until the key one octave below the Top Key will sound at the original volume.

With a setting of **60**, the volume will gradually increase until the key five octaves below the Top Key will sound at the original volume.

3-1c: Bottom Slope**[00...72]**

Specifies the key range (12 is one octave) over which the volume will reach the original volume from the Bottom Key.

This is not effective for the timbres that use Bank M programs.

With a setting of **0**, the Bottom Key will sound at the original (maximum) volume.

With a setting of **12**, the volume will gradually increase until the key one octave above the Bottom Key will sound at the original volume.

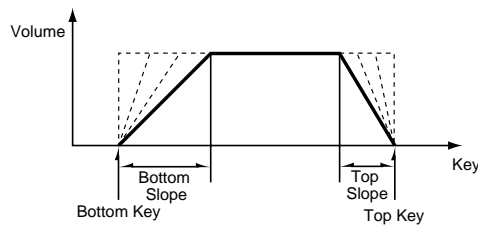
With a setting of **60**, the volume will gradually increase until the key five octaves above the Bottom Key will sound at the original volume.

3-1d: Bottom Key**[C-1...G9]**

Specifies the bottom key of the range in which each track will sound.

The key can also be specified from the keyboard.

Volume change as affected by keyboard position

**▼ Page Menu Command****3-1A: Memory Status**

This command displays the remaining amount of sequencer memory.

3-1B: Delete Song

This command deletes the currently selected song. When this command is executed, the musical data, settings, and patterns of the currently selected song will be erased, and the memory area that had been occupied by the song will be freed.

For details refer to "1-1B: Delete Song."

3-1C: Copy From Song

This command copies all setting data and musical data from a specified song to the currently selected song. When this command is executed, all setting data and musical data of the currently selected song will be erased, and overwritten by the data of the copy source. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1C: Copy From Song."

3-1D: Copy From Combination

This command copies the parameters from the specified combination to the setting data of the currently selected song. When this command is executed, the setting data of the currently selected song will be erased, and overwritten by the setting data of the combination. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1D: Copy From Combination."

3-3: Velocity Zone (Track 1-8)


3-4: Velocity Zone (Track 9-16)

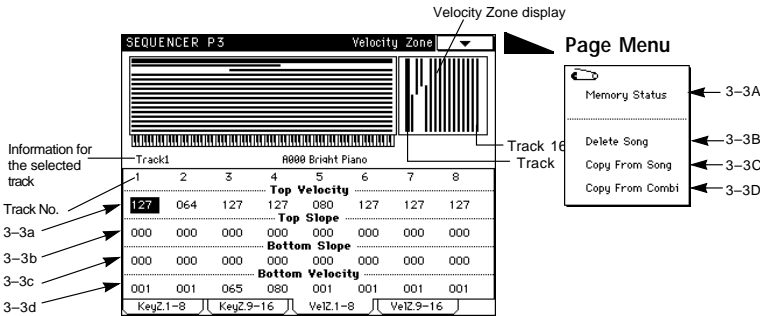
Here you can set the Top/Bottom Velocity to specify the range of velocities that will sound each track 1-8, and set the Top/Bottom Slope to specify the range in which the volume will change. The LCD will show a line to indicate the range of velocities which will sound each track, and the area of the slope will be greyed.

If two or more tracks receiving the same channel are set so that their velocity ranges do not overlap, you can play different sounds with notes of different playing strengths. (Velocity Switch)

If the slopes (the greyed portions) overlap, the sounds will overlap, and the mix of the sounds will change as you vary your playing strength. (Velocity Crossfade)

MIDI These settings have no effect on MIDI transmission or reception. All incoming note messages will be recorded, and all notes played by the sequencer or on the keyboard will be transmitted.

 It is not possible to set the Bottom Velocity above the Top Velocity. Nor is it possible to make settings that would cause the Top Slope and Bottom Slope to overlap.



3-3a: Top Velocity

[1...127]

Specifies the highest velocity value which will sound each track.

3-3b: Top Slope

[0...120]

Specifies the range of velocities over which the volume will reach the original volume from the Top Velocity.

This is not effective for the timbres that use Bank M programs.

With a setting of 0, the note will sound at the original volume for the Top Velocity.

With a setting of 120, the volume will decrease as the Top Velocity is approached.

3-3c: Bottom Slope

[0...120]

Specifies the range of velocities over which the volume will reach the original volume from the Bottom Velocity.

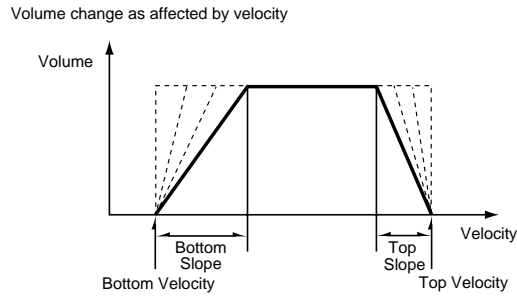
This is not effective for the timbres that use Bank M programs.

With a setting of 0, the note will sound at the original volume for the Bottom Velocity.

With a setting of 120, the volume will decrease as the Bottom Velocity is approached.

3-3d: Bottom Velocity**[1...127]**

Specifies the lowest velocity value which will sound each track.

**▼ Page Menu Command****3-3A: Memory Status**

This command displays the remaining amount of sequencer memory.

3-3B: Delete Song

This command deletes the currently selected song. When this command is executed, the musical data, settings, and patterns of the currently selected song will be erased, and the memory area that had been occupied by the song will be freed.

For details refer to "1-1B: Delete Song."

3-3C: Copy From Song

This command copies all setting data and musical data from a specified song to the currently selected song. When this command is executed, all setting data and musical data of the currently selected song will be erased, and overwritten by the data of the copy source. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1C: Copy From Song."

3-3D: Copy From Combination

This command copies the parameters from the specified combination to the setting data of the currently selected song. When this command is executed, the setting data of the currently selected song will be erased, and overwritten by the setting data of the combination. Before executing, be sure that you are not overwriting important data.

For details refer to "1-1D: Copy From Combination."

Sequencer P4

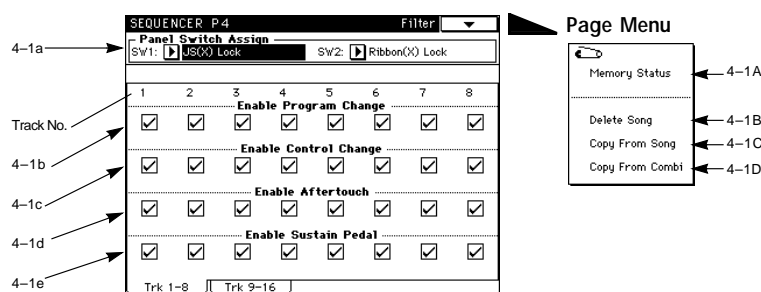
Here you can assign the functions of the assignable panel switches, and specify whether or not each type of MIDI message will be received.

4-1: Filter (Track 1-8)

4-2: Filter (Track 9-16)

MIDI These settings assign functions to the two assignable switches, and specify whether or not each track will receive four types of MIDI messages. The reception settings are filters for reception only, and will not affect the transmission of messages that are already recorded.

When controlling the **TRINITY** from an external device, be sure that the MIDI channels of each track match the MIDI channels of the messages being transmitted from the external device.



4-1a: Panel Switch Assign

Specify the functions that the front panel SW1 and SW2 assignable panel switches will perform. For details refer to Program Edit mode "1-1f: Panel Switch Assign" (page 7 in this manual).

MIDI If you operate these switches during recording, messages of the assigned functions will be recorded.

SW1

[JS (X) Lock...Modulation (CC#80)]

SW2

[JS (X) Lock...Modulation (CC#81)]

The same functions are available for assignment to SW1 and SW2 (except for Modulation), as follows.

If you set a switch to **Controller Lock** for the joystick, ribbon controller, or aftertouch, etc., the selected controller will be locked or unlocked (the LED will light to indicate Locked status) each time you press SW1 (or SW2).

For example if you set this parameter to JS(+Y), move the joystick away from you and press SW1 (or SW2), the joystick (+Y) movement will be locked (held) at that location, and modulation will continue to be applied even after you return the joystick to its normal position. In addition, you can then move the joystick in the (-Y) direction to apply two types of modulation simultaneously from the same joystick controller.

MIDI When a controller is locked, it will stop transmitting MIDI messages. However these MIDI messages can still be received.

With a setting of **Octave Up**, pressing SW1 (or SW2) will alternate between 1 octave up (the LED will be lit) and the original octave setting (the LED will be unlit).

With a setting of **Octave Down**, pressing SW1 (or SW2) will alternate between 1 octave down (the LED will be lit) and the original octave setting (the LED will be unlit).

With a setting of **Portamento Off**, the portamento effect will alternate on/off (the effect will be off when the LED is lit).

This is valid only for the bank M programs.

MIDI A MIDI message of CC#65 will be transmitted at each on/off (a value of 0 for OFF, a value of 127 for ON).

With a setting of **Modulation**, the switch can be used as a source for Alternate Modulation or Effect Dynamic Modulation. In this case, you must have specified the control destination. For this function alone, the functions of SW1 and SW2 are different; SW1 is handled as CC#80, and SW2 as CC#81.

MIDI For each on/off, CC#80 (or CC#81) will be transmitted (a value of 0 for OFF, a value of 127 for ON).

4-1b: Enable Program Change

MIDI This determines whether MIDI Program Change and Bank Select messages will be received.

If this is **checked**, tracks whose “2-1c: Track Status” is INT or BOTH will receive MIDI Program Change and Bank Select messages whose channels match their own. However the Global mode “2-1a: Filter” (☞ page 136 in this manual) setting must also be checked to enable reception.

If this is **un-checked**, the track will not receive MIDI Program Change or Bank Select messages.

4-1c: Enable Control Change

MIDI This determines whether MIDI controller messages (ribbon, volume, pedal, panpot, etc.) will be received.

If this is **checked**, tracks whose “2-1c: Track Status” is INT or BOTH will receive MIDI controller messages whose channels match their own. However the Global mode “2-1a: Filter” (☞ page 136 in this manual) setting must also be checked to enable reception.

If this is **un-checked**, the track will not receive MIDI controller messages.

4-1d: Enable Aftertouch

MIDI This determines whether MIDI aftertouch messages (Channel Aftertouch, Poly Key Pressure) will be received.

If this is **checked**, tracks whose “2-1c: Track Status” is INT or BOTH will receive MIDI aftertouch messages whose channels match their own. However the Global mode “2-1a: Filter” (☞ page 136 in this manual) setting must also be checked to enable reception.

If this is **un-checked**, the track will not receive MIDI aftertouch messages.

4-1e: Enable Damper Switch

MIDI This determines whether MIDI Sustain (damper) messages will be received.

If this is **checked**, tracks whose “2-1c: Track Status” is INT or BOTH will receive MIDI Sustain messages whose channels match their own. However the Global mode “2-1a: Filter” (☞ page 136 in this manual) setting must also be checked to enable reception.

If this is **un-checked**, the track will not receive MIDI Sustain messages.

▼ Page Menu Command

4-1A: Memory Status

This command displays the remaining amount of sequencer memory.

4-1B: Delete Song

This command deletes the currently selected song. When this command is executed, the musical data, settings, and patterns of the currently selected song will be erased, and the memory area that had been occupied by the song will be freed.

For details refer to "1-B: Delete Song."

4-1C: Copy From Song

This command copies all setting data and musical data from a specified song to the currently selected song. When this command is executed, all setting data and musical data of the currently selected song will be erased, and overwritten by the data of the copy source. Before executing, be sure that you are not overwriting important data.

For details refer to "1-C: Copy From Song."

4-1D: Copy From Combination

This command copies the parameters from the specified combination to the setting data of the currently selected song. When this command is executed, the setting data of the currently selected song will be erased, and overwritten by the setting data of the combination. Before executing, be sure that you are not overwriting important data.

For details refer to "1-D: Copy From Combination."

Sequencer P5

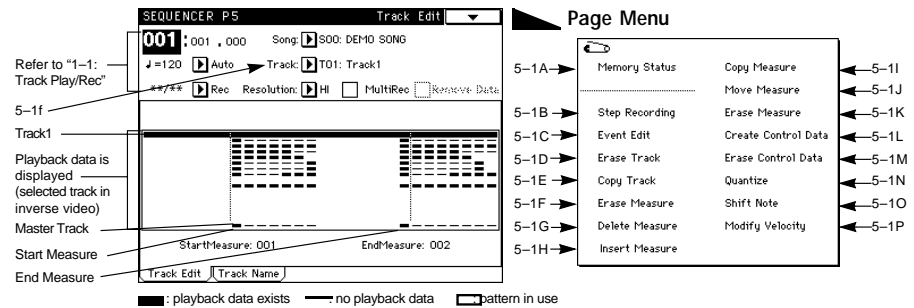
5-1: Track Edit

Here you can make settings for the currently selected track, edit previously recorded musical data, and perform step recording (non-realtime recording).

For the procedure of realtime recording, refer to Basic Guide page 43, "About recording".

To edit musical data or perform step recording, first select a track and an area in the tab page display. Then use the page menu command.

For details on settings for the currently selected track, refer to "1-1: Track Play/Rec."



5-1f: Track

[T1...T16, MTR]

Selects the track whose musical data you wish to record or edit (or which will be the copy destination).

If you wish to edit all tracks, there is no need to specify them here. (Check the All Tracks checkbox in the various dialog boxes to select all tracks.)

If you select **MTR** (Master Track), you can edit tempo and time signature on the master track.

5-1g: Start Measure/End Measure

Specify the range of measures to be recorded or edited (or which will be the copy destination).

Start Measure

[1...999]

Specifies the first measure. If you stop song playback while this tab page is displayed, the measure at which you stopped will be selected as the Start Measure.

End Measure

[1...999]

Specifies the last measure.

▼ Page Menu Command

5-1A: Memory Status

This command displays the remaining amount of sequencer memory.

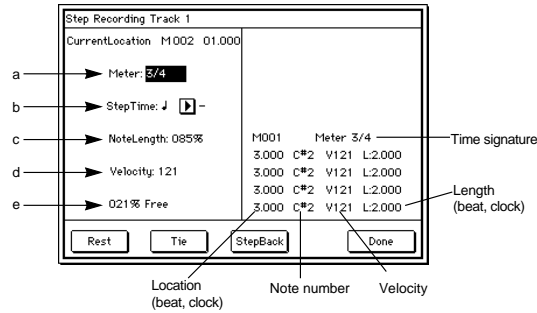
5-1B: Step Recording

This is where you perform non-realtime recording.

Use the keyboard to specify note pitches, and use the Rest button, Tie button, and Step Back button to specify the timings and velocities of each note. Step recording allows you to input songs that would be difficult to record in realtime.

Step recording allows you to enter note data. To enter other types of data, for example continuous data such as pitch bend, use "5-1L: Create Control Data." To enter individual data events such as program changes, use "5-1C: Event Edit."

- 1 In the tab 1 display, specify the track and the Start Measure for recording.
- 2 When this command is selected, the following dialog box will appear.



The left side of the dialog box allows you to specify the time signature for each measure, step time, note length, and velocity. The right side of the dialog box displays the recorded note data.

- a) Sets the time signature.
The time signature already specified for that measure will be displayed. It is possible to change the time signature, but if you do so, the time signature data of previously recorded measures will be modified, and those measures will be played back with the re-written time signature for all tracks.
- b) Specifies the basic note value that will be used for recording. The following table shows the number of clocks for each note value.

		e			
(0:24)	(0:48)	(0:96)	(1:00)	(2:00)	(4:00)
		e			
(0:36)	(0:72)	(1:44)	(1:96)	(3:00)	(6:00)
3	3	3	3	3	3
┌ ┐	┌ ┐	┌ e ┐	┌ ┐	┌ ┐	┌ ┐
(0:16)	(0:32)	(0:64)	(1:28)	(1:64)	(2:128)

- c) Specifies the length that the note will actually be held in relation to the note value. A setting of **50%** is staccato, **85%** is normal, and **100%** is tenuto.
 - d) **Velocity** specifies the velocity (playing strength) of the note data. If this is set to Key, the velocity that was actually played on the keyboard will be used.
 - e) The remaining amount of playback data memory will be displayed.
- 3 Press the appropriate buttons to record each note as explained below. When you finish step recording, return to the tab page by pressing the **Done** button.

Recording notes

When you press a note on the keyboard, a note of that note number and the length specified by Step Time will be recorded.
Each time you press a note, the location will advance by the Step Time.
When recording a chord, the timing at which you press each note has no effect. All notes that were held down before releasing the last note will be recorded as a chord of the specified Step Time.

Recording rests

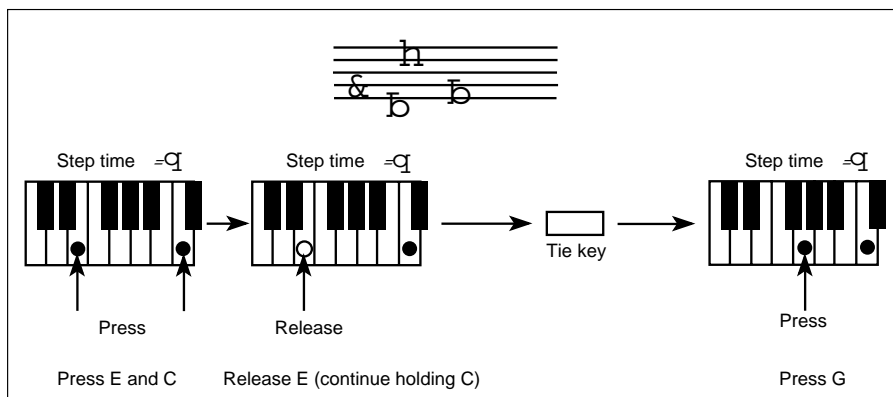
Without pressing the keyboard, press the **Rest** button. A rest of the length specified by the Step Time will be recorded.

Erasing note data

To erase the last-input note (or rest), press the **Step Back** button without pressing a note.
To erase a specific note from the last-input chord, hold down the note you wish to erase and press the **Step Back** button.

Recording a tie

Press the **Tie** button without pressing a note, and the last-input note will be tied, and its length will be extended by the Step Time.
If you hold down a note as you press the **Tie** button, the tie will apply only to that note, allowing you to input phrases as shown below.



5-1C: Event Edit

This allows you to edit individual events of recorded musical data.

- 1 In the tab 1 display, select the desired track and Start Measure. If you have set Track to MTR, continue to 4 .
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 Make settings in **Set Event Filt** to select the type of musical data that can be viewed (and edited) in the event edit display.

The following types of data can be selected; **Note**, **Pitch Bend**, **Control Change**, **Program Change**, **After Touch**, and **Poly After Touch**. Types of data for which the check box is checked will be shown in the event edit display below.

- 4 To move to the event display press the **OK** button. To return to the previous display press the Cancel button. If you press the OK key, the following dialog box will appear.

- a) Select the index that you wish to edit. You can also directly press the LCD at the desired event, or use the scroll bar located at the right. At this time, selecting a Note event will cause it to sound.
- b) If you modify the Location value, the event will move within the measure.

c) The types of musical data that can be selected and the ranges of data values are as follows.

Bar (display only) (bar line)	Meter: 1/4...16/16* (time signature)	
C-1...G9 (note data)	V: 1...127 (velocity)	L: 000.000...999:191 (length: beats, clocks)
PAFT (poly aftertouch)	C-1...G9 (note number)	0...127 (value)
CTRL (control change)	C:0...101 (control change number)	0...127 (value)
PROG (program change)	Bank: A, B, 002...127, GM, GMD, --- (program bank)	P: 0...127 (program number)
AFTT (aftertouch)	V: 0...127 (value)	
BEND (pitch bend)	V: -8192...+8191 (value)	

* Since the time signature is recorded in the master track, be aware that changing the time signature in a track will affect measures in other tracks as well, and that all tracks will be played back with the specified time signature.

A pattern number will be displayed in locations where a pattern has been Put (placed).

“**End of Track**” will be displayed at the end of the track.

5 To exit event editing and return to the tab page display, press the Done button.

Deleting an event

Select the event that you wish to delete, and press the **Delete button**. The event will be deleted, and subsequent events will be moved forward.

Inserting an event

Select an existing event at the location where you wish to insert, and press the **Insert button**. Events located after the selected event will be moved toward the end of the song, and a new event will be inserted at that location.

Moving an event

To move an event, use the **Delete button** and **Insert button** (to **Cut and Paste** the event). Use the Delete button to delete the event you wish to move, and use the Insert button to insert it in the new location. You can also move an event by modifying 'b' (its Location within the measure).

Copying an event

Select the event that you wish to copy, and press the Copy button. Then you can perform the Insert operation to insert that data.

Playback data other than note data is recorded in the same format as the corresponding MIDI message.

The following table shows each Control Change number and the operation on the TRINITY to which it corresponds when received or transmitted.

CC#	Control	Value	Function
0	Bank Select (MSB)	0...127	MSB of Bank Select message *1
1	Oscillator LFO	0...127	joystick movement in +Y direction
2	Filter LFO	0...127	joystick movement in -Y direction
4	Foot Controller	0...127	assignable pedal when assigned to Modulation
6	Data Entry (MSB)	0...127	MSB of RPN data *3
7	Volume	0...127	volume *2
10	Panpot	0...127	L...R pan
11	Expression	0...127	volume *2
12	Effect Control 1	0...127	dynamic modulation source Effect 1
13	Effect Control 2	0...127	dynamic modulation source Effect 2
16	Ribbon Controller (x)	0...127	horizontal movement on ribbon controller
17	Ribbon Controller (z)	0...127	pressure on ribbon controller
18	VALUE slider	0...127	VALUE slider operation
19	Controller (CC#19)	0...127	for alternate modulation or dynamic modulation
32	Bank Select (LSB)	0...127	LSB of Bank Select message *1
38	Data Entry (LSB)	0...127	LSB of RPN data *3
64	Sustain Pedal Switch on/off	0...63 (off), 64...127 (on)	sustain off, sustain on
65	Portamento on/off	0...63 (off), 64...127 (on)	portamento off, portamento on (when Solo Synth is installed)
72	Release Time	0...127	release time of filter EG, amp EG *4
73	Attack Time	0...127	attack time of amp EG *4
74	Brightness	0...127	filter cutoff *5
80	Panel Switch 1 on/off	0...63 (off), 64...127 (on)	panel switch 1 on/off
81	Panel Switch 2 on/off	0...63 (off), 64...127 (on)	panel switch 2 on/off
82	Pedal Switch on/off	0...63 (off), 64...127 (on)	pedal switch on/off
83	Controller (CC#83) on/off	0...63 (off), 64...127 (on)	alternate modulation on/off, dynamic modulation on/off
91	Effect 1 Control	0...127	Send 2 level
92	Effect 2 Control	0 (off), 1...127 (on)	insert effect on/off
93	Effect 3 Control	0...127	Send 1 level
94	Effect 4 Control	0 (off), 1...127 (on)	master effect (modulation-type) on/off
95	Effect 5 Control	0 (off), 1...127 (on)	master effect (reverb-type) on/off
96	Data Increment	00	increment RPN data *3
97	Data Decrement	00	decrement RPN data *3
100	RPN (LSB)	00 01 02	select Pitch Bend Range select Fine Tune select Coarse Tune *3
101	RPN (MSB)	00	MSB of RPN *3

CC#94 (Modulation-type Master Effect OFF) and CC#95 (Reverb/Delay-type Master Effect OFF) are valid for the data of tracks which are set to the Global MIDI channel.

- *1 Bank Select is normally specified as part of a Program Change event, but this may be insufficient when you need to select banks on an external device. In such cases, use CC#00 and CC#32. Refer to the manual for the external device for the relation between its memory banks and the Bank Select messages.
- *2 The volume of the **TRINITY series** is determined by multiplying the value of Volume (CC#07) with the value of Expression (CC#11). If you stop song playback and press the [RESET] key, the location will return to the beginning of the track, the volume will be set to the starting value, and expression will be set to the maximum value (127).
- *3 Unlike normal control change messages, Pitch Bend Range, Fine Tune, and Coarse Tune settings are made using RPC (Registered Parameter Control). The procedure is to use an RPN (Registered Parameter Number) to select the parameter that you wish to edit, and then use Data Entry messages to specify the parameter value. Parameters are selected using CC#100 (value of 00—02) and CC#101 (value of 00), and the data is input using CC#06 and CC#38.

The following tables show the correspondence between Data Entry values and the settings of each parameter.

RPN=0 (Pitch Bend Range)			RPN=1 (Fine Tune)		
CC#06	CC#38	Parameter value (semitone steps)	CC#06	CC#38	Parameter value (1 cent steps)
00	00	0	32	00	-50
01	00	+ 1	⋮	⋮	⋮
⋮	⋮	⋮	48	00	-25
⋮	⋮	⋮	⋮	⋮	⋮
12	0	+12	64	00	0
			⋮	⋮	⋮
			96	00	+50

RPN=2 (Coarse Tune)		
CC#06	CC#38	Parameter value (semitone steps)
40	00	-24
⋮	⋮	⋮
52	00	-12
⋮	⋮	⋮
64	00	0
⋮	⋮	⋮
88	00	+24

For example, if you wanted to set a transposition (Coarse Tune) of -12 for the track that was receiving channel 1, you would first send [B0, 64, 02] (hexadecimal) to the **TRINITY** to select the RPN Coarse Tune. Next, you would transmit [B0, 06, 34], [B0, 26, 00] to set the value to -12.

On most sequencers, you can transmit these messages by creating the following Control Change messages to be transmitted on channel 1; a CC#100 with a value of 02 to select RPN Coarse Tune, then a CC#06 with a value of 52 (corresponding to -12), and finally a CC#38 with a value of 00.

- *4 With a value of 64, the program's setting will apply. Values of 63 and below will shorten the time, and values of 65 and above will lengthen the time.
- *5 With a value of 64, the program's setting will apply. Values of 63 and below will darken the tone, and values of 65 and above will brighten the tone.

5-1D: Erase Track

This command erases all musical data in the track specified in the tab 1 display.

- 1 In the tab 1 display, specify the track for erasure.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 If you wish to erase all tracks including the master track, check All Tracks. If this is not **checked**, only the track specified in the tab 1 display will be erased.
- 4 To execute the Erase Track command, press the **OK button**. To cancel without executing, press the **Cancel button**.

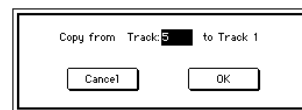


5-1E: Copy Track

The musical data of the track specified in the dialog box will be copied to the track specified in the tab 1 display.

Be aware that when you execute the Copy Track command, the musical data that was in the copy destination track will be lost.

- 1 In the tab 1 display, specify the copy destination track.
- 2 When this command is selected, the dialog box shown at right will appear.
- 3 Specify the copy source track.
- 4 To execute the Copy Track command, press the **OK button**. To cancel without executing, press the **Cancel button**.



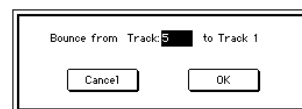
5-1F: Bounce Track

All musical data of the track specified in the tab 1 display and the track specified in the dialog box will be combined and placed in the track specified in the tab 1 display.

Be aware that when you execute the Bounce Track command, the data will be affected as follows:

- The combined musical data will be placed in the track specified in the tab 1 display, and all musical data of the track specified in the dialog box will be erased.
- Track settings (program and MIDI channel, etc.) will be those of the bounce destination track.
- If the track specified in the tab 1 display and the track specified in the dialog box contain identical control data in the identical location, incorrect operation may occur following the execution of this command. Before bouncing, use “5-1C: Event Edit” or “5-1M: Erase Control Data” etc. to erase the control data from one of the tracks.

- 1 In the tab 1 display, specify the bound destination track.
- 2 When this command is selected, the dialog box shown at right will appear.
- 3 Specify the bounce source track.
- 4 To execute the Bounce Track command, press the **OK button**. To cancel without executing, press the **Cancel button**.



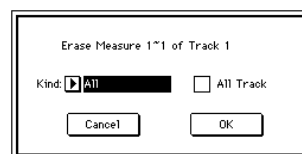
5-1G: Erase Measure

This command erases specified measures of the musical data of the track specified in the tab 1 display. You can specify the types of data to be erased.

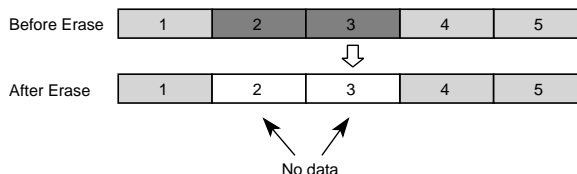
If you select All Tracks, data will be erased from all tracks including the master track.

Unlike the Delete Measure command, the Erase Measure command does not cause subsequent musical data to be moved forward.

- 1 In the tab 1 display, select the track from which data will be erased, and specify the Start Measure and End Measure.
If you have set Track to MTR, the Kind parameter in 4 will change to Tempo, and the check box will not be displayed.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 If you wish to erase data from all tracks including the master track, **check All Tracks**.
If this is **un-checked**, data will be erased from the track specified in the tab 1 display.
- 4 “**kind**” allows you to select the type of data that will be erased; All, Note, Control Change, After Touch, Bend, Program Change.
If this is All, all types of data in that track will be erased, but the master track data (tempo data) will not be erased unless All Tracks is checked.
If this is After Touch, both channel pressure and polyphonic key pressure will be erased.
- 5 To execute the Erase Measure command, press the **OK button**. To cancel without executing, press the **Cancel button**.



Example: If measures 2–3 are erased, measures 2–3 will be blank.



To delete only the tempo change data from the master track, use this command, or “5-1C: Event Edit” or “5-1M: Erase Control Data.”



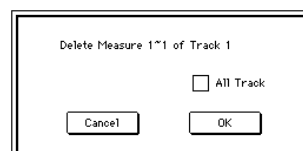
Be aware that if control data straddles the boundary of the erased area, only the data that lies in the erased area will be erased. Also, if you erase measures that fall within the length of a long-held note that extends the length of several measures, the note data in subsequent measures will also be erased.

5-1H: Delete Measure

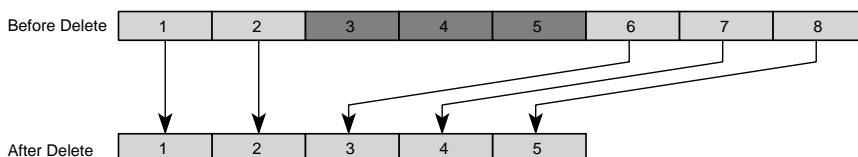
This command deletes specified measures from the track selected in the tab 1 display.

Unlike the Erase Measure command, the Delete Measure command will cause measures following the deleted measures to be moved forward to fill the gap.

- 1 In the tab 1 display, select the track from which measures will be deleted, and specify the Start Measure and End Measure.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 If you wish to delete measures from all tracks including the master track, **check** All Tracks. If this is **un-checked**, measures will be deleted from the track specified in the tab 1 display.
- 4 To execute the Delete Measure command, press the **OK button**. To cancel without executing, press the **Cancel button**.

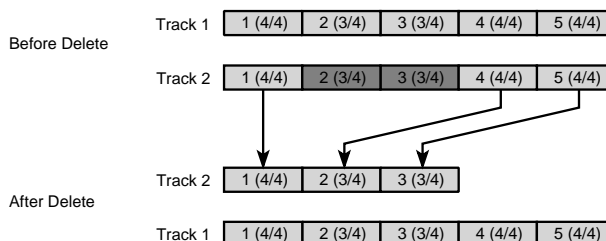



Example: When measures 3–5 are deleted, measures 6–8 are moved forward.



If All Tracks (step 3) is un-checked when this command is executed, the master track will not be affected. The time signature and tempo data will remain unchanged, and the time signature and tempo will change for the measures that were moved forward as a result of the delete operation.

Example: When measures 2 and 3 (3/4 time) of track 2 are deleted, the measures that were at 4 and 5 are moved forward, and their time signature will change to 3/4.




-  If All Tracks (step 3) is checked when this command is executed, the measures specified in the tab page will be deleted from all tracks including the master track, meaning that the time signature and tempo data will also be moved forward. Be aware that if control data straddles the boundary of the deleted area, only the data that lies in the deleted area will be deleted. Also if you delete measures that fall within the extent of a note that extends the length of several measures, the note data for subsequent measures will be erased as well.

5-1I: Insert Measure

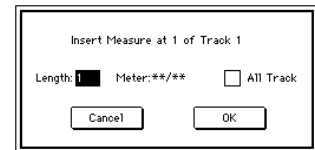
This command inserts the specified number of measures into the track specified in the tab 1 display.

When the Insert Measure command is executed, measures will be inserted into the location specified by Start Measure.

