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PAD VELO															
BPM															

RM1X

SEQUENCE REMIXER



OWNER'S MANUAL



FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!

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

2. IMPORTANT:

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

3. NOTE:

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

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

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

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

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA90620

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

ADVARSEL!

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

VARNING

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

VAROITUS

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

NEDERLAND / THE NETHERLANDS

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

SPECIAL MESSAGE SECTION

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

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

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

SPECIFICATIONS SUBJECT TO CHANGE:

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

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

IMPORTANT: The louder the sound, the shorter the time period before damage occurs.

Some Yamaha products may have benches and / or accessory mounting fixtures that are either supplied with the product or as optional accessories. Some of these items are designed to be dealer assembled or installed. Please make sure that benches are stable and any optional fixtures (where applicable) are well secured BEFORE using.

Benches supplied by Yamaha are designed for seating only. No other uses are recommended.

NOTICE:

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

ENVIRONMENTAL ISSUES:

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

Battery Notice:

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

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

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

Warning:

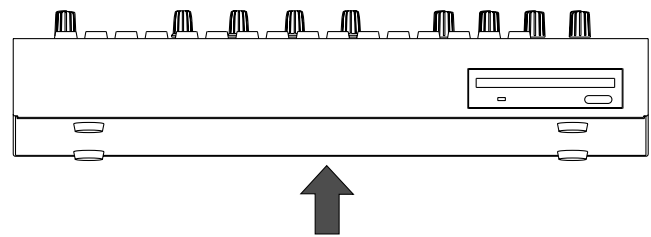
Do not attempt to disassemble, or incinerate any battery. Keep all batteries away from children. Dispose of used batteries promptly and as regulated by the laws in your area. Note: Check with any retailer of household type batteries in your area for battery disposal information.

Disposal Notice:

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

NAME PLATE LOCATION:

The name plate is located on the bottom of the product. The model number, serial number, power requirements, etc., are located on this plate. You should record the model number, serial number, and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.



Model _____

Serial No. _____

Purchase Date _____

PLEASE KEEP THIS MANUAL

PRECAUTIONS

PLEASE READ CAREFULLY BEFORE PROCEEDING

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



WARNING

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

- Do not open the instrument or attempt to disassemble the internal parts or modify them in any way. The instrument contains no user-serviceable parts. If it should appear to be malfunctioning, discontinue use immediately and have it inspected by qualified Yamaha service personnel.
- Do not expose the instrument to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings.
- If the AC adaptor cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during use of the instrument, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the adaptor plug from the outlet, and have the instrument inspected by qualified Yamaha service personnel.
- Use the specified adaptor (PA-5C or an equivalent recommended by Yamaha) only. Using the wrong adaptor can result in damage to the instrument or overheating.
- Before cleaning the instrument, always remove the electric plug from the outlet. Never insert or remove an electric plug with wet hands.
- Check the electric plug periodically and remove any dirt or dust which may have accumulated on it.



CAUTION

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

- Do not place the AC adaptor cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.
 - When removing the electric plug from the instrument or an outlet, always hold the plug itself and not the cord.
 - Do not connect the instrument to an electrical outlet using a multiple-connector. Doing so can result in lower sound quality, or possibly cause overheating in the outlet.
 - Unplug the AC power adaptor when not using the instrument, or during electrical storms.
 - Before connecting the instrument to other electronic components, turn off the power for all components. Before turning the power on or off for all components, set all volume levels to minimum.
 - Do not expose the instrument to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel disfiguration or damage to the internal components.
 - Do not use the instrument near other electrical products such as televisions, radios, or speakers, since this might cause interference which can affect proper operation of the other products.
 - Do not place the instrument in an unstable position where it might accidentally fall over.
 - Before moving the instrument, remove all connected adaptor and other cables.
 - When cleaning the instrument, use a soft, dry cloth. Do not use paint thinners, solvents, cleaning fluids, or chemical-impregnated wiping cloths. Also, do not place vinyl, plastic or rubber objects on the instrument, since this might discolor the panel or keyboard.
 - Do not rest your weight on, or place heavy objects on the instrument, and do not use excessive force on the buttons, switches or connectors.
 - Do not operate the instrument for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in the ears, consult a physician.
- REPLACING THE BACKUP BATTERY
- This instrument contains a non rechargeable internal backup battery which permits internal data to remain stored even when the power is off. When the backup battery needs replacing, the message "Backup Battery Low" will display in the display. When this happens, immediately back up your data, then have qualified Yamaha service personnel replace the backup battery.
 - Do not attempt to replace the backup battery yourself, in order to prevent the possible serious hazards. Always have qualified Yamaha service personnel replace the backup battery.
 - Never place the backup battery in a location that a child can reach, since a child might accidentally swallow the battery. If this should happen, consult a physician immediately.
- SAVING USER DATA
- Always save data to a floppy disk frequently, in order to help prevent the loss of important data due to a malfunction or user operating error.
- Yamaha cannot be held responsible for damage caused by improper use or modifications to the instrument, or data that is lost or destroyed.

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



RM1x
SEQUENCE REMIXER

Owner's Manual

Introduction

Thank you for choosing a Yamaha RM1x Sequence Remixer.

The RM1x is a complete dance-music workstation that can be used both as a real-time performance instrument and a powerful production tool. Its intuitive interface makes real-time operation easy for artists with a DJ background, while in-depth sequencing and editing functions make it possible to create sophisticated original patterns and songs from scratch. In addition to powerful sequence recording and playback capability, the RM1x also features a great sounding tone generator built in — so you don't need any extra equipment. You can even edit the voices to create sounds that are perfectly suited to your music.

Keep this Owner's Manual handy while familiarizing yourself with the RM1x, and store it in a safe place for later reference.

Main Features

- The sequencer of the RM1x provides 16 sequence tracks and up to 110,000 notes of storage capacity for professional-level sequencing power. Note timing resolution is 1/480th of a quarter note. Memory is backed up, so your data will not disappear when the power is turned off.
- Easy operation with the large 64 x 240 dot display.
- Intuitive performance control with 8 assignable real-time control knobs, 4 display knobs, and a large multi-function keyboard.
- An awesome assortment of preset patterns means you can play right away without having to program.
- Easy programming via an advanced interface that allows a wide range of parameters to be accessed and edited — when you need to be in total control of your sound.
- Powerful sequencing capabilities with in-depth editing function make it possible to create even complex patterns and musical textures.
- Assemble grooves in real time in the Pattern mode: each of the Pattern mode's "styles" has up to 16 "sections" which can be directly switched in real time during playback via the RM1x keyboard.
- Advanced tone generator technology gives you an extensive arsenal of outstanding sounds built in.
- Edit and refine the RM1x voices to create sounds that most ideally suit your own music.
- A sophisticated multi-effect system can be used to add anything from subtle ambiance to wild variations.
- Tap BPM entry lets you define tempos the way you feel them rather than with numbers.
- Full MIDI compatibility means that the RM1x can be used as the core of a larger music production system.

How to use the manuals

The documentation for the RM1x consists of the following two manuals. Understand the role of each manual, and refer to them as necessary.

☐ Owner's Manual (this manual)

This explains precautions for use, how to make connections, and all parameters and commands. Use this manual like a dictionary whenever you need to.

- Chapter 1. Basic concepts
- Chapter 2. Pattern mode
- Chapter 3. Pattern Chain mode
- Chapter 4. Song mode
- Chapter 5. Utility mode

“Pattern mode”, “Pattern chain mode” and “Song mode” have several functions in common.

In this manual, explanations for these common functions are given in greater detail in chapter 2 “Pattern mode”. Some of the overlapping explanation in chapter 3 “Pattern Chain mode” and chapter 4 “Song mode” is omitted. In such cases, the appropriate page of chapter 2 “Pattern mode” is indicated so that you can refer to it.

☐ List Book

This is a booklet that contains various lists such as the Voice list, Preset Style list, Effect list, MIDI data format, and MIDI implementation chart.

Printing conventions in this manual

This manual uses the following icons to indicate buttons and to distinguish different types of information.

- ▶ This indicates a panel button. The symbol in the box indicates the symbol printed on the button.
- ① ② This indicates the actual procedure for using the function.
- note** This indicates supplementary explanations related to the function, examples of use, and hints.

Finding the information that you need

In order to find the information that you need, you can make use of the following pages.

Table of contents (page 9)

Locate the desired information within the flow of the entire manual.

Front and rear panels (page 11)

Here you can read about the name and location of each button and control, and read about their function.

Quickstart Guide (page 20)

This brief, easy-to-follow section shows you how to use the basic features and functions of your new RM1x.

Function tree (page 32)

This lets you locate the desired information within the structure of the command hierarchy.

Glossary (page 146)

This section contains unfamiliar terms or phrases in alphabetical order with their explanations.

Index (page 150)

This lets you search alphabetically for unfamiliar terms to find pages on which they are discussed and pages on which related topics appear.

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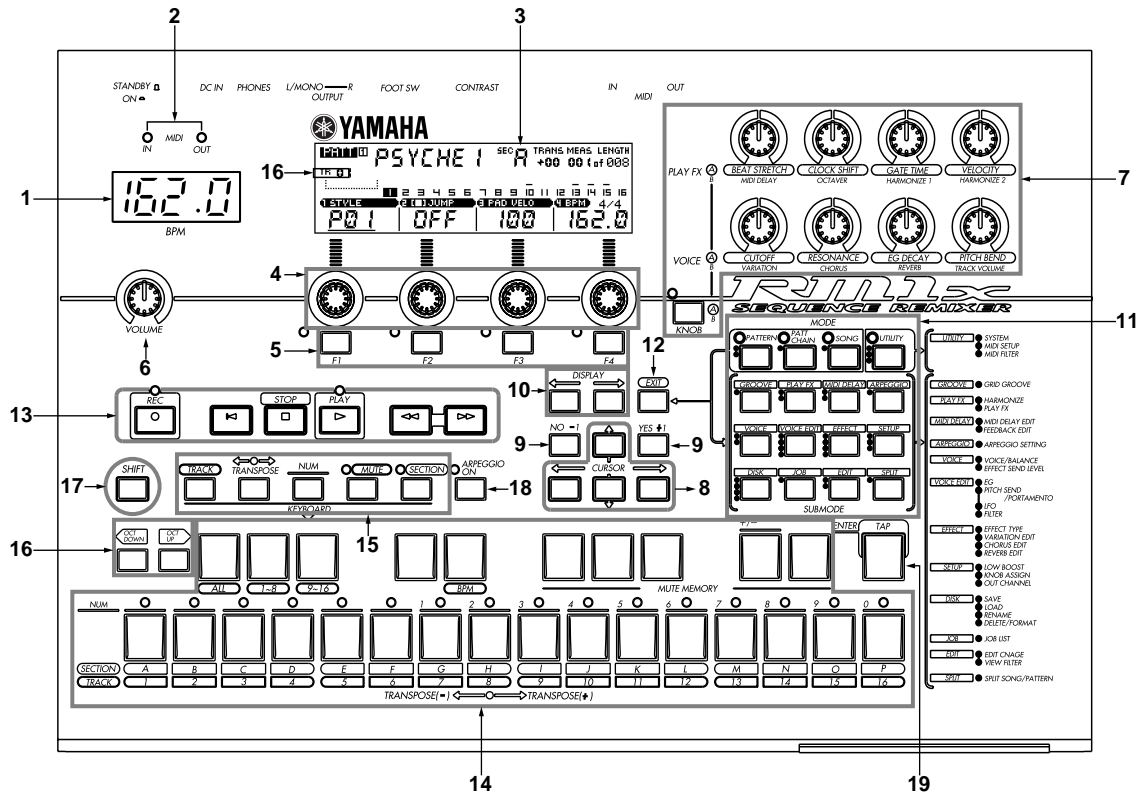
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The illustrations and LCD screens as shown in this owner’s manual are for instructional purposes only, and may be different from the ones on your RM1x.

SETUP

1. Front and rear panels

□ Front Panel



1. BPM Display

Normally this 4-digit LED numeric display shows the current BPM (Beats Per Minute) value, right down to a tenth of a beat. It can be switched to display measure numbers rather than beats per minute via a utility function (page 133). The BPM display also shows values related to the real time Controller Knobs (page 12), but only while any of the knobs are operated.

2. MIDI Data Monitors

The MIDI IN and OUT indicators above the BPM display light whenever MIDI data is received via the rear-panel MIDI IN connector (red MIDI IN indicator), or when MIDI data is transmitted by the RM1x via the MIDI OUT connector (green MIDI OUT indicator).

3. LCD Display

The RM1x's large backlit LCD display panel displays the parameters and values related to the currently selected operation or mode. The Display Knobs (page 12) and Function Buttons located immediately below the LCD display directly affect the corresponding parameters or functions on the display. The [DISPLAY] and [CURSOR] buttons are also closely related to display operation, and details are provided in the “Basic Operation” section beginning on page 23.

A CONTRAST control for the LCD display is provided on the rear panel (page 14). The LCD display can be set for normal or inverse (white on black) display via a utility mode function (page 133).

4. Display Knobs

The four knobs located immediately below the LCD display directly control the corresponding parameters on the display. For example, in the main PATTERN mode Display Knob 1 can be used to select a style, and Display Knob 4 can be used to set the BPM. More details are provided in the “Basic Operation” section beginning on page 23.

5. Function Buttons and Indicators

The function buttons - [F1] through [F4] - are similar to the Display Knobs in that they directly control the corresponding functions on the LCD display, but only when the related indicator is lit. More details are provided in the “Basic Operation” section beginning on page 23.

6. VOLUME Control

Adjusts the volume of the RM1x audio output via the rear-panel OUTPUT and PHONES jacks.

7. Real Time Controller Knobs & [KNOB] Button

These knobs allow the corresponding parameters to be controlled in real time during pattern or song playback. The parameters listed on the panel below the knobs are the default pre-assigned parameters, but other parameters can be assigned as required via the SETUP submode KNOB ASSIGN function (page 74). The knobs can be switched to control one of two different parameter groups - “A” and “B” - via the [KNOB] button. The “A” parameter group (the upper default parameters listed on the panel) are selected when the [KNOB] indicator is lit, and the “B” group (the lower parameters) is selected when the [KNOB] indicator is out. Different parameters can be assigned to both the “A” and “B” groups via the KNOB ASSIGN function mentioned above.

8. Cursor Buttons

The cursor buttons move the “cursor” around the LCD display screen, highlighting the various parameters that are available for editing (the RM1x cursor appears as a dark block with inverse characters).