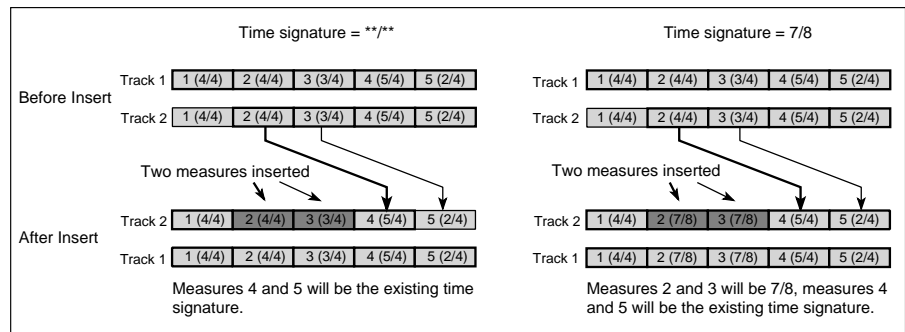
Measures following the inserted location will be moved backward.

-  For measures that are inserted into an area straddled by a long note, the note-off timing of the note data will be adjusted so that it ends immediately before the inserted area; i.e., the later portion of the note will be erased.

- 1 In the tab 1 display, specify the track into which measures will be inserted, and specify the Start Measure.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 If you wish to insert measures into all tracks including the master track, check **All Tracks**. This will cause all measures following the inserted area to playback as before. If All Tracks is **un-checked**, measures will be inserted only into the track specified in the tab page. Be aware that although subsequent measures of that track will be moved backward, the time signature and tempo will not move.
- 4 In **Length**, specify the number of measures that will be inserted.
- 5 In **Meter***, specify the time signature of the measures that will be inserted.
- 6 To execute the Insert Measure command, press the **OK button**. To cancel without executing, press the **Cancel button**.



- * If you want the time signature of the inserted measures to match the existing time signature, set this to **/**. For settings other than **/** the time signature of the inserted measures will change, and all tracks will playback with that time signature for those measures.



5-1J: Copy Measure

Measures of musical data from the track specified in the dialog box will be copied to the measures that were specified in the tab 1 display.

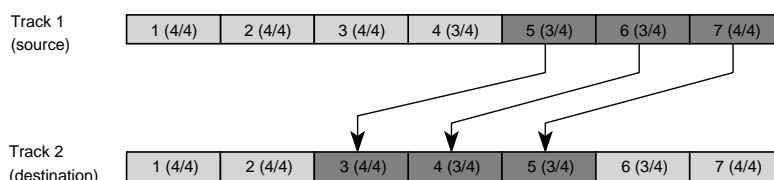
When the Copy Measure operation is executed, musical data will be copied to the measures specified in the tab 1 display, allowing you to easily create repetitive musical sections such as refrains within a song. Be aware that when the Copy Measure operation is executed, the musical data will change as follows:

- If measures containing no musical data are copied, the copy destination measures will be blank.
- Musical data in the copy destination will be erased, and overwritten by the data that is copied.
- Musical data that is copied will playback according to the time signature of the copy destination.

- 1 In the tab 1 display, specify the copy destination track and Start Measure.
- 2 When this command is selected, the dialog box shown at right will appear.
- 3 Specify the copy source track. If you wish to copy the musical data of all tracks including the master track, **check All Tracks**.
- 4 Specify the desired first and last measure of the copy source track.
- 5 To execute the Copy Measure command, press the **OK** button. To cancel without executing, press the **Cancel** button.

Copy from		Song: 0	
Track: 2	<input type="checkbox"/> All Tracks		
Measure	Start: 5	End: 8	
to Measure 1 of Track 1(S00)			
Cancel		OK	

Example: If measures 5-7 of track 1 are copied to measure 3 of track 2, measures 3-5 of track 2 will be written.



5-1K: Move Measure

Measures of musical data in the track specified in the dialog box will be moved to the measure specified in the tab 1 display.

Be aware that when the Move Measure operation is executed, the musical data will change as follows:

- Data following the move source measures will be moved forward to fill the gap.
- Data following the move destination will be moved backward to make room.

- 1 In the tab 1 display, specify the track and Start Measure of the move destination.
- 2 When this command is selected, the dialog box shown at right will appear.
- 3 Specify the move source track. If you wish to move the musical data of all tracks including the master track, **check All Tracks**.
- 4 Specify the desired first and last measure of the move source track.
- 5 To execute the Move Measure command, press the **OK** button. To cancel without executing, press the **Cancel** button.

Move from	
Track: 5	<input type="checkbox"/> All Tracks
Measure	Start: 1 End: 5
to Measure 1 of Track 1	
Cancel	OK

5-1L: Create Control Data

This command creates and inserts control data that changes smoothly until it reaches a specified value.

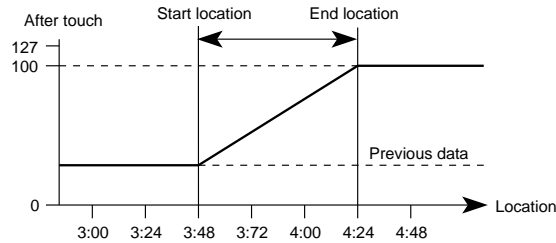
The beat and clock of the specified area are set after selecting the page menu command.


- 1 In the tab 1 display, specify the track in which you wish to create control data, and the Start Measure and End Measure. If you wish to create tempo data, select MTR as the Track. In this case, the Kind parameter in step 4 will be Tempo.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 For "**kind**", select the type of data that you wish to create; Control Change, After Touch, or Bend. If **Control Change** is selected, you can also select the control number ([page 105](#) in this manual).
- 4 Set the beat and clock (Beat, Tick) of the starting location.
- 5 Set the beat and clock (Beat, Tick) of the end location.
- 6 Set the desired **End Value**.
The Start Value will be the value at the starting location.

Create Control Data in Track: 1			
Start Measure: 1	End Measure: 1		
Beat.Tick: 01.000	Beat.Tick: 01.000		
-Kind-	-EndValue-		
<input checked="" type="radio"/> ControlChange No.: 0	0		
<input type="radio"/> AfterTouch	0		
<input type="radio"/> Bend	0		
Cancel		OK	

- 7 To execute the Create Control Data command, press the **OK button**. To cancel without executing, press the **Cancel button**.

Example: The controller is aftertouch. The start location is 3:48, end location is 4:24, and the end value is 100. The aftertouch value will begin changing from 3:48 and reach 100 at 4:24.



-  Executing the Create Control Data command consumes large amounts of sequencer memory. This means that if the remaining amount of memory is not large, it may not be possible to execute the command. In such cases, use “5-1N: Quantize” beforehand to thin out unneeded control data.

It is also possible to apply quantization afterward to the data that is created by this command.

5-1M: Erase Control Data

This command erases control data from the area specified in the tab 1 display.

The beat and clock of the specified area are set by selecting the page menu command.

- 1 In the tab 1 display, specify the track from which you wish to erase control data, and specify the Start Measure and End Measure. If you wish to erase tempo data, set Track to MTR. In this case, the Kind parameter in step 4 will be Tempo.
- 2 When this command is selected, the dialog box at right shown at right will appear.
- 3 For “**kind**”, select the type of data that you wish to erase; Control Change, After Touch, Bend, or Tempo. If **Control Change** is selected, you can also select the control number (☞ page 105 in this manual).
- 4 Set the beat and clock (Beat, Tick) of the starting location.
- 5 Set the beat and clock (Beat, Tick) of the end location.
- 6 To execute the Erase Control Data command, press the **OK button**. To cancel without executing, press the **Cancel button**.

5-1N: Quantize

This command quantizes (corrects the timing of) musical data recorded in a track. This will affect the data as follows:

- When note data is quantized, note-on timing will be quantized but note length will not be affected.
- If the quantize resolution is set to HI, quantization will be applied at the base resolution ($\frac{1}{92}$). In this case note data will not be affected, but if two or more control data events exist at the same timing location, they will be combined into one event, thus conserving sequencer memory.

- 1 In the tab 1 display, specify the track that you wish to quantize, and specify the Start Measure and End Measure.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 For “**kind**”, select the type of data that you wish to quantize; All, Note, Control Change, After Touch, Bend, or Program Change.

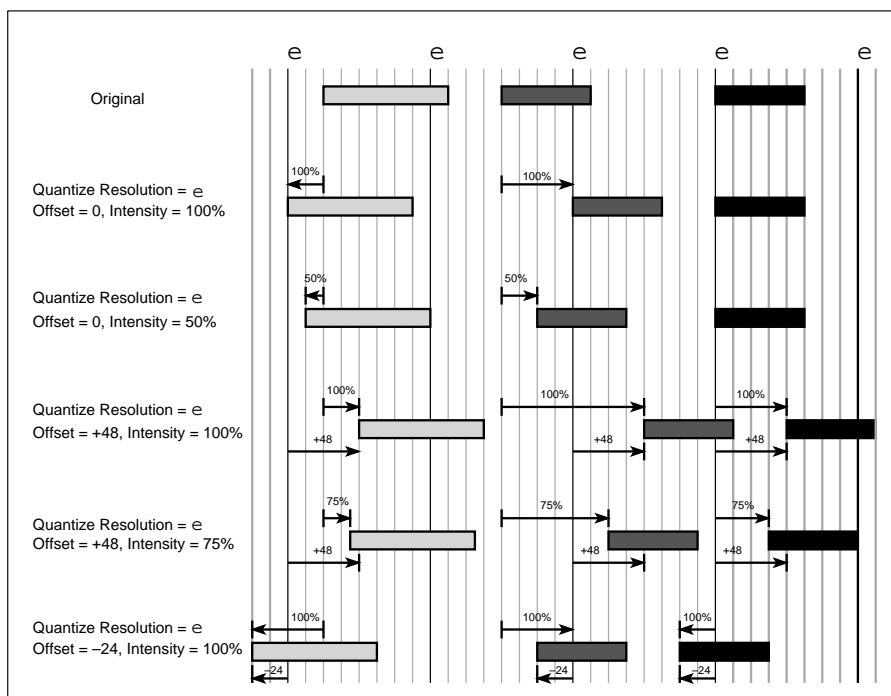
If you select **Control Change**, it is not possible to specify individual control numbers

If **After Touch** is selected, both Channel Pressure and Poly Key Pressure will be quantized.

When realtime recording on the TRINITY's sequencer, you can set Position to PostKBD and set the Aftertouch Curve to 6 or 7 (in Global mode "1-1: Global Setup"), in order to conserve memory consumption while recording.

- 4 **Resolution** specifies the quantizing resolution (HI, τ 3- q).
Recording continuously changing data such as joystick or aftertouch consumes large amounts of memory. Data events at intervals that are closer than the specified resolution will be combined into a single event, conserving sequencer memory. Rougher settings of Resolution will conserve memory, but be aware that the changes in playback data will also become rougher.
- 5 **Offset*** specifies the distance from the standard timing to which the data will be moved. With a setting of 96 the data will be moved an eighth note (ϵ), and with a setting of 48, a sixteenth note (\times) away from the standard timing. The data will be moved forward with positive (+) settings, and backward with negative (-) settings.
- 6 **Intensity*** specifies the degree to which quantization will be applied; i.e., how completely the settings of steps 4 and 5 will be applied. With an Intensity setting of 0, the data will not be moved at all. With an Intensity setting of **100**, the data will be moved all the way to the new location specified by the settings of steps 5 and 6.
- 7 To execute the Quantize command, press the **OK button**. To cancel without executing, press the **Cancel button**.

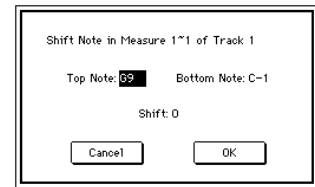
* Depending on the settings of Offset and Intensity, the Quantize command will produce the following changes.



5-1O: Shift Note

This command shifts (moves) the specified range of pitches in the measures selected in the tab 1 display by the specified amount.

- 1 In the tab 1 display, specify the track in which notes will be shifted, and specify the Start Measure and End Measure.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 For **Top Note**, specify the highest of the notes that will be shifted.
For **Bottom Note**, specify the lowest of the notes that will be shifted.
These settings can also be made from the keyboard.

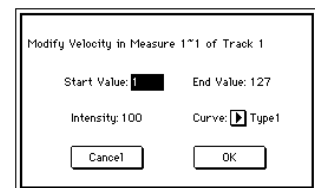


- 4 In **Shift**, specify the desired amount of shifting, in semitone steps over a range of -24 to +24.
- 5 To execute the Shift Note command, press the **OK button**. To cancel without executing, press the **Cancel button**.

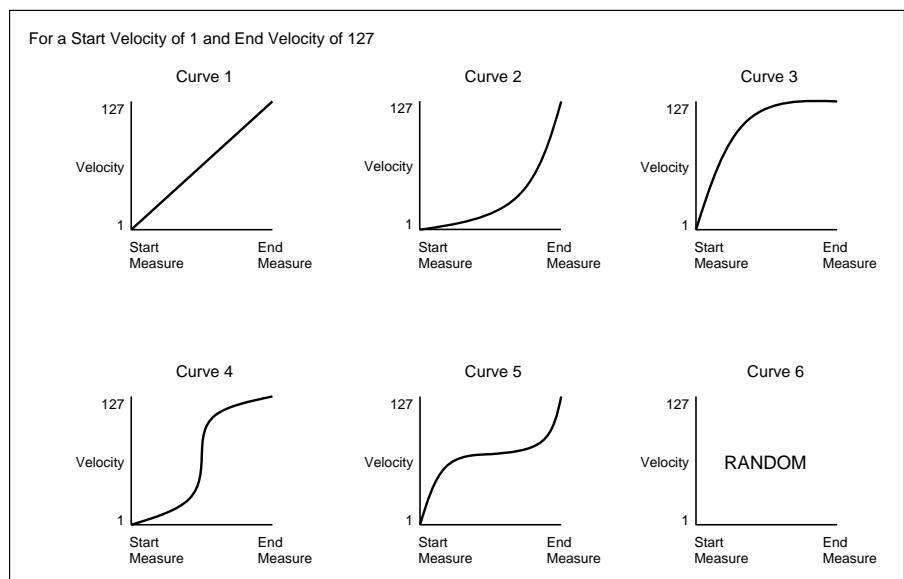
5-1P: Modify Velocity

This command modifies the velocity values over time for the area specified in the tab 1 display, using the specified curve.

- 1 In the tab 1 display, specify the track in which velocities will be modified, and specify the Start Measure and End Measure.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 For **Start Value**, specify the velocity value at the starting location.
- 4 For **End Value**, specify the velocity value at the ending location.
- 5 For **Curve***, select the curve (from 6 types) with which the velocities will be modified over time.
- 6 For **Intensity**, specify how closely the velocities will match the selected curve.
With a setting of **0[%]**, the velocities will remain with their original values. With a setting of **100[%]**, the velocities will exactly match the specified curve.
- 7 To execute the Modify Velocity command, press the **OK button**. To cancel without executing, press the **Cancel button**.

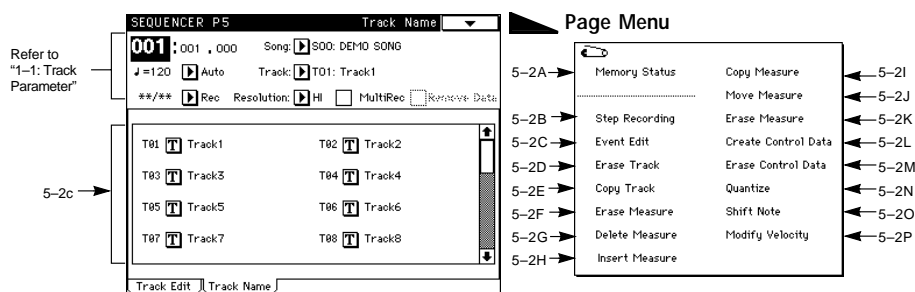


* The six types of curves are as follows.



5-2: Track Name

Assigns a name to each track.



5-2c: Track Name

Press the text edit button, and a screen will appear in which you can assign a name to each track (☞ Basic Guide, page 6).

The track names will be displayed in all tab pages of Sequencer mode P1, P2 and P5.

▼ Page Menu Command

5-2A: Memory Status

This command displays the remaining amount of sequencer memory.

5-2B: Step Recording

Here you can perform non-realtime recording. This allows you to record songs that would be difficult to record using realtime recording.

For details refer to "5-1B: Step Recording."

5-2C: Event Edit

Here you can edit individual events of recorded musical data.

For details refer to "5-1C: Event Edit."

5-2D: Erase Track

This command erases all musical data from the track specified in the tab 2 display.

For details refer to "5-1D: Erase Track."

5-2E: Copy Track

This command copies musical data of the track specified in the tab 2 display to another track.

For details refer to "5-1E: Copy Track."

5-2F: Bounce Track

This command combines all musical data of the track specified in the tab 2 display with the data of another track, and places the combined data into the bounce destination track.

For details refer to "5-1F: Bounce Track."

5-2G: Erase Measure

This command erases specified measures from the track specified in the tab 2 display.

For details refer to "5-1G: Erase Measure."

5-2H: Delete Measure

This command deletes specified measures from the track specified in the tab 2 display.

For details refer to "5-1H: Delete Measure."

5-2I: Insert Measure

This command inserts the specified number of measures into the track specified in the tab 2 display.

For details refer to “5-1I: Insert Measure.”

5-2J: Copy Measure

This command copies measures of the track specified in the tab 2 display.

For details refer to “5-1J: Copy Measure.”

5-2K: Move Measure

This command moves measures of the track specified in the tab 2 display.

For details refer to “5-1K: Move Measure.”

5-2L: Create Control Data

This command creates and inserts into the area specified in the tab 2 display control data that changes smoothly until it reaches a specified value.

For details refer to “5-1L: Create Control Data.”

5-2M: Erase Control Data

This command erases control data from the area specified in the tab 2 display.

For details refer to “5-1M: Erase Control Data.”

5-2N: Quantize

This command quantizes (adjusts) the timing of musical data recorded in a track.

For details refer to “5-1N: Quantize.”

5-2O: Shift Note

This command shifts (moves) the range of data (of measures and pitches) specified in the tab 2 display by the specified amount.

For details refer to “5-1O: Shift Note.”

5-2P: Modify Velocity

This command modifies the velocity values over time for the area specified in the tab 2 display, using the specified curve.

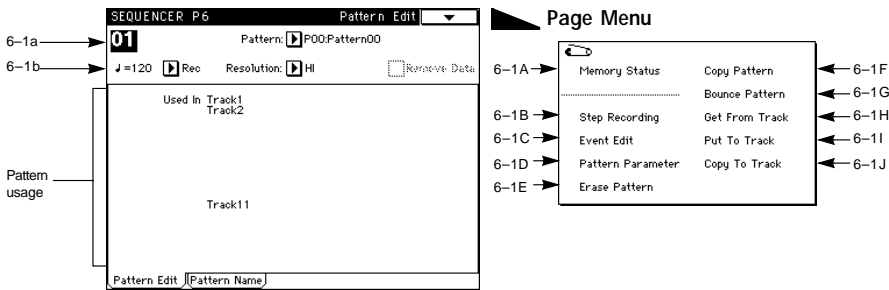
For details refer to “5-1P: Modify Velocity.”

Sequencer P6

Each song can have up to 100 patterns. Pattern data can be recorded using realtime recording, step recording, the Get From Track command (to copy data from a track), or the Copy Pattern command (to copy data from another pattern).

6-1: Pattern Edit

Here you can record or edit patterns, and make pattern settings. To record a pattern, first select the desired pattern in the tab page. Then move to the page menu. Use the page menu commands to record, edit, or make settings.



6-1a: Pattern Number/Name

The pattern number and pattern name of the currently selected pattern are displayed.

6-1b: Metronome/Resolution/Remove Data

Metronome [Off, On, Rec]

- Off:** The metronome will not sound.
- On:** The metronome will always sound.
- Rec:** The metronome will sound only during recording.

Resolution (Realtime Quantize Resolution) [HI, r3... q]

Specifies how the timing will be corrected during realtime recording. With a setting of **HI** (high resolution), timing will not be corrected. The data will be recorded at the maximum timing resolution ($q/192$). With a setting of $r3... q$, timing will be corrected to the nearest interval of the specified note value. For example if $r3$ is selected, timing will be corrected to the nearest 32nd note triplet. For details refer to "1-1: Track Play/Rec."

Remove Data

If this is **checked**, you will be able to delete unwanted data from a pattern. For example while real-time recording a pattern, you can hold down a key (note number) so that the data of the note number you are holding down will be removed from the pattern in the area that is played back while you continue holding that key. Similarly, you can remove bend data by moving the joystick in the X (horizontal) direction, or remove aftertouch data by applying pressure to the keyboard.

▼ Page Menu Command

6-1A: Memory Status

This command displays the remaining amount of sequencer memory.

6-1B: Step Recording

Here you can record pattern data using step recording.

Specify the pattern in the tab 1 display, and select this command. The rest of the procedure is the same as when step recording a track. (However in the case of a pattern, you will return to the beginning when you reach End of Pattern.) For details refer to "5-1B: Step Recording."

6-1C: Event Edit

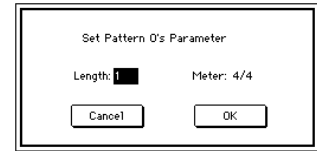
Here you can edit individual data events of a pattern.

Specify the pattern in the tab 1 display, and select this command. The rest of the procedure is the same as event editing for a track. For details refer to "5-1C: Event Edit."

6-1D: Pattern Parameter

Here you can make various settings for the pattern specified in the tab page.

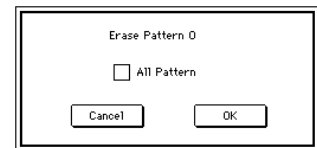
- 1 Specify a pattern in the tab 1 display.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 Specify the length of the pattern in **Length**.
- 4 Specify the time signature of the pattern in **Meter**.
This time signature is only temporary; when you Put the pattern into a song track, the pattern will playback with the time signature of that measure.
- 5 To finalize the pattern settings, press the **OK button**. To cancel the command, press the **Cancel button**.



6-1E: Erase Pattern

This command erases pattern data specified in the tab page.

- 1 Specify a pattern in the tab 1 display.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 If you **check** All Tracks, all patterns in the song will be erased.
If it is un-checked, the pattern specified in the tab 1 display will be erased.
- 4 To execute the Erase Pattern command, press the **OK button**. To cancel the command, press the **Cancel button**.

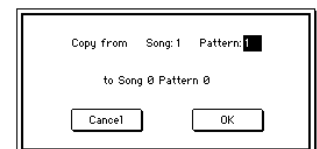


6-1F: Copy Pattern

The musical data of the pattern specified in the dialog box will be copied to the pattern specified in the tab 1 display.

In the built-in sequencer of the **TRINITY series**, patterns are attached to a specific song, but this Copy Pattern command allows a pattern to be used by a different song.

- 1 In the tab 1 display, select the copy destination pattern.
- 2 When you select this command, the dialog box at right will appear.
- 3 Specify the copy source song and pattern.
- 4 To execute the Copy Pattern operation press the **OK button**. To cancel without executing press the **Cancel button**.



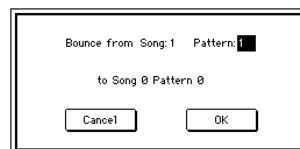
6-1G: Bounce Pattern

The musical data of the pattern specified in the dialog box and of the pattern specified in the tab 1 display will be combined, and placed in the pattern specified in the tab 1 display.

Be aware that executing the Bounce Pattern operation will affect the musical data as follows:

- The combined musical data will be placed in the pattern specified in the tab 1 display, but unlike the Bounce Track operation, the musical data of the pattern specified in the dialog box will not be erased.
- The time signature and length after the Bounce operation will follow the settings of the pattern specified on the tab 1 display.

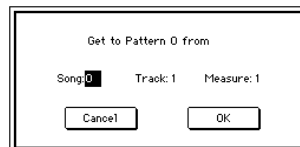
- 1 In the tab 1 display, specify the bounce destination pattern.
- 2 When you select this command, the dialog box at right will appear.
- 3 Specify the bounce source song and pattern.
- 4 To execute the Bounce Pattern operation press the **OK button**. To cancel without executing press the **Cancel button**.



6-1H: Get From Track

This command copies musical data from a track into the pattern specified in the tab 1 display.

- 1 Specify a pattern in the tab 1 display.
- 2 In "6-1D: Pattern Parameter" specify the length of the destination pattern.
- 3 When this command is selected, the dialog box shown at right will appear.
- 4 Select the song from which the data will be copied.
- 5 Select the track from which the data will be copied.
- 6 Select the first measure from which the data will be copied.
- 7 To execute the Get From Track command, press the **OK button**. To cancel the command, press the **Cancel button**.



6-1I: Put To Track

This command places a pattern number in a track. Unlike the Copy To Track command, the musical data of the pattern will not actually exist in the track into which the pattern has been put. When the song is played back and playback arrives at the pattern number, the specified pattern is called up and its data is played.

By creating frequently-repeated phrases or drum patterns as patterns and putting the patterns in the appropriate locations of the track, you can greatly conserve sequencer memory.

Be aware that if you edit the pattern, the playback of the song in which the pattern has been placed will also be affected.

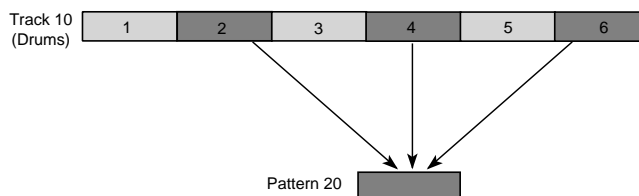
When the Put To Track command is executed, the data will be affected in the following ways:

- The musical data in the Put destination will be erased when Put is executed.
- The pattern that was Put will be played with the time signature specified for the measures of the Put destination.
- Control data (pitch bend data etc., but not volume data) already existing in the track will be reset immediately before the measure at which the pattern is Put. This means that if you want to apply pitch bend or damper in the measures where the pattern has been Put, you must write this data directly into the pattern.

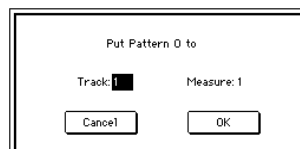
To remove a pattern that has been placed in a track, select the measure into which the pattern has been put, and execute the "5-1G: Erase Measure" command with a "kind" setting of All.

For details on the procedure, refer to "5-1G: Erase Measure."

Example: Pattern 20 has been Put at measures 2, 4, and 6 of track 10. When those measures are reached, pattern 20 is called and its data is played.



- 1 In the tab 1 display, select the pattern.
- 2 When this command is selected, a dialog box shown at right will appear.
- 3 Select the Put destination track.
- 4 Specify the starting measure of the Put location.
- 5 To execute the Put To Track command, press the **OK button**. To cancel the command, press the **Cancel button**.



6-1J: Copy To Track

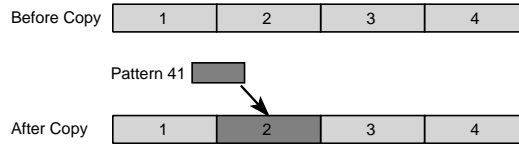
This command copies the contents (musical data) of the pattern specified in the tab 1 display to a track. Unlike the Put To Track command, the data itself is recorded into the track, and editing the copied data will not affect the pattern or other locations.

When the Copy To Track command is executed, the data will be affected in the following ways:

- Musical data previously existing in the copy destination measures will be erased.
- The musical data that was copied will be played back using the time signature of the measures to which it was copied.

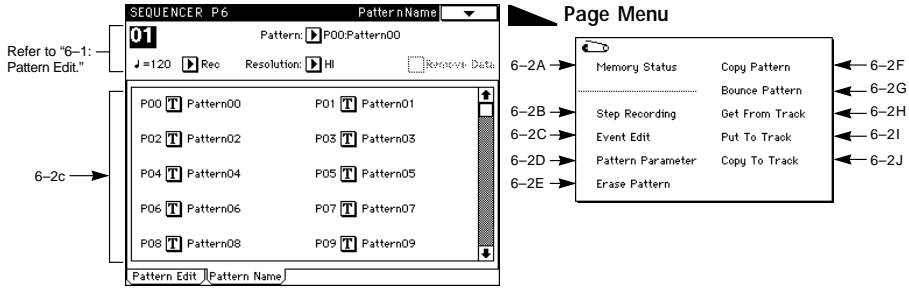
Specify the pattern in the tab 1 display, and select this command. The rest of the procedure is the same as for Put To Track. For details refer to “6-1I: Put To Track.”

Example: Copy the musical data of pattern 41 to measure 2



6-2: Pattern Name

Here you can assign a name to each pattern. For the settings of the currently selected pattern, refer to “6-1: Pattern Edit.”



6-2c: Pattern Name

When you press the text edit button of the pattern that you wish to name, the pattern naming display will appear (⇒ Basic Guide, page 6).

▼ Page Menu Command

6-2A: Memory Status

This command displays the remaining amount of sequencer memory.

6-2B: Step Recording

Here you can record pattern data using step recording. Specify the pattern in the tab 2 display, and select this command. The rest of the procedure is the same as when step recording a track. For details refer to “5-1B: Step Recording.”

6-2C: Event Edit

Here you can edit individual data events of a pattern. Specify the pattern in the tab 2 display, and select this command. The rest of the procedure is the same as event editing for a track. For details refer to “5-1C: Event Edit.”

6-2D: Pattern Parameter

Here you can make various settings for the pattern specified in the tab 2 display. For details refer to “6-1D: Pattern Parameter.”

6-2E: Erase Pattern

This command erases specified measures from the pattern specified in the tab 2 display. For details refer to “6-1E: Erase Pattern.”

6-2F: Copy Pattern

This command copies the settings and data of the pattern selected in the tab 2 display to another pattern. Specify the copy source pattern in the tab 2 display, and select this command. The rest of the procedure is the same as in the track command Copy Track. For details refer to “5-1E: Copy Track.”

6-2G: Bounce Pattern

This command combines the data of the pattern specified in the tab 2 display with the data of the pattern specified as the bounce destination, and places the combined data into the bounce destination. Specify a pattern in the tab 2 display, and select this command. The rest of the procedure is the same as in the track command Bounce Track. For details refer to “5-1F: Bounce Track.”

6-2H: Get From Track

This command copies musical data from a track into the pattern specified in the tab 2 display. For details refer to “6-1H: Get From Track.”

6-2I: Put To Track

This command places a pattern number in a track. Unlike the Copy To Track command, the musical data of the pattern will not actually exist in the track. When the song is played back and playback arrives at the pattern number, the specified pattern is called up and its data is played. For details refer to “6-1I: Put To Track.”

6-2J: Copy To Track

This command copies the contents (musical data) of the pattern specified in the tab 2 display to a track. Unlike the Put To Track command, the data itself is recorded into the track, and editing the copied data will not affect the pattern or other locations. For details refer to “6-1J: Copy To Track.”

Sequencer P7

7-1: Effect Grouping (Track 1-8)

7-2: Effect Grouping (Track 9-16)

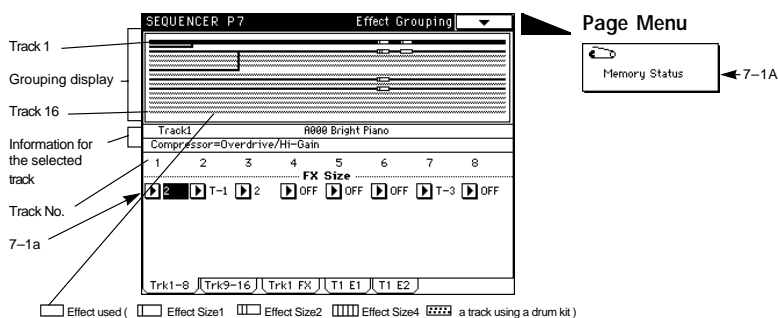
Here you can make group settings for the insert effects of each track, and adjust the spread of the effect sound that is output from the insert effects.

In the sequencer, the effect size of tracks 1-16 must total 8 or less. That is, even if all of the effect sizes are 1, it is not possible to use different insert effects in 9 or more tracks.

However it is possible to input the audio signal from one track into the insert effect used by another. This is referred to as "grouping." An insert effect to which the audio signal from another track is input is referred to as the grouping source.

Thus, we recommend that you create a group of tracks whose programs use similar insert effects, use one of the tracks as their grouping source, and input the audio signals to the insert effect of that track.

For details refer to the separate **Effect Guide**.



7-1a: FX Size

[OFF, 1, 2, 4, T-1...T-16]

Specifies the Effect Size of the insert effect used by the track.

For settings of T-1 to T-16, the track will be grouped to the effect of the track specified here.

For example if you are using a flanger on track 3, you could set the Effect Size of track 5 to T-3. This would mean that track 3 is the grouping source, and the audio signals of track 5 would be input to the flanger specified for track 3.

With a setting of 1 to 4, the insert effect set on 7-3 will be used.

When setting the effect size, the total for tracks 1-16 must be 8 or less.

For example if an effect size of 4 is specified for two tracks, it will not be possible to set the effect size for other tracks. (Insert effect settings cannot be made for other tracks.)

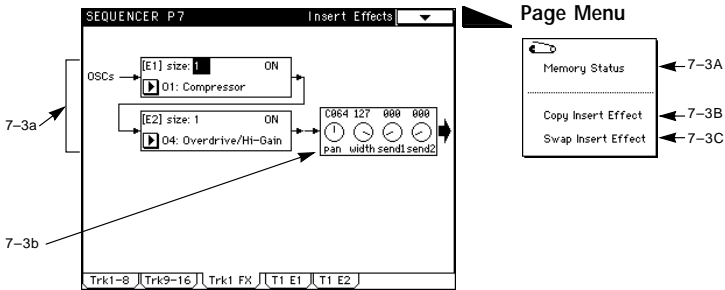
▼ Page Menu Command

7-1A: Memory Status

This command displays the remaining amount of sequencer memory.

7-3: Insert Effects (Track 1-16 Effects)

In this page you can make insert effect settings.



7-3a: Insert Effect Settings

Select the insert effect used by the track.

Size [0,1,2,4]

The size will determine the insert effects that can be selected.
A setting of **0** is No Effect, and insert effects cannot be selected.
For settings of **1-4**, you can specify the insert effect in "Effect Select." However the total size of [E1], [E2]... must be less than the value of "7-1a: FX Size."

Effect On/Off [Off, On]

Turn the effect on/off.
With a setting of **Off**, the effect will be bypassed. If an effect of Size 1 is selected, the dry sound will also be in mono. If you want the pan settings (Program Edit mode "1-1c: Pan") of Tracks being used in stereo to be valid, set "Size" to a setting other than 1.

MIDI Independently of this setting, a MIDI Effect 2 Control message (CC#92) can turn off the insert effects for all tracks. They will be turned off by a value of 0, and will be returned to the original setting by values of 1-127. The Global MIDI channel is used for these messages.

Effect Select

Select the insert effect. The effects that can be selected will depend on the "Size" setting.
Parameter settings for the effects selected here are made in "7-4: T1 E1" through "7-7: T1 E4".
For details on each effect, refer to the separate **Effect Guide**.

7-3b: Pan/Width/Send 1, 2

Pan (Panpot) [L000...C064...R127]
Adjusts the pan after the effects.

Width [0...127]
Specifies the left/right width of the sound that has passed through the effects. Higher settings will produce a wider left/right spread for the effects.

Send 1, 2 [0...100]
Sets the send level to the master effects.

▼ Page Menu Command

7-3A: Memory Status

This command displays the remaining amount of sequencer memory.

7-3B: Copy Insert Effect

This command copies insert effect settings from a specified program, combination or song to the currently selected track.

7-3C: Swap Insert Effect

This command exchanges insert effect settings within this page.

7-4: T1 E1 (Track 1-16 Edit Insert Effect 1)

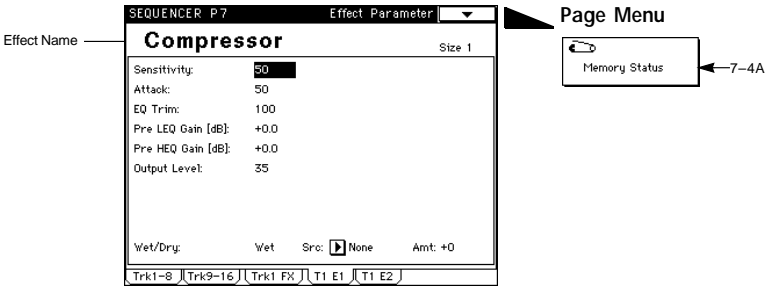
7-5: T1 E2 (Track 1-16 Edit Insert Effect 2)

7-6: T1 E3 (Track 1-16 Edit Insert Effect 3)

7-7: T1 E4 (Track 1-16 Edit Insert Effect 4)

These pages will be displayed if insert effects are selected in “7-3a: Insert Effect Setting.” Here you can make settings for insert effect parameters. For details on effect parameters, refer to the separate **Effect Guide**.

MIDI Effect dynamic modulation occurs on the MIDI channels specified for each track.



Sequencer mode

▼ Page Menu Command

7-4A: Memory Status

This command displays the remaining amount of sequencer memory.

Sequencer P8

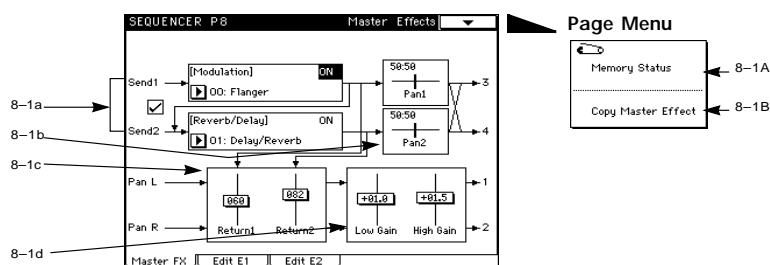
8-1: Master Effects

Here you can make master effect settings, set the return levels from the master effects, make High EQ and Low EQ settings for the output jacks 1/L/MONO and 2/R, and set panning for outputs 3 and 4.

The input level to the master effects is set by “1-3f: Send 1” and “1-3g: Send 2”. If these settings are set to PRG, the settings of the program will be used.

Pan L, R inputs the panned signal from each track as specified by “1-1(2): Track Play/Rec,” and also the panned signal specified for the insert effect output. If effect grouping is being used, the settings of the grouping source insert effect will be used.

For details refer to the separate **Effect Guide**.



8-1a: Effect1/Effect2 Setting

Here you can make settings for [Modulation] (Effect 1) and [Reverb/Delay] (Effect 2). The check box located in the left of the LCD determines how E1 and E2 will be connected. If this is **checked**, [Modulation] and [Reverb/Delay] will be connected in series. In this case, the right output of [Modulation] will be sent to [Reverb/Delay].

Effect On/Off

[ON/OFF]

Turns the master effects on/off.

MIDI Separately from this setting, [Modulation] can be turned off by Effect 4 Control (CC#94), and [Reverb/Delay] can be turned off by Effect 5 Control (CC#95). In both cases, a value of 0 is OFF and a value of 1—127 will restore the original settings. The Global MIDI channel is used for these messages.

Effect Select

Selects the master effects.

For [Modulation] a modulation-type effect can be selected, and for [Reverb/Delay] a reverb/delay-type effect can be selected.

Settings for the effects you select here are made in “8-2: Edit E1” and “8-3: Edit E2.” For details on each effect, refer to the separate **Effect Guide**.

8-1b: Pan 1/2

[OFF, L...50:50...R]

Adjusts the panning to outputs 3 and 4.

With a setting of **OFF**, there will be no output to outputs 3 and 4.

8-1c: Return 1/2

[0...127]

Adjusts the level of the audio signals sent from [Modulation] and [Reverb/Delay] to output jacks 1/L/MONO and 2/R.
The audio signals from Pan L and R will be mixed with the Effect 1 output adjusted by these Return 1 and 2 levels, and output from output jacks 1/L/MONO and 2/R.

8-1d: Low/High Gain

Adjusts the tonal character of the audio signal that is output from output jacks 1/L/MONO and 2/R. The units are in [dB].

Low Gain

[−18.0...+18.0]

Adjusts the level of the low frequency range.

High Gain

[−18.0...+18.0]

Adjusts the level of the high frequency range.

▼ Page Menu Command

8-1A: Memory Status

This command displays the remaining amount of sequencer memory.

8-1B: Copy Master Effect

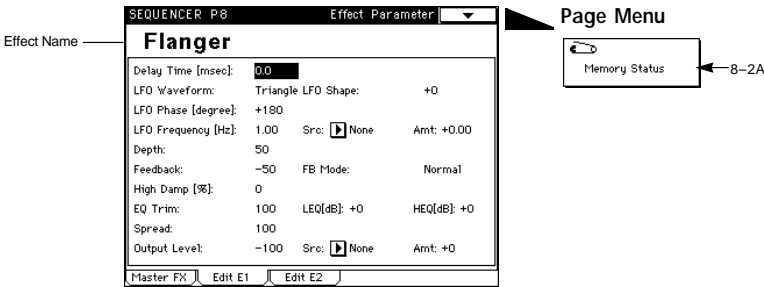
This command copies master effect settings from a specified program, combination or song to the master effect of the currently selected song.

8-2: Edit E1 (Edit Master Effect 1 [Modulation])

8-3: Edit E2 (Edit Master Effect 2 [Reverb/Delay])

Here you can set the master effect parameters.
These pages will be displayed if a modulation-type effect and reverb/delay-type effect are selected for [Modulation] and [Reverb/Delay] in “8-1a: Master Effect Setting”.

MIDI Effect Dynamic Modulation is done on the Global MIDI channel.
For details on the effect parameters, refer to the separate **Effect Guide**.



▼ Page Menu Command

8-2A: Memory Status

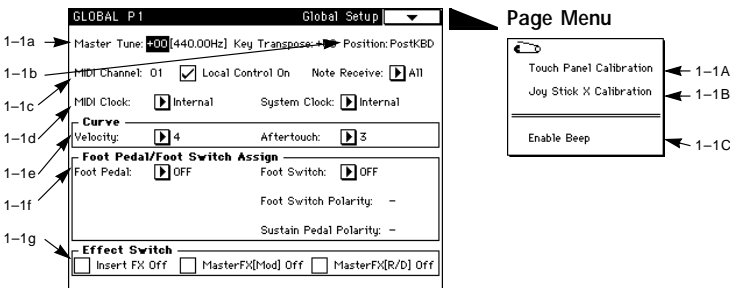
This command displays the remaining amount of sequencer memory.

6. Global mode

In Global mode you can make settings that affect the entire instrument, such as master tuning, MIDI settings, and memory protect. You can also assign drum samples to the drumkits. The settings made in Global mode are backed up when the power is off, and there is no need to write these settings into memory.

Global P1

1-1: Global Setup



1-1a: Master Tune/Key Transpose

Master Tune [-50...+50]
Adjusts the basic tuning of the entire TRINITY in steps of a single cent (a semitone = 100 cents).
With a setting of **0**, A4 (middle A) will be 440 Hz.

MIDI The tuning of the **TRINITY** can also be tuned using MIDI RPN Fine Tune messages. (However the **TRINITY** will not transmit this message.) In Sequencer mode, this message will be received on the MIDI channel of each track, to control the Detune parameter of that track. In other modes, this message is received only on the Global MIDI channel, and will control Master Tune.

Key Transpose [-12...+12]
Adjusts the pitch in semitone steps, over a range of ± 1 octave.
This setting is applied at the location (Post KBD or Pre TG) specified by the "1-1b: Position" setting.

MIDI If the setting of "1-1b: Position" is Post KBD, the range of note numbers transmitted by the TRINITY will be affected by this setting. This setting adjusts the overall pitch in semitone steps.

Note numbers transmitted			
Transpose	-12	0	+12
TRINITY	24...84	36...96	48...108
TRINITY V3	(C1...C6)	(C2...C7)	(C3...C8)
TRINITY plus			
TRINITY V3 pro	16...91	28...103	40...115
TRINITY pro	(E0...G6)	(E1...G7)	(E2...G8)
TRINITY V3 proX	9...96	21...108	33...120
TRINITY proX	(A-1...C7)	(A0...C8)	(A1...C9)

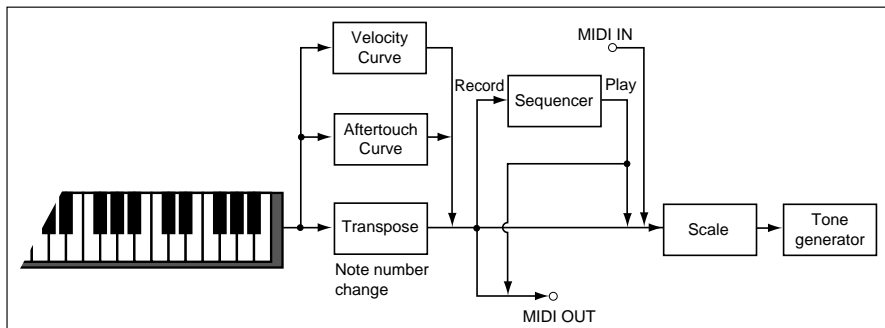
1-1b: Position [Post KBD/Pre TG]

This determines the location at which Transpose (↖ page 129 in this manual), Velocity Curve (↖ page 132 in this manual), and Aftertouch Curve (↖ page 133 in this manual) settings will be applied.
This setting will affect the way that MIDI data is transmitted and received, and how sequencer recording data is handled. However it has no effect on how the internal tone generator is played by the built-in keyboard.

With a setting of **Post KBD**, the settings for Velocity Curve, Aftertouch Curve, and Transpose will be applied immediately after the keyboard. Use this setting when you are using the TRINITY as a master keyboard.

The velocity curve, aftertouch curve, and transpose settings will affect the way in which data from the TRINITY's keyboard will play the internal tone generator, will be recorded on the sequencer, and will be transmitted to external MIDI devices.

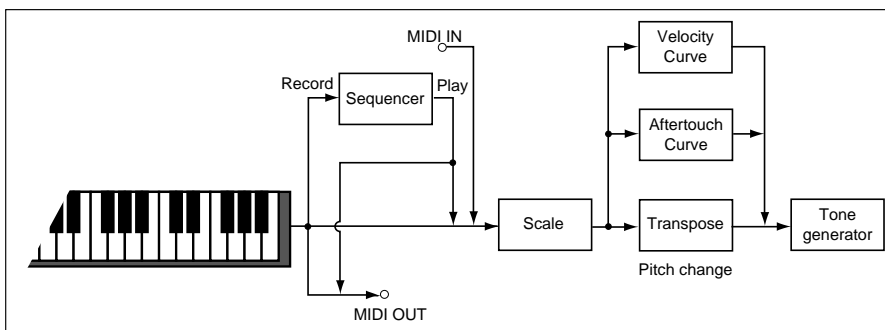
MIDI Data received from MIDI IN or from the sequencer will not be affected.



With a setting of **Pre TG**, the settings of Velocity Curve, Aftertouch Curve, and Transpose will be applied immediately before the tone generator section (TG). Use this setting when you are using the TRINITY as a MIDI tone generator.

The velocity curve, aftertouch curve, and transpose settings will not affect the way in which data from the TRINITY's keyboard will be transmitted via MIDI or recorded on the sequencer, nor will they affect the way that sequencer playback data will be transmitted via MIDI.

MIDI The data that is transmitted from MIDI OUT when you play the keyboard, or that is recorded or transmitted from MIDI OUT by the sequencer, will not be affected.



1-1c: MIDI Channel/Local Control On/Note Receive

MIDI channel (Global MIDI channel)

[1...16]

MIDI This sets the Global MIDI channel.

The Global MIDI channel is the channel on which musical data is transmitted and received in Program Play mode, combinations are selected in Combination Play mode, master effects are controlled in various modes, and the channel on which system exclusive messages are transmitted and received.

MIDI reception

In Program Play mode, the TRINITY will be played by MIDI messages received on the Global MIDI channel. However in Combination Play mode or Sequencer Mode, the TRINITY will be played by MIDI messages received on the channels specified for each timbre or track.

In Combination Play mode, Program Changes received on the Global MIDI channel will select combinations.

If you wish to use MIDI to control the master effects (effect on/off, dynamic modulation), make sure that the channel of the MIDI messages matches the Global MIDI channel. To control master effects from the TRINITY's sequencer, set the channel of the track containing the control data to match the Global MIDI channel. To control the insert effects of a combination or of the sequencer, use the MIDI channel of the appropriate timbre or track.

MIDI transmission from the TRINITY's keyboard

In Sequencer mode, the TRINITY's keyboard will transmit on the channel of the currently selected track (whose Track Status is EXT or BOTH). However in other modes, the keyboard will transmit on the Global MIDI channel.

In Combination Play mode, transmission will take place simultaneously on the Global MIDI channel as well as on the channel specified for timbres whose Timbre Mode is EXT.

Local Control On

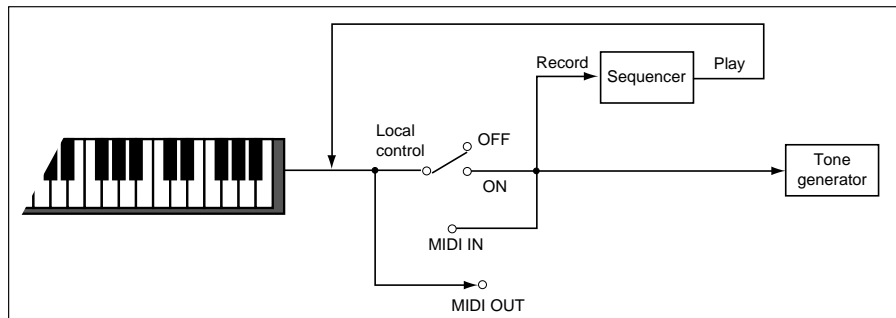
This setting determines whether the TRINITY's keyboard and joystick etc. will control the internal tone generator.

If this is **checked**, the keyboard and joystick etc. will control the tone generator. If you are playing the TRINITY by itself, leave this checked.

If this is **un-checked**, the keyboard and joystick etc. will be disconnected from the tone generator. This means that the TRINITY will not produce sound in response to its own keyboard or sequencer playback.

Un-check this setting if the echo-back function from an external sequencer is causing notes to be triggered twice.

MIDI Even if this is un-checked, MIDI transmission and reception will take place as normal. That is, note messages will be transmitted when you play the keyboard, and incoming note messages will be sounded by the internal tone generator.



Note Receive (Note Receive Filter)

[Even/Odd/All]

This setting determines which of the note numbers (odd, even, or all note numbers) played on the TRINITY's keyboard or received via MIDI will be sounded.

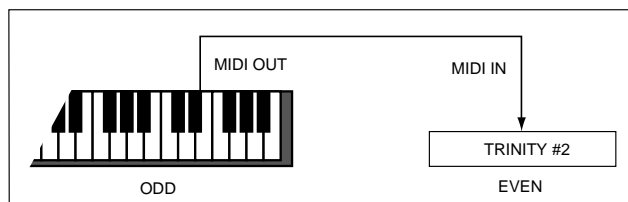
Even: Even-numbered notes (C#, D#, F, G, A, B) will be sounded.

Odd: Odd-numbered notes (C, D, E, F#, G#, A#) will be sounded.

All: All note numbers will be sounded. Normally you should leave this set to All.

When another **TRINITY** is connected, you can double the maximum number of simultaneous notes by setting one unit to Even and the other unit to Odd.

MIDI This setting has no effect on the MIDI data that is received.



1-1d: MIDI Clock/System Clock

MIDI Clock (MIDI Clock Source) [Internal/External]

MIDI If **Internal** is selected, the TRINITY's sequencer will use its own internal clock. Select Internal if you are using the TRINITY as the master to which an external sequencer is synchronized, or when using the TRINITY by itself. When you operate the TRINITY's sequencer, MIDI realtime messages will be transmitted, allowing external MIDI devices (external sequencers or drum machines, etc.) to synchronize to the TRINITY's sequencer. If **External** is selected, the TRINITY's sequencer will synchronize to incoming MIDI clock messages. Select **External** if you are using the TRINITY as a slave device. In this case, the sequencer will be controlled mainly from outside, but playback can also be started and stopped using the front panel [START/STOP]. The TRINITY will receive MIDI realtime messages from an external sequencer, and the internal sequencer will operate in synchronization with the external sequencer.

MIDI realtime messages

Start	starts playback from the beginning of the song
Stop	stops playback
Continue	starts playback from the location where playback stopped
Song Select	selects a song
Song Position Pointer	sets the location in a song (measure number 'x', clock number 'y')
MIDI Clock	This is a clock message that is transmitted at regular intervals of the tempo. Slave sequencers will playback in synchronization to these messages. 24 MIDI clocks are equivalent to a quarter note.

System Clock [Internal, SP DIF, Digital I/F]

Selects the system clock of the TRINITY.
Internal: The TRINITY will use its internal clock. Normally you will leave this selected.
S/P DIF: If this is selected when the HDR-TRI option is installed, the TRINITY will use the external S/P DIF clock.
Digital I/F: If this is selected when the Digital I/F option is installed, the TRINITY will use the external Digital I/F clock.

1-1e: Curve

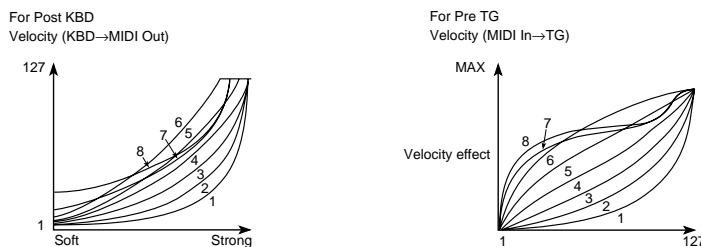
These settings select the aftertouch and velocity sensitivity (response).

MIDI If "1-1b: Position" is Post KBD, this setting will be applied immediately after the keyboard, so that the MIDI data transmitted will be affected, but the MIDI data received will not be affected. With a setting of Pre TG, this setting will be applied immediately before the tone generator, so that MIDI reception will be affected but transmission will not be affected.
The setting of "1-1b: Position" has no effect on the way that the TRINITY's keyboard plays the internal tone generator.

Velocity (Velocity Curve) [1...8]

The curve that you select here will affect the relationship between changes in keyboard velocity and the resulting changes in volume or tone.
If "1-1b: Position" is set to Post KBD, keyboard playing dynamics will be related to the transmitted velocity values as shown in the graph below (left). The velocity curve for received data is automatically selected from one of the following four curves in the graph at the lower right.
With a setting of Pre TG, keyboard playing dynamics and incoming velocity data will be related to the resulting velocity effect as shown in the graph on the next page (right). If you are playing the internal tone generator from an external keyboard or sequencer, and the overall sound is too bright or dark, set this to Pre TG and select an appropriate velocity curve here.

For transmission, velocity curve 4 in the lower left graph is automatically used.



Curves 7 and 8 produce a steady level of effect for softly played notes, and are suitable for use when you do not require velocity control or when you wish to even out the strength of notes, but have the disadvantage that dynamic control of the softer notes is more difficult. In this way, each curve has its own characteristics. Select a curve that is appropriate for your own playing strength, playing style, and the effect that you are trying to produce.

- 1: significant effect is produced only for strongly played notes
- 2: similar to 1
- 3: similar to 1
- 4: playing dynamics allow control over the effect (the standard curve)
- 5: similar to 4
- 6: significant effect is produced even without playing strongly
- 7: medium-strength notes produce a fairly steady effect
- 8: medium-strength notes produce an even steadier effect than 7

Aftertouch (Aftertouch Curve)

[1...8]

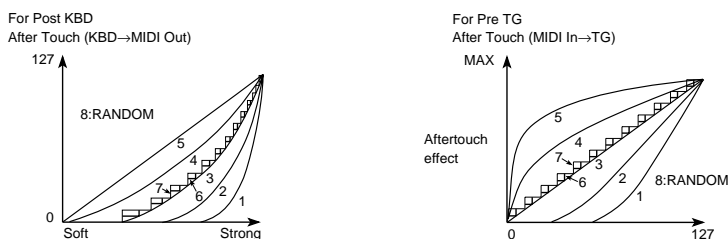
When using aftertouch to control volume or tone, the curve you select here will affect the relation between the aftertouch pressure you apply and the resulting effect.

When “1-1b: Position” is set to Post KBD, the pressure you apply to the keyboard will produce the aftertouch effect or transmit aftertouch data as shown in the graph below (left).

For received data, aftertouch curve 3 from the graph below (at right) is used automatically.

With a setting of Pre TG, the pressure you apply to the keyboard or the aftertouch data that is received will produce an aftertouch effect as shown in the graph below (right)

For transmitted data, aftertouch curve 3 from the graph below (at left) is used automatically.



In curves 6 and 7, the change takes place over 12 and 24 steps respectively. If you are recording aftertouch data to the sequencer and want to avoid using excessive memory, you may wish to use these curves (set Position to Post KBD). In particular, since curve 7 is in 12 steps, you could assign aftertouch to modify the pitch and set the width of pitch change to 1 octave, so that aftertouch would modify the pitch in semitone steps.

Curves 1-5 can be used when you wish to make fine adjustments.

Curve 8 is random, and can be used when you want to produce special effects, or when you want to use aftertouch to apply irregular modulation.

- 1: significant effect is produced only for strong pressure
- 2: similar to 1
- 3: aftertouch allows the effect to be adjusted (normal curve)
- 4: similar to 3
- 5: effect is produced even with soft pressure
- 6: aftertouch adjusts the effect in large steps (24 levels)
- 7: aftertouch adjusts the effect in large steps (12 levels)
- 8: random

1-1f: Foot Pedal/Foot Switch Assign

Foot Pedal

[OFF, Volume...Effect Control 2 (CC#13)]

This determines the function of the assignable pedal (please use a Korg XVP-10 or EXP-2, sold separately) connected to the rear panel PEDAL jack (☞ Basic Guide, page 5).

OFF: The connected pedal will not function.

Volume: The pedal will adjust the volume of the TRINITY. At the same time, MIDI Volume messages (CC#7) will be transmitted to adjust the volumes of timbres or tracks with matching MIDI channels.

Expression: The pedal will adjust the volume of the TRINITY. At the same time, MIDI Expression messages (CC#11) will be transmitted to adjust the volume of timbres or tracks with matching MIDI channels.

Master Volume: The pedal will adjust the volume. At the same time, the MIDI Universal Exclusive message Master Volume (F0H, 7FH, gg, 04, 01, vv, mm, F7H) will be transmitted to adjust the volume of all timbres and tracks (while preserving the volume balance between each timbre or track, etc.).

Tempo Offset: The pedal will control the tempo of the sequencer. Advancing the pedal will increase the tempo. This will also cause MIDI Clock messages to be transmitted at a correspondingly closer interval.

Data Entry: The pedal will adjust parameter values in the various Edit modes.

Foot Pedal (CC#04): The pedal will control the Alternate Modulation for which AMS was set to Foot Pedal in Program Edit mode. Simultaneously, MIDI Foot Controller (CC#04) messages will also be transmitted.

Effect Control 1 (CC#12): The pedal will control Effect Dynamic Modulation. This is only for Effect Dynamic Modulation, and you will need to set the Effect Dynamic Modulation Source to MIDI Cnt1. Simultaneously, Effect Control 1 messages (CC#12) will be transmitted.

Effect Control 2 (CC#13): The pedal will control Effect Dynamic Modulation. This is only for Effect Dynamic Modulation, and you will need to set the Effect Dynamic Modulation Source to MIDI Cnt2. At the same time, Effect Control 2 messages (CC#13) will be transmitted.

Foot Switch

[OFF, Program Up...Modulation (CC #82)]

MIDI This determines the function of the assignable switch (an on/off switch such as the Korg PS-1; sold separately) connected to the rear panel SWITCH jack (☞ Basic Guide, page 5).

OFF: The connected switch will not function.

Program Up: The switch will select programs or combinations.

In Program Play mode, the program following the currently selected program will be selected. In Combination Play mode, the combination following the currently selected combination will be selected. At the same time, a Bank Select message and a Program Select message will be transmitted.

Program Down: The switch will select programs or combinations.

In Program Play mode, the program preceding the currently selected program will be selected. In Combination Play mode, the combination preceding the currently selected combination will be selected. At the same time, a Bank Select message and a Program Select message will be transmitted.

Song Start/Stop: The switch will start and stop the sequencer. At the same time, MIDI Start and Stop messages will be transmitted.

Song Punch In/Out: When the Sequencer mode "1-7h: Recording Setup" (☞ page 87 in this manual) is set to Manual Punch In, the switch will punch-in and punch-out.

Modulation (CC#82): The switch will control Alternate Modulation. If you wish to use this, set AMS to Foot SW (CC#82).

Foot Switch Polarity

[-/+]

Set this to match the polarity of the assignable switch connected to the rear panel SWITCH jack (☞ Basic Guide, page 5).

If you have connected a Korg PS-1 foot pedal, the polarity of the switch is (▼), so set this parameter to "-". If you have connected a pedal switch that has "+" polarity (▲), set this parameter to "+". (▼: Open type, ▲: Closed type)

If the polarity setting does not match the pedal switch that is connected, it will not function correctly.

If a pedal switch is not connected, set this to "-".

Sustain Pedal Polarity

[-/+]

Set this to match the polarity of the sustain pedal connected to the rear panel SUSTAIN jack (☞ Basic Guide, page 5).

If you have connected a Korg PS-1 foot pedal, the polarity of the switch is (▼), so set this parameter to “-”. If you have connected a sustain pedal that has “+” polarity (▲), set this parameter to “+”. (▼: Open type, ▲: Closed type)

If the polarity setting does not match the sustain pedal that is connected, it will not function correctly.

If a sustain pedal is not connected, set this to “-”.

1-1g: Effect Switch

Insert FX Off

If this is **checked**, all insert effects will be Off.

If this is **un-checked**, the On/Off setting of each insert effect will be determined by the On/Off setting in Program Edit mode “7-1a: Insert Effect Setting” (⇨ page 48 in this manual), Combination Edit mode “7-2a: Insert Effect Setting” (⇨ page 71 in this manual) or Sequencer mode “7-3a: Insert Effect Setting” (⇨ page 123 in this manual).

MIDI When this is turned on/off, an Effect 2 Control message (CC#92) will be transmitted. The value will be 127 when On, and 0 when Off.

Master FX [Mod] Off

If this is **checked**, [E1] (modulation-type master effect) will be Off.

If this is **un-checked**, the [E1] On/Off setting will be determined by the On/Off setting in Program Edit mode, Combination Edit mode or Sequencer mode “8-1a: Effect 1/Effect 2 Setting” (⇨ page 74 in this manual).

MIDI When this is turned on/off, an Effect 4 Control (CC#94) message will be transmitted. The value will be 127 when On, and 0 when Off.

Master FX [R/D] Off

If this is **checked**, [E2] (reverb/delay-type master effect) will be Off.

If this is **un-checked**, the [E2] On/Off setting will be determined by the On/Off setting in Program Edit mode, Combination Edit mode or Sequencer mode “8-1a: Effect 1/Effect 2 Setting” (⇨ page 74 in this manual).

MIDI When this is turned on/off, an Effect 5 Control (CC#95) message will be transmitted. The value will be 127 when On, and 0 when Off.

▼ Page Menu Command

1-1A: Touch Panel Calibration

Use this command to make adjustments if touch panel input does not function the way that you expect (for example if an on-screen control cannot be operated by touching the place where it is displayed).

- 1 Touch the rectangle displayed at the upper left of the LCD screen.
When selected correctly, it will be displayed in inverse video.
- 2 Touch the rectangle displayed at the lower right of the LCD screen.
When selected correctly, it will be displayed in inverse video.
- 3 Press the Done button.

If calibration could not be performed correctly, an error message will appear. Try the operation once again.

1-1B: Joystick X Calibration

Use this command if moving the joystick fully left or right does not produce the specified pitch bend effect, or if the maximum or minimum effect is reached mid-way through the joystick's travel.

- 1 Move the joystick fully left and then fully right as far as it will go.
- 2 Release the joystick.
- 3 Press the Done button.

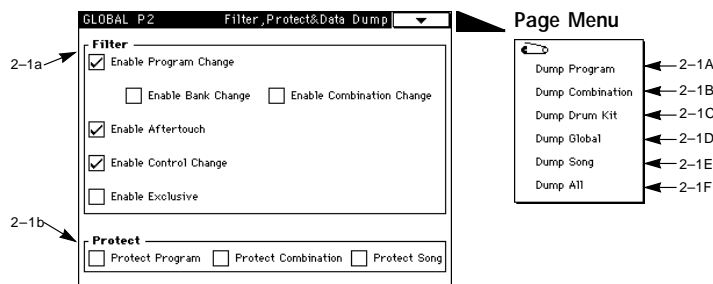
If calibration could not be performed correctly, an error message will appear. Try the operation once again.

1-1C: Enable Beep (Check Command)

If this is **checked**, pressing an active object on the LCD screen will produce sound.

Global P2

2-1: Filter, Protect & Data Dump



2-1a: Filter

Enable Program Change

MIDI This specifies whether or not MIDI Program Change messages will be transmitted and received.

If this is **checked**, Program Change messages will be transmitted and received. However, the “Enable Bank Change” and “Enable Combination Change” settings will apply.