9. [NO -1] and [YES +1] Buttons

The [NO -1] and [YES +1] buttons are used to edit (change the value of) the parameter at which the cursor is currently located. The [NO -1] button decrements (decreases stepwise) the value of the selected parameter, while the [YES +1] button increments (increases stepwise) the parameter. Press either button briefly to decrement or increment the parameter by one, or hold the button for continuous decrementing or incrementing in the specified direction.

The [NO -1] and [YES +1] button are also used to respond to certain prompts when they appear. Press [YES +1] to go ahead with the operation, or [NO -1] to cancel.

10. DISPLAY [←] and [→] Buttons

When the selected mode or submode (page 23) includes more parameters than can fit on the display at one time, arrow symbols will appear at the left and/or right side of the display to indicate that more parameters are available in the indicated direction(s). The DISPLAY [←] and [→] buttons can be used to scroll the display in the corresponding direction when this occurs.

11. MODE and SUBMODE Buttons

The four MODE buttons select the main RM1x operating modes (PATTERN, PATTERN CHAIN, SONG, and UTILITY), while the SUBMODE buttons select a range of submodes via which you can access the RM1x's detailed programming features. Details on mode and submode selection are provided in the “Basic Operation” section beginning on page 23.

12. [EXIT] Button

The [EXIT] button takes you out of any function selected by the function buttons, or the edit or job modes (described below), directly back to the current main mode (e.g. SONG or PATTERN).

13. Sequencer Buttons and Indicators

The sequencer buttons control recording and playback in the PATTERN, PATTERN CHAIN, and SONG modes.

REC ◻	Activates the record-ready mode in the RM1x PATTERN and SONG modes. The red REC button indicator will light, then recording will begin as soon as the ▶ button is pressed. The ◻ button can be pressed again to cancel the record-ready mode before recording is actually started by pressing the ▶ button.
PLAY ▶	Starts playback from the current point in the pattern or song if the record-ready mode is not active, or recording from the same point if the record-ready mode is active. The green PLAY indicator flashes at the current BPM during recording and playback.
STOP ◻	Stops playback or recording.
◀ & ▶	Fast reverse and forward. Press the ◀ or ▶ button to rapidly move through the pattern or song in the corresponding direction.
◀	Top. Instantly returns to the first beginning of the current song or pattern (i.e. the first beat of the first measure).

14. Keyboard

This 26-note keyboard makes it possible to program the RM1x without having to connect an external MIDI keyboard. It's even polyphonic, so you can directly enter chords as well as single notes. The only thing it lacks is velocity sensitivity. The RM1x does, however, accept velocity information from an external MIDI keyboard.

The keyboard also performs a range of functions as specified by the keyboard mode button (below): track selection, transposition, numeric data entry, track mute/solo, and section selection. The “black keys” also perform a range of other functions, such as selecting specific track ranges and memorizing a number of track mute setups.

15. Keyboard Mode Buttons

These buttons modify the function of the RM1x keyboard for track selection, transposition, numeric data entry, track mute/solo, and section selection. Details are provided in the “Basic Operation” section beginning on page 23.

16. [OCT DOWN] and [OCT UP] Buttons

Although the range of the RM1x keyboard is a little over two octaves, the [OCT DOWN] and [OCT UP] buttons allow the pitch of the keyboard to be shifted down or up in octave steps, over a range of 8 (+/- 4) octaves. Each time the [OCT DOWN] button is pressed the pitch of the keyboard is shifted down by one octave, until the lower limit is reached. The [OCT UP] button shifts the pitch of the keyboard up in the same way. The current amount of octave shift is indicated on the LCD display.

17. [SHIFT] Button

The [SHIFT] button is used to access several secondary or “background” functions that you might only need in special situations. For example, the [SHIFT] button can be used when you want to “solo” a track instead of muting it via the [MUTE] keyboard mode button.

The [SHIFT] button can also be used in conjunction with the Display Knobs: hold the [SHIFT] button while rotating a knob for faster data selection.

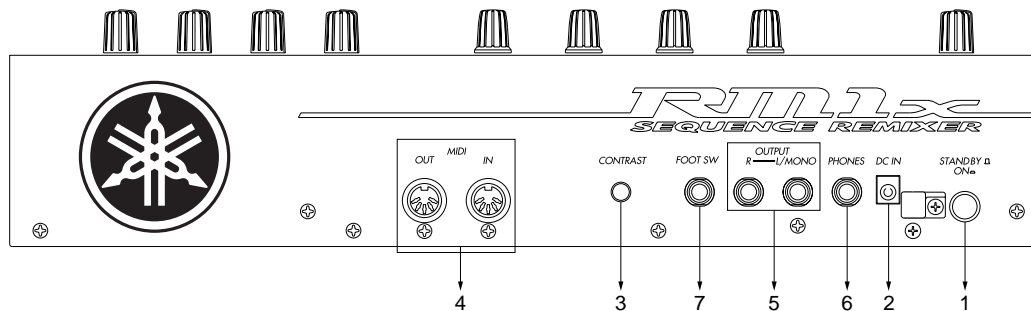
18. [ARPEGGIO ON] Button

Turns the RM1x's automatic arpeggio feature on or off (page 62). The [ARPEGGIO ON] button indicator will light when the ARPEGGIO feature is on.

19. [TAP/ENTER] Button

This dual-purpose button is used both for tap-entry of BPM values (page 20), and to enter numeric values (page 26).

□ Rear Panel



1. STANDBY/ON Switch

Press in to turn the RM1x on, and press again to turn it off. When the power is on one of the mode button indicators will light and the PATTERN mode display will appear on the LCD (Liquid Crystal Display).

2. DC IN Jack

The DC output cable from the Yamaha PA-5C AC Power Adaptor supplied with the RM1x is plugged in here.

3. CONTRAST Control

Use the CONTRAST control to achieve the best LCD display visibility (LCD visibility varies greatly with viewing angle).

4. MIDI IN & OUT Connectors

The RM1x has MIDI IN and MIDI OUT connectors for maximum system flexibility. If you plan to use a MIDI keyboard or other instrument to play and program the RM1x, it should be connected to the RM1x MIDI IN connector (see “Connecting external MIDI devices,” page 18). Input “filters” defining what data will and will not be received by the MIDI IN connector can be set as required via the UTILITY mode (page 137).

The MIDI OUT connector can be connected to an external tone generator or synthesizer if you want to drive external voices from the RM1x sequencer. Like the MIDI IN connector, MIDI filters can be set for the MIDI OUT connector via the UTILITY mode.

5. L/MONO & R OUTPUT Jacks

These are the main stereo outputs from the RM1x tone generator system (see “Audio equipment connections,” page 17). Both are standard 1/4” mono phone plugs. When a plug is inserted into only the L/MONO output, the left- and right-channels signals are mixed and delivered via that output to allow direct connection to mono sound systems. The output level is adjusted via the VOLUME control (page 12).

6. PHONES Jack

Any pair of stereo headphones with a 1/4” stereo phone plug can be plugged in here for convenient monitoring. The PHONES output level is adjusted via the VOLUME control.

7. FOOT SW Jack

An optional Yamaha FC4 or FC5 footswitch connected to this jack can be used for start/stop, section selection, sustain, or tap BPM entry, as determined by the setting of the UTILITY mode FOOT SWITCH parameter (page 132).

□ Floppy disk drive

1. Floppy disk slot

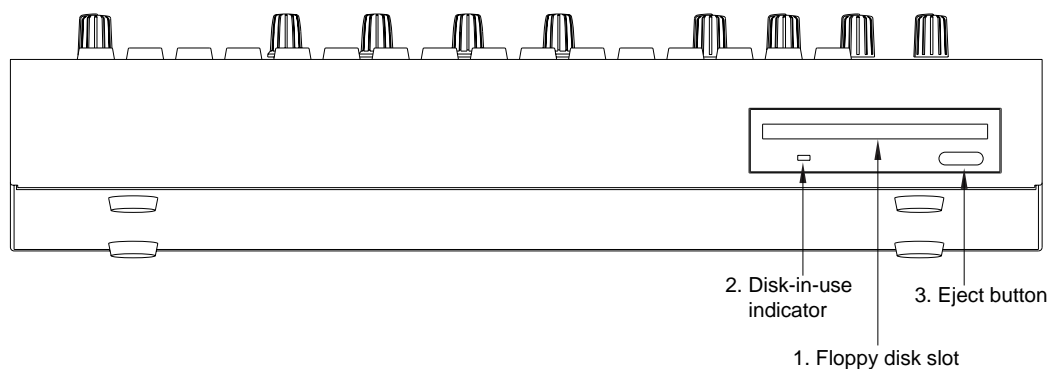
This is where floppy disks are inserted for loading or saving data. 3.5 inch 2HD (MF2HD) or 2DD (MF2DD) floppy disks can be used. (page 42)

2. Disk-in-use indicator

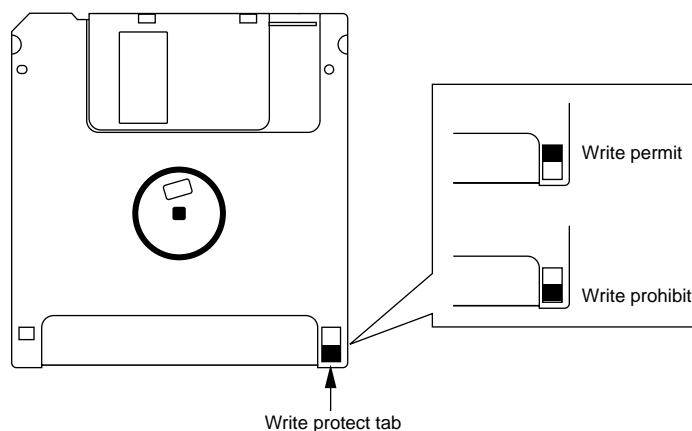
This indicator will light while data is being read from or written to the floppy disk. Never attempt to remove the disk while this indicator is lit.

3. Eject button

Press this button to remove the floppy disk. Disks must be inserted or removed gently and firmly, and only while the access indicator is dark.



note The back of a floppy disk contains a write protect tab as shown in the following illustration. When this tab is in the downward position (with the window open), it will not be possible to modify, add, or delete data. When you wish to protect important data, you should leave the tab in this position.



CAUTION !

Be aware that Yamaha can make no guarantee regarding data damage that results from improper use.

2. Connections

In order to use the RM1x, the included AC adaptor and an amp system etc. must be connected. If you use external MIDI devices or controllers, these must also be connected.

This sections explains how to make these connections.

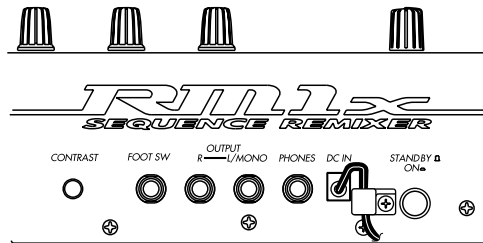
CAUTION!

Be sure to turn off the STANDBY/ON switch before making any connections. If you make connections while the STANDBY/ON switch is on, you risk damaging external equipment such as the amp or speakers.

□ Power supply connections

- 1 Make sure that the STANDBY/ON switch of the RM1x is set to STANDBY, and connect the included AC adaptor (PA-5C) to the power supply jack.

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



- 2 Plug the AC adaptor into an AC outlet, and turn on the RM1x STANDBY/ON switch.

When turning the power off, simply reverse the procedure.

WARNING!

Use only the included PA-5C AC adaptor (or other adaptor specifically recommended by Yamaha). Using other AC adaptors will cause malfunctions. Also, be sure to unplug the AC adaptor from the AC outlet if you will not be using the RM1x.

CAUTION!

Even when the switch is in the “STANDBY” position, electricity is still flowing to the instrument at the minimum level. When you are not using the RM1x for a long time, make sure you unplug the AC power adaptor from the wall AC outlet.

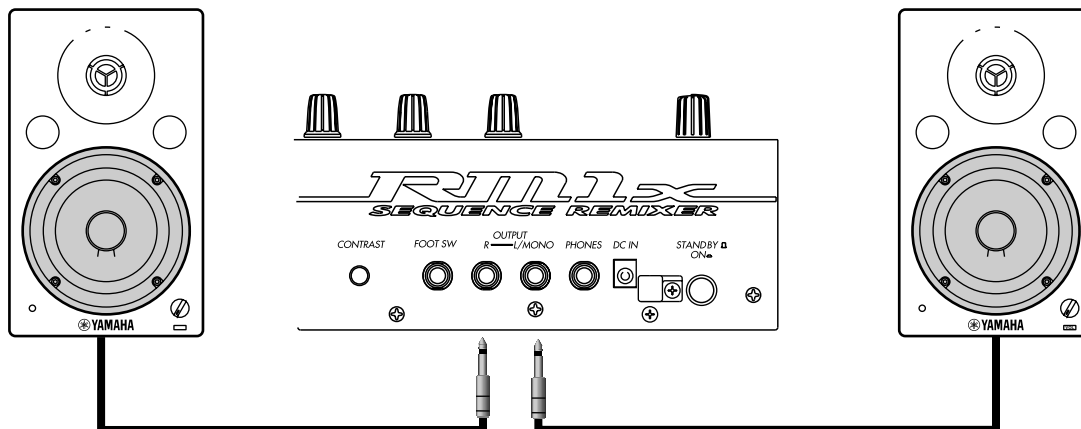
Never interrupt the power supply (e.g. unplug the AC adaptor) during any RM1x record operation! Doing so can result in a loss of data.

□ Audio equipment connections

To output the sound of the RM1x, connect an amp or mixer to the output jacks.