In Program Play mode, programs will be selected by incoming Program Change messages on a channel that matches the Global MIDI channel.

When you select a program, a Program Change message will be transmitted on the Global MIDI channel.

In Combination Play mode, combinations will be selected by incoming Program Change messages on a channel that matches the Global MIDI channel. However this can be disabled by the “Enable Combination Change” setting.

Incoming Program Change messages whose channel matches the channel settings of Combination Edit mode “1-1e: MIDI Channel” (⇨ page 58 in this manual) will select programs for that timbre. When you select a combination, a Program Change message will be transmitted on the Global MIDI channel, and also simultaneously transmitted on the channel of each timbre whose Combination Edit mode “1-1d: Timbre Mode” parameter (⇨ page 58 in this manual) is set to EXT.

In Sequencer mode, incoming Program Change messages on a channel that matches the channel setting of a track whose Track Status is INT or BOTH will select programs for that track.

When you select a song or playback a sequence, Program Change messages will be transmitted on the channel specified for each track whose Track Status is EXT or BOTH.

If “Enable Bank Change” is checked, Bank Select messages will be transmitted together with Program Change messages.

If “Enable Program Change” is **un-checked**, Program Change messages will be neither transmitted nor received.

Enable Bank Change

MIDI This specifies whether MIDI Bank Select messages will be transmitted and received.

If this is **checked**, both Bank Select and Program Change messages will be transmitted and received if “Enable Program Change” is checked.

If this is **un-checked**, only Program Change messages will be transmitted or received if “Enable Program Change” is checked.

! When recording to the sequencer, Bank Select messages will be recorded regardless of this setting, but playback will be affected by this setting.

Enable Combination Change

MIDI This setting affects the operation of Combination Play mode (see table below).

If this is **checked**, combinations will be selected by incoming Program Change messages whose channel matches the Global MIDI channel.

If the channel of the incoming Program Change message does not match the Global MIDI channel, but does match the MIDI channel of a timbre, a program will be selected for that timbre.

If this is **un-checked**, combinations will not be selected even if the channel of the incoming Program Change message matches the Global MIDI channel.

However if the channel of the incoming Program Change message matches the MIDI channel of a timbre, a program will be selected for that timbre.

Enable Aftertouch

MIDI This determines whether or not MIDI Aftertouch messages will be transmitted and received.

The keyboard of the TRINITY transmits only Channel Aftertouch. (It does not transmit Poly Aftertouch.) It does however respond to Poly Aftertouch as AMS, and can receive Poly Aftertouch to control individual notes.

If this is **checked**, Aftertouch messages will be transmitted and received.

If this is **un-checked**, Aftertouch messages will be neither transmitted nor received.

Since Aftertouch messages are generated by even slight pressure on the keyboard, you can conserve sequencer memory by leaving this un-checked when recording with programs that do not require aftertouch.

When sequence data that contains aftertouch is played back, the aftertouch data will still be played back faithfully (and simultaneously transmitted by MIDI) regardless of this setting.

Enable Control Change

MIDI This determines whether or not control change messages (messages of controllers such as pitch bend, damper pedal, volume, and joystick etc.) will be transmitted and received.

If this is **checked**, control change messages will be transmitted and received.

If this is **un-checked**, control change messages will neither be transmitted nor received.

When sequence data that contains control change data is played back, the control change data will still be played back faithfully (and simultaneously transmitted by MIDI) regardless of this setting.

Enable Exclusive

MIDI This determines whether or not System Exclusive messages (sound data for programs or combinations, etc., editing operations performed in Program/Combination Edit mode) will be transmitted and received.

If this is **checked**, exclusive messages will be transmitted and received.

If this is **un-checked**, exclusive messages will be neither transmitted nor received. Normally, you will leave this setting un-checked. However when the page menu commands of this page (Data Dump) are displayed, exclusive messages can be transmitted and received regardless of this setting.

2-1b: Protect

Protect Program (Protect Program Memory)

This determines whether or not internal program memory will be protected.

If this is **checked**, internal program memory will be protected, and the following Write operations will be prohibited.

- Program write
- Program data reception by MIDI data dump
- Loading program data from disk

If this is **un-checked**, internal program memory can be written into.

Protect Combination (Protect Combination Memory)

This determines whether or not internal combination memory will be protected.

If this is **checked**, internal combination memory will be protected, and the following Write operations will be prohibited.

- Combination write
- Combination data reception by MIDI data dump

- Loading combination data from disk

If this is **un-checked**, internal combination memory can be written into.

Protect Song (Protect Song Memory)

This determines whether or not internal song memory will be protected. However when the power is turned OFF, song data in internal song memory will be lost regardless of this setting.

If this is **checked**, internal song memory will be protected, and the following Write operations will be prohibited.

- Sequencer recording
- Song data reception by MIDI data dump
- Loading song data from disk

If this is **un-checked**, internal song memory can be written into.

▼ Page Menu Command

2-1A: Dump Program

2-1B: Dump Combination

2-1C: Dump Drum Kit

2-1D: Dump Global

2-1E: Dump Song

2-1F: Dump All

MIDI These commands transmit TRINITY data as a MIDI exclusive message to an external device, such as another **TRINITY series** instrument, a MIDI data filer, or a computer.

While a Page Menu Command is displayed, data dumps can be transmitted and received regardless of the System Exclusive setting.

If you wish to transmit MIDI data (program or combination data) to another **TRINITY series** instrument, set the Global MIDI channels of the two instruments to the same channel.

When transmitting MIDI data to a data filter, there is normally no need to match MIDI channels.

When you select a command (refer to the table below), a dialog box will appear.

If you have selected a command **other than Dump All**, select as necessary the bank and/or number of the data that you wish to dump, and press OK.

Dump Program	Programs of all banks, programs of the specified bank, 1 program
Dump Combination	Combinations of all banks, combinations of the specified bank, 1 combination
Dump Drum Kit	All drumkits, 1 drumkit
Dump Global	Global parameters
Dump Song	All songs
Dump All	Programs of all banks + combinations + drumkits + global parameters + songs



While Data Dump is being executed, be careful not to operate the switches or controls of the TRINITY.

The following table shows the size of the dumped data, and the time required for dumping.

Type of data	Data size (kByte)		Time required (seconds)	
	TRINITY	TRINITY V3, TRINITY V3 pro, TRINITY V3 proX	TRINITY	TRINITY V3, TRINITY V3 pro, TRINITY V3 proX
All Data* ¹	265.4–809.7	303.5–847.8	85.0–259.1	97.2–271.3
All Programs* ²	126.7	164.8	40.6	52.4
1 Program Bank (Bank A, B)	63.3	63.3	20.3	20.3
1 Program Bank (Bank M)	-----	38.1	-----	12.2
1 Program (Bank A, B)	0.5	0.5	0.2	0.2
1 Program (Bank M)	-----	0.6	-----	0.2
All Combination	113.5		36.4	
1 Combination Bank	56.8		18.2	
1 Combination	0.4		0.2	
All Drumkits	19.6		6.3	
1 Drumkit	1.6		0.6	
Global Parameters	1.3		0.5	
All Songs	4.3–548.6		1.4–175.6	

*¹ Global Setup, All Drumkits, All Combinations, All Programs, All Songs

*² TRINITY: programs of banks A and B

TRINITY V3, TRINITY V3 pro, TRINITY V3 proX: programs of banks A, B, and M

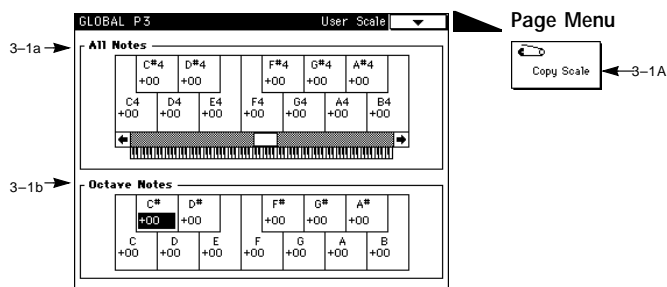
For the data format and contents, refer to page 165 “MIDI Implementation” in this manual.

Global P3

3-1: User Scale

Here you can set the two user scales.

The user scales specified here can be selected in Program Edit mode “1-1e: Scale” (☞ page 6 in this manual), Combination Edit mode “2-1a: Scale” (☞ page 61 in this manual), or Sequencer mode “2-1: Track Parameter” (☞ page 89 in this manual).



3-1a: All Notes

[−99...+99]

For this scale you can independently adjust the pitch for each of the 128 notes of the scale.

Use the horizontal scroll bar to move the displayed range of the keyboard, and adjust the pitch of each of the 128 notes (C-1 to G9) in 1-cent steps, relative to equal temperament.

With a setting of −99, the pitch will be approximately a semitone lower than equal temperament.

With a setting of +99, the pitch will be approximately a semitone higher than equal temperament.

By executing the page menu command “3-1A: Copy Scale” you can copy the settings of the Stretch preset scale to this user scale.

3-1b: Octave Notes

[−99...+99]

For this scale you can adjust the pitch of each note in the octave.

The adjustments you make (in 1-cent steps) to the pitch of each note of the octave (C-B) will be reflected in all octaves. These adjustments are relative to equal temperament.

With a setting of −99, the pitch will be approximately a semitone lower than equal temperament.

With a setting of +99, the pitch will be approximately a semitone higher than equal temperament.

The default setting is the scale used for combination A054: Real Harp Gliss.

▼ Page Menu Command

3-1A: Copy Scale

This command copies a preset scale to a user scale.

The preset Stretch scale can be copied to the “3-1a: All Notes” user scale.

Other preset scales can be copied to the “3-1b: Octave Notes” user scale.

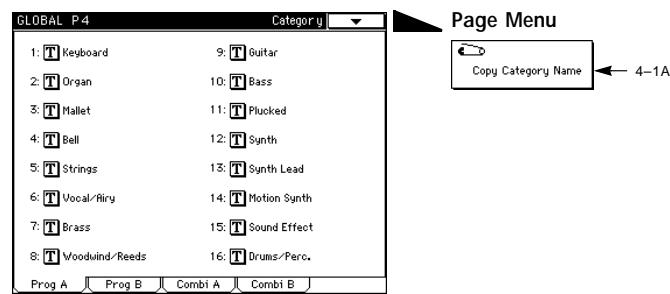
For details on scales, refer to Program Edit mode, “1-1e: Scale” (☞ page 6 in this manual).

Global P4

4-1: Category Program A

4-2: Category Program B

Here you can edit your own settings for program categories A and B.
If the category names you edit here are assigned to programs, you can use them to search for programs in Program Play mode, Combination Play mode and Sequencer mode.
With the factory settings, category names for various instrument families are registered. Also, categories have already been assigned to each of the factory preset programs.



Select the text edit button of the category name that you wish to edit, and a display will appear allowing you to edit the category name (➡ Basic Guide, page 6).
Up to 16 category names can be specified.

▼ Page Menu Command

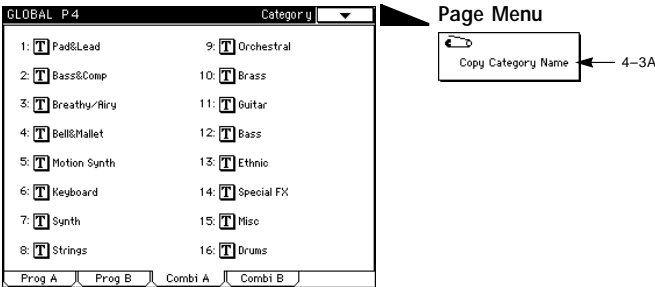
- 4-1A: Copy Category Name**
Specifies a copy source and copy destination, and copy a category name.

4-3: Category Combination A

4-4: Category Combination B

Here you can edit your own combination categories A and B. Combinations can be assigned the category names that you edit here, so that you can use them to search for combinations in Combination Play mode.

With the factory settings, category names for various instrument families are registered. Also, categories have already been assigned to each of the factory preset combinations.



Select the text edit button of the category name that you wish to edit, and a display will appear allowing you to edit the category name (see Basic Guide, page 6). Up to 16 category names can be specified.

▼ Page Menu Command

4-3A: Copy Category Name

Specifies a copy source and copy destination, and copy a category name.

Global P5

5-1: Drumkit (Drumkit Setup)

Here you can edit drum kits.

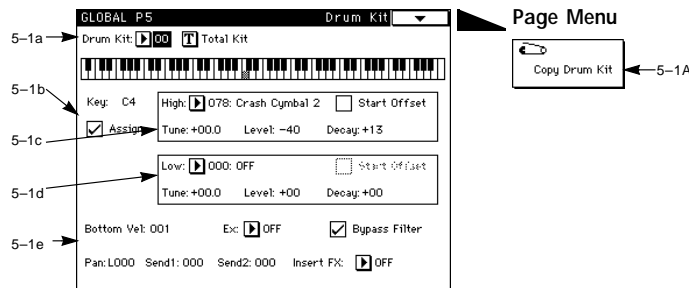
Drum kits use the filter, amp, and effect settings of the program displayed in Program Play mode. The result will be the same as changing the multisample of the single-mode program selected in Program Play mode to a Drumkit.

Since programs that use a drum kit have different filter, amp, and effect settings than programs that do not use a drum kit, it is best to first select a drum mode program in Program Play mode before moving to this page. A program that uses a drum kit will have filter, amp, and effect settings etc. that are suitable for drum sounds. Programs that use a drum kit are marked by “ @ ” in the separate **Voice Name List**.

Make sure the Octave is set to 8' (this setting is made in Program Edit mode “1-2: OSC Basic (Oscillator Basic)” on page 9). If this is not set to 8' the correspondence between keys and drum sounds will be skewed and incorrect.

MIDI If “2-1a: Enable Exclusive” is checked, only “5-1: Drumkit” can be edited by exclusive data in Global mode.

⚠ When you edit a drum kit, the sound of the programs which use that drum kit will be affected. (Before editing, check which programs use that drum kit.)



5-1a: Drumkit

[0...11]

Selects the drum kit that you wish to edit.

The text edit button will access a display that allows you to rename the drum kit. For details, refer to Basic Guide page 6.

5-1b: Key/Assign

Key

[A0...C8]

Selects the key for which you want to specify a drum sample and make settings.

To specify the drum sample and make settings for it, use “5-1c: High Drumsample” to “5-1e: Drumsample Setup.” Two drum samples can be assigned to each key, and triggered by different velocities.

Assign

If this is **checked**, the drum samples selected by the parameters “5-1c: High Drumsample” and “5-1d: Low Drumsample” will sound. Normally you will leave this **checked**.

If this is **un-checked**, the selected drum sample will be ignored, and the drum sample of the neighboring key to the right will be used. The pitch will be a semitone lower than the neighboring key to the right. Leave this un-checked if you wish to play drum samples at different pitches.

5-1c: High Drumsample

High (High Drumsample)

[OFF, 1...258]

Selects the drum sample that will be sounded by velocities above the Bottom Vel specified in “5-1e: Drumsample Setup”. A list of the drum samples is included in the separate **Voice Name List**. If you do not want to use velocity to switch drum samples, set Bottom Vel to 1, and specify a drum sample only for this parameter.

With a setting of **OFF**, there will be no sound.

Start Offset

If this is **checked**, the drum sample will start playing from a location after the beginning of the waveform. (This location is fixed for each drum sample.)

If this is **un-checked**, the drum sample will start from the beginning of the waveform.

Tune

[-60.0...+24.0]

Adjusts the pitch in 50-cent steps.

Keys that are set to **0** will sound the sample at its original pitch.

Keys that are set to **-60.0** will sound the sample 5 octaves lower than its original pitch.

Keys that are set to **+24.0** will sound the sample 2 octaves above its original pitch.

For example this could be used to create a group of Hi-tom, Mid-tom, and Low-tom sounds using a single tom drum sample.

Level

[-99...+99]

Adjusts the volume.

Keys with a setting of **+99** will sound at a volume double that of the amp level of the program using that drumkit.

Keys with a setting of **0** will sound at the volume of the amp level of the program using that drum kit.

Keys with a setting of **-99** will not sound.

Decay

[-99...+99]

Adjusts the decay time.

The decay time for each key will be the sum of the amp EG Decay Time of the program using that drum kit and the setting you make here.

The program amp EG for a drum kit sets the Start Level and Attack Level high, and the Break Point Level to 0. That is, the level will be highest at note-on, and decays thereafter.

5-1d: Low Drumsample

Specifies the drum sample that will be sounded by velocities below the Bottom Vel specified in “5-1e: Drumsample Setup”.

For details on each parameter, refer to “5-1c: High Drumsample”.

5-1e: Drumsample Setup

These parameters are common to both High and Low drum samples.

Bottom Vel

[1...127]

Specifies the velocity value at which the High drum sample and the Low drum sample will be switched. Velocities of this value and higher will sound the drum sample specified in "5-1c: High Drumsample."

If you do not wish to switch drum samples using velocity, set this value to **1**, and set only the "5-1c: High Drumsample."

Ex (Exclusive Assign)

[OFF, Group01...Group16]

With a setting of **Group01–Group16**, the key will be placed in the specified group. Keys with the same group number are in the same group, and will sound monophonically with last-note priority. This means that by placing two or more drum samples of the same type (for example, open hi-hat and closed hi-hat) in a single group, you can prevent the unnatural effect of an open hi-hat and a closed hi-hat sounding simultaneously.

With a setting of **OFF**, the key will not be placed in an assign group. Normally you will leave this **OFF**.

Pan

[OFF, L000...C064...R127]

Sets the pan position for each key.

When **OFF** is selected, there will be no output.

With a setting of **L000–R127**, the assigned drumsample will be panned as specified.

With a setting of **C064**, the sound will be assigned to L and R at equal volumes, so that the sound will appear to come from the center. By making different settings for each key, you can simulate the spatial placement characteristic of an actual drum kit; for example, hi-hat at left, snare to the right of the hi-hat, toms from center to the right, and cymbals at left and right.

Send 1

[0...127]

Specifies the send 1 level for each key.

Send 2

[0...127]

Specifies the send 2 level for each key.

Bypass Filter

Specifies whether or not the filters of a program that uses this drumkit will apply to each key.

If this is **checked**, the filter will not apply.

If this is **un-checked**, the filter will apply.

Insert FX

[OFF, Inst 1...Inst 4]

Specifies the effect to which the drum sample assigned to each key will be output.

With a setting of **OFF**, it will not be output.

With a setting of **Inst 1–Inst 4**, the sound will be output to the specified one of four insert effects [E1]–[E4] selected for the drum mode program.

▼ Page Menu Command

5-1A: Copy Drumkit

This command copies settings from another drumkit to the currently selected drumkit.



When this command is executed, the data of the currently selected drumkit will be rewritten. Before executing, make sure that you are not overwriting data that you wish to keep.

7. Disk mode

In this mode you can save (copy from internal memory to floppy disk) and load (copy from floppy disk to internal memory) various types of data.

Use **MS-DOS format 3.5 inch 2DD or 2HD** floppy disks.

When disks are formatted by the **TRINITY's** disk drive, 2DD disks will have a capacity of **720 Kbytes** (9 sectors/track), and 2HD disks will have a capacity of **1440 Kbytes** (18 sectors/track).

Files, directories, and icons

The **TRINITY** uses files and directories on a floppy disk to manage various types of data in a hierarchical structure. The contents of a file (i.e., whether it is a file or a directory, and if a file, the type of data it contains) are indicated by not only a name but also graphically by an icon. The shape of the icon indicates whether an item on disk is a file or a directory.



File



Directory

In this manual, we refer to items recognizable as a file by MS-DOS as a “DOS file,” and items recognizable as a directory as a “DOS directory.”

The **TRINITY** distinguishes between types of DOS files by the filename extension of the DOS file.

DOS files with filename extensions other than those shown below will be considered to be Standard MIDI Files.

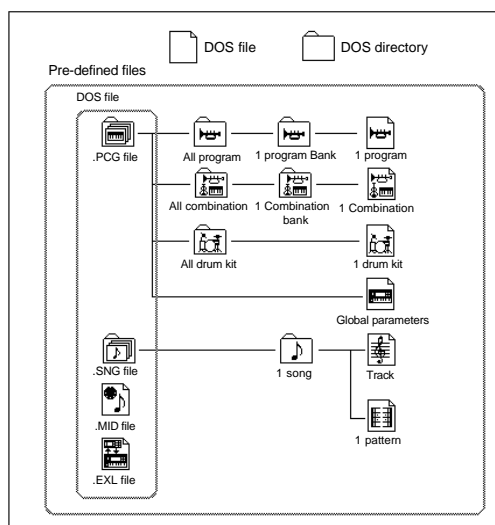
Extension	Type
.PCG	Program/Combination/Drum kit/Global parameters
.SNG	Song
.MID	Standard MIDI File
.EXL	MIDI Exclusive data



When data is saved by the **TRINITY**, one of these four extensions will be automatically added to the filename. If you later modify the filename extension, it will be considered an undefined file, and will be handled as a Standard MIDI File.

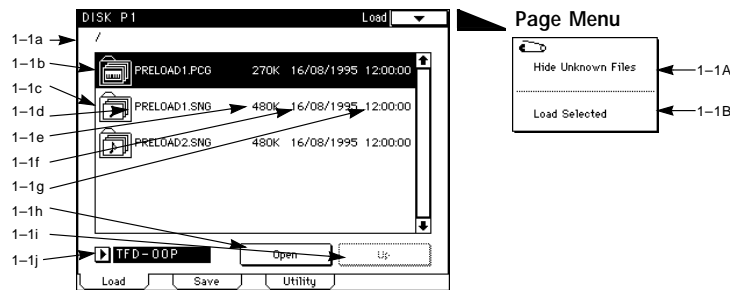
The files used by the **TRINITY** have the following structure.

Since .PCG files and .SNG files can be opened and their contents handled separately, they are shown as directory icons in the display.



1-1: Load

Here you can load a selected file or directory into memory.
Use the **Open button** or **Up button** to select the desired file or directory, and then select the page menu command “1-1B: Load Selected.”



1-1a: Current directory

The currently selected directory to which commands will apply is called the “current directory.” The LCD shows the full pathname of the directories. A regular slash character “/” is the directory delimiter (the character that divides hierarchical levels).
Use “1-1h: Open button” and “1-1i: Up button” to change the current directory.

1-1b: Directory window

This area displays file information for the current directory.
When a file or directory is selected in this window, the selected file will be displayed in inverse video. The directory window will show information about the file as explained in “1-1c: File icon” through “1-1g: Saved time.”

1-1c: File icon

The displayed icon will indicate the file type. For details on icons, refer to page 147 in this manual.

1-1d: Filename

The name of the file is displayed.

1-1e: Size

The size of the file (in kilobytes) is displayed.

1-1f: Saved date

The date (**day, month, year**) that the file was last saved is displayed.
However since the TRINITY does not contain an internal calendar or clock, you need to set the date in “1-3E: Set Date/Time” before saving.

1-1g: Saved time

The time that the file was last saved is displayed.
However since the TRINITY does not contain an internal calendar or clock, you need to set the time in “1-3E: Set Date/Time” before saving.

1-1h: Open button

Use this button to open a directory, and move the current directory to the next lower level. This is available only when a directory is selected in "1-1b: Directory Window."

1-1i: Up button

Use this button to move the current directory to the next higher level. If the current directory is the root directory (where the current directory display is only "/"), this button is not available.

1-1j: Drive select

Select the disk that will be used for loading and saving. The volume label of the disk will be displayed, and disks without a volume label will be indicated as "no label." With the standard system, only the internal floppy drive can be selected.

▼ Page Menu Command

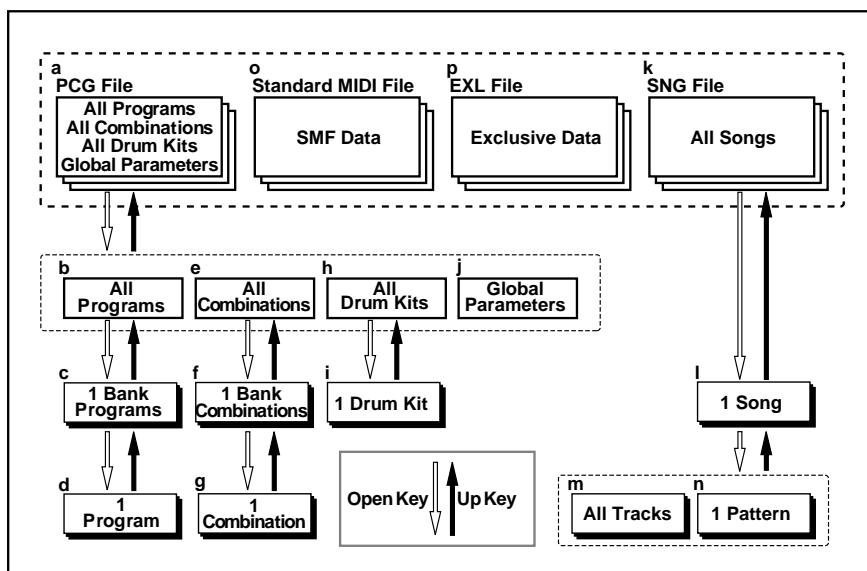
1-1A: Hide Unknown Files (check command)

If this is **checked**, undefined file types will not appear in the directory window. However this is valid only if the current directory is a DOS directory.

1-1B: Load Selected

This command loads the file or directory selected in "1-1d: Directory Window" into internal memory.

When this command is selected, a dialog box will appear, but the dialog box that appears will depend on the file from which you are loading data. (Refer to "a" through "p" below.)

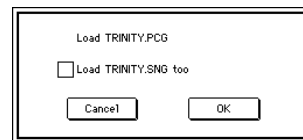


a: If a .PCG file is selected

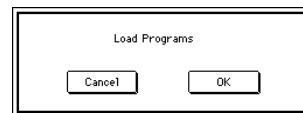
All data included in the .PCG file will be loaded.

If the check box in the dialog box is **checked**, files of the same name with a filename extension of .SNG (normally loaded by "k: If a .SNG file is selected", below) will also be loaded. However in this case, the .PCG and .SNG files must be in the same directory.

- 1 In the tab 1 display, select a .PCG file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.

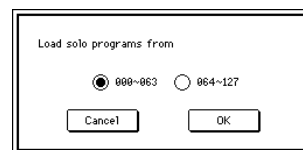
**b: If a .PCG file is opened, and a Program file inside it is selected**
All program data of the .PCG file will be loaded.

- 1 In the tab 1 display, select a program file within a .PCG file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.

**c: If a .PCG file or program file is opened, and a Bank file inside it is selected**

All program data of the selected bank will be loaded into the selected loading destination bank.

- 1 In the tab 1 display, select a bank file within a program file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 Select the loading destination bank.
- 4 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.
- 5 On a **TRINITY** that does not have the **PBS-TRI** option installed, the dialog box shown at right will appear when you attempt to load a PCG file containing 128 bank M programs. Use the radio buttons to select the set of programs that you wish to load, and press the **OK button** to load the programs.

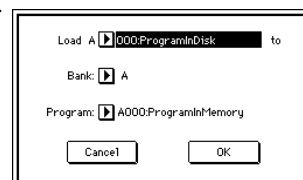


To return to the previous display, press the **Cancel button**.

d: If a .PCG file, a program file, or a bank file is opened, and a 1 Program file is selected

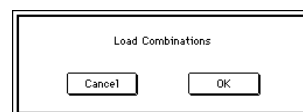
The selected 1 program will be loaded into the program number selected as the loading destination.

- 1 In the tab 1 display, select a 1 program file within a bank file.
- 2 When this command is selected, the dialog box at right will appear. If you wish to load a program other than the program selected in step 1, re-select the desired program.
- 3 Select the loading destination bank and program.
- 4 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.

**e: If a .PCG file is opened, and a Combination file is selected**

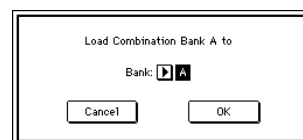
All combination data in the .PCG file will be loaded.

- 1 In the tab 1 display, select a combination file within a .PCG file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.

**f: If a .PCG file or a combination file is opened, and a Bank file is selected**

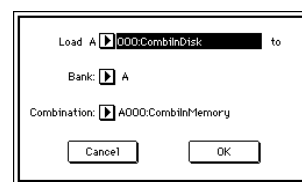
All combination data in the selected bank will be loaded into the bank selected as the loading destination.

- 1 In the tab 1 display, select a bank file within a combination file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 Select the loading destination bank.
- 4 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.



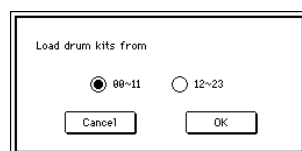
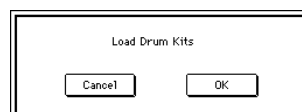
g: If a .PCG file, a combination file, or a bank file is opened, and a 1 Combination file is selected
The selected 1 combination will be loaded into the combination number specified as the loading destination.

- 1 In the tab 1 display, select a 1 combination file within a bank file.
- 2 When this command is selected, the dialog box at right will appear. If you wish to load a combination other than the one selected in step 1, re-select the desired combination.
- 3 Select the loading destination bank and combination.
- 4 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.



h: If a .PCG file is opened and a Drumkit file is selected
All drum kits in the .PCG file will be loaded.

- 1 In the tab 1 display, select a drumkit file within a .PCG file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.
- 4 On a TRINITY that does not have the PBS-TRI option installed, the dialog box shown at right will appear when you attempt to load a PCG file containing 24 drum kit programs.
Use the radio buttons to select the set of drum kits that you wish to load, and press the **OK button** to load the drum kits.
To return to the previous display, press the **Cancel button**.



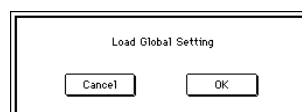
i: If a .PCG file or drum kit file is opened, and a 1 Drum kit file is selected
The selected 1 drum kit will be loaded into the drum kit specified as the loading destination.

- 1 In the tab 1 display, select a 1 drumkit file within the drumkit file.
- 2 When this command is selected, the dialog box at right will appear.
If you wish to load a drumkit other than the drumkit selected in step 1, re-select the drumkit for loading.
- 3 Select the loading destination drum kit.
- 4 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.



j: If a .PCG file is opened and a Global file is selected

- 1 In the tab 1 display, select a Global file within a .PCG file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.

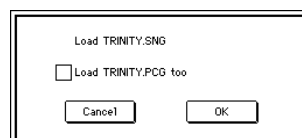


k: If a .SNG file is selected

All data in the .SNG file will be loaded.

If the check box in the dialog box is checked, an identically-named file with an extension of .PCG will also be loaded at the same time. However in this case, the .PCG file and the .SNG file must exist in the same directory.

- 1 In the tab 1 display, select a .SNG file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.



l: If a .SNG file is opened and a 1 Song file is selected

The selected 1 song will be loaded into the song that you select as the loading destination.

- 1 In the tab 1 display, select a 1 song file within a .SNG file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 Select the loading destination song.
- 4 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.

**m: If a .SNG file or a 1 song file is opened, and a Track file is selected**

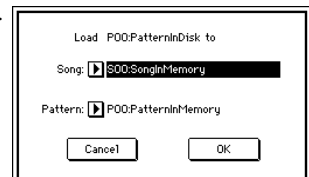
Event data of all tracks in the selected song will be loaded into the song that you select as the loading destination. However, it is not possible to select a song that has not been created as the loading destination.

- 1 In the tab 1 display, select a track file within a 1 song file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 Select the loading destination song.
- 4 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.

**n: If a .SNG file or a 1 song file is opened, and a 1 Pattern file is selected**

The selected pattern will be loaded into the pattern of the song you select as the loading destination. However, it is not possible to select a song that has not been created as the loading destination.

- 1 In the tab 1 display, select a 1 pattern file within a 1 song file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 Select the loading destination song.
- 4 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.

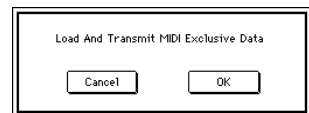
**o: If a .MID file or an undefined file is selected**

The selected file will be assumed to be a Standard MIDI File, and will be loaded into the song that you specify as the loading destination.

- 1 In the tab 1 display, select a .MID file or an undefined file.
- 2 When this command is selected, the dialog box at right will appear.
- 3 Select the loading destination song.
- 4 To load the data press the **OK button**. To cancel loading, press the **Cancel button**.

**p: If an .EXL file is selected**

- 1 In the tab 1 display, select an .EXL file.
- 2 When this command is selected, the dialog box at right will appear. All data in the .EXL file will be transmitted from MIDI.
- 3 To load the data press the **OK button**. To cancel loading, press the **Cancel button**. After the data has been loaded from the .EXL file, it will be transmitted via MIDI.



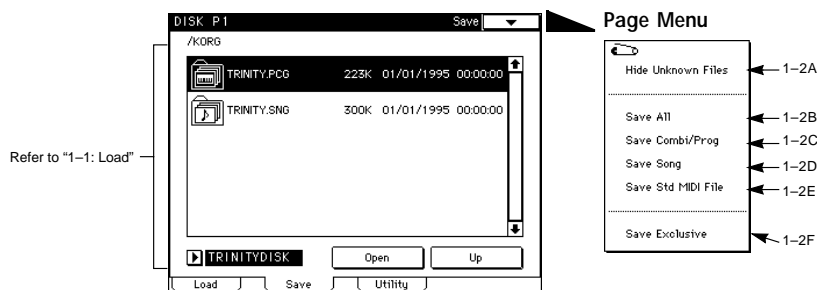
1-2: Save

Here you can save various types of data from internal memory onto a disk.

Use the Open button or Up button to move to the desired directory (current directory), and then select a page menu command.

When you execute a save command, the data will be saved in the same level of the file hierarchy as the displayed files.

The date and time of the saved file can be specified by "1-3E: Set Date/Time."



▼ Page Menu Command

1-2A: Hide Unknown Files (check command)

If this is **checked**, undefined files will not appear in the directory window.

1-2B: Save All

All combinations, programs, drum kits, global parameters, and songs in internal memory will be saved to disk as a .PCG file or .SNG file ('a' and 'k' of the middle diagram on p.149). Programs and combinations of the banks you specify will be saved. However, this command can be used only when the current directory is a DOS directory.

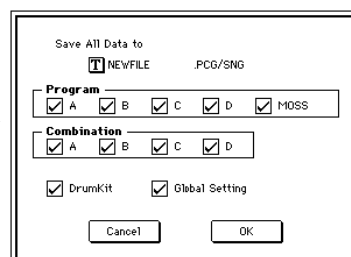
- 1 When this command is selected, the dialog box at right will appear.
- 2 Press the text edit button to access the text entry dialog box, and specify the filename (☞ Basic Guide, page 6).
- 3 Check the **check** boxes for the data items that you wish to save.



Combinations consist of programs, and some programs use a drum kit as their sound source.

As necessary, when saving combinations you should also save the programs used by those combinations, and when saving programs you should also save the drum kits used by those programs.

- 4 To save the data press the **OK** button. To cancel saving, press the **Cancel** button.



1-2C: Save Combi/Prog

All combinations, programs, and drum kits from internal memory, in addition to the global parameters, will be saved to disk as a .PCG file (diagram 'a' on page 149). You can specify the program and combination banks that will be saved.

This command is valid only if the current directory is a DOS directory.

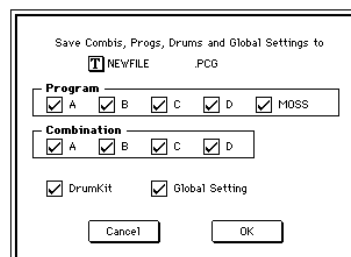
- 1 When this command is selected, the dialog box at right will appear.
- 2 Press the text edit button to access the text entry dialog box, and specify the filename (☞ Basic Guide, page 6).
- 3 Check the check boxes for the data items that you wish to save.



Combinations consist of programs, and some programs use a drum kit as their sound source.

As necessary, when saving combinations you should also save the programs used by those combinations, and when saving programs you should also save the drum kits used by those programs.

- 4 To save the data press the **OK** button. To cancel saving, press the **Cancel** button.



1-2D: Save Song

All songs in internal memory will be saved to disk as a .SNG file ('k' in the middle diagram on page 149).

This is valid only when the current directory is a DOS directory.

- 1 When this command is selected, the dialog box at right will appear.
- 2 Press the text edit button to access the text entry dialog box, and specify the filename (⇨ Basic Guide, page 6).
- 3 To save the data press the **OK button**. To cancel saving, press the **Cancel button**.



1-2E: Save Std MIDI File

The selected song from internal memory will be saved to disk as a .MID file (Standard MIDI File) in the specified format ('o' in the middle diagram on page 149).

This is valid only when the current directory is a DOS directory.

- 1 When this command is selected, the dialog box at right will appear.
- 2 Select the song that you wish to save.
- 3 Press the text edit button to access the text entry dialog box, and specify the filename (⇨ Basic Guide, page 6).
- 4 Use the radio buttons to specify the format.

Format 0: 16 tracks of MIDI data will be saved as one track.

Format 1: Tracks will be saved individually.



- 5 To save the data press the **OK button**. To cancel saving, press the **Cancel button**.

The song data saved in this way can be played back by a device that can read Standard MIDI File data. However if you will be playing back the data on the **TRINITY series**, we recommend that you use "1-2D: Save Song" to save the song data in the **TRINITY's** own format, since this will allow a higher degree of reproducibility during playback.

1-2F: Save Exclusive

Incoming MIDI exclusive data will be held temporarily in the free area of the sequencer memory, and then saved to disk as an .EXL file ('p' in the middle diagram on page 149). The default filename is **New File**.

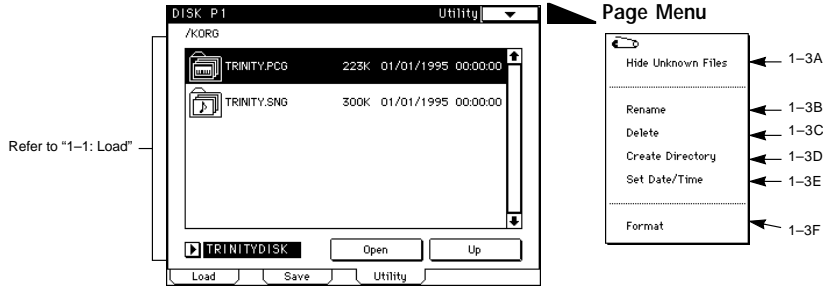
This is valid only when the current directory is a DOS directory.

- 1 When this command is selected, the TRINITY will wait for incoming exclusive data. When exclusive data is received, the dialog box at right will appear.
- 2 Transmit to the **TRINITY** the exclusive data that you wish to save. The display will indicate the amount of data received and the remaining amount that can be received. Exclusive data will be received as long as **Save Exclusive** is displayed.
- 3 Press the text edit button to access the text entry dialog box, and specify the filename (⇨ Basic Guide, page 6).
- 4 To save the data press the **OK button**. To cancel saving, press the **Cancel button**.



1-3: Utility

Here you can perform various operations on the selected disk or file.
Select a disk or file, and then select the desired page menu command.



▼ Page Menu Command

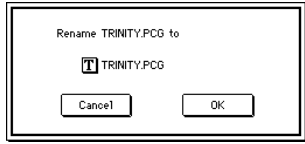
1-3A: Hide Unknown Files (check command)

If this is checked, undefined files will not appear in the directory window. However this is valid only if the current directory is a DOS directory.

1-3B: Rename

This command renames the selected file or directory.
This is valid only if the current directory is a DOS directory.

- 1 In the tab 3 display, select the file or directory that you wish to rename.
- 2 When this command is selected, the dialog box at right will appear. (The name of the selected file or directory will be displayed.)
- 3 Press the text edit button to access the text entry dialog box, and modify the name (⇒ Basic Guide, page 6).
- 4 To save the data press the **OK button**. To cancel saving, press the **Cancel button**.



1-3C: Delete

This command deletes the selected file or directory.
If you have selected a directory, it can be erased only if no files or directories exist within that directory.
This is valid only if the current directory is a DOS directory.

- 1 In the tab 3 display, select the file or directory that you wish to delete.
- 2 When this command is selected, a dialog box will appear. (The name of the selected file or directory will be displayed.)
- 3 To delete the data press the **OK button**. To cancel without deleting, press the **Cancel button**.

1-3D: Create Directory

This command creates a new directory inside the current directory.

- 1 When this command is selected, the dialog box at right will appear.
- 2 Press the text edit button to access the text entry dialog box, and specify the directory name (⇒ Basic Guide, page 6).
- 3 To create the directory press the **OK button**. To cancel without creating a directory, press the **Cancel button**.



1-3E: Set Date/Time

This command sets the date and time that will be assigned to a file when it is saved.

- 1 When this command is selected, the dialog box at right will appear.
- 2 Set the date and time.

Year	1980-2079
Month	1-12
Day	1-31
Hour	0-23
Minute	0-59
Second	0-59 (only odd-numbered seconds are assigned to a file)

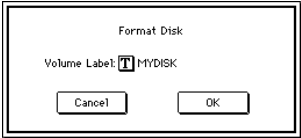


- 3 To set the specified date and time, press the **OK button**. To cancel without setting, press the **Cancel button**.

1-3F: Format

This command formats the selected disk. The volume label (a name for the disk) that you specify will be assigned to the disk. The volume label assigned here will be displayed in "1-1j: Drive Select." The volume label can be up to 11 characters long.

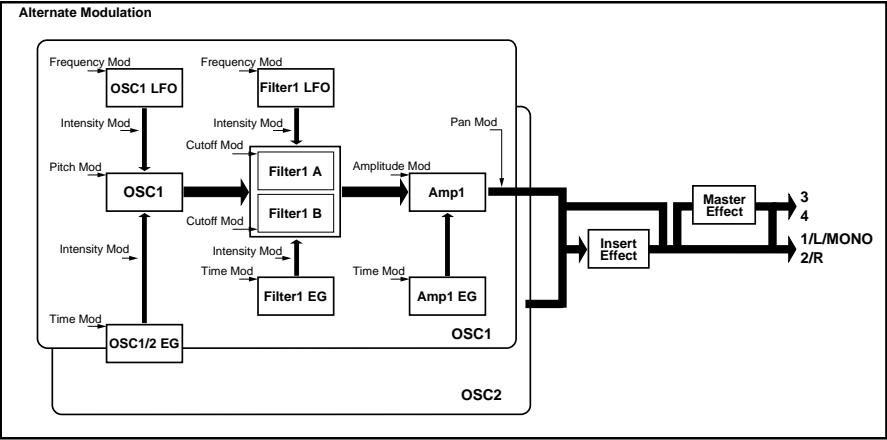
- 1 Insert the floppy disk that you wish to format into the floppy disk drive.
- 2 When this command is selected, the dialog box at right will appear.
- 3 Press the text edit button to access the text entry dialog box, and specify the volume label (see Basic Guide, page 6).
- 4 To format the disk press the **OK button**. To cancel without formatting, press the **Cancel button**.



8. Appendix

About Alternate Modulation

Alternate Modulation can be specified for the following 14 types, in total, 27 alternate modulation destinations shown in the diagram below. (OSC EG is common to OSC 1 and 2.) AMS (Alternate Modulation Source) can be selected independently for each of these to apply modulation.



About Alternate Modulation Sources

There are 26 Alternate Modulation sources (AMS) that can control Alternate Modulation destinations.

If you select two or more Alternate Modulation destinations for control by the same AMS, a single source will apply modulation to each of the specified destinations.

Frequently used assignments such as using the joystick (X) to control pitch are provided as special parameters, so it is not necessary to use Alternate Modulation to accomplish this.

Alternate Modulation Source	
OSC EG	oscillator EG
Filter EG	filter EG (filter EGs of the same oscillator)
Amplifier EG	amp EG (amp EGs of the same oscillator)
OSC LFO	oscillator LFO (oscillator LFO of the same oscillator)
Filter LFO	filter LFO (filter LFO of the same oscillator)
Velocity	velocity
Note Number	note number
Poly After	polyphonic aftertouch
After Touch	channel aftertouch
Joy Stick (X)	joystick (X)
Joy Stick (+Y)	joystick (+Y)
Joy Stick (-Y)	joystick (-Y)
Ribbon (X)	ribbon controller (X)
Ribbon (Z)	ribbon controller (Z)
Foot Pedal (CC#04)	assignable foot pedal
Value Slider (CC#18)	value slider
MIDI (CC#19)	MIDI control change no.19 (General Purpose Control 4)
SW1 (CC#80)	assignable panel switch 1
SW2 (CC#81)	assignable panel switch 2
Foot SW (CC#82)	assignable foot switch
MIDI (CC#83)	MIDI control change no.83 (General Purpose Control 8)
Tempo	tempo
Filter 1 EG	filter EG1 (selected for oscillator 2)
Amp 1 EG	amp EG1 (selected for oscillator 2)
OSC 1 LFO	oscillator LFO 1 (selected for oscillator 2)
Filter 1 LFO	filter LFO 1 (selected for oscillator 2)

Alternate Modulation settings

For different settings of AMS (Alternate Modulation Source), the modulation destination will be affected as shown in the table below.

Parameter (AMS Intensity)	AMS	EG/LFO -99...0...+99	Amp EG 0...+99	JS(X), Ribbon (Y) -Max...0...+Max	Controller ¹ 0...127	SW ² Off, On	Note No. ³ ...C2...C4...C6...	Tempo ⁴ q (.60...120...240...)
Pitch	(+12.00)	-1...0...+1 [Oct]	0...+1 [Oct]	Special parameter provided	0...+1 [Oct]	0...+1 [Oct]	Special parameter provided	...-1...0...+1... [Oct]
Cutoff ⁵	(+99)	-99...0...+99	0...+99	-99...0...+99	0...+99	...-99...0...+99	99...-99...0...+99	
Amplitude	(+99)	Setting value x (0...1...8)	Special parameter provided	Setting value x (0...1...8)	Setting value x (1...8)	Setting value x (1...8)	Setting value x (0...1...8...)	Setting value x (0...1...8...)
EG/LFO Time ⁶	(+99)	Setting value x (64...1...1/64)	Setting value x (1...1/64)	Setting value x (64...1...1/64)	Setting value x (1...1/64)	Setting value x (1...1/64)	Setting value x (...64...1...1/64...)	Setting value x (...64...1...1/64...)
EG/LFO Intensity ⁷	(±12.00) (+99)	-1...0...+1 [Oct]	0...+1 [Oct]	-1...0...+1 [Oct]	0...+1 [Oct]	0...+1 [Oct]	...-1...0...+1 [Oct]	...-1...0...+1... [Oct]
		-99...0...+99	0...+99	-99...0...+99	0...+99	...-99...0...+99	99...-99...0...+99	
Panpot ⁸	(+99)	-127...0...+127	0...+127	-127...0...+127	0...+127	-127...0...+127	-127...0...+127	

^{*1} Controller: Velocity, AfterTouch, Poly After, Ribbon(Z), Assignable Foot Pedal, Joy Stick(+Y), Joy Stick(-Y), Value Slider, MIDI Control Change

^{*2} SW: SW1, SW2, Assignable Foot Switch

^{*3} If Note No. is selected for AMS, C4 will be the center.

^{*4} If Tempo is selected for AMS, q=120 will be the center.

^{*5} This will be added to the Cutoff value. As the Cutoff value increases by 10, the cutoff frequency will double (rise 1 octave).

^{*6} EG Time: Attack Time, Decay Time, Slope Time, Release Time
LFO Time: Delay, Fade, Frequency (as Time shortens, Frequency will become faster)

^{*7} For Oscillator EG/LFO, AMS Intensity has a maximum value of +12.0. For Filter EG/LFO and Amp EG, AMS Intensity has a maximum value of +99.

^{*8} This is determined by the status at Note On, and will be added to the Pan value.

Examples of using Alternate Modulation

- If Tempo is selected as the modulation source for the various EG Time or LFO Frequency settings, the speed of the EG or LFO will change according to changes in sequencer playback tempo.
- In addition to this, if you use Tempo to control Pitch and Cutoff Frequency as well, you can simulate the effect of speeding up a tape recorder.
- If Poly After is selected as AMS, you can apply modulation to specific notes, just as you can using EG or Velocity. For example if a chord is sounding, vibrato can be applied to only a specific note of the chord.
- You can create LFOs or EGs that change in complex ways.
- The tone, EG, or LFO can be controlled not only using velocity or the joystick, etc., but also from switches and pedals.
- Pan can be controlled by the joystick.
- The filter EG can control both cutoff frequency and pitch, or the filter 1 EG can control the filter 2 cutoff frequency.

About Dynamic Modulation Sources

You can operate the D/mod Src (Dynamic Modulation Source) specified as part of the effect settings to apply modulation to effect parameters.

The parameters that can be controlled will depend on the type of effect, and some effects have two or more modulation sources.

There are 26 selections available for D/mod Src, and these sources can control Dynamic Modulation destinations.

D/mod Source	
Gate 1	gate 1 (on while any key is being pressed)
Gate 1 + Sus	gate 1 + sustain pedal
Gate 2	gate 2 (re-triggered each time a key is pressed)
Gate 2 + Sus	gate 2 + sustain pedal
Note No.	note number
Velocity	velocity
After Touch	aftertouch
JS (+Y)	joystick (+Y)
JS (-Y)	joystick (-Y)
JS (X)	joystick (X)
Ribbon (X)	ribbon controller (X)
Ribbon (Z)	ribbon controller (Z)
SW 1	assignable panel switch 1
SW 2	assignable panel switch 2
Foot SW	assignable foot switch 1
Foot Pedal	assignable foot pedal
Sustain Pdl	sustain pedal
MIDI Vol	MIDI Volume (CC#07)
MIDI Pan	MIDI Pan (CC#10)
MIDI Exp	MIDI Expression Control (CC#11)
MIDI CNT 1	MIDI Effect Control 1 (CC#12)
MIDI CNT 2	MIDI Effect Control 2 (CC#13)
Slider	value slider
MIDI CC#19	MIDI Control Change (CC#19)
Tempo	tempo
Autofade	autofade

Various messages

A

Audio tracks were skipped

Situation: On a **TRINITY series** instrument which does not have the **HDR-TRI** option, you attempted to load a file that included an audio track, and the data was loaded without the audio track.

B

Battery Low

Situation: The internal battery has run down.

Action: Be sure to contact your dealer or a Korg service center.

C

Can't Calibrate

Situation: Calibration could not be performed correctly.

Action: Try the command once again.

Completed

Situation: This will appear after a command has been successfully executed.

D

Destination and source are identical

Situation: When copying or bouncing, the same song, track, or pattern was selected for both source and destination.

Action: Select a different song, track, or pattern for the source and destination.

Destination is empty

Situation: When editing, the track or pattern specified as the destination contains no musical data.

Action: Specify a track or pattern that contains musical data.

Destination measure is empty

Situation: When editing, the measure specified as the destination contains no data.

Action: Specify a measure that contains data as the destination.

Destination song is empty

Situation: The song specified as the copy or bounce destination does not exist.

Action: Before copying or bouncing, execute Create New Song in the dialog box that appears when you select a new song.

Destination start measure within the limits of source

Situation: When using the Move Measure operation for All Tracks or within the same track, the specified destination measure is within the source measures.

Action: Specify a destination measure that does not fall within the source.

Directory not empty

Situation: When you attempt to erase a directory, one or more files or another directory may exist within the directory.

Action: Erase all files or directories within the directory.

E

Error in formatting medium

Situation: When attempting to format a floppy disk on the Trinity, a faulty sector was found on the disk, so formatting was not possible.

Action: Use a different floppy disk.

Error in reading from medium

Situation: Reading from a floppy disk was unsuccessful.

Action: Try the reading operation once again. If the same error occurs again, it is possible that the data on the disk has been damaged.

Error in writing to medium

Situation: Writing to a floppy disk was unsuccessful.

Action: It is possible that the floppy disk is physically damaged. Use a different disk. Avoid using the floppy disk that produced the error.

F**File already exists**

Situation: When attempting to execute Create Directory or Rename File, a directory or file of the same name already exists on disk.

Action: Either delete the existing directory or file, or specify a different name.

File is read only protected

Situation: You attempted to save a file with the same name as a read-only file already existing on the floppy disk.

Action: Save the file under a different name.

File unavailable

Situation: You attempted to load or open a .PCG, .SNG, or .EXL file whose file format was incorrect.

File/path not found

Situation: The specified file or directory does not exist. Or, you attempted to open a DOS directory that exceeds the hierarchy limit (64 characters or less for the full pathname).

Action: Check the file or directory.

I**Illegal file description**

Situation: An invalid filename was specified as the name for saving a file or creating a directory.

Action: Specify a valid filename. Filenames which cannot be recognized by MS-DOS cannot be used.

Illegal SMF data

Situation: You attempted to load a file which was not a Standard MIDI File.

Illegal SMF division

Situation: You attempted to load a timecode based Standard MIDI File.

Illegal SMF format

Situation: You attempted to load a Standard MIDI File whose format was neither 0 nor 1.

M**Measure over max**

Situation: If the editing operation were executed, the track length would exceed 999 measures.

Action: Delete unneeded measures.

Measure size over

Situation: When loading a Standard MIDI File, the number of events in a single measure exceeded the maximum (approximately 10,000 events).

Measure size over max

Situation: If the editing operation were executed, the maximum amount of data that can be included in a single measure would be exceeded.

Action: Use Event Edit etc. to delete unneeded data.

Medium changed

Situation: The floppy disk was exchanged.

Medium unavailable

Situation: A command was executed for a floppy disk whose format was other than MS-DOS 2HD or 2DD.

Action: Use a different floppy disk.

Medium write protected

Situation: The writing destination floppy disk is write protected.

Action: Turn off the write protect on the floppy disk, and execute the command once again.

Memory full

Situation: When editing a song, track, or pattern etc. in Sequencer mode, the total data of all songs has reached the sequencer data memory capacity, and the operation is not possible.

Action: Increase the amount of free memory by deleting data from other songs, etc.

Situation: When realtime recording in Sequencer mode, the free memory in which recorded data is stored has been used up, and recording has been halted.

Action: Increase the amount of free memory by deleting data from other songs, etc.

Situation: When loading a Standard MIDI File in Disk mode, the sequencer memory has filled up.

Action: Delete song data. (If necessary, save it before deleting.)

Memory overflow

Situation: While receiving exclusive data using the Save Exclusive command, the sequencer memory capacity was exceeded.

Action: If you wish to receive two or more items of exclusive data, transmit them to the Trinity separately.

Memory protected

Situation: The internal programs, combinations, or songs are protected.

Action: Turn off write protect in Global mode, and execute loading once again.

N

No Data

Situation: When loading a Standard MIDI File, the file contains no events. Or when saving exclusive data received by Save Exclusive, there is no data to save.

No items were selected

Situation: In the Save All or Save Combi/Prog dialog box, no check boxes were checked.

No Medium

Situation: A floppy disk is not inserted.

Action: Insert a floppy disk.

No recording track specified

Situation: For realtime multitrack recording, you attempted to start recording when no tracks were set to a track status of REC.

Action: Set the track status to REC for the track(s) that you wish to record.

Situation: For realtime single-track recording, you attempted to begin recording with the current track as the MTR (master track).

Action: Select a track 1–16 for recording, and begin recording.

No space available on medium

Situation: You attempted to save a file or create a directory, but there was no free space on the floppy disk.

Action: Either delete existing files, or use a different disk that has sufficient free space.

Not enough memory

Situation: When starting realtime recording in Sequencer mode, it was not possible to allocate the minimum free memory (memory for the bar events up to the recording start location, etc.).

Action: Increase the amount of free memory by deleting data of other songs, etc.

Situation: When executing Save Exclusive in Disk mode, there was not enough free sequencer memory.

Action: Delete song data (after saving it if necessary).

Not enough memory to open pattern

Situation: There was not enough sequencer memory to open the pattern, so it cannot be edited.

Action: Delete unneeded song, track, or pattern data, or open the pattern.

P

Pattern conflicts with events

Situation: Bouncing was not possible, since one track contains a pattern, and the other track contains an event or pattern in the same measure.

Action: Open the pattern.

Pattern is across destination end measure or source start measure

Situation: When moving measures, a pattern has been Put in the destination end measure or the source start measure, and editing is not possible unless the pattern is opened.

Action: Open the pattern.

R

Root directory is full

Situation: You attempted to create a file or a directory in the root directory, but this would exceed the number of allowable root directory entries.

Action: Either delete an existing file or directory, or use a different disk.

S

Source is empty

Situation: Data does not exist in the track or pattern specified as the source.

Action: Specify a track or pattern that contains playback data.

T

There is no readable data

Situation: On a **TRINITY series** instrument which does not have the **PBS-TRI** option, you attempted to load a file which contained only banks C and D.

Track number over

Situation: When loading a Standard MIDI File, the number of loaded tracks exceeded 16.

U

Unable to create directory

Situation: You attempted to create a directory that would exceed the hierarchical limit (64 characters for the full pathname).

Y

You can't undo this operation

Situation: In Sequencer mode, it is not possible to allocate sufficient free memory to allow you to Undo the recording or event editing operation after it has been performed. If you wish to preserve the previously recorded or edited data, press the **OK button**. If you wish to return to the previous data (and delete the previously recorded or edited data), press the **Cancel button**.

MIDI Implementation Chart

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1 – 16	1–16	Memorized
	Changed	1 – 16	1–16	
Mode	Default	3		
	Messages	X	X	
	Altered	*****		
Note Number:		24–108/16–115/9–120	0–127	(Transmission) TRINITY, V3, plus / V3pro, pro / V3proX, proX
	True Voice	*****	0–127	When sequencer data is sent: 0 – 127
Velocity	Note On	O 9n, V=1 – 127	O 9n, V=1 – 127	
	Note Off	X	X	
Aftertouch	Polyphonic (Key)	O	O	Only sequencer data is transmitted for each key *A
	Monophonic (Channel)	O	O	*A
Pitch Bend		O	O	*C
Control Change	0, 32	O	O	Bank Select (MSB, LSB) *P
	1, 2, 16, 17, 18	O	O	Joystick (+Y, –Y), Ribboon (X, Z), Slider *C
	4, 64, 82	O	O	Footpedal, Sustain pedal, Footpedal *C
	6, 38, 96, 97	X	O	Data Entry (MSB, LSB), Increment, decrement *E
	7, 11	O	O	Volume, Expression *C
	10, 91, 93	O	O	L:R panpot, Send 2, 1 *C
	12, 13, 80, 81	O	O	Effect controller 1, 2, Panel switch 1, 2 *C
	19, 72, 73, 74, 83	X	O	EG time (Release, Attack), Brightness, Controller *C
	92 ,94, 95	O	O	Insert, Master (M, R/D), Effect on/off *C
	100, 101	X	O	RPN (LSB, MSB) *2
	120, 121	X	O	All sound off, Reset all Controllers
	5, 65	X, O	O	Portamento Control (ononly for solo synth) *C
	0 – 101	O	O	(Sequencer data)
Program Change		O 0 – 127	O 0 – 127	*P
	Variable Range	*****	0 – 127	0–63 for solo synthesizer
System Exclusive		O	O	*3 *E
System Common	Song Position	O	O	*1
	Song Select	O 0 – 9	O 0 – 9	*1
	Tune	X	X	
System Real Time	Clock	O	O	*1
	Command	O	O	*1
Aux Messages	Local On/Off	X	O	
	All Notes Off	X	O 123 – 127	
	Active Sense	O	O	
	Reset	X	X	
<div>*C, *P, *A, *E: Sent and received when MIDI Filter (Controller, Program Change, Aftertouch, System Exclusive) is set to ENA.</div> <div>*1: When clock is set to internal, sent but not received. When set to external, received but not sent.</div> <div>*2: LSB, MSB = 00,00: pitch bend range, =01,00: fine tune, =02,00: course tune</div> <div>*3: Includes Inquiry, Master Balance, and Master Volume messages.</div>				

Mode 1:OMNI ON, POLY
Mode 3:OMNI OFF, POLY

Mode 2:OMNI ON, MONO
Mode 4:OMNI OFF, MONO

O: Yes
X: No

To obtain the TRINITY V3, V3 pro or V3 proX "MIDI Implementation," please contact a Korg distributor.

MIDI Implementation

*2 : When change the Combination No., Transmits [Bank Select], [Program Change] of Selected Combination, and Each Timbre(Mode=EXT)'s [Bank Select], [Program Change], [Volume].

*3 : Program : MIDI Out (Hex) Combination : MIDI Out (Hex)
BankA 00~127 : aa, bb, pp = 00, 00, 00~7F BankA 00~127 : aa, bb, pp = 00, 00, 00~7F
" B 00~127 : " 00, 01, 00~7F " B 00~127 : " 00, 01, 00~7F
" S 00~63 : " 00, 04, 00~3F

1-2 SYSTEM COMMON MESSAGES

Status [Hex]	Second [H] [D]	Third [H] [D]	Description
F2	ss (ss)	tt (tt)	Song Position Pointer (Stopped) ss : Least significant (LSB) tt : Most significant (MSB) #4
F3	ss (ss)	-- --	Song Select (Song is selected) ss : Song No. = 0~19 #4

Transmits these messages when in Sequencer mode (Internal Clock).
When change a Song No., Transmits [Song Select] and Each Track (Status=EXT, BOTH)'s [Bank Select], [Program Change], [Volume], [Panpot], and finally transmits [Song Position Pointer].

*4 : For Example, If Time Signature is 4/4 or 8/8, tt, ss=00, 10 means 1 Measure

1-3 SYSTEM REALTIME MESSAGES

Status [H]	Description	(Transmitted when
F8	Timing Clock	(Everytime in SEQ mode) #5
FA	Start	(Started) #5
FB	Continue	(Continue started) #5
FC	Stop	(Stopped) #5
FE	Active Sensing	(Everytime)

*5 : Transmits these messages when in Sequencer mode (Internal Clock)

1-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (DEVICE INQUIRY REPLY)

Byte [H]	Description
F0	Exclusive Status
7E	Non Realtime Message
0E	MIDI GLOBAL CHANNEL (DEVICE ID)
06	INQUIRY MESSAGE
02	IDENTITY REPLY
42	KORG ID
3B	TRINITY ID
00	(MANUFACTURERS ID)
00	(FAMILY CODE (LSB))
00	(FAMILY CODE (MSB))
00	(MEMBER CODE (LSB))
00	(MEMBER CODE (MSB))
00	(Minor Ver. (LSB))
00	(Minor Ver. (MSB))
00	(Major Ver. (LSB))
00	(Major Ver. (MSB))
P7	END OF EXCLUSIVE

Transmits when received a INQUIRY MESSAGE REQUEST.

aa = 01 : Trinity
09 : Trinity plus
12 : Trinity pro
1B : Trinity proX

1. TRANSMITTED DATA

1-1 CHANNEL MESSAGES

Status [Hex]	Second [H] [D]	Third [H] [D]	Description	BNA
4n	kk (kk)	40 (64)	Note Off (Key Off)	A
5n	kk (kk)	vv (vv)	Note On vv=1~127 (Key On)	A
An	kk (kk)	vv (vv)	Poly Key Pressure (Only Seq Recorded Data)	T, Q
Bn	00 (00)	mm (mm)	Bank Select (MSB) (BANK Key, Prg/Comb Chang) #2, 3	PB
Bn	01 (01)	vv (vv)	Modulation 1 (Joy Stick(+Y))	C
Bn	02 (02)	vv (vv)	Modulation 2 (Joy Stick(-Y))	C
Ba	04 (04)	vv (vv)	Foot Pedal (Assignable Pedal = Mod)	C
Bn	07 (07)	vv (vv)	Volume (A. Pedal=Vol, Comb/Sng Chang) #2	C
Bn	0A (10)	vv (vv)	Panpot (1:2 Panpot (Song Change))	C
Bn	0B (11)	vv (vv)	Expression (A. Pedal = Expression)	C
Bn	0C (12)	vv (vv)	Effect Control 1 (A. Pedal = BPF CTRL1)	C
Bn	0D (13)	vv (vv)	Effect Control 2 (A. Pedal = BPF CTRL2)	C
Ba	10 (16)	vv (vv)	Multi Purpose Control 1 (Ribbon Controller(X))	C
Bn	11 (17)	vv (vv)	Multi Purpose Control 2 (Ribbon Controller(Z))	C
Bn	12 (18)	vv (vv)	Multi Purpose Control 3 (Value Slider)	C
Bn	20 (32)	bb (bb)	Bank Select (LSB) (BANK Key, etc) #2, 3	PB
Bn	40 (64)	00/7F (00/127)	Hold 1 Off/On (Sustain Pedal Off/On1)	C
Bn	41 (65)	00/7F (00/127)	Portamento Off/On (A. Panel SW = Port Off/On1)	C
Bn	50 (80)	00/7F (00/127)	Multi Purpose Control 5 (A. Panel SW 1 = Mod)	C
Bn	51 (81)	00/7F (00/127)	Multi Purpose Control 6 (A. Panel SW 2 = Mod)	C
Bn	52 (82)	00/7F (00/127)	Multi Purpose Control 7 (A. Panel SW = Mod)	C
Bn	5B (91)	vv (vv)	Effect 1 Control (Send 2)	C
Bg	5C (92)	00/7F (00/127)	Effect 2 Control (Insert Effect Off/On1)	C
Bn	5D (93)	vv (vv)	Effect 3 Control (Send 1)	C
Bg	5E (94)	00/7F (00/127)	Effect 4 Control (Master FX (Mod) Off/On1)	C
Bg	5F (95)	00/7F (00/127)	Effect 5 Control (Master FX (Delay) Off/On1)	C
Bn	cc (cc)	vv (vv)	Control Data cc=00~127 (Seq Recorded Data)	C, Q
Cn	pp (pp)	-- --	Program Change (Prog/Comb Change)	P
Cn	vv (vv)	-- --	Channel Pressure (After Touch)	T
En	bb (bb)	bb (bb)	Bender Change (Joy Stick(X))	C

n : MIDI Channel (0~15) Usually Global Channel. When using Sequencer, each track (Status=EXT, BOTH)'s channel. And when in Combination Play mode, each timbre (Mode=EXT)'s channel.

g : Always Global MIDI Channel No. (0~15)

vv: Value

EMA = A : Always Enabled

C : Enabled when Enable Control in GLOBAL mode is Checked

P : Enabled when Enable Program in GLOBAL mode is Checked

PB: Enabled when Enable Program & Bank in GLOBAL mode is Checked

T : Enabled when Enable After Touch in GLOBAL mode is Checked

Q : Enabled when Sequencer is Playing (Trans), Recording (Receive)

T, Q: T and Q

C, Q: C and Q

*1 : kk=24~108 : Trinity, Tri plus (61Keys+Transpose)
-16~115 : Trinity pro (76Keys+ ")
-09~120 : Trinity proX (88Keys+ ")
-00~127 : Recorded data in sequencer

1-5 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (REALTIME)

Byte[H]	Description
F0	EXCLUSIVE STATUS
F7	REALTIME MESSAGE
06	MIDI GLOBAL CHANNEL
04	SUB ID 1 1D 1, 2 = 4, 1 : MASTER VOLUME
01	SUB ID 2
vv	VALUE(LSB)
vv	VALUE(MSB)
FF	END OF EXCLUSIVE

1-6 Transmits Function Code (5th byte of Exclusive message) List

Func	Description	R	D	E	C
42	MODE DATA				
4E	MODE CHANGE				0#6
41	PARAMETER CHANGE				0#7
53	DRUMKIT PARAMETER CHANGE				0#8
40	CURRENT PROGRAM PARAMETER DUMP				0#9
4C	PROGRAM PARAMETER DUMP				0#10
49	CURRENT COMBINATION PARAMETER DUMP				
4B	COMBINATION PARAMETER DUMP				
48	SEQUENCE DATA DUMP				
51	GLOBAL DATA DUMP				
52	DRUMKIT DATA DUMP				
50	ALL DATA (GLOBAL, DRUM, COMBI, PROG, SEQ) DUMP				
25	RECEIVED MESSAGE FORMAT ERROR				
23	DATA LOAD COMPLETED (ACK)				
24	DATA LOAD ERROR (NACK)				
21	WRITE COMPLETED				
22	WRITE ERROR				

Transmitted when

R : Request Message is received

D : Data dump by SW (Don't respond to Exclusive ENA, DIS)

E : EX-Message received

C : Mode or No. is changed by SW

Some Request Message is not received in some mode. See 2-5.