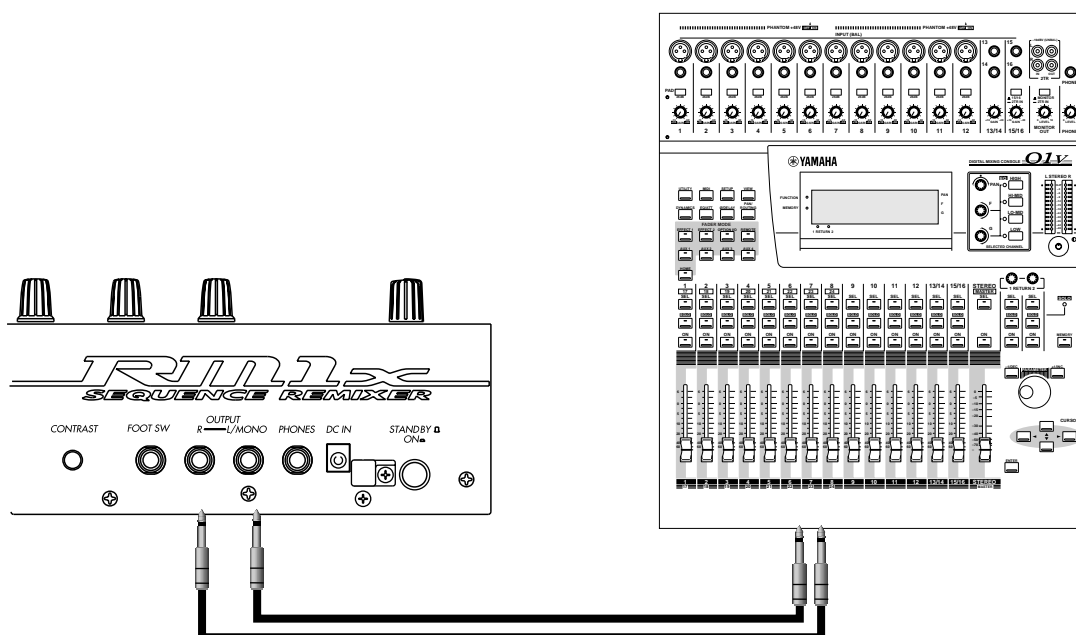
Connection to powered speakers

Connect two powered speakers (left and right) to the output jacks (L/MONO, R). If you are connecting only one powered speaker, use the L/MONO jack.



Connection to a mixer

Connect the output jacks (L/MONO, R) to two channels of the mixer. The channel connected to the L/MONO jack should be panned left, and the channel connected to the R jack should be panned right. Make the same type of connections if you are connecting the RM1x to an MTR or cassette deck.



Using headphones

If you are using headphones, connect them to the rear panel PHONES (headphones) jack.

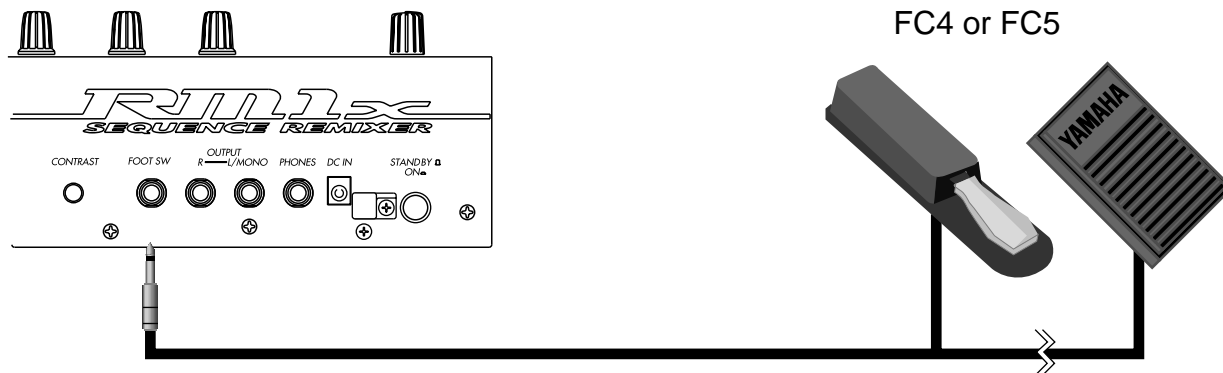
When using headphones, adjust the volume to an appropriate level that will not harm your hearing.

CAUTION !

Do not connect the output jacks of the RM1x to the mic input jacks of an amp or cassette deck etc. If they are connected to mic inputs, the sound quality may be impaired, and the device may be damaged. Also, when connecting the RM1x to a mixer or similar device, set the mixer channels to the Line Input position.

Connecting a footswitch

When using a separately sold FC4 or FC5 foot switch, insert the foot switch plug into the FOOT SW jack located on the rear panel.

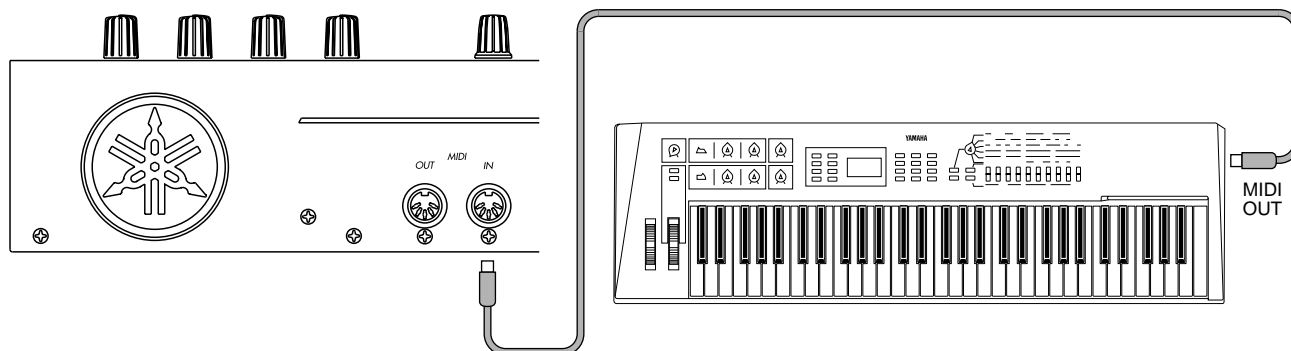


Connecting external MIDI devices

Connecting a MIDI keyboard

Realtime recording input will be easier if you use a MIDI keyboard.

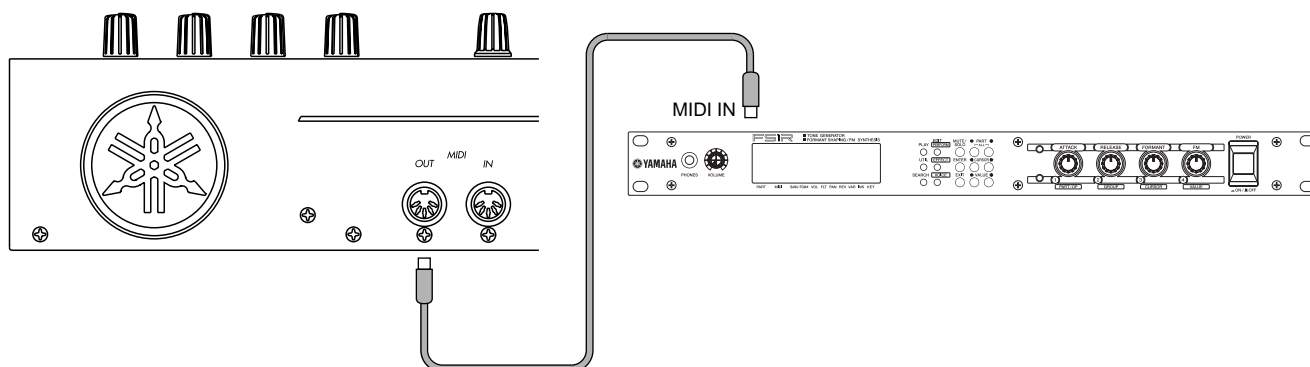
Use a MIDI cable to connect the MIDI OUT of the external MIDI keyboard to the MIDI IN connector on the rear panel.



Connecting a tone generator module

RM1x song and pattern playback data can be used to play an external tone generator module.

Use a MIDI cable to connect the MIDI OUT connector on the rear panel to the MIDI IN connector of the external MIDI device.



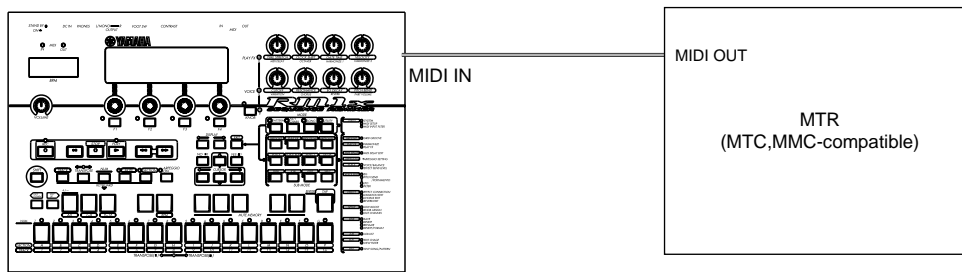
❑ Connecting a MTR (multi-track recorder)

Since the RM1x implements MTC (MIDI Time Code) and MMC (MIDI Machine Control), you can produce music while synchronized to a MTC- or MMC-compatible multi-track recorder.

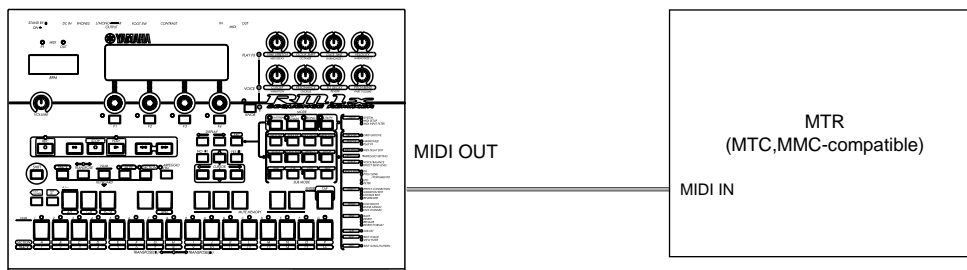
Use MIDI cables to connect the MIDI OUT connector of the RM1x to the MIDI IN connector of the MTR, and the MIDI IN connector of the RM1x to the MIDI OUT connector of the MTR.

If you use MTC or MMC to control an MTR, set the Utility mode MIDI page MIDI Sync setting to "MTC."

Synchronizing the RM1x by MTC from an external device



Controlling an external device via MMC from the RM1x



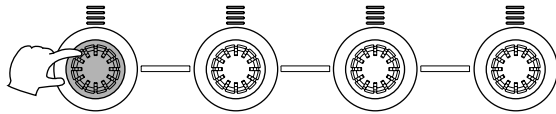
3. Quickstart Guide

When your RM1x is properly connected and powered up, try the following to get a feel for how easy it is to remix the preset patterns to create your own groove.

But remember, *this is just the tip- of the iceberg!* The RM1x can do much, much more.

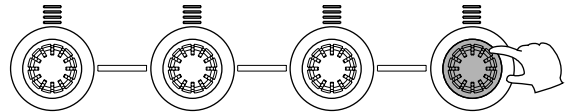
1. Select a Style

Use Display Knob 1 to select a preset style (P01 ... P60).



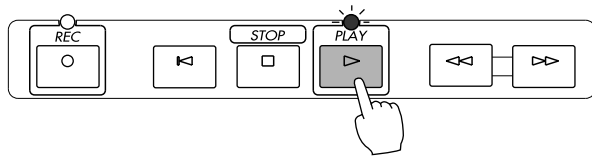
4. Dial In a New BPM (Beat Per Minute)

Use Display Knob 4 to adjust the BPM to a value that feels right to you.



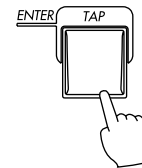
2. Start Playback

Press the PLAY button. The currently selected section of the selected style will begin playing. This “pattern” will continue to loop until a different section or style is selected.



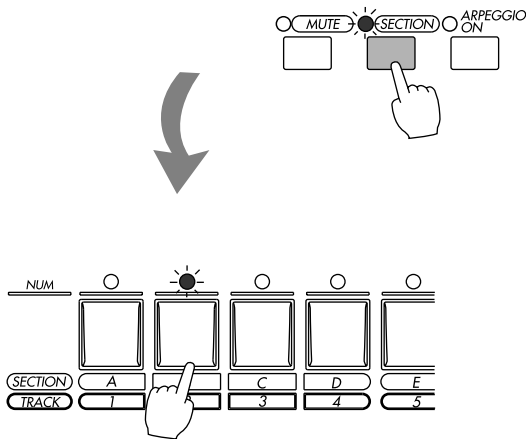
5. Tap In a New BPM

Tap on the [TAP] button a few times at the desired BPM. The RM1x will automatically adjust to the BPM you tap.



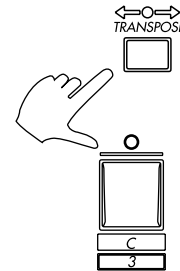
3. Switch Sections

Make sure that the [SECTION] button indicator is flashing (if it isn't, press the [SECTION] button so that it does), then use the white keys on the RM1x keyboard to switch sections.



6. Transpose

Transpose the pattern to any key by pressing a key on the RM1x keyboard while holding the [TRANPOSE] button.



A newly selected section will begin immediately. The current section is indicated by a flashing indicator above the corresponding key, and a letter (“A” ... “P”) next to “SEC” in the display.

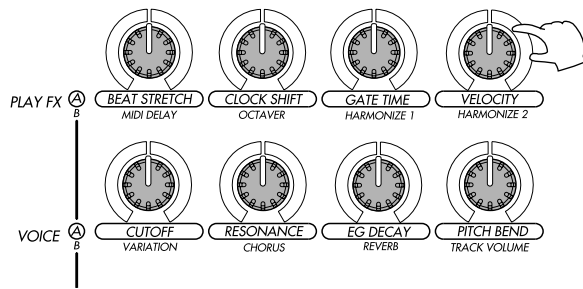
- More on section on page 28.

The central E key on the keyboard (labeled “H” and “8”) corresponds to no transposition. Higher or lower keys indicate transposition by the corresponding number of semitones in the corresponding direction. The amount of transposition is also indicated by the TRANS parameter in the display.

- More on transposition on page 27.

7. Use the Real-time Controller Knobs

Try rotating the RM1x controller knobs to hear their effect. The default parameters are labeled below each knob. The [KNOB] button selects the “A” or “B” parameter group.



The knobs affect the currently selected track. You can quickly select any of the 16 tracks by pressing the appropriate white key on the RM1x keyboard (“1” ... “16”) while holding the [TRACK] button. The number of the selected track will be highlighted in the display.

- More on track selection on page 27.

The “A” parameter group (the upper default parameters listed on the panel) are selected when the [KNOB] indicator is lit, and the “B” group (the lower parameters) is selected when the [KNOB] indicator is out.