* When transmits series of EX Messages to TRINITY, please wait to send a next message until [DATA LOAD COMPLETED] or [WRITE COMPLETED] for last messages is transmitted.

#6 : Transmits when change a Mode.

#7 : Transmits when edit a parameter in PROG EDIT, COMBI EDIT, PROG PLAY, COMBI PLAY mode.

#8 : Transmits when edit a DrumKit's parameter in GLOBAL mode.

#9 : Transmits when change a Program No..

#10 : Transmits when change a Combination No..

2. RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES

Status	Second	Third	Description	ENA
[Hex]	[H]	[D]	(Use)	
Bn	kk (kk)	xx (xx)	Note Off	A
9n	kk (kk)	00 (00)	Note Off	A
9n	kk (kk)	vv (vv)	Note On vvr1~127	A
An	kk (kk)	vv (vv)	Poly Key Pressure	T, Q
Bn	00 (00)	mm (mm)	Bank Select (MSB)	#1
Bn	01 (01)	vv (vv)	Modulation1 Depth	C
Bn	02 (02)	vv (vv)	Modulation2 Depth	C
Bn	04 (04)	vv (vv)	Foot Pedal	C
Bn	05 (05)	vv (vv)	Portamento Time	#2
Bn	06 (06)	vv (vv)	Data Entry (MSB)	C
Bn	07 (07)	vv (vv)	Volume	C
Bn	0A (10)	vv (vv)	Panpot	C
Bn	0B (11)	vv (vv)	Expression	C
Bn	0C (12)	vv (vv)	Effect Control 1	C
Bn	0D (13)	vv (vv)	Effect Control 2	C
Bn	10 (16)	vv (vv)	Multi Purpose Control1	C
Bn	11 (17)	vv (vv)	Multi Purpose Control2	C
Bn	12 (18)	vv (vv)	Multi Purpose Control3	C
Bn	13 (19)	vv (vv)	Multi Purpose Control4	C
Bn	20 (32)	bb (bb)	Bank Select (LSB)	#1
Bn	26 (38)	vv (vv)	Data Entry (LSB)	C
Bn	40 (64)	\$3F/240 (\$63/264)	Hold1 Off/On	C
Bn	41 (65)	\$3F/240 (\$63/264)	Portamento Off/On	C
Bn	48 (72)	vv (vv)	Release Time	#2
Bn	49 (73)	vv (vv)	Attack Time	#3
Bn	4A (74)	vv (vv)	Brightness	#3
Bn	50 (80)	vv (vv)	Multi Purpose Control5	C
Bn	51 (81)	vv (vv)	Multi Purpose Control6	C
Bn	52 (82)	vv (vv)	Multi Purpose Control7	C
Bn	53 (83)	vv (vv)	Multi Purpose Control8	C
Bn	5B (91)	vv (vv)	Effect1 Level	C
Bn	5C (92)	00/#00 (00/#00)	Effect2 Level	C
Bn	5D (93)	vv (vv)	Effect3 Level	C
Bn	5E (94)	00/#00 (00/#00)	Effect4 Level	C
Bn	5F (95)	00/#00 (00/#00)	Effect5 Level	C
Bn	60 (96)	00 (00)	DATA Increment	C
Bn	61 (97)	00 (00)	DATA Decrement	C
Bn	64 (100)	0r (0r)	RPN Parameter No. (LSB)	#4
Bn	65 (101)	00 (00)	RPN Parameter No. (MSB)	#4
Bn	cc (cc)	vv (vv)	Control Data cc=0~127	C, Q
Bn	78 (120)	00 (00)	All Sound Off	C
Bn	79 (121)	00 (00)	Reset All Controllers	C
Bn	7A (122)	00/7F (00/127)	Local Control Off/On	A
Bn	7B (123)	00 (00)	All Notes Off	A
Bn	7C (124)	00 (00)	Omni Mode Off	A
Bn	7D (125)	00 (00)	Omni Mode On	A
Bn	7E (126)	≤10 (≤16)	Mono Mode On	A
Bn	7F (127)	00 (00)	Poly Mode On	A
Cn	pp (pp)	-- --	Program Change	#1, 5
Dn	vv (vv)	-- --	Channel Pressure	(as After-Touch)
En	bb (bb)	bb (bb)	Bender Change	(as After-Touch)

2-5 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (REALTIME)

Byte[0]	Description
F0	EXCLUSIVE STATUS
7F	REALTIME MESSAGE
gg	MIDI CHANNEL #8
04	SUB ID 1
bb	SUB ID 2
vv	VALUE(LSB)
mm	VALUE(MSB)
F7	END OF EXCLUSIVE

#9 : bb = 01 : MASTER VOLUME (mm, vv = 00, 00~7F, 7F : Min~Max)
 = 02 : MASTER BALANCE (mm, vv = 00, 00~40, 40~7F, 7F : L~Center~R)

2-6 SYSTEM EXCLUSIVE MESSAGES

* TRINITY doesn't receive these messages when Sequencer is playing or recording. And if in the DATA FILER Page, they will be saved.

Function Code (5th byte of Exclusive message) List

Func	Description	G	C	P	A	No.
12	MODE REQUEST	○	○	○	○	42
10	CURRENT PROGRAM PARAMETER DUMP REQUEST	○	○	○	○	40
1C	PROGRAM PARAMETER DUMP REQUEST	○	○	○	○	4C
19	CURRENT COMBINATION PARAMETER DUMP REQUEST	○	○	○	○	49
1B	COMBINATION PARAMETER DUMP REQUEST	○	○	○	○	4D
18	SEQUENCE DATA DUMP REQUEST	○	○	○	○	48
0E	GLOBAL DATA DUMP REQUEST	○	○	○	○	51
0D	DRUMKIT DATA DUMP REQUEST	○	○	○	○	52
0F	ALL DATA(GLOBAL, DRUMS, COMBI, PROG, SEQ) DUMP REQ	○	○	○	○	50
11	PROGRAM WRITE REQUEST	○	○	○	○	21
1A	COMBINATION WRITE REQUEST	○	○	○	○	21
40	CURRENT PROGRAM PARAMETER DUMP	○	○	○	○	23
4C	PROGRAM PARAMETER DUMP	○	○	○	○	23
49	CURRENT COMBINATION PARAMETER DUMP	○	○	○	○	23
4D	COMBINATION PARAMETER DUMP	○	○	○	○	23
48	SEQUENCE DATA DUMP	○	○	○	○	23
51	GLOBAL DATA DUMP	○	○	○	○	23
52	DRUMKIT DATA DUMP	○	○	○	○	23
50	ALL DATA(GLOBAL, DRUMS, COMBI, PROG, SEQ) DUMP	○	○	○	○	23
4E	MODE CHANGE	○	○	○	○	23
41	PARAMETER CHANGE	○	○	○	○	23
53	DRUM KIT PARAMETER CHANGE	○	○	○	○	23

Receive when in=

G : GLOBAL Mode

C : COMBI PLAY, COMBI EDIT Mode

P : PROG PLAY, PROG EDIT Mode

A : ANY OTHER Mode

No. : MIDI Out Function No.
 (transmitted when the message has been received)

n : MIDI Channel No. (0~15) Usually Global Channel.
 When in Combi/Seq mode, each Unbre(Mode=INT) s/track(Status=INT, BOTHI) s channel.

g : Always Global Channel No. (0~15)

x : Random

ENA Same as TRANSMITTED DATA

#1 : MIDI In [lex] Program MIDI In [lex] Combination
 mm, bb, pp = 00, 00, 00~7F : BankA 00~127
 00, 01, 00~7F : " B 00~127
 00, 04, 00~3F : " S 00~63

#2 : Only for Solo Synthesizer

#3 : vv 53F : Fast or Bark

=40 : Default

241 : Slow or Bright

#4 : r = 0 : Pitch Bend Sens (Only in SEQ Mode).

= 1 : Detune ("). When received Ch = Global Ch,

= 2 : Transpose ("). act as Master Tune (Other mode).

#5 : At the end of process (While Exclusive is ENA).

Transmits Exclusive Message[DATA LOAD COMPLETED]or[DATA LOAD ERROR].

2-2 SYSTEM COMMON MESSAGES

Status	Second	Third	Description
[lex]	[0]	[0]	(Used for)
F2	ss (ss)	tl (tl)	Song Position Pointer (Location) ss : Least significant (LSB) tl : Most significant (MSB)
F3	ss (ss)	--	Song Select (Song select) ss : Song No. = 0~19

Receive when in Sequencer Mode (External Clock)

#6 : For Example if Time Signature is 4/4 or 3/8, tl, ss=00, 10 means 1Measure

2-3 SYSTEM REALTIME MESSAGES

Status[0]	Description	(Used for)
F8	Timing Clock	(Seq Tempo, All Mod, Dyn Mod) #7
FA	Start	(Seq Start) #7
FB	Continue	(Seq Continue start) #7
FC	Stop	(Seq Stop) #7
FE	Active Sensing (MIDI Connect check)	
#7	Receive when in Sequencer Mode (External Clock)	

2-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

Byte[0]	Description
F0	Exclusive Status
7E	Non Realtime Message
gg	MIDI Channel #8
06	Sub ID 1
01	Sub ID 2
F7	END OF EXCLUSIVE

#8 : gg = 0~F : Receive if Global Channel

= 7F : Receive any Channel

(Receive anytime except for Seq playing/Recording. DATA FILER Page)

3. MIDI EXCLUSIVE FORMAT (R: Receive, T: Transmit)

See 'Structure of TRINITY Series SYSTEM EXCLUSIVE MESSAGES'

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0001 0010 (12)	MODE REQUEST	12H
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=42 message.

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0001 0000 (10)	CURRENT PROGRAM PARAMETER DUMP REQUEST	10H
xxxx xxxx (xx)	(Reserved)	
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=40 or Func=24 message.

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0001 1100 (1C)	PROGRAM PARAMETER DUMP REQUEST	1CH
00xx 00bb (kb)	Kind, Bank	#1
0ppp pppp (pp)	Program No.	
xxxx xxxx (xx)	(Reserved)	
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=4C or Func=24 message.

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0001 1001 (19)	CURRENT COMBI PARAMETER DUMP REQUEST	19H
xxxx xxxx (xx)	(Reserved)	
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=49 or Func=24 message.

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0001 1101 (1D)	COMBI. PARAMETER DUMP REQUEST	1DH
00xx 00bb (kb)	Kind, Bank	#2
0ccc cccc (cc)	Combination No.	
xxxx xxxx (xx)	(Reserved)	
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=4D or Func=24 message.

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0001 1000 (18)	SEQUENCE DATA DUMP REQUEST	18H
xxxx xxxx (xx)	(Reserved)	
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=48 or Func=24 message.

(7) GLOBAL DATA DUMP REQUEST

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0000 1110 (0F)	GLOBAL DATA DUMP REQUEST	0FH
xxxx xxxx (xx)	(Reserved)	
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=51 or Func=24 message.

(8) DRUMKIT DATA DUMP REQUEST

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0000 1101 (0D)	DRUMKIT DATA DUMP REQUEST	0DH
0F0d dddd (kd)	Kind, Drumkit No.	#3
xxxx xxxx (xx)	(Reserved)	
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=52 or Func=24 message.

(9) ALL DATA (GLOBAL, DRUMS, COMBI, PROG, SEQ) DUMP REQUEST

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0000 1111 (0F)	ALL DATA (GLR, CMB, PRG, SEQ) DUMP REQ	0FH
xxxx xxxx (xx)	(Reserved)	
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=50 or Func=24 message.

(10) PROGRAM WRITE REQUEST

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0001 0001 (11)	PROGRAM WRITE REQUEST	11H
0000 00bb (0b)	Write Program Bank	#4
0ppp pppp (pp)	Write Program No.	
1111 0111 (F7)	EOX	

Receives this message, writes the data and transmits Func=21 or Func=22 message.

(11) COMBINATION WRITE REQUEST

Byte	Description	R
F0.42.3g.3B	EXCLUSIVE HEADER	
0001 1010 (1A)	COMBINATION WRITE REQUEST	1AH
0000 00bb (0b)	Write Combination Bank	#4
0ccc cccc (cc)	Write Combination No.	
1111 0111 (F7)	EOX	

Receives this message, writes the data and transmits Func=21 or Func=22 message.

(12) CURRENT PROGRAM PARAMETER DUMP

Byte	Description	R, T
F0.42.3g.3B	EXCLUSIVE HEADER	
0100 0000 (40)	CURRENT PROGRAM PARAMETER DUMP	40H
0000 0001 (01)	Program Type	t=0:PCM, -1:SOLIO
0ddd dddd (dd)	Data	#5, 6, TABLE 1, 2
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.

Receives Func=10 message, and transmits this message & data.

When Enter the EDIT PROGRAM Mode or Ball the PERFORMANCE EDIT BY IT

(13) PROGRAM PARAMETER (In Memory) DUMP

Byte	Description	R, T
F0.42.3g.3B	EXCLUSIVE HEADER	
0100 1100 (4C)	PROGRAM PARAMETER DUMP	4CH
0000 00vv (0v)	Available Bank	#7
00xx 00bb (kb)	Kind, Bank	#7
0ppp pppp (pp)	Program No.	
xxxx xxxx (xx)	(Reserved)	
0ddd dddd (dd)	Data	#5, 8, TABLE 1.2
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=1C message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(14) CURRENT COMBINATION PARAMETER DUMP

Byte	Description	R, T
F0.42.3g.3B	EXCLUSIVE HEADER	
0100 1001 (49)	CURRENT COMBINATION PARAMETER DUMP	49H
xxxx xxxx (xx)	(Reserved)	
0ddd dddd (dd)	Data	#5, 9, TABLE 3
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=19 message, and transmits this message & data.
When the Comb No. is changed by SW, transmits this message & data.

(15) COMBINATION PARAMETER (In Memory) DUMP

Byte	Description	R, T
F0.42.3g.3B	EXCLUSIVE HEADER	
0100 1101 (4D)	COMBINATION PARAMETER DUMP	4DH
0000 00vv (0v)	Available Bank	#10
00xx 00bb (kb)	Kind, Bank	#10
0ccc cccc (cc)	Combination No.	
xxxx xxxx (xx)	(Reserved)	
0ddd dddd (dd)	Data	#5, 11, TABLE 3
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=1D message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(16) SEQUENCE DATA (In Memory) DUMP

Byte	Description	R, T
F0.42.3g.3B	EXCLUSIVE HEADER	
0100 1000 (48)	SEQUENCE DATA DUMP	48H
xxxx xxxx (xx)	(Reserved)	
0sss ssss (ss)	Seq. data Size (4Bytes)	#12-1
0ooo oooo (oo)	Seq. data Offset (4Bytes)	#5, 12-2
0aaa aaaa (aa)	Each Song data Address (80Bytes)	#5, 12-3
0ddd dddd (dd)	Sequence Data	#5, 12-4, TABLE 8
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=18 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(17) GLOBAL DATA DUMP

Byte	Description	R, T
F0.42.3g.3B	EXCLUSIVE HEADER	
0101 0001 (51)	GLOBAL DATA DUMP	51H
xxxx xxxx (xx)	(Reserved)	
0ddd dddd (dd)	Data	#5, 13, TABLE 4
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=0F message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(18) DRUMKIT DATA DUMP

Byte	Description	R, T
F0.42.3g.3B	EXCLUSIVE HEADER	
0101 0010 (52)	DRUMKIT DATA DUMP	52H
0000 00vv (0v)	Available Drumkit Range	#14
0k0d dddd (0d)	Kind, Drumkit No.	#14
xxxx xxxx (xx)	(Reserved)	
0ddd dddd (dd)	Data	#5, 15, TABLE 7
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=0D message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(19) ALL DATA (GLOBAL, DRUMS, COMBI, PROG, SEQ.) DUMP

Byte	Description	R, T
F0, 42, 3E, 3B	EXCLUSIVE HEADER	
0101 0000 (50)	ALL DATA (GLOBAL, COMBI, PROG, SEQ.) DUMP	50H
0000 00vv (0v)	Available Bank	*16
xxxx xxxx (xx)	(Reserved)	
0sss ssss (ss)	Seq. data Size (4Bytes)	*12-1
0ddd dddd (dd)	Data	*5, 17, TABLE 1, 2, 3, 4, 7, 8
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=0F message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(20) MODE CHANGE

Byte	Description	R, T
F0, 42, 3E, 3B	EXCLUSIVE HEADER	
0100 1110 (4E)	MODE CHANGE	4EH
0000 0mm (0m)	Mode	*18
xxxx xxxx (xx)	(Reserved)	
1111 0111 (F7)	EOX	

Receives this message & data, changes the Mode, and transmits Func=23 or Func=24.
When the Mode is changed by SW, transmits this message & data.

(21) PARAMETER CHANGE

Byte	Description	R, T
F0, 42, 3E, 3B	EXCLUSIVE HEADER	
0100 0001 (41)	PARAMETER CHANGE	41H
0000 0mm (0m)	Mode	*18
0ppp pppp (pp)	Parameter ID (MSB)	TABLE 1, 2, 3, 5, 6
0000 0000 (00)	Parameter ID (LSB)	
0qqq qqqq (qq)	Parameter SUB ID (MSB)	TABLE 1, 2, 3, 5, 6
0000 0000 (00)	Parameter SUB ID (LSB)	
0vvv vv vv (vv)	Value (MSB bit7~13)	*19
0vvv vv vv (vv)	Value (LSB bit0~6)	*19
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
When the Parameter No. is changed by SW, transmits this message & data.

(22) DRUMKIT PARAMETER CHANGE

Byte	Description	R, T
F0, 42, 3E, 3B	EXCLUSIVE HEADER	
0101 0011 (53)	DRUMKIT PARAMETER CHANGE	53H
000k kkkk (0k)	Drumkit No. (: 00~11)	
0sss ssss (ss)	Key No. (: 00~6C)	
0ppp pppp (pp)	Parameter No. (MSB)	TABLE 7
0ppp pppp (pp)	Parameter No. (LSB)	TABLE 7
0vvv vv vv (vv)	Value (MSB bit7~13)	*19
0vvv vv vv (vv)	Value (LSB bit0~6)	*19
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.

(23) MODE DATA

Byte	Description	T
F0, 42, 3E, 3B	EXCLUSIVE HEADER	
0100 0010 (42)	MODE DATA	42H
0000 0mm (0m)	Mode	*18
0ooo oooo (oo)	Option	*20
0sss ssss (ss)	Setup data 1	*20
0ddd dddd (dd)	Setup data 2	*20
xxxx xxxx (xx)	(Reserved)	
1111 0111 (F7)	EOX	

Receives Func=12 message, and transmits this message & data.

(24) MIDI IN DATA FORMAT ERROR

Byte	Description	T
F0, 42, 3E, 3B	EXCLUSIVE HEADER	
0010 0110 (26)	MIDI IN DATA FORMAT ERROR	26H
0ccc cccc (cc)	Error Code	*21
1111 0111 (F7)	EOX	

Transmits this message when there is an error in the MIDI IN message (ex. data length).

(25) DATA LOAD COMPLETED (ACK)

Byte	Description	T
F0, 42, 3E, 3B	EXCLUSIVE HEADER	
0010 0011 (25)	DATA LOAD COMPLETED	25H
1111 0111 (F7)	EOX	

Transmits this message when DATA LOAD PROCESSING have been completed.

(26) DATA LOAD ERROR (NAK)

Byte	Description	T
F0, 42, 3E, 3B	EXCLUSIVE HEADER	
0010 0100 (24)	DATA LOAD ERROR	24H
0ccc cccc (cc)	Error Code	*22
1111 0111 (F7)	EOX	

Transmits this message when DATA LOAD PROCESSING have not been completed (ex. protected).

(27) WRITE COMPLETED

Byte	Description	T
F0, 42, 3E, 3B	EXCLUSIVE HEADER	
0010 0001 (21)	WRITE COMPLETED	21H
1111 0111 (F7)	EOX	

Transmits this message when DATA WRITE MIDI has been completed.

(28) WRITE ERROR

Byte	Description	T
F0, 42, 3E, 3B	EXCLUSIVE HEADER	
0010 0010 (22)	WRITE ERROR	22H
0ccc cccc (cc)	Error Code	*23
1111 0111 (F7)	EOX	

Transmits this message when DATA WRITE MIDI has not been completed.

#1 : k = 0 : All Programs (Use b)
 1 : 1 Bank Programs (Use b & pp)
 2 : 1 Program
 b = 0 : Bank A
 1 : Bank B
 4 : Bank S

#2 : k = 0 : All Combinations (Use b)
 1 : 1 Bank Combinations (Use b)
 2 : 1 Combination (Use b & cc)
 b = 0 : Bank A
 1 : Bank B

#3 : k = 0 : All Drumkits (Use d)
 1 : 1 Drumkit
 d = 0 ~ B : Drumkit 00 ~ 11

#4 : PROGRAM COMBINATION BANK
 b = 0 : Bank A
 1 : Bank B
 4 : Bank S Only for Program

#5 :
 DUMP DATA CONVERT n=0~ for #6, #8, #9, #11, #12-2, #12-3, #12-4, #13, #15, #17
 DATA (1set = 8bit x 7Byte)
 b7 ~ b0 b7 ~ b0 b7 ~ b0 b7 ~ b0
 7n+0 7n+1 7n+2 7n+3 7n+4 7n+5 7n+6
 MIDI DATA (1set = 7bit x 8Byte)
 b7b7b7b7b7b7 b6 ~ b0 b6 ~ b0 b6 ~ b0 b6 ~ b0
 7n+5 7n+4 7n+3 7n+2 7n+1 7n+0 7n+5 7n+4 7n+3 7n+2 7n+1 7n+0

#6 : PROGRAM PARAMETER (IN CURRENT BUFFER) DUMP FORMAT
 #PCM 433Byte = 7x51+6 → 8x51+(1+6) = 495Byte (0.25Sec, See TABLE 1, #5)
 #SOLO 521Byte = 7x74+3 → 8x74+(1+3) = 596Byte (0.25Sec, See TABLE 2, #5)

#7 : bit0 of v is for Flash ROM Option
 bit1 of v is for Solo Synthesizer Option
 v = 0 : Bank A+B : Trinity (Basic)
 1 : Bank A+B+C+D : Trinity (with Flash ROM)
 2 : Bank A+B+S1 : Trinity plus(Basic), Trinity pro(Basic), Trinity pro X(Basic)
 3 : Bank A+B+C+D+S1+S2 : All Trinity series (with all options)
 (S1:S00~63, S2:S64~127)

k = 0 : All Bank Programs (Use v)
 1 : 1 Bank Program (Use v&b) ← When Bank S, Please see v (64Prog ? or 128Prog ?).
 2 : 1 Program (Use b & pp)
 b = 0 : Bank A
 1 : Bank B
 4 : Bank S

#8 : PROGRAM PARAMETER (IN INTERNAL MEMORY) DUMP FORMAT (See TABLE 1, 2, #5)
 #1PROG (PCM) 433Byte = 7x51+6 → 8x51+(1+6) = 495Byte (0.25Sec)
 #1PROG (SOLO) 521Byte = 7x74+3 → 8x74+(1+3) = 596Byte (0.25Sec)
 #1BANK (PCM) [A00(433Byte)], ..., [A127(433Byte)]
 433x128Byte = 7x7917+5 → 8x7917+(1+5) = 63342Byte (20.45Sec)
 #1BANK (S1) [S00(521Byte)], ..., [S63(521Byte)]
 521x64Byte = 7x4763+3 → 8x4763+(1+3) = 38108Byte (12.25Sec)
 #1BANK (S1+S2) [S00(521Byte)], ..., [S127(521Byte)]
 521x128Byte = 7x9526+6 → 8x9526+(1+6) = 76215Byte (24.45Sec)
 #BANK AB [A00(433Byte)], ..., [B127(433Byte)]
 433x256Byte = 7x15835+3 → 8x15835+(1+3) = 126684Byte (40.65Sec)
 #BANK ARCD [A00(433Byte)], ..., [D127(433Byte)]
 433x512Byte = 7x31670+6 → 8x31670+(1+6) = 253367Byte (81.15Sec)
 #BANK ARS1 [A00(433Byte)], ..., [R127(433Byte)], [S00(521Byte)], ..., [S63(521Byte)]
 433x256+521x64Byte = 7x20598+6 → 8x20598+(1+6) = 164791Byte (52.85Sec)
 #BANK ABCDS1S2 [A00(433Byte)], ..., [D127(433Byte)], [S00(521Byte)], ..., [S127(521Byte)]
 433x512+521x128Byte = 7x41197+5 → 8x41197+(1+5) = 329582Byte (105.55Sec)

#9 : COMBINATION PARAMETER (IN CURRENT BUFFER) DUMP FORMAT (See TABLE 3, #5)
 388Byte = 7x55+3 → 8x55+(1+3) = 444Byte (0.25Sec)

#10 : v is for Flash ROM Option
 v = 0 : Bank A+B : All Trinity series (Basic model)
 1 : Bank A+B+C+D : With Flash ROM Option
 k = 0 : All Bank Combination (Use v)
 1 : 1 Bank Combination (Use b)
 2 : 1 Combination (Use b & cc)
 b = 0 : Bank A
 1 : Bank B
 (2 : Bank C)
 (3 : Bank D)

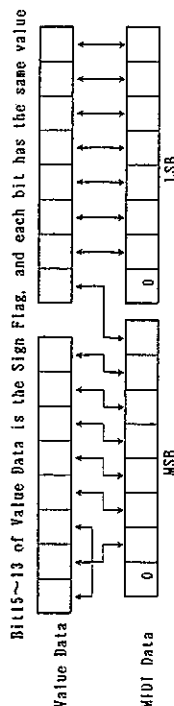
#11 : COMBINATION PARAMETER (IN INTERNAL MEMORY) DUMP FORMAT (See TABLE 3, #5)
 #1COMB1 388Byte = 7x55+3 → 8x55+(1+3) = 444Byte (0.25Sec)
 #1BANK [A00(388Byte)], ..., [A127(388Byte)]
 388x128Byte = 7x7094+6 → 8x7094+(1+6) = 58759Byte (18.25Sec)
 #BANK AB [A00(388Byte)], ..., [B127(388Byte)]
 388x256Byte = 7x14189+5 → 8x14189+(1+5) = 113518Byte (36.45Sec)
 #BANK ABCD [A00(388Byte)], ..., [D127(388Byte)]
 388x512Byte = 7x28379+3 → 8x28379+(1+3) = 227036Byte (72.75Sec)

#17 : ALL DATA (GLOBAL, DRUMS, COMBI, PROG, SEQ) DUMP FORMAT
 [Global Data].
 [Drums Data].
 [All Combination Parameter Data].
 [All Program Parameter Data].
 [Seq Data Address Offset (4Bytes)].
 [Song Data Head Address (80Bytes)].
 [Sequence Data]
 (See #5)
 (See TABLE 4. #13)
 (See TABLE 7. #15)
 (See TABLE 3. #11)
 (See TABLE 1. 2. #8)
 (See #12-2)
 (See #12-3)
 (See TABLE 8. #12-4)

TRINITY 1172+17112+99328+110848+4+80[Each song data]Byte = 7xC+D
 → 8xC+(1+D)Byte (83.6~???.?Sec)
 TRINITY 1172+17112+99328+144192+4+80[Each song data]Byte = 7xC+D
 → 8xC+(1+D)Byte (95.8~???.?Sec)
 plus, pro, x

#18 : mmm = 0 : COMBI PLAY 3 : PROG EDIT 5 : DISK
 1 : COMBI EDIT 4 : SEQUENCER
 2 : PROG PLAY 5 : GLOBAL

#19 : VALUE DATA FORMAT (Use at PARAMETER CHANGE, DRUM KIT PARAMETER CHANGE)



#20 : oo = bit0 = 0 : No Solo Synthesizer, =1 : Solo Synthesizer is loaded
 ss = bit0, 1 = 0 : Note Receive is EVEN, =1 : ODD, =2 : ALL
 bit3 = 0 : Seq Clock is Internal, =1 : External
 bit5, 6 = 0 : System Clock is INT, =1 : S/P DIF, =2 : Digital I/P
 dd = bit0 = 0 : Prog Mem is not protected, =1 : protected
 bit1 = 0 : Comb Mem is not protected, =1 : protected
 bit2 = 0 : Seq Mem is not protected, =1 : protected

#21 : cc = 0 : Received Data Length is wrong
 1 : Received Function code is not registered
 40 : Another type error

#22 : cc = 0 : Dest Memory is protected
 1 : Dest Bank/Prog/Param is not exist
 2 : The mode is wrong
 3 : Memory over flow
 40 : Another type error

#23 : cc = 0 : Dest Memory is protected
 1 : Dest Bank/Prog is not exist
 2 : The mode is wrong
 40 : Another type error

12 : SEQUENCE DATA'S OFFSET, SIZE, ADDRESS FORMAT (Total 80Bytes)

12-1 : Sequence Data Size (4Bytes)

'Seq Data Size' is a all song data's length. A unit is Byte.

[Data Size (bit21~27)].

[Data Size (bit14~20)].

[Data Size (bit17~13)].

[Data Size (bit10~6)]

12-2 : Sequence Data Address Offset (4Bytes)

'Address Offset' is a all song data's common offset.

Each Song's real address is calculated by 'Address Offset' + Each song's 'Song Data Head Address'.

CAUTION : 'Address Offset' is a fixed value. But When System version is changed, it will be changed too.

12-3 : Song 0~19 Data Head Address (4x20Bytes)

Each Song's real address is calculated by 'Address Offset' + Each song's 'Song Data Head Address'.

12-4 : Sequence Data

Each Song has a individual block data. And each song data's structure is as TABLE 5.