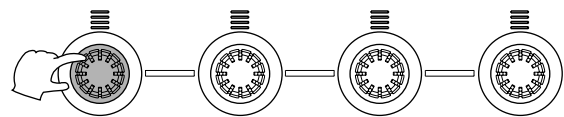
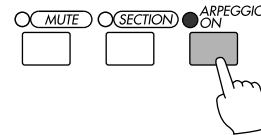
- More on the controller knobs on page 29.

When the mute mode is engaged the indicators above tracks which contain data will light. Press a key once to mute a track which contains data (its indicator will flash and “M” will appear above the tracks number in the display). Press the key again to un-mute a muted track.

- More on the Mute and Solo functions on page 28.

9. Play an Arpeggio

Press the [ARPEGGIO] button so that its indicator lights, then play an interval or chord on the RM1x keyboard. The RM1x will automatically create an arpeggio based on the notes you play.

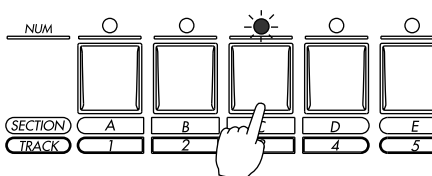
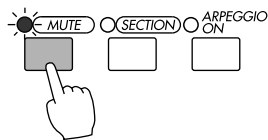


Using the Arpeggio submode parameters you can select several different types of arpeggio.

- More on the Arpeggio mode on page 62.


8. Mute & Un-mute Tracks

Press the [MUTE] button so that its indicator flashes, then use the white keys on the RM1x keyboard to mute and un-mute tracks as required.



10. Experiment With Different Styles

Use control knob 1 to select different styles and experiment with the various sections each contains.

Press the STOP  button to stop playback when done.

4. Using the included disk

Here's how to use the included disk.

❑ Contents of the disk

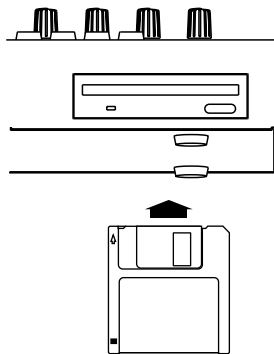
The included disk contains 3 demo songs.

The demo songs allow you to enjoy demo playback, and to playback songs while adjusting the assignable knobs (PLAY FX and VOICE) to experience the possibilities of the RM1x.

❑ Listening to the demo playback

Here's how to load a demo song file from disk and enjoy the demo playback.

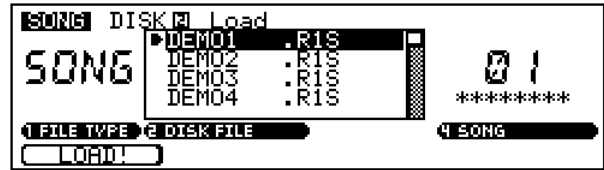
- 1 With the label facing upward, insert the disk into the floppy disk slot.
Insert the disk all the way until it clicks into place.



- 2 Press the [SONG] button.
You will enter Song mode.
- 3 Press the [DISK] button.
You will enter Disk submenu.



- 4 Press the [DISK] button again.
You will enter Load page, and the top line of the display will indicate "SONG DISK [D] Load".



- 5 Use the CURSOR button to move the cursor to the file you wish to play.
- 6 Press the F1 button (LOAD!) to start the load operation.
The display will indicate "Executing...".



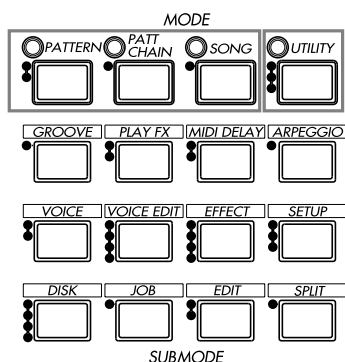
- 7 Press the [SONG] button.
The top line of the display will indicate the loaded song name.
- 8 Press the PLAY [▶] button to start playback.
- 9 Press the STOP [■] button to stop playback.

note By changing the DISK FILE in step 5 you can playback other songs.

Basic Operation

1. Selecting Modes & Submodes

The RM1x has three main playback and recording modes — PATTERN, PATTERN CHAIN, and SONG — and a UTILITY mode. Each of these includes a range of “submodes” which provide access to more in-depth parameters.



Note that a number of dots appears to the left of the MODE and SUBMODE buttons. The number of dots beside each button indicates the number of display pages which can be accessed by that button. A button which has only one dot will access only a single page. A button which has 3 dots, for example, will access three different display pages in sequence. You can go back up through a sequence of pages from any page in the list by pressing the [EXIT] button the requisite number of times. The titles of the pages accessed by all multi-page MODE and SUBMODE buttons are listed on the top panel to the right of the buttons themselves. For example, looking at this list we can see that the SUBMODE [EFFECT] button, which has four dots, accesses the “Type” “Variation Edit” “Chorus Edit” and “Reverb Edit” pages.

□ The Main Modes

The main modes are directly accessed by pressing the corresponding MODE button: [PATTERN], [PATT CHAIN], [SONG], or [UTILITY]. The corresponding indicator will light, and the name of the selected mode will appear in the upper left-hand corner of the LCD Display. Here’s a brief summary of what the modes do, and page references to the related sections in this manual.

Mode	Description	Page
PATTERN	This is the RM1x mode you’ll probably use for most recording and playback operations, and is the default mode which will appear when the power is initially turned on. The [PATTERN] button alternately selects the main PATTERN mode and the PATCH mode in which phrases can be “patched” together to create patterns. In the RM1x the term “pattern” refers to a relatively short pattern - say, 4 to 16 measures - which is used for looped playback.	45
PATTERN CHAIN	The PATTERN CHAIN mode allows patterns to be “chained” together for automatic sequential playback.	109
SONG	Although you’ll probably use the PATTERN mode for most recording and playback operations, the RM1x SONG can be used to record and play complete songs when, for example, you want to create a continuous sequence of more than 256 measures, or use an odd time signature.	115
UTILITY	As its name implies, the UTILITY mode provides access to a range of utility functions which affect overall system and MIDI operation.	131

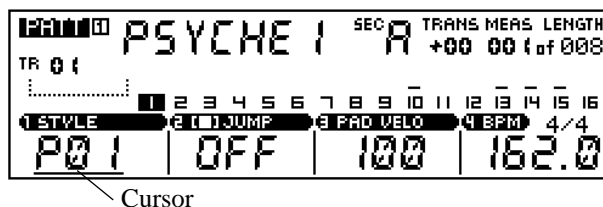
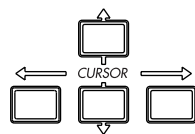
□ The Submodes

The submodes are accessed via the SUBMODE buttons below the MODE buttons. When a SUBMODE button is pressed, the submode corresponding to the currently selected main MODE is selected. For example, the PATTERN mode JOB submode will be slightly different from the SONG mode JOB submode. The chart below includes brief summaries of what the submodes do, and page references to the related sections in this manual.

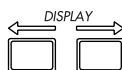
Mode	Description	Page
GROOVE	This submode makes it possible to adjust the pitch, timing, length, and velocity of notes via a 16th-note grid to create “grooves” that would not be possible with precise sequencer-like programming.	55, 119
PLAY FX	A range of play effects which affect the sound only during playback, without actually changing the sequence data. Play effects include harmonize, beat stretch, clock shift, gate time, and velocity offset.	57, 119
MIDI DELAY	MIDI Delay creates delay effects that can sound much the same as those created by conventional delay effect units, but the delays are created by manipulating the MIDI note data rather than the audio signal.	60, 119
ARPEGGIO	This feature can be used to create simple automatic arpeggios based on notes played on the RM1x keyboard.	62, 119
VOICE	The VOICE submode allows any of the RM1x’s voices to be assigned to individual tracks, and includes volume, pan, and effect send controls for each track.	63, 120
VOICE EDIT	This submode provides access to in-depth voice editing parameters that you can use to customize voices for your own sound.	65, 120
EFFECT	Detailed effect editing to add the finishing touches to your sound.	69, 120
SETUP	The SETUP submode includes a LOW BOOST function, knob assignment for the RM1x’s real-time control knobs, and individual output channel assignments for the internal tone generator and MIDI transmission.	73, 121
DISK	All disk operations can be accessed via this submode: save, load, file name, delete, rename, format, etc.	76, 111, 122
JOB	Accesses the RM1x’s extensive range of PATTERN, PATTERN CHAIN, and SONG jobs.	80, 123
EDIT	The EDIT submode allows detailed editing of sequence data, so you have complete control over the pitch, timing, velocity, duration, and other parameters for each note.	99, 128
SPLIT	The PATTERN SPLIT submode lets you copy specified measures from one section to another section. The SONG SPLIT submode is similar, but it lets you copy specified measures from a song to a specified section.	108, 129

2. Navigating Around the Display

In all of the RM1x displays, the currently selected parameter or function is indicated by a “cursor” which can be either an inverse block (i.e. the selected value will appear as white characters in a black block), or the opposite if the “NEGA” mode is selected via the UTILITY mode LCD MODE function — page 133), or an underline. The underline type cursor is often used for parameters which are accessible via the display knobs (see below). The cursor can be moved around the display via the CURSOR buttons. Each of these four buttons moves the cursor in the direction indicated by the corresponding arrow (if the cursor can be moved in that direction). If you’re lost in a display and can’t locate cursor, try pressing the CURSOR buttons: you’ll spot the cursor as soon as it moves.



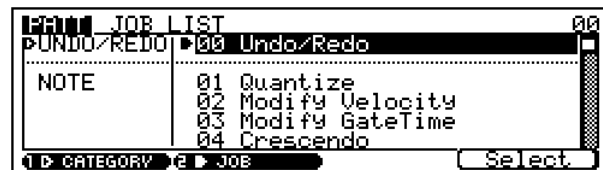
If a selected mode has more parameters than can fit in a single display screen, an arrow will appear on one or both sides of the display, indicating that more parameters are available by scrolling in the corresponding direction(s). This can be accomplished either by moving the cursor past the end of the display by using the CURSOR buttons, or the display can be scrolled directly by using the DISPLAY buttons.



Menu Selection

In JOB submodes (pages 80, 112, 123) you will be presented with a “menu” from which you can select a job. There are several ways to do this, as listed below:

CURSOR buttons	Use the CURSOR buttons to scroll to the desired job, then press the Select function button (F4, below “Select” on the display).
Display Knobs	Use the knob below “JOB” on the display to scroll through the job list, then press the Select function button (F4, below “Select” on the display. You can also use the CATEGORY knob to switch between job categories (listed to the left of the jobs).
[NO -1]/[YES +1] buttons	Press the [NO -1] or [YES +1] once briefly to single-step through the menu in the corresponding direction, or hold the button for continuous scrolling. When the desired job has been highlighted, press the Select function button (F4, below “Select” on the display).
Numeric Selection	Use the numeric entry method described below to enter the number of the desired job. The job number will flash in the upper right corner of the display. Then press the [ENTER] button.



3. Changing (Editing) Values

The RM1x lets you adjust and edit values in three ways:

□ The Display Knobs

The display knobs provide a fast, easy way to adjust and edit corresponding parameters. If any parameters in the selected display can be accessed via the display knobs, they will appear directly above the knobs as shown in the example below.



To adjust a knob-related parameter, simply rotate the knob either clockwise to increase the value or counter-clockwise to decrease the value. For more rapid adjustment — when, for example, you need to quickly cover a large value range — rotate the appropriate display knob while holding the [SHIFT] button.

The function of the display knobs does not depend on cursor location, so you adjust the related values with the cursor located at another position on the display.

□ The [NO -1] and [YES +1] Buttons

The [NO -1] and [YES +1] buttons offer a convenient, precise way to increment or decrement the selected value in single-step increments. After making sure that the cursor is located at the value to be edited, press either the [NO -1] or [YES +1] once briefly for a single step in the corresponding direction, or hold the button for continuous scrolling.

Note that the [NO -1] and [YES +1] buttons are also used to confirm or abort certain operations — thus the “NO” and “YES” labels.

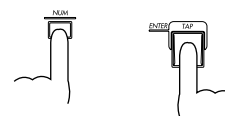
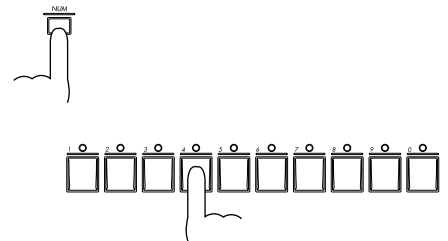
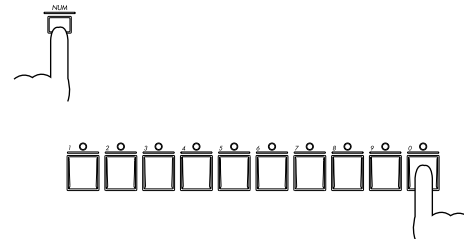
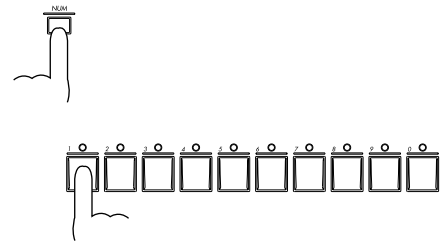


- note**
- For even faster decrementing or incrementing, press the opposite increment/decrement button while holding the button corresponding to the direction you want to increment/decrement in.

□ Numeric Entry

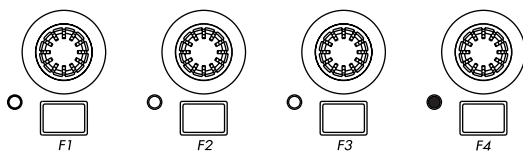
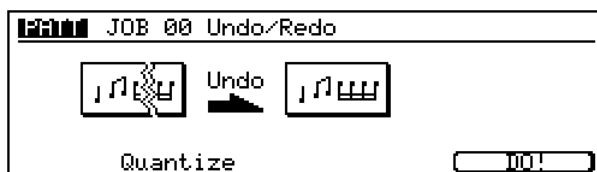
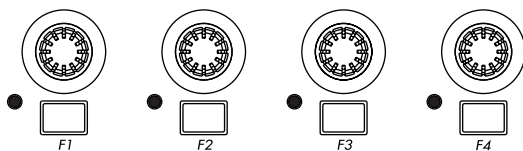
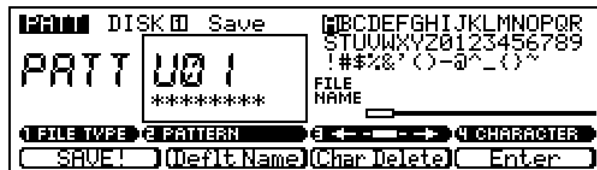
Numeric entry can be useful when you know precisely the value you want to enter, making it unnecessary to scroll through long lists of values or parameters to get the desired effect.

For numeric entry the cursor must be located at the value to be edited. Press and hold the [NUM] keyboard mode button — the LEDs above the keys marked “1” through “9” and “0” will light, indicating that those keys can be used to enter a numeric value. While still holding the [NUM] button, press the number keys to enter the value, starting from the leftmost digit. To enter the value “104,” for example, press “1,” “0,” and then “4.” When the desired value has been specified, release the [NUM] button. The value should be flashing on the display as entered. Finally, press the [ENTER] button to actually enter the specified value.



4. The Function Buttons

The four function buttons below the LCD Display — F1 through F4 — only become active when necessary. When a function button is active, its indicator (the LED immediately to the left of the button) will light. The function buttons become active when a “go do it” type control is required. Disk “SAVE,” for example. Or the “DO!” function provided for most of the jobs.



5. Keyboard Modes

The RM1x keyboard does a lot more than simply enter notes. In conjunction with the KEYBOARD mode buttons it allows fast, efficient entry of a range of parameters. One of its alternative functions — numeric value entry — has already been discussed in the “Changing (Editing) Values” section, (page 26). The keyboard is also used for grid-type data entry in the Grid Groove (page 55) and Grid Step Record (page 54) modes. The remaining keyboard modes are summarized below:

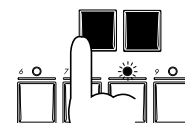
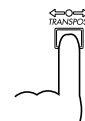
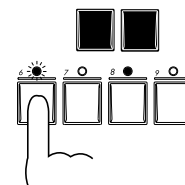
□ TRACK

Allows direct track selection for recording and other track-dependent operations. To select one of the RM1x’s 16 tracks, press and hold the [TRACK] button. The indicator above the keyboard key corresponding to the currently selected track will flash. While still holding the [TRACK] button, simply press the key corresponding to the track you want to select

(the corresponding indicator will flash and the selected track will be highlighted on the LCD Display), then release the [TRACK] button.

□ TRANSPOSE

This mode provides a fast, easy way to transpose playback pitch in semitone increments from -12 semitones to +13 semitones (used in conjunction with the OCTAVE buttons — page 13 — transposition is actually possible over a +/- 36 semitone range). When the [TRANSPOSE] button is held, the keyboard indicator(s) corresponding to the current transpose value will flash. A single flashing LED indicates the corresponding white key, and a pair of flashing LEDs indicates the black key between them.



The central E key on the keyboard (labeled “H” and “8”) corresponds to no transposition. Higher or lower keys indicate transposition by the corresponding number of semitones in the corresponding direction. The amount of transposition is also indicated by the TRANS parameter in the PATTERN and SONG displays.

To change the transpose value, simply press the appropriate key while holding the [TRANSPOSE] button.

□ NUM

Described under “Numeric Entry” in the “Changing (Editing) Values” section (page 26).

☐ MUTE (SOLO)

This button can be used in conjunction with the keyboard to mute or solo specific tracks. Tracks which are muted produce no sound during playback. If a track is soloed, only that track will be heard during playback.

To mute any number of tracks in the PATTERN or SONG mode, press the KEYBOARD [MUTE] button. The [MUTE] button indicator will flash. Next, press the keys corresponding to the tracks you want to mute — an “M” will appear above the track numbers of muted tracks on the LCD Display. Each time a key is pressed while the MUTE mode is engaged the corresponding track will be alternately muted and unmuted. You can then disengage the MUTE mode by pressing the [MUTE] button a second time (the [MUTE] button indicator will go out), and the current mute settings will remain in effect. Five separate mute setups can be memorized for instant recall as described in the “Mute Memory” section, below.

While the [MUTE] button indicator is flashing it is also possible to mute all tracks simultaneously by pressing the black key labeled [ALL]. In the same way tracks 1 through 8 can be muted at once by pressing the [1-8] key. In this case the remaining tracks (9 through 16) will all be un-muted. The [9-16] key mutes tracks 9 through 16 while un-muting tracks 1 through 8. Pressing the next black key (C#) or the one next to that (BPM) will un-mute all muted tracks.



Only a single un-muted track can be soloed at a time, and unlike the mute settings, the solo function will be disengaged when the MUTE mode is disengaged. To solo a track, press the [MUTE] button while holding the [SHIFT] button. The [MUTE] button indicator will flash at a faster rate than when the MUTE mode is engaged, and the indicator above the currently soloed track will flash. Simply press a different key to solo a different track, then press the [MUTE] button a second time (the [MUTE] button indicator will go out) to disengage the SOLO mode.



Mute Memory

While the MUTE mode is engaged, the MUTE MEMORY buttons (the highest 5 black keys) can be used in conjunction with the [SHIFT] button to memorize the current mute setup: press a MUTE MEMORY button while holding the [SHIFT] button. Up to 5 different mute setups can be memorized in this way.

Memorized mute setups can be instantly recalled while the MUTE mode is engaged simply by pressing the appropriate MUTE MEMORY button.

☐ SECTION

Styles in the RM1x PATTERN mode can have up to 16 “sections,” — “A” through “P.” Each section is effectively a separate pattern, and different sections can be used for introductions, variations, breaks, endings, etc. The SECTION mode allows the keyboard to be used for direct section selection, allowing you to quickly change sections during playback. When the KEYBOARD [SECTION] button is pressed the [SECTION] button indicator will flash, keyboard indicators corresponding to sections which contain data will light, and the keyboard indicator corresponding to the currently selected section will flash. The current section is also shown by the “SEC” parameter on the LCD Display. To select a different section, simply press the appropriate key. Press the [SECTION] button a second time to disengage the SECTION mode (the [SECTION] button indicator will go out).

6. The Realtime Controller Knobs

One of the features that makes the RM1x a great performance tool is its realtime controller knobs. The knobs allow the corresponding parameters to be controlled in real time during pattern or song playback, so, for example, you can sweep filter cutoff frequency, bend pitch, add or modify effects, or control just about any available parameter during playback simply by turning the appropriate knob. A complement of 8 controller knobs means you have instant access to multiple parameters, and you can control more than one parameter at the same time.

The parameters listed on the panel below the knobs are the default pre-assigned parameters, but other parameters can be assigned as required via the SETUP submode Knob Assign function (page 74). The knobs can be switched to control one of two different parameter groups - “A” and “B” - via the [KNOB] button. The “A” parameter group (the upper default parameters listed on the panel) are selected when the [KNOB] indicator is lit, and the “B” group (the lower parameters) is selected when the [KNOB] indicator is out. Different parameters can be assigned to both the “A” and “B” groups via the KNOB ASSIGN function mentioned above. The default “A” and “B” group parameters are listed below.

1	BEAT STRETCH	MIDI DELAY
2	CLOCK SHIFT	OCTAVER
3	GATE TIME	HARMONIZE 1
4	VELOCITY	HARMONIZE 2
5	CUTOFF	VARIATION
6	RESONANCE	CHORUS
7	EG DECAY	REVERB
8	PITCH BEND	TRACK VOLUME

7. Undo/Redo

Undo is a function that cancels the last-executed recording, edit, or job operation, and restores the data to its previous condition. Redo is a function that cancels the Undo operation, and re-executes the operation.

These jobs are very convenient when important data has been damaged because of recording, editing, or a job. These jobs can be used for recording, editing, and job (except Name) operations in the Pattern mode, Pattern chain mode, and the Song mode, and for Patch operations in the Pattern mode.

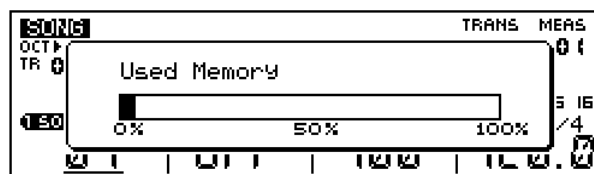
To execute the Undo operation, press the [JOB] button while holding the [SHIFT] button. To execute the Redo operation, press the [JOB] button while holding the [SHIFT] button again.

After a recording, editing, or job operation has been performed, it will always be possible to execute Undo. Likewise, it will always be possible to execute Redo after Undo has been executed, and Undo and Redo will alternate.

- note** • This procedure does the same thing as the Undo/Redo job in the Pattern job (page 82), Pattern chain job (page 113), and Song job (page 124).

8. Used Memory display

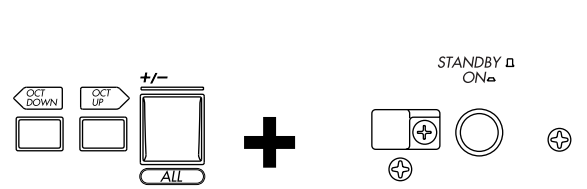
Here's how to check the amount of currently used memory, so that you can see about how much more recording can be done. Press the F1 button while holding the [SHIFT] button. The “Used Memory” will appear as long as you continue holding these buttons.



9. System Initialization

If you wish to reset the RM1x's settings to the factory condition, you can perform the Initialization operation.

- While holding down the [OCT DOWN] and [OCT UP] buttons and the F#/Gb key [ALL] located at their right, turn on the STANDBY/ON switch.



- When “RM1x” appears in the display, release the keys.
- When initialization has been performed, “Factory Set” appears briefly in the display.

CAUTION!

When initialization is performed, all internal memory will be erased. If you wish to keep any of your data, you must save it to floppy disk before initializing.

Simultaneous Button & Knob Functions

This chart lists a number of RM1x functions which are accessed either by simultaneously pressing two buttons, or by operating a knob while holding a button.

Buttons/knobs simultaneously operated		Description	See page
SHIFT	STOP	Specifies the current measure as the measure the RM1x will “jump” to when the [STOP] button is pressed.	46
SHIFT	PLAY	Starts loop playback of the currently selected song in the SONG mode.	116
SHIFT	MUTE	Engages the SOLO mode.	28
SHIFT	PATTERN	Resets parameter changes applied by the Knobs in the PATTERN mode.	29
SHIFT	PATT CHAIN	Resets parameter changes applied by the Knobs in the PATT CHAIN mode.	29
SHIFT	SONG	Resets parameter changes applied by the Knobs in the SONG mode.	29
SHIFT	GROOVE	Resets the GROOVE parameters of the selected track.	55, 119
SHIFT	PLAY FX	Resets the PLAY FX parameters of the selected track.	57, 119
SHIFT	MIDI DELAY	Resets the MIDI DELAY parameters of the selected track.	60, 119
SHIFT	F1	Displays the amount of memory currently in use.	29
SHIFT	MUTE MEMORY	Stores the MUTE MEMORY setting.	28
SHIFT	SECTION[A] - [P]	Simultaneously hold the [SHIFT] button and the desired section button to auto-retrigger section change according to the Pattern Quantize value (page 132).	28, 132
SHIFT	Keyboard	Adds the specified note during arpeggio playback.	21, 62, 119
SHIFT	Keyboard	Deletes the specified note during PATTERN Realtime Recording.	51
SHIFT	Keyboard	Deletes the specified note during Step Recording.	52, 118
SHIFT	Keyboard	Selects the specified note during Grid Step Recording.	53, 118
SHIFT	Keyboard	Selects a single note position and deselect all others in the GRID GROOVE submode.	55, 119
SHIFT	Display Knob1 - 4	Rotate the appropriate Display Knob while holding the [SHIFT] button for coarser, more rapid adjustment.	26
SHIFT	Knob 1 - 8	Allows the knob position to be changed without changing the effect parameter.	29
SHIFT	Knob 1 - 8	Deletes all corresponding parameter data during PATTERN realtime recording.	51
SHIFT	JOB	Executes the Undo/Redo operation.	29
TRACK	TRACK[1] - [16]	Selects the specified track.	27
TRACK	BPM	Selects the BPM track in the SONG mode.	116
TRACK	OCT DOWN	Moves the cursor to successively lower track numbers.	25
TRACK	OCT UP	Moves the cursor to successively higher track numbers.	25
TRACK	CURSOR buttons	Moves the cursor to tracks in the corresponding directions.	25
TRACK	ALL	While holding the [TRACK] and [ALL] buttons simultaneously, the effect of the Knobs will be applied to all tracks.	29
TRACK	[1] - [8]	While holding the [TRACK] and [1-8] buttons simultaneously, the effect of the Knobs will be applied to tracks 1-8.	29
TRACK	[9] - [16]	While holding the [TRACK] and [9-16] buttons simultaneously, the effect of the Knobs will be applied to tracks 9-16.	29
TRANSPOSE	Keyboard	Changes the transpose value.	27
NUM	NUM [1]-[9], [0]	Enters the specified number.	26
OCT UP	OCT DOWN	Resets the keyboard octave.	13
OCT UP	Keyboard	Applies a maximum vibrato effect to the note.	13
OCT DOWN	Keyboard	Bends the note up to the maximum pitch allowed by the currently specified pitch bend range.	13

Chapter 1. BASIC CONCEPTS

This chapter explains the basic concepts that you need to know before use, such as the mode structure and the internal structure of the RM1x.

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1. Function tree

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 - Step Recording page 52
 - Step Recording (Grid) page 54
 - GROOVE page 55
 - PLAY FX page 57
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 - Play FX page 58
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 - Job18 Copy Phrase page 92
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 - Job23 Get Phrase page 94
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 - Job25 Clear Phrase page 95
 - Job26 Phrase Name page 95
- Track
 - Job27 Copy Track page 95
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 - Job30 Normalize Play Effect page 96
 - Job31 Divide Drum Track page 97
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▣ PATTERN CHAIN MODE

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 - Job06 Copy Chain page 114
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SONG MODE

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Step Recording	page 118
Step Recording (Grid)	page 118
GROOVE	page 119
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Harmonize	page 119
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MIDI DELAY	page 119
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Job05 Transpose	page 125
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Job16 Modify Control Data	page 126
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Measure	
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Track	
Job20 Copy Track	page 127
Job21 Exchange Track	page 127
Job22 Mix Track	page 127
Job23 Clear Track	page 127
Job24 Normalize play Effect ...	page 127
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Song	
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Edit	page 128
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UTILITY MODE

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Memory Protect on/off	page 132
Click mode	page 133
Click beat	page 133
Recording count	page 133
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MIDI sync	page 135
MTC Start offset	page 135
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Echo back	page 135
TG param out	page 136
Voice setup to TG	page 136
Voice setup to MIDI	page 136
MIDI Filter	page 137

2. How the RM1x is organized

□ Five blocks

The RM1x consists of five blocks: the sequencer block, the tone generator block, the controller block, the effect block, and the arpeggio block.