Song data size is flexible, and the size is shown by #12-1 'Sequence Data Size' (1event data use 6Bytes). (See TABLE 8)

13 : GLOBAL DATA (IN INTERNAL MEMORY) DUMP FORMAT

[Global Data (1172Byte)]

1172=7x167+3 → 8x167+(1+3) =1340Byte (0.55Sec)

14 : v is for Flash ROM Option

v = 0 : 12 Drunkits : All Trinity series Basic model

1 : 24 Drunkits : All Trinity series (with Flash ROM Options)

k = 0 : All Drunkits (Use v)

1 : 1 Drunkit (Use d)

d = 0~0B : Drunkit No. (When v = 0)

0~17 : Drunkit No. (When v = 1)

15 : DRUMS DATA (IN INTERNAL MEMORY) DUMP FORMAT

#1 DRUMKIT 1426Byte = 7x203+5 → 8x203+(1+5) = 1630Byte (0.65Sec)

#12 DRUMKITS [DRUM0(1426Byte)] [DRUM11(1426Byte)]

1426x12Byte = 7x2444+4 → 8x2444+(1+4) = 19557Byte (6.35Sec)

#24 DRUMKITS [DRUM0(1426Byte)] [DRUM23(1426Byte)]

1426x24Byte = 7x4889+1 → 8x4889+(1+1) = 39114Byte (12.65Sec)

16 : bit0 of v is for Flash ROM Option

bit1 of v is for Solo Synthesizer Option

Program Combination Drunkit

v = 0 : A+B A+B 1~12 : Trinity(Basic)

1 : A+B+C+D A+B+C+D 1~24 : Trinity (with Flash ROM Option)

2 : A+B+C+D A+B 1~12 : Trinity plus/pro(Basic), Trinity pro X

3 : A+B+C+D+S1+S2 A+B+C+D 1~24 : ALL Trinity series (with all Options)

(S1 : Banks Prog00~63, S2 : Banks Prog64~127)

[TABLE 1] PROGRAM PARAMETERS (for PCM Synth)

29. Aug. 1995

No. : No. in the PROGRAM DUMP DATA.

PARAMETER : Parameter ID & SUB ID (Hex) for PARAMETER CHANGE.

Left side of ' ' is Parameter ID, and right side is SUB ID.

\$: While Assign mode is Drum, these parameters are ignored.

: These parameters are ignored in Combination Song.

No. (bit)	PARAMETER	DATA (Hex) : VALUE	DESCRIPTION	PARAM. No.
00	PROGRAM NAME (Head)	20~7F : ' ' ~ ' ' [ASCII Code]		----
15	PROGRAM NAME (Tail)			
CATEGORY				
b0~3	CATEGORY A	0~F : 1~16	(Ex. for Instruments)	*1 00,00
b4~7	CATEGORY B	0~F : 1~16	(Ex. for User)	*1 00,01
OSCILLATOR				
b0,1	OSCILLATOR MODE	0: SINGLE, 1: DOUBLE, 2: DRUM		00,02
b12	LEGATO SW	0: OFF, 1: ON	Available when MONO	00,04
b13	KEY ASSIGN	0: POLY, 1: MONO		00,03
b14	HOLD	0: OFF, 1: ON		00,07
b5,6	KEY PRIORITY	0: LOW, 1: HIGH, 2: LAST	Available when MONO	00,05
b17	POLY ASSIGN MODE	0: NORMAL, 1: PIANO	Available when POLY	*2 00,06
18	BOTTOM VEL OF OSC2 \$	01~7F : 01~127	Available when DOUBLE	*3 01,16
SCALE				
b0~3	SCALE KEY	0~B : C~B		00,09
b4~7	SCALE TYPE	0~C : 0~7		00,08
20	RANDOM INTENSITY #	00~0F : 00~07	Normal = 0	*5 00,0A
PANEL SWITCH ASSIGN				
b0~3	SW 2 ASSIGN	0~B : 0~6		00,0C
b4~7	SW 1 ASSIGN	0~B : 0~6		00,0B
OSCILLATOR EG (Linear Line)				
22	START LEVEL	9D~63 : -99~99		06,00
23	ATTACK TIME	00~63 : 00~99		06,01
24	ATTACK LEVEL	9D~63 : -99~99		06,02
25	DECAY TIME	00~63 : 00~99		06,03
26	RELEASE TIME	00~63 : 00~99		06,04
27	RELEASE LEVEL	9D~63 : -99~99		06,05
OSCILLATOR EG TIME MOD (For EG Whole Time)				
28	INT BY VELOCITY	9D~63 : -99~99		06,06
29	A.M. SOURCE	00~16 : 0~7	Alternate Modulation	06,07
30	INT BY A.M.	9D~63 : -99~99		06,08
OSCILLATOR-1				
31	LOW MS. OFFSET STARTS	0: NORMAL, 1: OFFSET	Right side of ' ' is SUB ID for OSC 2	01,04/0E
b0~6	LOW MULTISAMPL(USB)\$	000~176 : 000~374	Lower Vel's Multisample	*8 01,03/0D
32	LOW MULTISAMPL(LSB)\$			
33	HIGH MS. OFFSET START	0: NORMAL, 1: OFFSET	Drum is setuped by each Keys	01,01/0B
b0~6	HIGH MULTISAMPL(USB)\$	000~176 : 000~374	Hi Vel's Multi/DrumKit	*8 01,00/0A
34	HIGH MULTISAMPL(LSB)\$			
35	LOWER LEVEL	00~7F : 00~127		01,05/0E
36	HIGHER LEVEL	00~7F : 00~127		01,02/0C
37	BOTTOM VEL OF HI MS	01~7F : 01~127	(For Vel Split)	*8 01,14/15
b0~4	TRANSPOSE	F4~0C : -12~12 [S.T]		01,08/12
b6,7	OCTAVE	00~03 : 32~4 [.]		01,07/11
39	TUNE (4SD)	PH50~04B0 : -1200~1200	Only change a Pitch	01,09/13
40	TUNE (LSB)	[Cent]		
41	DELAY START	90~60, FF : 0~3	FF : Start by NOTE OFF!	01,06/10

OSC-1 PITCH MOD				
42	BY PITCH SLOPE	F6~14 : -12~2,0	Linear, Center Key is C4	*10 02,00
43	INT BY OSC EG	8D~73 : -12,00~12,00		*11 02,08
44	INT BY OSC-1 LFO	8D~73 : -12,00~12,00		*11 02,0C
45	INT BY RIBBON(X)	F4~0C : -12~12 [S.T]		02,01
OSC-1 PITCH MOD BY JOY STICK (X)				
46	INT BY J.S(+X)	# C4~0C : -60~12		*12 02,02
47	INT BY J.S(-X)	# C4~0C : -60~12		*12 02,04
b0~3	STEP OF J.S(+X)	# 0~F : 0~13		02,03
b4~7	STEP OF J.S(-X)	# 0~F : 0~13		02,05
OSC-1 PITCH MOD BY ALTERNATE MOD				
49	A.M. SOURCE	00~16 : 0~7	Alternate Modulation	02,06
50	INT BY A.M.	8D~73 : -12,00~12,00		*11 02,07
INTENSITY MODULATION OF OSC EG TO OSC-1 PITCH				
51	MOD INT BY VELOCITY	9D~63 : -99~99		02,09
52	A.M. SOURCE	00~16 : 0~7	Alternate Modulation	02,0B
53	INT BY A.M.	8D~73 : -12,00~12,00		*11 02,0B
OSC-1 LFO				
b0~4	WAVEFORM	0~12 : 0~14		03,00
54	START MODE	0: ON, 1: OFF, 2: BOTH		03,03
bit7	KEY SYNC	0: OFF, 1: ON		03,04
55	OFFSET	9D~63 : -99~99	Doesn't effect while DELAY	03,02
56	FREQUENCY	00~63 : 00~99		03,01
57	DELAY	00~63 : 00~99		03,05
58	FADE	9D~63 : -99~99		*15 03,06
OSC-1 LFO FREQUENCY MOD				
59	INT BY KBD TRK	9D~63 : -99~99	Linear, Center Key is C4	03,07
60	INT BY J.S(+Y)	00~63 : 00~99		03,08
61	A.M. SOURCE	00~16 : 0~7	Alternate Modulation	03,09
62	INT BY A.M.	9D~63 : -99~99		03,0A
INTENSITY MODULATION OF OSC-1 LFO TO OSC-1 PITCH				
63	MOD INT BY J.S(+Y)	00~63 : 00~99		02,0D
64	MOD INT BY A.T	00~63 : 00~99		02,0E
65	A.M. SOURCE	00~16 : 0~7	Alternate Modulation	02,0F
66	INT BY A.M.	8D~73 : -12,00~12,00		*11 02,10
FILTER-1				
b0,1	FILTER-1A TYPE	0~3 : 0~3	*17	07,01
b2,3	FILTER-1B TYPE	0~3 : 0~3	*17	07,06
b4,5	FILTER-1 ROUTING	0~3 : 0~3	*18	07,00
FILTER-1 EG (Up:Linear, Down:Exponential)				
68	START LEVEL	9D~63 : -99~99		0B,00
69	ATTACK TIME	00~63 : 00~99		0B,01
70	ATTACK LEVEL	9D~63 : -99~99		0B,02
71	DECAY TIME	00~63 : 00~99		0B,03
72	BREAK POINT LEVEL	9D~63 : -99~99		0B,04
73	SLOPE TIME	00~63 : 00~99		0B,05
74	SUSTAIN LEVEL	9D~63 : -99~99		0B,06
75	RELEASE TIME	00~63 : 00~99		0B,07
76	RELEASE LEVEL	9D~63 : -99~99		0B,08
FILTER-1 EG TIME(4POINTS) MOD BY KEYBOARD TRACK (Linear, Center Key is C4)				
77	ATTACK TIME	9D~63 : -99~99		0B,09
78	DECAY TIME	9D~63 : -99~99		0B,0A
79	SLOPE TIME	9D~63 : -99~99		0B,0B
80	RELEASE TIME	9D~63 : -99~99		0B,0C

FILTER-1 EG TIME(4POINTS) MOD BY VELOCITY			
81	ATTACK TIME	9D~53 : -99~99	0B,0D
82	DECAY TIME	9D~53 : -99~99	0B,0E
83	SLOPE TIME	9D~53 : -99~99	0B,0F
84	RELEASE TIME	9D~53 : -99~99	0B,10
FILTER-1 EG TIME MOD (For EG Whole Time)			
85	A.M SOURCE	00~16 : *	0B,11
86	INT BY A.M	9D~53 : -99~99	0B,12
FILTER-1 EG LEVEL(3POINTS) MOD BY VELOCITY			
87	START LEVEL	9D~53 : -99~99	0B,13
88	ATTACK LEVEL	9D~53 : -99~99	0B,14
89	BREAK POINT LEVEL	9D~53 : -99~99	0B,15
INTENSITY MODULATION OF FILTER-1 EG TO FILTER-1A & FILTER-1B CUTOFF FREQ BY A.M			
90	A.M SOURCE	00~16 : *	0B,14
91	INT BY A.M	9D~53 : -99~99	0B,15
FILTER-1 LFO			
92	WAVEFORM	0~12 : *	0C,00
93	START MODE	0:ON, 1:OFF, 2:BOTH	*15 0C,03
94	KEY SYNC	0:OFF, 1:ON	0C,04
95	OFFSET	9D~53 : -99~99	0C,02
96	FREQUENCY	00~63 : 00~99	0C,01
97	DELAY	00~63 : 00~99	0C,05
98	FADE	9D~53 : -99~99	*15 0C,06
FILTER-1 LFO FREQUENCY MOD			
99	A.M SOURCE	00~16 : *	0C,07
100	INT BY A.M	9D~53 : -99~99	0C,08
INTENSITY MODULATION OF FILTER-1 LFO TO FILTER-1A & FILTER-1B CUTOFF FREQ			
101	MOD INT BY J.S(-Y)	00~63 : 00~99	0B,16
102	MOD INT BY A.T	00~63 : 00~99	0B,17
103	A.M SOURCE	00~16 : *	0B,1A
104	INT BY A.M	9D~53 : -99~99	0B,1B
FILTER-1A			
105	CUTOFF FREQ VALUE	00~63 : 00~99	07,02/07
106	INPUT GAIN	00~63 : 00~99	07,03/08
107	RESONANCE LEVEL	00~1F : 00~31	07,04/09
108	RESO LEVL MOD BY VEL	9D~53 : -99~99	07,05/0A
FILTER-1A CUTOFF FREQ MOD			
109	INT BY FILTER-1 EG	9D~53 : -99~99	0B,12/13
110	EG INT MOD BY VEL	9D~53 : -99~99	0B,10/11
111	INT BY FILTER-1 LFO	9D~53 : -99~99	0B,15/19
112	INT BY J.S(X)	9D~53 : -99~99	0B,04/0C
113	INT BY A.T	00~63 : 00~99	0B,05/0D
FILTER-1A CUTOFF MOD BY KBD TRACK (Figured)			
114	LOW KEY	00~7F : C-1~G9	0B,00/0B
115	HIGH KEY	00~7F : C-1~G9	0B,01/09
116	LOWER RAMP	9D~53 : -99~99	0B,02/0A
117	HIGHER RAMP	9D~53 : -99~99	0B,03/0B
FILTER-1A CUTOFF FREQ MOD			
118	A.M SOURCE	00~16 : *	0B,06/0E
119	INT BY A.M	9D~53 : -99~99	0B,07/0F
FILTER-1B			
120	WAVEFORM	0~12 : *	0C,00
121	START MODE	0:ON, 1:OFF, 2:BOTH	*15 0C,03
122	KEY SYNC	0:OFF, 1:ON	0C,04
123	OFFSET	9D~53 : -99~99	0C,02
124	FREQUENCY	00~63 : 00~99	0C,01
125	DELAY	00~63 : 00~99	0C,05
126	FADE	9D~53 : -99~99	*15 0C,06
FILTER-1B FREQUENCY MOD			
127	A.M SOURCE	00~16 : *	0C,07
128	INT BY A.M	9D~53 : -99~99	0C,08
INTENSITY MODULATION OF FILTER-1 LFO TO FILTER-1A & FILTER-1B CUTOFF FREQ			
129	MOD INT BY J.S(-Y)	00~63 : 00~99	0B,16
130	MOD INT BY A.T	00~63 : 00~99	0B,17
131	A.M SOURCE	00~16 : *	0B,1A
132	INT BY A.M	9D~53 : -99~99	0B,1B
FILTER-1B			
133	CUTOFF FREQ VALUE	00~63 : 00~99	07,02/07
134	INPUT GAIN	00~63 : 00~99	07,03/08
135	RESONANCE LEVEL	00~1F : 00~31	07,04/09
136	RESO LEVL MOD BY VEL	9D~53 : -99~99	07,05/0A
FILTER-1B CUTOFF FREQ MOD			
137	INT BY FILTER-1 EG	9D~53 : -99~99	0B,12/13
138	EG INT MOD BY VEL	9D~53 : -99~99	0B,10/11
139	INT BY FILTER-1 LFO	9D~53 : -99~99	0B,15/19
140	INT BY J.S(X)	9D~53 : -99~99	0B,04/0C
141	INT BY A.T	00~63 : 00~99	0B,05/0D
FILTER-1B CUTOFF MOD BY KBD TRACK (Figured)			
142	LOW KEY	00~7F : C-1~G9	0B,00/0B
143	HIGH KEY	00~7F : C-1~G9	0B,01/09
144	LOWER RAMP	9D~53 : -99~99	0B,02/0A
145	HIGHER RAMP	9D~53 : -99~99	0B,03/0B
FILTER-1B CUTOFF FREQ MOD			
146	A.M SOURCE	00~16 : *	0B,06/0E
147	INT BY A.M	9D~53 : -99~99	0B,07/0F
FILTER-1B PARAMETERS			
148	SAME AS FILTER-1A(109~117)		
149	Above 15 param No. 's right side of '/' is SUB ID for Filter-1B		
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Appendix

#1 : Each Category's names are setuped in GLOBAL mode.

#2 : PIANO NONE (= self exclusive assign).

#3 : For OSC2 BLOCK ON/OFF by Velocity { OSC1 is always on by all range of velocity }.

#4 : 8P~C3 : -12.00 ~ -1.20 (0.20 Step)

C4~C0 : -1.00 ~ -0.55 (0.05 Step)

C5~32 : -0.50 ~ +0.50 (0.01 Step)

33~3C : +0.55 ~ +1.00 (0.05 Step)

3P~73 : +1.20 ~ +12.00 (0.20 Step)

44 : 0 : Equal Temperament	5 : Kirnberger	#12 : INTENSITY = C4 : -60 (-50c1)
1 : Pure Major	7 : Siendro	
2 : Pure Minor	8 : Pelog	00 : 00 (0rr)
3 : Arabic	9 : 1 Octave user Scale (RAM)	00 : 00 (0rr)
4 : Pythagoras	10 : Stretch	00 : 12 (+10c1)
5 : Weckenstein	11 : All range user scale (RAM)	

45 : Range of Random pitch [Semi tone]	1 : 1/8 [Sea Tone]
0 : 00	2 : 1/4
1 : -1/64 ~ +1/64	3 : 1/2
2 : -1/32 ~ +1/32	4 : 1
3 : -1/16 ~ +1/16	6 : -1/2 ~ +1/2
4 : -1/8 ~ +1/8	7 : -1 ~ +1

*6:	(For MIDI Out)	(For MIDI Out)	(For MIDI Out)	F : 12
0 :	J. S(X) Lock	5 : JS & Ribbon Lock	*14 : 0	Triangle 00° (^)
1 :	J. S(+Y) Lock	7 : Octave Down	Note No. 10ct Down	Triangle 50° (^)
2 :	J. S(-Y) Lock	8 : Octave Up	Note No. 10ct Up	Triangle 180° (^)
3 :	Ribbon Cont(X) Lock	9 : Portamento Off	C.C #65 Off/On	Triangle 270° (^)
4 :	Ribbon Cont(Z) Lock	10 : Modulation CC#80	C.C #80	Triangle 00° (^)
5 :	A. T Lock	Modulation CC#81	C.C #81	Triangle 00° (^)

*7. See the AMS table, below is a list of all AMS.

1	OSC EG	15	Assignable Pedal	C.C. #04	
2	Filter EG in the same OSC	16	Value Slider	C.C. #18	
3	Map EG	17	MIDI Control Change #19	C.C. #19	*15 : ON : LFO is started at NOTE

5	: Filter LF0	"				19 : Assignable Panel SW2	C.C.#81		
6	: Velocity	(Vel of Note On!)				20 : Assignable Pedal #3	C.C.#82		
7	: Rate No.	(No. of Note On!)				21 : MIDI Control Change #83	C.C.#83		
8	: Poly After	Poly After				22 : Tempo (Int/Ext)	(Count of Clock)		
9	: After Touch	After Touch				23 : Filter i EG (Only from OSC2)			
10	: Joy Stick (X)	Pitch Bend				24 : Amp l EG	"		
11	: Joy Stick (+Y)	C.C.#01				25 : OSC l LF0	"		
12	: Joy Stick (-Y)	C.C.#02				26 : Filter l LF0	"		
13	: Ribbon Controller (X)	C.C.#16							

#19 : Between LOW KEY & HIGH KEY is connected by linear line. Lower(Higher) area of LOW(HIGH) KEY has a linear line, and its ramp will decided by RAMP.

#20 : When panpot is controlled by Alternate Mod, it will act based on its initial setting.

[TABLE 2] PROGRAM PARAMETERS (For SOLO Synth)

29. Aug. 1995

No. : No. in the PROGRAM PUMP DATA.

PARA No. : Parameter ID & SUB ID [Hex] for PARAMETER CHANGE.

Left side of ' ' is Parameter ID, and right side is SUB ID.

: These parameters are ignored in Combination Song.

No. (b1)	PARAMETER	DATA(HEX) : VALUE	DESCRIPTION	PARA No.
00	PROGRAM NAME (Head)	20~7F : ' ' ~ ' ' [ASCII Code]		---
15	PROGRAM NAME (Tail)			---
CATEGORY				
b0~3	CATEGORY A	0~F : 1~16	(Ex. For Instruments) #1	1B.00
b4~7	CATEGORY B	0~F : 1~16	(Ex. For User) #1	1B.01
OSCILLATOR				
b0.1	OSCILLATOR MODE	3	3 Fixed (Means SOLO)	---
b1.2	PORTAMENTO	0~OFF, 1~ON		1C.11
b1.3	HOLD	0~OFF, 1~ON		1B.02
b4.5	KEY PRIORITY	0~LOW, 1~HIGH, 2~LAST		1B.03
b6.7	TRIGGER MODE	0~MULT, 1~SINGL, 2~VEL		1B.04
b0~5	THRESHOLD VELOCITY	01~7F : 01~127		1B.05
b1.7	ABOVE/BELOW	0~ABOVE, 1~BELOW		1B.06
SCALE				
b0~3	SCALE KEY	# 0~B : C~B		1B.07
b4~7	SCALE TYPE	# 0~B : #2		1B.08
20	RANDOM INTENSITY	# 00~07 : 00~07	Normal = 0	1B.09
PANEL SWITCH ASSIGN				
b0~3	SW 2 ASSIGN	# 0~8 : #3		1B.0B
b4~7	SW 1 ASSIGN	# 0~8 : #3		1B.0A
EG 1				
22	START LEVEL	9D~63 : -99~99	29~2C are Param ID for EG 1~4	29/2A/2B/2C.00
23	ATTACK TIME	00~63 : 00~99		1E.01
24	ATTACK LEVEL	9D~63 : -99~99		1E.02
25	DECAY TIME	00~63 : 00~99		1E.03
26	BREAK POINT LEVEL	9D~63 : -99~99		1E.04
27	SLOPE TIME	00~63 : 00~99		1E.05
28	SUSTAIN LEVEL	9D~63 : -99~99		1E.06
29	RELEASE TIME	00~63 : 00~99		1E.07
30	RELEASE LEVEL	9D~63 : -99~99		1E.08
EG 1 TIME(POINTS) MOD BY KEYBOARD TRACK				
31	ATTACK TIME	9D~63 : -99~99		1E.09
32	DECAY TIME	9D~63 : -99~99		1E.0A
33	SLOPE TIME	9D~63 : -99~99		1E.0B
34	RELEASE TIME	9D~63 : -99~99		1E.0C
EG 1 TIME(POINTS) MOD BY VELOCITY				
35	LEVEL	9D~63 : -99~99		1E.0D
36	ATTACK TIME	9D~63 : -99~99		1E.0E
37	DECAY TIME	9D~63 : -99~99		1E.0F
38	SLOPE TIME	9D~63 : -99~99		1E.10
39	RELEASE TIME	9D~63 : -99~99		1E.11
EG 2~4				
40	EG 2 (Same as EG 1 (22~39))		See above 18 parameters.	ParamID = 2A
57	EG 3 (Same as EG 1 (22~39))		See above 18 parameters.	ParamID = 2B
76	EG 4 (Same as EG 1 (22~39))		See above 18 parameters.	ParamID = 2C

LFO 1				
b0~4	WAVEFORM	0~1D :	#4	2D/2E/2F/30.00
94	START MODE	0~ON, 1~OFF, 2~BOTH	#5	---
b5.6	KEY SYNC	0~OFF, 1~ON		1E.02
95	FREQUENCY	00~C7 : 00~199		1E.01
LFO 1 FREQUENCY MOD				
96	INT BY XBD TRK	9D~63 : -99~99		1E.04
97	INT BY J.S(+)	9D~63 : -99~99		1E.05
98	FREQ MOD SOURCE	00~6F : 00~111	#6	---
99	FREQ MOD INT	9D~63 : -99~99		1E.06
100	OFFSET	9D~63 : -99~99		1E.07
LFO 1 AMPLITUDE MOD				
101	AMP MOD SOURCE	00~6F : 00~111	#6	---
102	AMP MOD INT	9D~63 : -99~99		1E.0A
103	DELAY	00~63 : 00~99		1E.0B
104	FADE	9D~63 : -99~99	#7	---
LFO 2~4				
105	LFO 2 (Same as LFO 1 (94~104))		See above 13 parameters.	ParamID = 2E
115	LFO 3 (Same as LFO 1 (94~104))		See above 13 parameters.	ParamID = 2F
116	LFO 4 (Same as LFO 1 (94~104))		See above 13 parameters.	ParamID = 30
126	OSCILLATOR 1			
127	OSC SET	00~0B :	#8	---
PITCH EG				
139	START LEVEL	9D~63 : -99~99		1E.00
140	ATTACK TIME	00~63 : 00~99		1E.01
141	ATTACK LEVEL	9D~63 : -99~99		1E.02
142	DECAY TIME	00~63 : 00~99		1E.03
143	BREAK POINT LEVEL	9D~63 : -99~99		1E.04
144	SLOPE TIME	00~63 : 00~99		1E.05
145	(RESERVED)			---
146	RELEASE TIME	00~63 : 00~99		1E.06
147	RELEASE LEVEL	9D~63 : -99~99		1E.07
PITCH EG MOD BY KEYBOARD TRACK				
148	LEVEL	9D~63 : -99~99		1E.08
149	TIME	9D~63 : -99~99		1E.09
PITCH EG MOD BY VELOCITY				
150	LEVEL	9D~63 : -99~99		1E.0A
151	TIME	9D~63 : -99~99		1E.0B
OSC 1 PITCH MOD				
152	INT BY J.S(+)	# C4~0C : -60~12		1C.09
153	INT BY J.S(-)	# C4~0C : -60~12		1C.0A
154	STEP OF J.S(+)	# 0~F :	#9	---
155	STEP OF J.S(-)	# 0~F :	#9	---
PORTAMENTO				
b0~6	TIME	00~63 : 00~99		1C.0F
b1.7	FINGERED MODE	0~NORMAL, 1~FINGERED		1C.0E
157	TIME MOD BY VEL	9D~63 : -99~99		1C.10

OSCILLATOR 1		Right side of '/' is SUB ID for OSC 2	
158	OCTAVE	00~03 : 32~4 []	1C.01/05
159	TRANSPOSE	F4~0C : -12~12 [S.T]	1C.02/06
160	PINE TUNE	CE~32 : -50~50	1C.03/07
161	FREQUENCY OFFSET	9C~64 : -10.0~10.0 [Hz]	1C.04/08
PITCH SLOPE		Right side of '/' is SUB ID for OSC 2	
162	LOW KEY	00~7F : C-1~G9	1D.00/0A
163	HIGH KEY	00~7F : C-1~G9	1D.01/0B
164	LOWER SLOPE	CE~32 : -1.00~2.00	1D.02/0C
165	HIGHER SLOPE	CE~32 : -1.00~2.00	1D.03/0D
PITCH MOD BY LFO		Right side of '/' is SUB ID for OSC 2	
166	LFO SELECT	07~0A : LFO1~LFO4	1D.04/0E
167	LFO MOD INT	9D~63 : -99~99	1D.05/0F
168	INT MOD BY AT	9D~63 : -99~99	1D.06/10
169	INT MOD BY JS(+))	9D~63 : -99~99	1D.07/11
PITCH MOD		Right side of '/' is SUB ID for OSC 2	
170	PITCH MOD SOURCE	00~6F : 00~111 #6	1D.08/12
171	PITCH MOD INT	9D~63 : -99~99	1D.09/13
OSCILLATOR 1 SETTING		Parameters are determined by OSC SET (27 Bytes)	
172			31.00
173			31.77
OSCILLATOR 2		Above 14 param No.'s right side of '/' is SUB ID for OSC 2	
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AMPLIFIER EG		DELAY	
337	START LEVEL	00~63 : 00~99	28.0A
338	ATTACK TIME	00~63 : 00~99	28.0B
339	DECAY TIME	00~63 : 00~99	28.0C
340	BREAK POINT LEVEL	00~63 : 00~99	28.0D
341	SLOPE TIME	00~63 : 00~99	28.0E
342	SUSTAIN LEVEL	00~63 : 00~99	28.0F
343	RELEASE TIME	00~63 : 00~99	28.0G
344	(RESERVED)		
AMP EG TIME (4POINTS) MOD BY KEYBOARD TRACK			
345	ATTACK TIME	00~63 : 00~99	28.0H
346	DECAY TIME	00~63 : 00~99	28.0I
347	SLOPE TIME	00~63 : 00~99	28.0J
348	RELEASE TIME	00~63 : 00~99	28.0K
AMP EG TIME (4POINTS) MOD BY VELOCITY			
349	ATTACK TIME	00~63 : 00~99	28.0L
350	DECAY TIME	00~63 : 00~99	28.0M
351	SLOPE TIME	00~63 : 00~99	28.0N
352	RELEASE TIME	00~63 : 00~99	28.0O
DISTORTION			
353	GAIN	00~63 : 00~99	28.0P
354	(RESERVED)		
355	(RESERVED)		
356	LEVEL	00~63 : 00~99	28.0Q
357	EFFECT BALANCE	00~63 : 00~100 [%]	28.0R
358	FX BAL MOD SOURCE	00~63 : 00~111 *6	28.0S
359	FX BAL MOD INT	00~63 : 00~111 *6	28.0T
REVERB			
360	PRE DELAY TIME	00~63 : 00~99	28.0U
361	REVERB TIME	00~63 : 00~99	28.0V
362	HIGH DAMP	00~63 : 00~99	28.0W
363	EFFECT BALANCE	00~63 : 00~100 [%]	28.0X
364	FX BAL MOD SOURCE	00~63 : 00~111 *6	28.0Y
365	FX BAL MOD INT	00~63 : 00~111 *6	28.0Z
OUTPUT			
366	PANPOT #	00~7F : 00~127	28.0A
367	PAN MOD SOURCE	00~63 : 00~111 *6	28.0B
368	PAN MOD INT	00~63 : 00~99	28.0C
369	OUTPUT LEVEL	00~7F : 00~127	28.0D
370	SEND 1	00~7F : 00~127	28.0E
371	SEND 2	00~7F : 00~127	28.0F
INSERT EFFECT PARAMETERS #			
372	FX1~3 (22Bytes x 3)		38.00
373	MASTER EFFECT PARAMETERS #		38.72
374			39.00
375			39.72

*1 : Each Category's names are set up in GLOBAL mode.