Sequencer block (page 35)

Tone generator block (page 37)

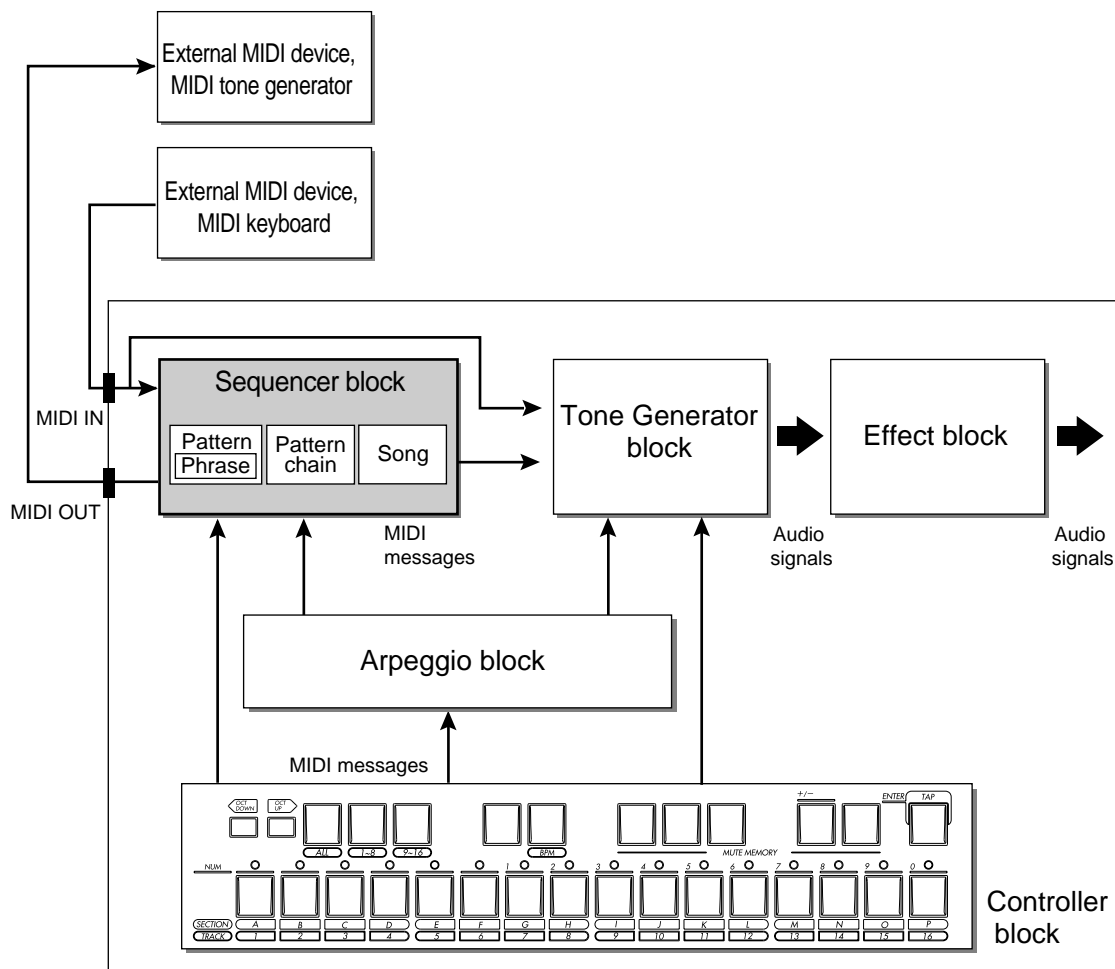
Controller block (page 38)

Effect block (page 39)

Arpeggio block (page 62)

□ How the blocks are connected

The five blocks are connected as follows.



3. Sequencer block

□ About the sequencer block

This block lets you create patterns and songs by recording/editing musical performances recorded from an external MIDI device or from the controller block, and then plays back this data, transmitting it to the tone generator block or to an external MIDI tone generator as MIDI messages.

The sequencer block can be operated in three modes: Pattern mode (page 45), Pattern Chain mode (page 109), and Song mode (page 115).

By recording one track at a time to create a multi-track recording, you can create patterns and songs which use up to 16 tracks.

When patterns or songs are played back, the musical data is output to the tone generator block and to the MIDI OUT connector. The output destination of the musical data can be specified for each track by setting the Out Channel (pages 75, 121).

“Tracks” are memory areas in which musical performances are recorded. Musical data can be recorded, edited, and played back independently for each track.

□ Pattern

In the RM1x the term “pattern” refers to a relatively short pattern — say, 4 to 16 measures — which is used for looped playback.

Patterns are created by joining up to 16 parts vertically with drums, bass, and chord backing. While phrases contain musical data for a single instrument, patterns combine two or more phrases to create a single backing pattern.

Patterns are created in the Pattern mode. (page 45)

The RM1x manages patterns by Style, by Section and by phrase.

The RM1x provides $60 \times 16 = 960$ patterns.

Style

“Styles” are groups of 16 patterns or “sections” (see “Section,” below) which can be selected at any time and in any order during playback in the RM1x PATTERN mode. One section might be the style’s introduction, another the verse, another the bridge, etc.

The RM1x provides 60 preset styles.

Section

“Sections” are the individual components that make up a “style” (above). Each section plays a single “pattern” (above).

For each style, the RM1x provides 16 sections (A - P).

Phrase

“Phrases” are musical phrases for a single instrument, such as a rhythm pattern for the rhythm part, a bass line for the bass part, or a chord backing for the guitar part. Phrases are the smallest unit that makes up the pattern.

Preset phrases and user phrases are categorized by two parameters: “phrase category” and “phrase number.” This lets you efficiently find desired phrases without having to be familiar with each individual phrase.

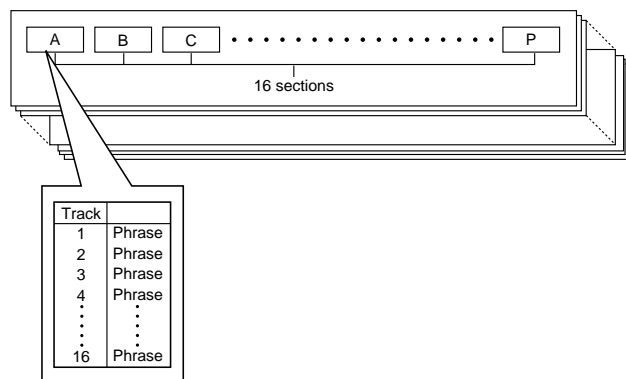
• Phrase category

Phrase category refers to the type of instrument or playing technique. “US” indicates a “User Phrase,” and all others are preset phrases.

• Phrase Number

Phrase Number specifies phrases within Phrase Category by a number 001 - 256. (User phrases are numbered 001 - 256.)

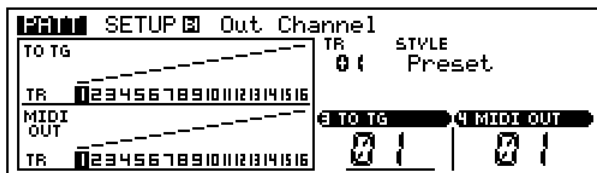
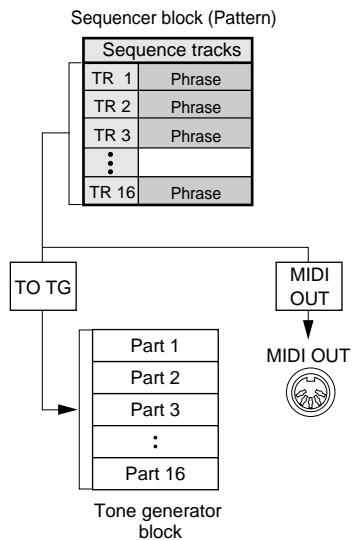
Styles (Preset x 60, User x 50)



Playback channel of each track

When a pattern is played back, the musical data of each track in the pattern is transmitted to the tone generator block and the MIDI OUT connector according to the Out Channel settings of SETUP submenu. (page 75)

The data is transmitted to the tone generator block as specified by the “TO TG” setting, and to the MIDI OUT connector as specified by the “MIDI OUT” settings.



Pattern chain

A Pattern Chain is a sequence of patterns programmed in the PATTERN CHAIN mode.

The patterns in the Pattern Chain will play in the specified sequence, and playback can be started from any measure in the chain.

A Pattern Chain can include patterns from any of the RM1x’s preset or user styles.

The RM1x has memory for 20 Pattern Chains.

Songs

“Songs” are songs that have been created by recording musical data to tracks in the Song mode.

The RM1x’s song memory can hold 20 songs.

Track structure of a song

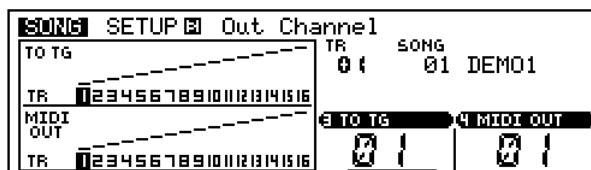
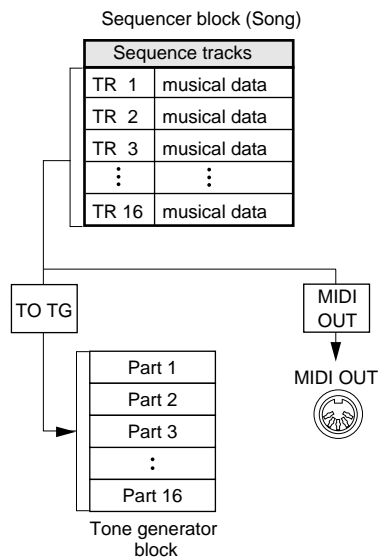
Each song consists of 16 sequence tracks and one BPM (tempo) track.

The sequence tracks are used to record musical data. Data can be recorded from the controller block etc. using realtime recording or step recording etc. The RM1x has 16 sequence tracks, and each track can record musical data for one Part.

Sequence track playback channels

When a song is played back, the musical data of each sequence track is transmitted to the tone generator block and the MIDI OUT connector according to the Out Channel settings of SETUP submenu. (page 75)

The data is transmitted to the tone generator block as specified by the Out Channel “TO TG” setting, and to the MIDI OUT connector on the channels specified by the “MIDI OUT” settings.



4. Tone generator block

□ About the tone generator block

The tone generator block is what actually produces sound in response to the MIDI messages received from the sequencer block, the controller block, and from the MIDI IN connector.

This is a 16part 32note polyphonic multi-timbral tone generator.

□ Voices

“Voices” are the individual sound programs that you can edit, which are used by the tone generator to produce sound.

There are two types of voices: normal voices which change their pitch as you play different notes on the keyboard, and drum voices which produce a different rhythm instrument sound for each note of the keyboard.

Normal voices consist of 1 or 2 “elements.” By using two elements you can produce a richer sound, or create a voice that produces different sounds depending on the pitch or velocity.

Drum voices are special voices in which different sounds are assigned to each note. You can make detailed modifications to the sound of each note.

Elements are the building blocks that each voice is made of, and are made from sampled waveforms. You can make detailed modifications to the pitch, tone and volume.

□ Bank number (MSB, LSB) and Program number (Voice number)

The RM1x contains 654 normal voices and 46 drum kits. This is more voices than can be selected by a program number of 1 - 128. Thus, voices are selected on the RM1x using a combination of the Bank Number MSB, Bank Number LSB and Program Number. When using MIDI to select a voice, transmit these three MIDI messages in the order of Bank Select MSB, Bank Select LSB, and Program Change.

The voices within the bank specified by the Bank Select messages are selected by Program Change messages.

Each voice is placed in a three-dimensional space with the three axes being the Bank Select MSB, LSB, and Program Change (see diagram below).

Bank Number

MSB=000 : LSB=000 Normal voices: GM System Level 1
 MSB=063 : LSB=000 Normal voices: SyBa&Ld
 MSB=063 : LSB=001 Normal voices: SyPd&Fx
 MSB=063 : LSB=002 Normal voices: SyMater1
 MSB=063 : LSB=003 Normal voices: Band Instrument
 MSB=063 : LSB=004 Normal voices: Cls & Wind
 MSB=063 : LSB=005 Normal voices: Ethnic & Percussion
 MSB=063 : LSB=006 Normal voices: SFX
 MSB=126 : LSB=000 Drum Kit
 MSB=127 : LSB=000 GM Drum

□ Maximum polyphony

The tone generator block has a maximum polyphony of 32 notes, in element units. i.e., 32 notes can be played simultaneously if you are using normal voices that consist of one element or drum voices, and 16 notes can be played simultaneously with normal voices that consist of two elements.

The number of elements used by each voice is given in the voice lists of the separate “List Book”.

If MIDI messages are received which request more than the available maximum polyphony, currently-sounding notes will be turned off, and the later arrivals will be played. This type of note assignment is called “last-note priority”.

□ Connections between the sequencer block and the tone generator block

The sequencer block is internally connected to the tone generator block via MIDI.

The connections between each track of the sequencer block and each part of the tone generator block can be specified by the SETUP submode Out Channel (page 75) setting “TO TG”.

TO TG	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Tone Generator part number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

5. Controller block

□ About the controller block

The controller block lets you use the keyboard, assignable knobs, and foot switch etc. to play music and control the tone generator block via the sequencer block, or to directly control the tone generator block or effect block.

The functions of the assignable knobs can be set in SETUP submode (page 74).

The functions of the foot switch can be set in Utility mode (page 132).

The output destination of the musical data transmitted from the controller block is specified by the Keyboard Track setting (page 27). The musical data is output as specified by the Out Channel setting of the keyboard track, either to one of the parts of the tone generator or to the MIDI OUT connector.

□ Relationship to other blocks

In Pattern mode, Pattern Chain mode and Song mode, the controller block is connected to the various parts of the tone generator and to the MIDI OUT connector via the keyboard track (recording track) of the sequencer block.

Data from the controller block passes from the keyboard track to the parts of the tone generator block and to external MIDI devices in accordance with the Out Channel settings “TO TG,” and “MIDI OUT.”

From the controller block, you can record user phrases or song tracks, or play the tone generator block or external MIDI devices.

- note** • The “keyboard track” is the track which is highlighted in the Pattern Play and Song Play pages.
- The “recording track” is the track which is highlighted in the Recording Standby pages.

6. Effect block

□ About the effect block

This block processes the audio signal that is output from the tone generator block, adding reverberation or ambiance etc.

The RM1x has three types of effect: the reverb effect, the chorus effect, and the variation effect.

Settings for this block can be made in Effect submode (pages 69, 120).

Effect settings for Pattern / Song mode can be made in Effect submode and in Voice submode. In Effect submode, you can store the effect type and other detailed settings of the three effects for each song, allowing you to create the ideal acoustical ambiance for the style / song. In Voice submode, you can store the effect send level settings of the three effects for each part of the style / song.

Reverb effect

The reverb effect is dedicated to reverb. It adds reverberation to the sound.

In Effect submode, you can select one of 11 Effect Types, and modify parameter values to adjust the character of the reverb. Effect submode settings are remembered independently for each style / song.

Chorus effect

The chorus effect is dedicated to chorus. It adds spaciousness and depth to the sound.

In Effect submode, you can select one of 11 Effect Types, and modify parameter values to adjust the character of the chorus. Effect submode settings are remembered independently for each style / song.

Variation effect

The variation effect provides 43 types of effect including reverb and chorus, and also distortion and overdrive etc.

In Effect submode, you can select one of 43 Effect Types, and modify parameter values to adjust the character of the effect. Effect submode settings are remembered independently for each style / song.

System Effects and Insertion Effects

The effects of the effect block are divided into two types of effect: system effects and insertion effects.

On the RM1x, the reverb effect and the chorus effect are system effects, and the variation effect can be set either as a system effect or an insertion effect.

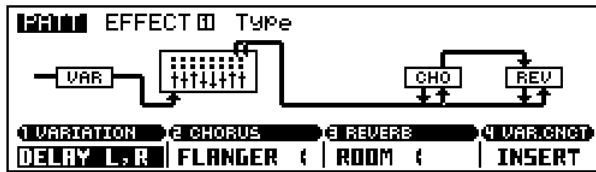
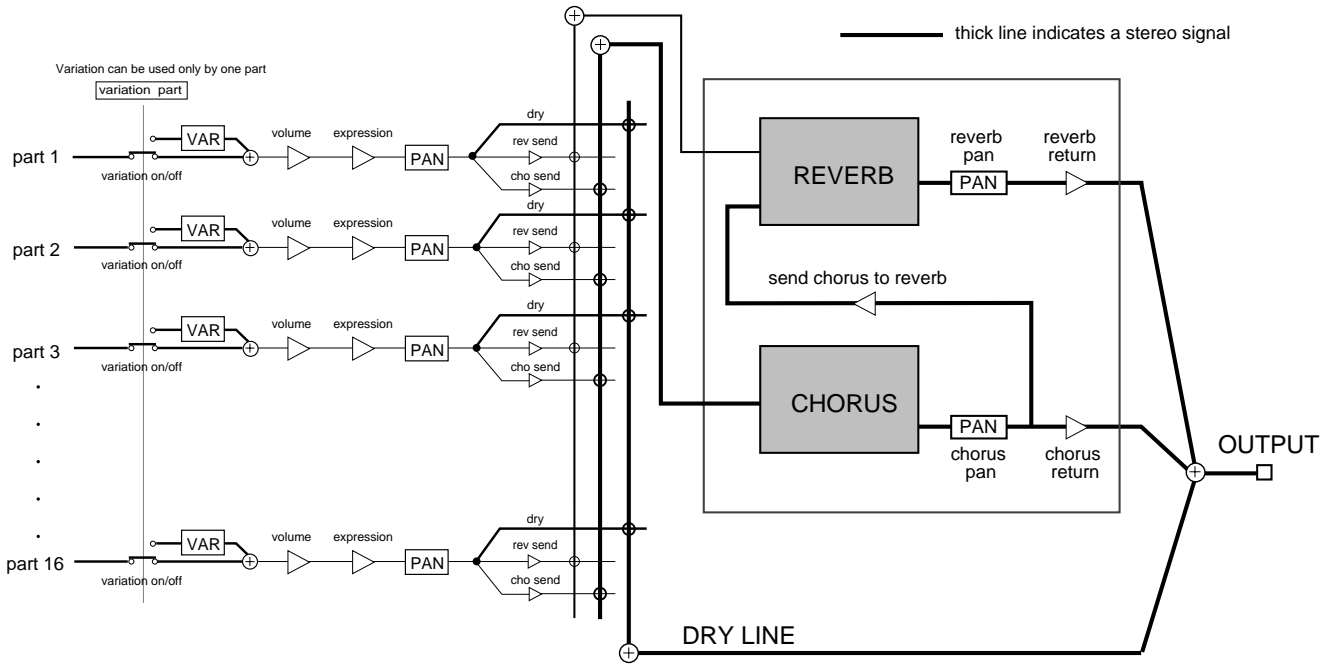
In the case of a system effect, effect processing is performed by using the mixer Send and Return controls to send signals from each tone generator Part to the effect and then return the processed signal to the mixer.

In the case of an insertion effect, the effect is connected in series between the instrument and the mixer, and adjusted using the Dry/Wet Balance. On the RM1x, an insertion effect can be used on any one specified Part.

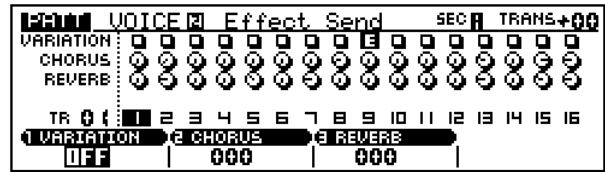
How the effects work

Variation = Insertion

When Variation connection is set to Insertion, the three effects will be connected as shown in the diagram below.



(pages 69, 120)



(pages 64, 120)

Of the 16 parts of the tone generator block, the signals of the part specified by the Voice submode Variation on/off (pages 64, 120) will be input to the variation effect, and the variation effect will be applied here.

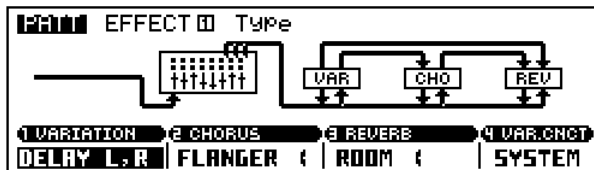
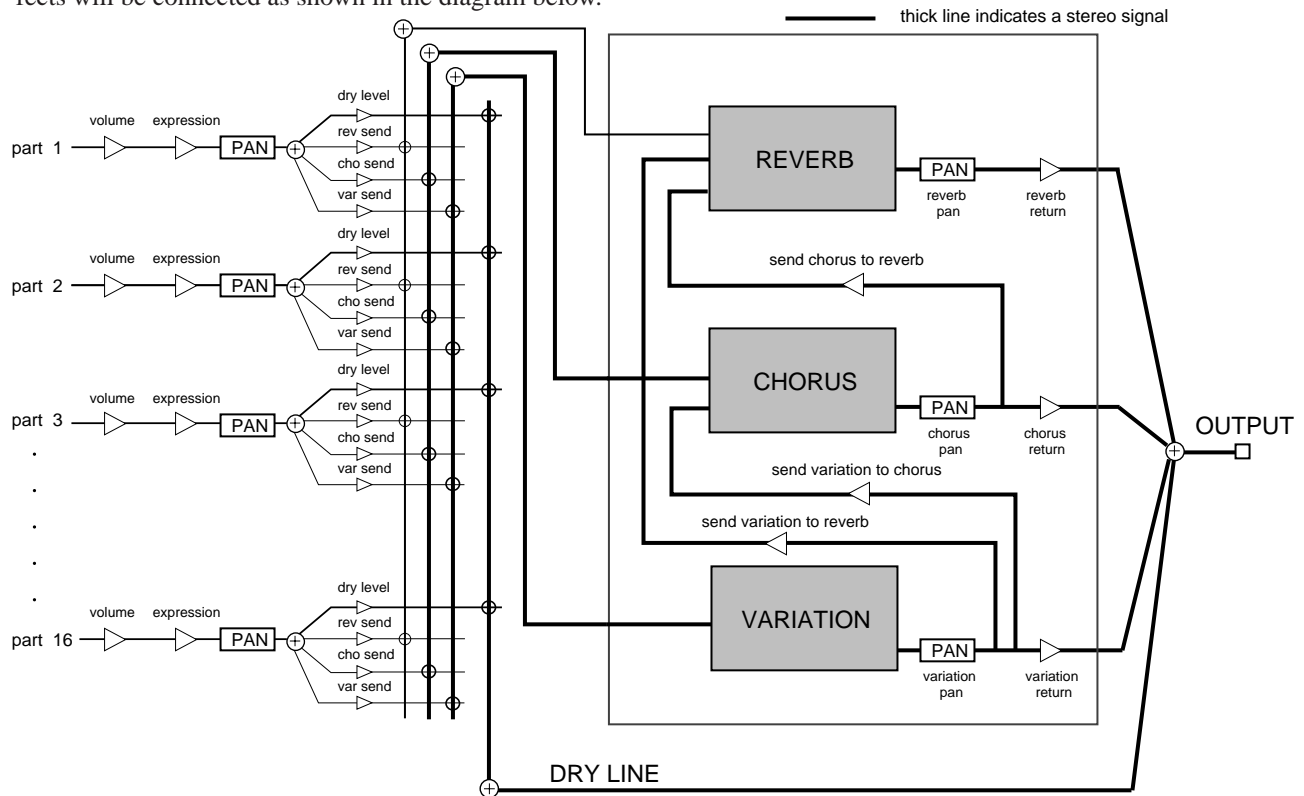
The signals of all tone generator parts including the above-mentioned part will be sent to the reverb effect and the chorus effect according to the Voice submode settings Reverb Send Level (pages 64, 120) and Chorus Send Level (pages 64, 120). Here you can adjust the depth of the effect for each part.

The stereo location of the effect output is determined by the Effect submode settings Reverb Pan (pages 72, 121) and Chorus Pan (pages 71, 121).

A bus line called Send Chorus To Reverb (pages 71, 121) connects the chorus effect to the reverb effect. By using this bus line you can connect the chorus effect and reverb effect in series.

- **Variation = System**

When Variation connection is set to System, the three effects will be connected as shown in the diagram below.



(pages 69, 120)

VOICE	Effect	Send	SEC	TRANS
VARIATION	0	0	0	0
CHORUS	0	0	0	0
REVERB	0	0	0	0
DRY	0	0	0	0
TR	1	2	3	4
VARIATION	CHORUS	REVERB	DRY LEVEL	
000	000	000	127	

(pages 64, 120)

The signals from all tone generator parts will be sent to the reverb effect, chorus effect, and variation effect according to the Voice submode settings Reverb Send Level (pages 64, 120), Chorus Send Level (pages 64, 120), and Variation Send Level (pages 64, 120). Here you can adjust the effect depth for each part.

The stereo location of the effect output is determined by the Effect submode settings Reverb Pan (pages 72, 121), Chorus Pan (pages 71, 121), and Variation Pan (pages 70, 121).

If Variation connection = System, three bus lines will be connected. Send Chorus To Reverb (pages 71, 121) is a bus line that connects the Chorus Effect to the Reverb Effect. Send Variation To Chorus (pages 70, 121) is a bus line that connects the Variation Effect to the Chorus Effect. Send Variation To Reverb (pages 70, 121) is a bus line that connects the Variation Effect to the Reverb Effect. By using these three bus lines, you can use the effects in a variety of ways, such as connecting the three effects in series, or dividing them.

7. About floppy disks

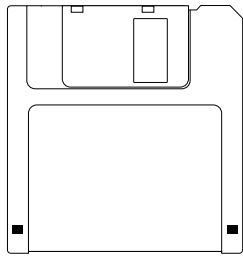
On the RM1x, floppy disks are used to save data that you create, or to exchange data with other devices. This section explains the types of floppy disks that the RM1x can use, and things you should know about floppy disk handling.

Types of floppy disk

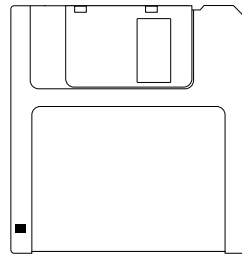
The RM1x can use two types of floppy disk: 3.5 inch 2HD and 3.5 inch 2DD.

Before data files can be stored on a floppy disk, the disk must be formatted (initialized) (page 79).

The RM1x formats 2HD disks to 1.44 MB (megabytes) and 2DD disks to 720 KB (kilobytes) MS-DOS format. (MS-DOS is a registered trademark of Microsoft Corporation.) Since this format is common to computers as well as to Yamaha products and the products of other manufacturers, it allows disk compatibility.



3.5 inch 2HD
1.44 MB

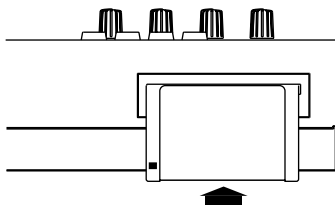


3.5 inch 2DD
720 KB

Inserting a floppy disk

With the label side of the floppy disk facing upward, insert it into the floppy disk drive starting with the end with the shutter.

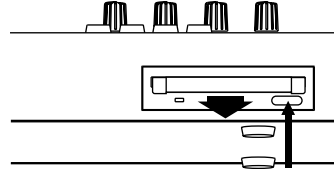
Push the disk gently in until it clicks into place.



Push disk gently in until it clicks into place

Removing a floppy disk

After making sure that the floppy disk drive is not in use, firmly press the eject button, make sure that the floppy disk has been completely ejected, and remove it from the drive.



Press the eject button firmly and accurately, and make sure that the disk is ejected

If the disk catches inside and does not slide out smoothly, firmly press the eject button once again, or re-insert the floppy disk and then press the eject button once again.

While the disk-in-use indicator is lit, data is being transferred between the floppy disk and the RM1x. While the disk-in-use indicator is lit, never turn off the power or attempt to remove the floppy disk.

Doing so could damage not only the floppy disk but also the floppy disk drive.

Regular cleaning of the disk drive heads

Floppy disk drives contain a high-precision magnetic head. When a floppy disk drive is used for an extended period, the heads will become soiled by magnetic particles from the floppy disk. This will increase the chance of errors occurring when data is read or written.