#2 : 0 : Equal Temperament		6 : Kirnberger	
1 : Pure Major		7 : Slendro	
2 : Pure Minor		8 : Pelog	
3 : Arabic		9 : 1 Octave user Scale (RAM)	
4 : Pythagoras		10 : Stretch	
5 : Wertheimer		11 : All range user scale (RAM)	
#3 : (for MIDI Out)			
0 : J.S(X) Lock		6 : JS & Ribbon Lock (Each Control Lock)	
1 : J.S(X) Lock		7 : Octave Down	Note No. 10ct Down
2 : J.S(X) Lock		8 : Octave Up	Note No. 10ct Up
3 : Ribbon Cont(X) Lock		9 : Portamento Off	C.C #55 Off/On
4 : Ribbon Cont(2) Lock		10 : Modulation CCR80	C.C #80 ... SW1
5 : A.T Lock		Modulation CCR81	C.C #81 ... SW2
#4 : 0 : Sine		10 : Down saw	00' 20 : Growl
1 : Sine		11 : Down saw 180°	21 : Guitar Vibrato
2 : Cos		12 : Rectangle 00°	22 : Step Tri
3 : Cos		13 : Rectangle 180°	23 : Step Saw
4 : Triangle 00°		14 : Random1	24 : Step Tri4
5 : Triangle 90°		15 : Random2	25 : Step Saw6
6 : Triangle 180°		16 : Random3	26 : Exp Saw Up
7 : Triangle 270°		17 : Random4	27 : Exp Saw Down
8 : Up saw 00°		18 : Random5	28 : Exp Tri
9 : Up saw 180°		19 : Random6	29 : String Vibrato

```

#5 : ON : LFO is started at NOTE ON! ( Normal ).
      OFF : LFO is started at NOTE OFF!.
      BOTH: LFO is started at NOTE ON! and stopped at NOTE OFF! (Reversible).

#5 : 0 : OFF
      7 : LFO 1
      8 : LFO 2
      9 : LFO 3
     10 : LFO 4
     11 : Portamento
     12 : Velocity
     13 : Note No.
     14 : After Touch
     15 : J.S (X)
     16 : J.S (+Y)
     17 : J.S (-Y)
     18 : Ribbon (X)
     19 : Ribbon (Z)
     20 : Pedal (CC#04)
     21 : Value Slider (CC#18)
     22 : MIDI C.C #19
     23 : SW 1 (CC#80)
     24 : SW 2 (CC#81)
     25 : Pedal SW (CC#82)
     26 : MIDI C.C #83
     27 : Tempo

#7 : Fade < 0 : Fade out at Note on!
      Fade out at Note off!
      Fade out at Note on!, and fade in at Note off! ( BOTH mode )
      > 0 : Fade in at Note on! : Normal
      Fade in at Note off!
      Fade in at Note on!, and fade out at Note off! ( BOTH mode )

#8 : Set OSC1
      0 : Set1 Std OSC
      1 : Set2 Std OSC
      2 : Set3 Std OSC
      3 : Set4 Std OSC
      4 : Set5 Comb Filter OSC
      5 : Set6 Comb Filter OSC
      6 : Set7 Comb Filter OSC
      7 : Set8 VPM OSC
      8 : Set9 VPM OSC
      9 : Set10 Brass
      A : Set11 Reed
      B : Set12 Pluck
      OSC2
      0 : Set1 Std OSC
      1 : Set2 Std OSC
      2 : Set3 Std OSC
      3 : Set4 Std OSC
      4 : Set5 Comb Filter OSC
      5 : Set6 Comb Filter OSC
      6 : Set7 Comb Filter OSC
      7 : Set8 VPM OSC
      8 : Set9 VPM OSC
      9 : Set10 Brass
      A : Set11 Reed
      B : Set12 Pluck

#9 : STEP = 0 : Continuous
      1 : 1/8 [ Semi Tone ]
      2 : 1/4
      3 : 1/2
      4 : 1
      5 : 1
      6 : 1
      7 : 12

#10 : 0 : Through
      1 : Low Pass
      2 : High Pass
      3 : Band Pass
      4 : Band Reject

#11 : 1 : EG1
      1 : 1
      2 : 1
      3 : 1
      4 : EG4
      5 : Pitch EG
      6 : Amp EG

```

TABLE 3-1 COMBINATION PARAMETERS 8. Dec. 1995
 PARA No. : Parameter ID & SUB ID [Hex] for PARAMETER CHANGE. n : Timbre No. (0~71~78)

No. (bit)	PARAMETER	DATA (Hex) : VALUE	DESCRIPTION	PARA No.
00	COMB. NAME (Head)	20~7F : ~ ~ ~ ~ [ASCII code]	---	---
15	COMB. NAME (Tail)			
CATEGORY				
16	b0~3 CATEGORY A	0~F : 1~16	(Example : For Purpose) #1	00,00
17	b4~7 CATEGORY B	0~F : 1~16	(Example : For User) #1	00,01
SCALE (For use of each Timbres)				
18	b0~3 SCALE KEY	0~B : C~B	#2	04,01
19	b4~7 SCALE TYPE	0~C : ~ ~ ~	#2	04,00
20	b0~3 RANDOM INTENSITY	00~07 : 00~07 #3	Normal = 0	04,02
SWITCH ASSIGN				
21	b0~3 PANEL SW 2 ASSIGN	0~8 : ~ ~ ~	#4	07,01
22	b4~7 PANEL SW 1 ASSIGN	0~8 : ~ ~ ~	#4	07,00
GROUP 1~8 INSERT FX				
23	b0~3 INSERT FX			09,00
24	b4~7 INSERT FX			30,??
MASTER EFFECT PARAMETERS				
195		(22 x 8 = 176 Bytes)		
196				31,00
197				33,??
TIMBRE 1 PARAMETER				
236	PROGRAM NO.	00~7F : 00~127	For Int. Ext	01,01+4n
237	PROGRAM BANK	00~04 : ~ ~ ~	#5	01,00+4n
238	MIDI CHANNEL	0~F, 10 : 1~16, GLOBAL	For Int. Ext	01,03+4n
239	TEMPO MODE	0:INT, 1:OFF, 2:EXT		01,02+4n
240	OUTPUT LEVEL	00~7F : 00~127	For Int. Ext	02,01+4n
241	PITCH BEND RANGE	E8~18~24~P, 24~24	For Int. Ext	04,06+4n
242	TRANSPOSE	E8~18~24~P, 24~24	For Int. Ext	04,04+4n
243	DETUNE	9D~53~99~99[Cent]	For Int. Ext	04,03+4n
244	DELAY START	00~60, FF : #6	For Int. Ext	04,02+4n
245	L-R PAN	FF, 00~7F, 80 : #7	For Int. Ext	02,00+4n
246	SEND 1 LEVEL	00~7F, 80~00~127, PRG	For Int. Ext	02,02+4n
247	SEND 2 LEVEL	00~7F, 80~00~127, PRG	For Int. Ext	02,03+4n
248	PROGRAM CHANGE FILL	0:DIS, 1:ENA	For Int. Ext	07,02+4n
249	DAMPER FILTER	0:DIS, 1:ENA	For Int. Ext	07,03+4n
250	AFTER TOUCH FILTER	0:DIS, 1:ENA	For Int. Ext	07,04+4n
251	CONTROL CHANGE FILL	0:DIS, 1:ENA	For Int. Ext	07,05+4n
252	SCALE SELECT	0:COMB1, 1:PROG	For Int. Ext	07,06+4n
253	HIDE OSC2	0:NOT HIDE, 1:HIDE	For Int. (For DOUBLE)	03,00+3n
254	FORCE POLY	0:NOT FORCE, 1:FORCE	For Int. (For MONO)	03,01+3n
255	KEY ZONE TOP	00~7F : C~1~G9	For Int. Ext	05,00+4n
256	KEY ZONE BOTTOM	00~7F : C~1~G9	For Int. Ext	05,01+4n
257	K.Z SLOPE OF TOP	0~F : ~ ~ ~	For Int. Ext	05,02+4n
258	K.Z SLOPE OF BOTTOM	0~F : ~ ~ ~	For Int. Ext	05,03+4n
259	VEL ZONE TOP	01~7F : 01~127	For Int. Ext	06,00+4n
260	VEL ZONE BOTTOM	01~7F : 01~127	For Int. Ext	06,01+4n
261	V.Z SLOPE OF TOP	0~F : ~ ~ ~	For Int. Ext	06,02+4n
262	V.Z SLOPE OF BOTTOM	0~F : ~ ~ ~	For Int. Ext	06,03+4n
263	INSERT EFFECT SIZE	00~0B : ~ ~ ~	For Int. Ext	08,00+4n
TIMBRE 2~8 PARAMETERS				
255				Above 28 Param's
256				n=1~7 is for
257				Timbre 2~8

#1 : Each Category's names are setup in GLOBAL mode.

#2 : 0 : Equal Temperament 4 : Pythagoras 8 : Pelog
 1 : Pure Major 5 : Werkeister 9 : 1 Octave user Scale (RAM)
 2 : Pure Minor 6 : Kirnberger 10 : Stretch
 3 : Arabic 7 : Slendro 11 : All range user scale (RAM)

#3 : Range of Random pitch [Semi tone]
 0 : 00 3 : -1/16~+1/16
 1 : -1/84~+1/84 4 : -1/8 ~+1/8
 2 : -1/32~+1/32 5 : -1/4 ~+1/4

#4 : (for MIDI Out)
 0 : J.S(X) Lock P.Bend hold (for MIDI Out)
 1 : J.S(Y) Lock C.C #01 hold 6 : JS & Ribbon Lock (Each Control Lock)
 2 : J.S(Y) Lock C.C #02 hold 7 : Octave Down Note No. 10ct Down
 3 : Ribbon Cont(X) Lock C.C #16 hold 8 : Octave Up Note No. 10ct Up
 4 : Ribbon Cont(Z) Lock C.C #17 hold 9 : Portamento Off C.C #55 Off/On
 5 : A.T Lock A.Touch hold 10 : Modulation CC#80 ... SW1
 Modulation CC#81 C.C #80 ... SW2

#5 : 00 : Bank A
 01 : " B
 02 : " C (only extended)
 03 : " D (only extended)
 04 : " S (for SOLO)

#6 : Data Time[ms] Step
 00~19 : 00~50 (2ms) 1A~28 : 60~200 (10ms)
 29~38 : 250~1000 (50ms) 39~60 : 1100~5000 (100ms)
 PP : KEY OFF (Sound start at NOTE OFF!)

#7 : 00~7F : 100~8127
 80 : PROG
 PP : OFF

#8 : COMB1 : Timbre uses a scale setup at the Combination.
 PROG : Timbre uses a scale setup at the Program.

#9 : 0 : 0 4 : 4 8 : 12(1 Oct)
 1 : 1(Semi tone) 5 : 6(0.5Oct) 9 : 18(1.5 ")
 2 : 2 6 : 8 10 : 24(2 ")
 3 : 3 7 : 10 11 : 30(2.5 ")
 12 : 36(3 Oct)
 13 : 48(4 ")
 14 : 60(5 ")
 15 : 72(6 ")

#10 : 0 : 0 Vel fade slope = Para value x 8
 1 : 8
 F : 120

#11 : 0 : OFF
 1 : Size 1
 2 : Size 2
 3 : Size 4
 4 : Timbre 1
 5 : Timbre 8

[TABLE 4] GLOBAL PARAMETERS

No. : No. in the GLOBAL DUMP DATA.

No. (bit)	PARAMETER	DATA (Hex) : VALUE	DESCRIPTION
GLOBAL PARAMETER			
00	MASTER TUNE	CE~32 : -50~50 [Cent]	For Int.
01	KEY TRANSPOSE	FE~0C : -12~12 [S.T]	For Int. Ext.
02	VELOCITY CURVE	0~7 : 1~8	For Int. Ext.
03	AFTER TOUCH CURVE	0~7 : 1~8	For Int. Ext.
bit0	PEDAL SW POLARITY	0~(2) : 1~(F)	For Int. Ext.
04	SUSTAIN SW POLARITY	0~(2) : 1~(F)	For Int. Ext.
bit1	CONVERT POSITION	0:POST KBD, 1:PRE TG	Int. Ext. For TRANSPOSE, VEL/AFT CURVE
05	(Reserved)		
06	PEDAL SW ASSIGN	00~05 : #1	Int. Ext.
07	PEDAL ASSIGN	00~08 : #2	Int. Ext.
08	USER SCALE (Octave)	9C~84 : -100~100 [Cent]	Int.
19	(12 Bytes)		
20	USER SCALE	9C~84 : -100~100 [Cent]	Int.
147	(128 Bytes)		
148	PROG CATEGORY NAME	20~7F : ' ' ~ ' ' [ASCII Code]	
659	of A-1~B-16		
660	COMBI CATEGORY NAME	20~7F : ' ' ~ ' ' [ASCII Code]	
1171	of A-1~B-16		
	(16x16x2 Bytes)		

#1 : 0 : OFF

1 : PROG (COMBI) UP

2 : PROG (COMBI) DOWN

3 : SONG START/STOP

4 : SONG PUNCH IN/OUT

5 : MODULATION

#2 : 0 : OFF

1 : TIMBRE (TRACK) VOLUME

2 : TIMBRE (TRACK) EXPRESSION

3 : MASTER VOLUME

4 : TEMPO OFFSET

5 : DATA ENTRY

6 : FOOT PEDAL

7 : EFFECT CONTROL 1

8 : EFFECT CONTROL 2

(For MIDI Out)

Program Change

Program Change

Start / Stop

C.C #82

(For MIDI Out)

C.C #07

C.C #11

(Universal Exclusive)

(Speed of Clock)

(Parameter Change of EX)

C.C #04

C.C #12

C.C #13

[TABLE 5] Parameter No. at COMBINATION PLAY mode
n(=0~7) : Timbre 1~8

PARAMETER	DATA (Hex) : VALUE	DESCRIPTION	PARA No.
TIMBRE BANK	00~04 : A~S		00, 004~04
TIMBRE PROGRAM	00~7F : 00~127		00, 014~04
TIMBRE PANPOT	00~7F : 00~127		00, 024~04
TIMBRE VOLUME	00~7F : 00~127		00, 034~04

[TABLE 6] Parameter ID at Program Play mode

PARAMETER	DATA (Hex) : VALUE	DESCRIPTION	PARA No.
OCTAVE	FD~03 : -3~+3	OSC 1,2 Octave	00, 00
CUTOFF FREQUENCY	F6~0A : -10~+10	Filter 1-A, 1-B, 2-A, 2-B Cutoff	00, 01
FILTER EG INT	F6~0A : -10~+10	Filter EG Int to Filter 1-A, 1-B, 2-A, 2-B	
		Filter EG Int to Filter 1-A~2-B by Velocity	00, 02
		Filter EG Int to Filter 1, 2 by Alternate Mod	
AMP LEVEL	F6~0A : -10~+10	AMP 1,2 Level	00, 03
ATTACK TIME	F6~0A : -10~+10	AMP 1,2 EG Attack Time	00, 04
RELEASE TIME	F6~0A : -10~+10	Filter 1, 2 and AMP 1, 2 EG Release Time	00, 05
INSERT FX BALANCE	F6~0A : -10~+10	All Insert FX's Dry/Wet Balance	00, 06
MASTER FX BALANCE	F6~0A : -10~+10	All Master FX's Dry/Wet Balance	00, 07

[TABLE 7] DRUMKIT PARAMETERS

No. : No. in the DRUMKIT DUMP DATA.

PARA No. : Parameter No. [Hex] for DRUMKIT PARAMETER CHANGE.

Left side of ' ' is MSB, and right side is LSB.

No. (bit)	PARAMETER	DATA (Hex) : VALUE	DESCRIPTION	PARA No.
DRUMKIT NAME				
00	DRUMKIT NAME (Head)	20~7F : ' ' ~ ' ' [ASCII code]		
15	DRUMKIT NAME (Tail)			
16	(Reserved)			
17	(Reserved)			
KEY-A0 PARAMETERS				
18	bit7 HIGH DS OFFSET START	0:NORMAL, 1:OFFSET	#1 Right side of ' ' is SUB ID for LOWER	00, 02/07
19	bit6 HIGH DRUMSAMPLE(MSB)	FF, 00~102 : OFF, 00~256	Higher Vel's Drumsample	00, 01/06
20	HIGHER TUNE	88~30 : -60, 0~24, 0	0.5 Semi tone Step	00, 03/08
21	HIGHER LEVEL	9D~63 : -99~99		00, 04/09
22	HIGHER DECAY	9D~63 : -99~99		00, 05/0A
23	LOWER		Above Parameter's	
	Same as HIGHER (18~22)		right side of ' '	
27	(5 Bytes)		Is SUB ID of LOWER	
28	L:R PAN	00~7F, FF:1000~R127, OFF		00, 0E
29	SEND 1 LEVEL	00~7F : 00~127		00, 0F
30	SEND 2 LEVEL	00~7F : 00~127		00, 10
31	EXCLUSIVE ASSIGN	FF, 00~0F : OFF, G1~G16		00, 0C
bit0~3	INSERT FX GROUP	0, 1~4 : OFF, INST1~4		00, 11
bit6	ASSIGN	0:OFF, 1:ON		00, 00
bit7	FILTER BYPASS	0:BYPASS, 1:FILTERED		00, 00
33	BOTTOM VEL OF HIGHER	01~7F : 01~127	For DRUMSAMPLE SELECT by Vel	00, 0B
KEY-A#0~C8 PARAMETERS				
30	Same as KEY-A0 (18~33)			00, 00
1425	(15 x 87 = 1332 Bytes)			00, 11

#1 : Key : Note No.

A0 : 21

1 : 1

C4 : 60

1 : 1

C8 : 108

SEQUENCER EVENT DATA FORMAT

※ SEQ EVENT DATA's address is showed by each track's EVENT ADDRESS (1 SONG SEQ DATA's 804~871th, 882~927th). And usually they are located just behind the 1 SONG SEQ DATA.

x : Ignored

1st Data	2nd Data	3rd Data	4th Data	5th Data	6th Data
.....
↓	↓	↓	↓	↓	↓
.....

xxxx : Event Data Kind

= 1 : Bar

= 3 : Track End

= B : Tempo Change

at Track 1~16

= 1 : Bar

= 2 : Pattern

= 3 : Track End

= 9 : Note

= A : Poly Key Pressure

= B : Control Change

= C : Program Change

= D : Channel Pressure

= E : Pitch Bend

at Pattern

= 1 : Bar

= 3 : Track End

= 9 : Note

= A : Poly Key Pressure

= B : Control Change

= C : Program Change

= D : Channel Pressure

= E : Pitch Bend

* NOTE ON

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Length	Length	Velocity	Key No.	tttt	tttt	tttt	tttt	tttt	tttt
.....

xxxx : Note length (From Note On to Note Off)

= 000~0FFF

(= 0C0H : J)

(= FFFFH : Tie to next measure)

vv = 01~7FH

ttt : Location of Note On (in the measure)

(= 000~0FFF)

(= 0C0H : J)

(= FFFFH : Tie from last measure)

* PITCH BEND

uppp	uppp	uppp	uppp	uppp	uppp	uppp	uppp	uppp	uppp
Last Val(H)	Last Val(L)	Value(H)	Value(L)	Value(H)	Value(L)	Value(H)	Value(L)	Value(H)	Value(L)
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

#2 : ttt : Location of Event (in the measure)

= 000~0FFF

(= 0C0H : J)

* AFTER TOUCH

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Val(H)	Last Val(L)	Value(H)	Value(L)	Value(H)	Value(L)	Value(H)	Value(L)	Value(H)	Value(L)
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

#2 : ttt : Location of Event (in the measure)

= 000~0FFF

(= 0C0H : J)

* PROGRAM CHANGE

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Bank	Last Prog No.	Bank	Prog No.	Last Bank	Last Prog No.	Bank	Prog No.	Last Bank	Last Prog No.
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* CONTROL CHANGE

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Value	Value	Control No.	Last Value	Value	Control No.	Last Value	Value	Control No.	Last Value
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* POLY KEY PRESSURE

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Value	Value	Key No.	Last Value	Value	Key No.	Last Value	Value	Key No.	Last Value
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* PATTERN (Instead of BAR)

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* TEMPO CHANGE

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last tempo	Last tempo	Tempo	Last tempo	Last tempo	Tempo	Last tempo	Last tempo	Tempo	Last tempo
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* BAR

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* TRACK END

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* AFTER TOUCH

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* TRACK END

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* TRACK END

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* TRACK END

xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure	Pat Measure	Pat No.	Last Measure
.....

#1 : u = 0 : Use [Last value] for last value

= 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

* TRACK END

Using MIDI exclusive messages

Unlike normal general-purpose messages, exclusive messages can be used by each manufacturer in any desired way, and are used mainly for exchanging sound data.

The format will differ between manufacturers, but Korg's own format is as follows.

1st byte	'F0'	: exclusive status
2nd byte	'42'	: Korg ID
3rd byte	'3n'	: n (0–F) is the Global MIDI channel 1–16
4th byte	'3B'	: model ID (3B: TRINITY series)
5th byte	'ff'	: function ID (the function etc. of the data in the 6th and following bytes)
6th and following		: data
	:	:
last byte	'F7'	: end of exclusive

The 'model ID' in the 4th byte specifies the model for whom the message is intended, but since all models of the Trinity series use the same model ID, exclusive messages can be exchanged between any of these instruments. In addition, a 'member code' can be used to query further subdivisions of instruments with the same model ID. (Refer to 1-4 Universal System Exclusive Messages.)

The function of the exclusive message is determined by the 5th byte; the function ID. For the various types, refer to the Function Code List (1-5, 2-6).

Transmission or reception of a set of sound data etc. is referred to as a data dump. This can be transmitted in the Global mode Data Dump page, or in response to an appropriate Request message being received.

Notes for each type of message

- **No.11 Program Write Request**
This message writes the program in the edit buffer into internal memory. When you enter Program Edit mode, the data for that program is loaded into the edit buffer (the writing source), so it is recommended that it be written in Program Edit mode. It is also possible to write in Program Play mode, but even in this case, correct writing is possible only by going through Program Edit mode.
- **No.41 Parameter Change, No.53 Drum Parameter Change, No.4E Mode Change**
When the mode is changed from the front panel of the Trinity, a "Mode Change" message is transmitted. Each time a parameter is selected or a value is modified in Program Play (Performance Edit), Program Edit, or Combination Edit, a "Parameter Change" message is transmitted. By transmitting these messages to the Trinity, parameters can be edited individually. The "Parameter Change" contains the mode data, so if the mode of the receiving instrument does not match, that "Parameter Change" will not be received (i.e., that mode data will not change the mode).
In Global mode, only drum kit parameters can be changed individually, and "Drum Parameter Change" messages are used for this purpose. The method is the same as for "Parameter Change" messages.
- When an exclusive message has been received and its data has been processed, a "Data Load Completed" (ACK) message is transmitted. However if the received data was in an incorrect format, a "Format Error" message will be transmitted, and if the receiving Trinity series instrument was set inappropriately (for example if memory protect was turned on, or if the mode was wrong), a "Load Error" (NAC) message will be transmitted.
If a program change message is received when the Exclusive Filter is set to ENA, a "Data Load Completed" message will be transmitted after the message has been processed. (Program Change messages are not exclusive messages, but this is an exception.)

Specifications and options

Specifications

	TRINITY	TRINITY V3	TRINITY V3 pro	TRINITY V3 proX
Synthesis method	ACCESS	ACCESS + MOSS	ACCESS + MOSS	ACCESS + MOSS
Tone generator section (ACCESS) (MOSS)	32 voice, 32 oscillator (single mode)/16 voice, 32 oscillator (double mode) 6 voice, 2 oscillator (max.) + sub oscillator + noise generator			
Keyboard section	61 key	61 key	76 key	88 key Weighted
Waveform memory	PCM ROM 24 Mbytes	PCM ROM 24 Mbytes	PCM ROM 24 Mbytes	PCM ROM 24 Mbytes
Number of programs	256	320	320	320
Number of combinations	256	256	256	256
Sequencer section	16-part multi-timbral, 16 track, $\frac{1}{4}$ /192 resolution, 100 patterns (for each song), 20 songs, maximum capacity 80,000 notes, Standard MIDI File compatible			
Effect section	Program (for single/double mode): 3 insert effects + 2 master effects Program (for drum mode): 4 insert effects + 2 master effects Combination: 8 insert effects + 2 master effects Sequencer: 8 insert effects + 2 master effects			
Number of effects	100 (insert effects), 14 (master effects)			
Display	TouchView Graphical User Interface 320 x 240 dots			
Disk drive	3.5 inch 2HD/2DD	3.5 inch 2HD/2DD	3.5 inch 2HD/2DD	3.5 inch 2HD/2DD
Contrast knob	●	●	●	●
Phones	●	●	●	●
OUTPUT jack (1/L/MONO, 2/R, 3, 4)	●	●	●	●
SUSTAIN, SWITCH, PEDAL jacks	●	●	●	●
MIDI IN/OUT/THRU connectors	●	●	●	●
Power consumption	22 W	22 W	22 W	29 W
Dimensions (W x D x H)	1090.1 x 348.3 x 125.9 mm	1090.1 x 348.3 x 125.9 mm	1297.1 x 348.3 x 125.9 mm	1460.0 x 462.3 x 147.0 mm
Weight	14.05 kg	14.25 kg	17.05 kg	33.3 kg

ACCESS: Advanced Control Combined Synthesis System

MOSS: Multi Oscillator Synthesis System

- Specifications and appearance are subject to change without notice for product improvement.

Included items

AC power cable

Floppy disk

TFD-00P, TFD-01P (TRINITY)

TFD-00P-V3, TFD-01P-V3 (TRINITY V3, TRINITY V3 pro, TRINITY V3 proX)

Options (sold separately)

DI-TRI Digital I/F option
MOSS-TRI DSP Synthesizer option
HDR-TRI Hard Disk Recorder option
SCSI-TRI SCSI option
PBS-TRI Playback Sampler/Flash ROM option

Pedal switch: PS-1
Expression/Volume pedal: XVP-10
Foot controller: EXP-2
Foot controller: FC-6

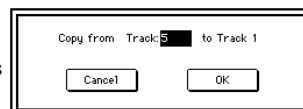
In conjunction with the **TRINITY series** operating system update, please make the following additions and changes to the Parameter Guide.

- 1** On page 101 change the first line of “5–1f: Track” to read as follows.
Selects the track whose musical data you wish to record or edit (or which will be the copy destination).
- 2** On page 101 change the first line of “5–1g: Start Measure/End Measure” to read as follows.
Specify the range of measures to be recorded or edited (or which will be the copy destination).

- 3** On page 107 change “5–1E: Copy Track” to read as follows.

The musical data of the track specified in the dialog box will be copied to the track specified in the tab 1 page.
Be aware that when you execute the Copy Track command, the musical data that was in the copy destination track will be lost.

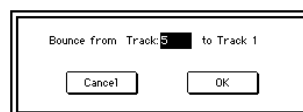
- 1 In the tab 1 page, specify the copy destination track.
- 2 When this command is selected, the dialog box shown at right will appear.
- 3 Specify the copy source track.
- 4 To execute the Copy Track command, press the **OK button**. To cancel without executing, press the **Cancel button**.



- 4** On page 107 change “5–1F: Bounce Track” to read as follows.

All musical data of the track specified in the tab 1 page and the track specified in the dialog box will be combined and placed in the track specified in the tab 1 page.
Be aware that when you execute the Bounce Track command, the data will be affected as follows:

- The combined musical data will be placed in the track specified in the tab 1 page, and all musical data of the track specified in the dialog box will be erased.
 - Track settings (program and MIDI channel, etc.) will be those of the bounce destination track.
 - If the track specified in the tab 1 page and the track specified in the dialog box contain identical control data in the identical location, incorrect operation may occur following the execution of this command. Before bouncing, use “5–1C: Event Edit” or “5–1M: Erase Control Data” etc. to erase the control data from one of the tracks.
- 1 In the tab 1 page, specify the bound destination track.
 - 2 When this command is selected, the dialog box shown at right will appear.
 - 3 Specify the bounce source track.
 - 4 To execute the Bounce Track command, press the **OK button**. To cancel without executing, press the **Cancel button**.



5 On page 109, change “5–1J: Copy Measure” to read as follows.

Measures of musical data from the track specified in the dialog box will be copied to the measures that were specified in the tab 1 page.

When the Copy Measure operation is executed, musical data will be copied to the measures specified in the tab 1 page, allowing you to easily create repetitive musical sections such as refrains within a song. Be aware that when the Copy Measure operation is executed, the musical data will change as follows:

- If measures containing no musical data are copied, the copy destination measures will be blank.
- Musical data in the copy destination will be erased, and overwritten by the data that is copied.
- Musical data that is copied will playback according to the time signature of the copy destination.

- 1 In the tab 1 page, specify the copy destination track and Start Measure.
- 2 When this command is selected, the dialog box shown at right will appear.
- 3 Specify the copy source track. If you wish to copy the musical data of all tracks including the master track, **check All Tracks**.
- 4 Specify the desired first and last measure of the copy source track.
- 5 To execute the Copy Measure command, press the **OK button**. To cancel without executing, press the **Cancel button**.

6 On page 110, change “5–1K: Move Measure” to read as follows.

Measures of musical data in the track specified in the dialog box will be moved to the measure specified in the tab 1 page.

Be aware that when the Move Measure operation is executed, the musical data will change as follows:

- Data following the move source measures will be moved forward to fill the gap.
- Data following the move destination will be moved backward to make room.

- 1 In the tab 1 page, specify the track and Start Measure of the move destination.
- 2 When this command is selected, the dialog box shown at right will appear.
- 3 Specify the move source track. If you wish to move the musical data of all tracks including the master track, **check All Tracks**.
- 4 Specify the desired first and last measure of the move source track.
- 5 To execute the Move Measure command, press the **OK button**. To cancel without executing, press the **Cancel button**.

7 On page 117, change “6–1F: Copy Pattern” to read as follows.

The musical data of the pattern specified in the dialog box will be copied to the pattern specified in the tab 1 page.

In the built-in sequencer of the **TRINITY series**, patterns are attached to a specific song, but this Copy Pattern command allows a pattern to be used by a different song.

- 1 In the tab 1 page, select the copy destination pattern.
- 2 When you select this command, the dialog box at right will appear.
- 3 Specify the copy source song and pattern.
- 4 To execute the Copy Pattern operation press the **OK button**. To cancel without executing press the **Cancel button**.



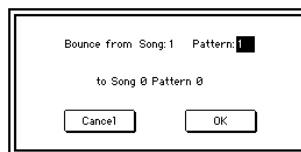
8 On page 117, change “6–1G: Bounce Pattern” to read as follows.

The musical data of the pattern specified in the dialog box and of the pattern specified in the tab 1 page will be combined, and placed in the pattern specified in the tab 1 page.

Be aware that executing the Bounce Pattern operation will affect the musical data as follows:

- The combined musical data will be placed in the pattern specified in the tab 1 page, but unlike the Bounce Track operation, the musical data of the pattern specified in the dialog box will not be erased.
- The time signature and length after the Bounce operation will follow the settings of the pattern specified on the tab 1 page.

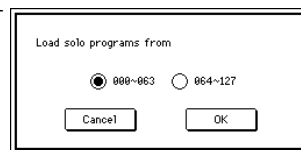
- 1 In the tab 1 page, specify the bounce destination pattern.
- 2 When you select this command, the dialog box at right will appear.
- 3 Specify the bounce source song and pattern.
- 4 To execute the Bounce Pattern operation press the **OK button**. To cancel without executing press the **Cancel button**.



9 On page 150, add the following as step 5 of “c: If a .PCG file or program file is opened, and a Bank file inside it is selected.”

- 5 On a **TRINITY** that does not have the **PBS-TRI** option installed, the dialog box shown at right will appear when you attempt to load a PCG file containing 128 bank S programs. Use the radio buttons to select the set of programs that you wish to load, and press the **OK button** to load the programs.

To return to the previous display, press the **Cancel button**.

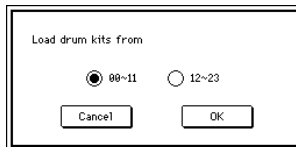


- 10** On page 151, add the following as step 4 of “h: If a .PCG file is opened and a Drumkit file is selected.”

- 4 On a **TRINITY** that does not have the **PBS-TRI** option installed, the dialog box shown at right will appear when you attempt to load a PCG file containing 24 drum kit programs.

Use the radio buttons to select the set of drum kits that you wish to load, and press the **OK button** to load the drum kits.

To return to the previous display, press the **Cancel button**.



- 11** On page 153, the “1-2B: Save All” operation now allows you to save specified individual banks of Programs and Combinations. Change the explanation and procedure to read as follows:

All combinations, programs, drum kits, global parameters, and songs in internal memory will be saved to disk as a .PCG file or .SNG file (‘a’ and ‘k’ of the middle diagram on p.149). Programs and combinations of the banks you specify will be saved. However, this command can be used only when the current directory is a DOS directory.

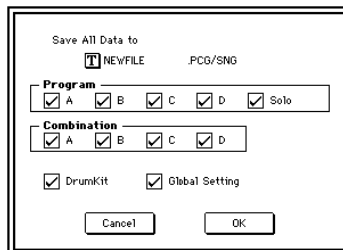
- 1 When this command is selected, the dialog box at right will appear.
- 2 Press the text edit button to access the text entry dialog box, and specify the filename (⇒ Basic Guide, page 6).
- 3 Check the **check** boxes for the data items that you wish to save.



Combinations consist of programs, and some programs use a drum kit as their sound source.

As necessary, when saving combinations you should also save the programs used by those combinations, and when saving programs you should also save the drum kits used by those programs.

- 4 To save the data press the **OK button**. To cancel saving, press the **Cancel button**.



- 12** On page 153, the “1–2C: Save Combi/Prog” operation now allows you to save specified individual banks of Programs and Combinations. Change the explanation and procedure to read as follows:

All combinations, programs, and drum kits from internal memory, in addition to the global parameters, will be saved to disk as a .PCG file (diagram ‘a’ on page 149). You can specify the program and combination banks that will be saved.

This command is valid only if the current directory is a DOS directory.

- 1 When this command is selected, the dialog box at right will appear.
- 2 Press the text edit button to access the text entry dialog box, and specify the filename (⇒ Basic Guide, page 6).
- 3 Check the check boxes for the data items that you wish to save.



Combinations consist of programs, and some programs use a drum kit as their sound source.

As necessary, when saving combinations you should also save the programs used by those combinations, and when saving programs you should also save the drum kits used by those programs.

- 4 To save the data press the **OK button**. To cancel saving, press the **Cancel button**.

- 13** Add the following messages to “Messages” on pages 160, 162 and 163.

A

Audio tracks were skipped

Situation: On a **TRINITY series** instrument which does not have the **HDR-TRI** option, you attempted to load a file that included an audio track, and the data was loaded without the audio track.

N

No items were selected

Situation: In the Save All or Save Combi/Prog dialog box, no check boxes were checked.

T

There is no readable data

Situation: On a **TRINITY series** instrument which does not have the **PBS-TRI** option, you attempted to load a file which contained only banks C and D.