In order to keep the floppy disk drive in good condition, we recommend that you clean the heads regularly (once a month).

Floppy disk handling and storage

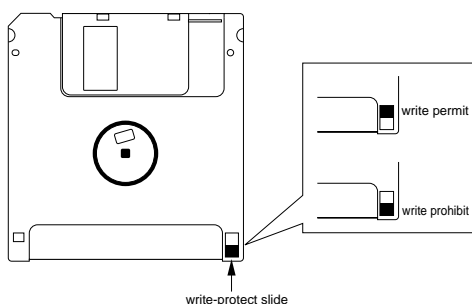
Floppy disks should not be placed in locations of direct sunlight or temperature extremes, or in excessively damp or dusty locations.

Do not allow floppy disks to come near objects that have a strong magnetic field, such as televisions or speakers.

Before turning off the power, remove the floppy disk from the disk drive. Leaving a floppy disk in the drive for a long period with the power turned off can cause the disk to become dirty, producing read/write errors.

□ Preventing accidental erasure

Floppy disks have a write-protect slide which can be used to prevent accidental erasure of data. On floppy disks which contain important data, move the write-protect slide to the write-protect position (the window open) so that data cannot be written to the disk.



□ Data backup

The data on a floppy disk can be damaged by unforeseen accidents. If you have especially important data that you wish to keep, we suggest that you take the time to make a backup copy.

□ Types of file used by the RM1x

All data

These files handle all data of the RM1x's internal memory as a single file.

All data includes the following data.

Songs	20
Styles (User)	50
System Setup	1

Song data includes the musical data for songs 01 - 20 of Song mode, the Voice submode and Effect submode settings for each song, and the Song mode Play FX and Out Channel settings.

Style data includes data for the eight Patterns of each Style (50 × 16 = 800), and 99 User Phrases for each Style (50 × 99 = 4950). The data for each Pattern includes Play Effect, Pattern Voice, and Pattern Effect settings in addition to the musical data.

System Setup contains the settings of Utility mode.

Style (User)

Style files contain all the data included in a style (16 sections and 256 user phrases) of Pattern mode.

Style files include the following data.

- Musical data recorded in the Style
- Play FX settings
- Out Channel settings
- Voice submode settings
- Effect submode settings

Song

Song files contain all the data included in one song of Song mode.

Song files include the following data.

- Musical data recorded in the song
- Play FX settings
- Out Channel settings
- Voice submode settings
- Effect submode settings

SMF

SMF (Standard MIDI File) is defined as a suggested format for MIDI musical data, and is a sequencer data format used by many musical instrument manufacturers and computer software companies. Devices that are Standard MIDI File compatible can exchange sequence data via floppy disk, etc.

SMF handles one Song or one Section (style) as a single file. Play FX, Out Channel, Voice submode and Effect submode settings are not included in an SMF file.

SMF+TG Header

When saving a pattern / song in this format, 1 or 2 setup measures will be added to the beginning of the musical data. Program Change, Volume, Pan, Reverb Send Level, Chorus Send Level, Variation Send Level, and Pitch Bend Sensitivity will be inserted in the form of MIDI data into these setup measures.

When a file saved with a TG header is loaded and then saved once again with the TG Header setting, tone generator setup data will again be inserted at the beginning of the pattern / song, resulting in duplicate data. For this reason, before saving the data for the second time, you should use the Pattern / Song job Delete Measure to delete the previous setup measures that were added.

When a file saved with a TG header is loaded and played back, the tempo may lag slightly during measure 1. However this will have no effect on the playback of the original portion of the song data.

When a file saved with a TG header is loaded and played back, all settings of Voice submode will be ignored. If you wish to keep the Voice submode settings, use the Pattern / Song job Delete Measure to delete the setup measures that were added.

□ Data filename extensions

When the above-mentioned five types of data are saved by the RM1x, a filename extension (three characters indicating the type of file) will be automatically added to the name of the file as follows.

1. All Data .R1A
2. Style .R1P
3. Song .R1S
4. SMF .MID

MEMO

A large area of the page is filled with a light gray dotted grid, intended for taking notes or writing a memo.

Chapter 2. PATTERN MODE

The PATTERN mode provides 60 preset styles - including rhythms, beats, and instrumental parts - covering virtually the entire spectrum of dance and contemporary music!

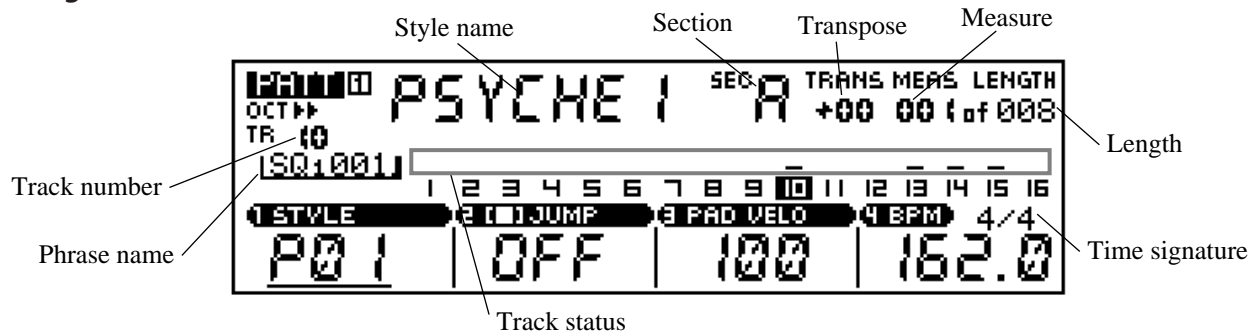
The PATTERN mode lets you record up to 50 original user styles which can be used in the same way as the preset styles.

This chapter explains all the PATTERN mode operations.

1. PATTERN Playback	46
2. Recording	49
3. Groove	55
4. Play FX	57
5. MIDI delay	60
6. Arpeggio	62
7. Voice	63
8. Voice Edit	65
9. Effect	69
10. Setup	73
11. Disk	76
12. Job	80
13. Edit	99
14. Split	108

1. PATTERN Playback

□ Playback



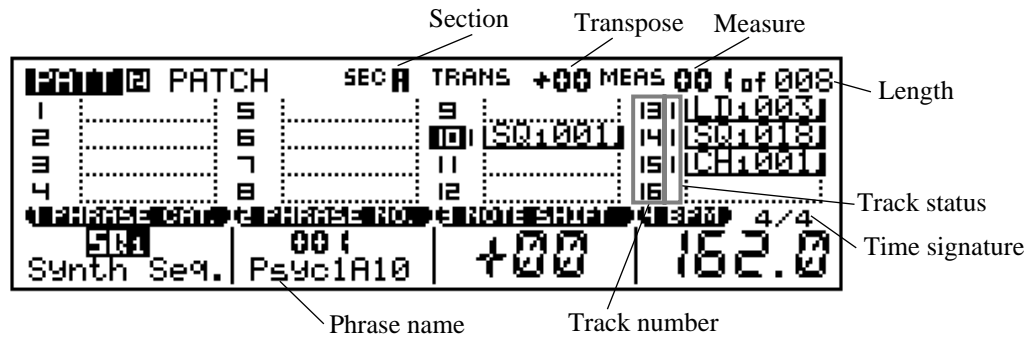
Parameter	Values	Function
① Style number / name	P01 ... P60, U01 ... U50	Selects the style.
② Jump	OFF, 001 ... 256	Specifies the measure the RM1x will “jump” to when the STOP <input type="checkbox"/> button is pressed. When “OFF” the playback locations remains where it is when playback is stopped. To specify the current measure, press the STOP <input type="checkbox"/> button while holding the [SHIFT] button.
③ Keypad velocity	001 ... 127, RND1 ... RND4	Specifies the note velocity value for the RM1x keyboard. Higher values produce louder sound. There are also four “random velocity” settings which produce different degrees of random velocity variation. “RND1” produces the smallest variation and “RND4” produces the greatest variation.
④ BPM	25 ... 300	Sets tempo for pattern playback.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.
Measure		Sets playback start location; or shows current playback location.
Length		Shows total length of pattern.
Time Signature	1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4	Sets the pattern’s time signature.
Section	A ... P	Shows the current selected section. Section selection can be accomplished by the keyboard method described on page 28.
Track status	M, S	Indicates track SOLO or track MUTE. The highlighted track number indicates the currently selected track.
Phrase name		Indicates the currently selected phrase.

* For information about how to change values, refer to the Basic Operation (page26).

To select a style and play a pattern

- ① Make sure the PATTERN mode is selected (if necessary, press the MODE [PATTERN] button). “PATT 1” should appear in the upper left-hand corner of the LCD display.
- ② Use display knob 1 to select a style (P01 ... P60 are preset styles. U01 ...U50 are user styles).
- ③ Select a section via the keyboard as described on page 28.
- ④ Press PLAY to start playback.
The PLAY button indicator will flash at the current BPM rate, the velocity bars above active tracks will indicate playback level in the corresponding tracks, and the MEAS parameter will indicate the current measure during playback.
- ⑤ Change sections or other parameters as required during playback.
In the PATTERN mode the current section will continue to “loop” until another section is selected or playback is stopped.
- ⑥ Press STOP to stop playback when done.

Patch



Parameter	Values	Function
① Phrase category		Selects the phrase category.
② Phrase number		Selects the phrase number.
③ Note shift	-99 ... +99	Shifts the pitch of the currently selected phrase by the specified number of semitones.
④ BPM	25 ... 300	Sets tempo for pattern playback.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.
Measure		Sets playback start location; or shows current playback location.
Length		Shows total length of pattern.
Time Signature	1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4	Sets the pattern's time signature.
Section	A ... P	Shows the current selected section. Section selection can be accomplished by the keyboard method described on page 28.
Track status	M, S	Indicates track SOLO or track MUTE. The highlighted track number indicates the currently selected track.
Phrase name		Indicates the currently selected phrase.

* For information about how to change values, refer to the Basic Operation (page 26).

You can use this screen to create a pattern (by arranging phrases onto the 16 pattern tracks), or to select and replay an existing pattern.

To create a pattern

- ① After selecting the style you want to work on in the PATTERN mode, use the MODE [PATTERN] button to select the PATCH mode. "PATT 2 PATCH" should appear in the upper left-hand corner of the LCD display.
- ② Select the section you want to program via the keyboard as described on page 28.
- ③ Set the length of the section via the Length parameter.
- ④ Press the PLAY button to start playback if you want to monitor the sound of the pattern as you work on it. The PLAY button indicator will flash at the current BPM rate, the velocity bars next to active tracks will indicate playback level in the corresponding tracks, and the MEAS parameter will indicate the current measure during playback.
- ⑤ Select the track to which you want to assign a phrase via the keyboard as described on page 27. The corresponding track number will be highlighted on the display.
- ⑥ Use display knobs 1 and 2 to select the category and number of the phrase you want to assign to the current track, respectively (phrase titles are composed of two parts: a category abbreviation on the left, and a number on the right).
- ⑦ Continue selecting tracks and assigning phrases until your pattern is complete.
- ⑧ Press STOP to stop playback when done.

Please note that the right edge of the “frame” surrounding the phrase names in the PATCH mode display indicates whether the length of the phrase is less than or equal to that of the pattern, or whether it is longer than that of the pattern.

Phrase length less than or equal to pattern length.

PATTERN PATCH		SEC	TRANS	+00	MEAS	00 (of 002
1		5	9		13	
2		6	10		14	FX1001
3		7	11		15	
4		8	12		16	

FX1	001	+00	120.0
Synth Efx	Psyc1G12		

Phrase length greater than pattern length.

PATTERN PATCH		SEC	TRANS	+00	MEAS	00 (of 004
1		5	9		13	
2		6	10		14	FX1001
3		7	11		15	
4		8	12		16	

FX1	001	+00	120.0
Synth Efx	Ps9c1G12		

2. Recording

Although the RM1x comes equipped with many preset phrases, it also allows you to record your own user phrases. You use the Phrase Recording submode to make these recordings.

The RM1x offers two general recording methods: realtime recording and step recording.

With realtime recording, the RM1x operates as a tape recorder, recording the performance data as it is played. This allows you to catch all the nuances of an actual performance.

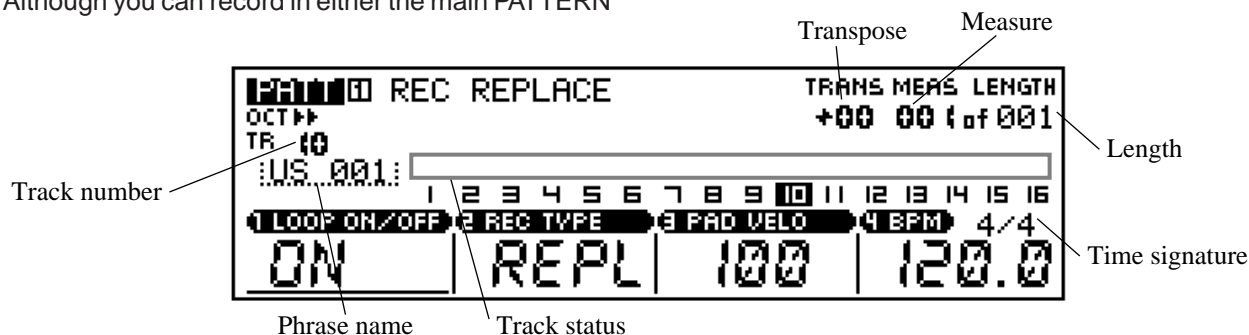
With step recording, you input the phrase one note at a time, almost as if you were writing the notes down on a music sheet. This allows you to create complex phrases without having to play them in real time at the keyboard.

Preparing to Record

- ❶ Go to the VOICE submode and assign the voice(s) you want to use to the track(s) you intend to record, as described on page 63.
- ❷ Return to the PATTERN mode. Although you can record in either the main PATTERN

or PATCH mode, you will need to start from the PATTERN mode in order to select the style to be recorded and the recording mode (REPLACE, OVERDUB, STEP, or GRID — described separately below).

- ❸ Use display knob 1 to select the style you want to record to (only user styles — U01 ... U50 — are recordable).
- ❹ Use the Length parameter to specify the length of the phrase you intend to record, and the time signature parameter to select the desired time signature. These changes can only be made for “empty” patterns (patterns can be cleared by using the Clear Pattern job — page 98).
- ❺ Press REC to engage the record standby mode. The red REC button indicator will light and the PATTERN mode display will appear as shown below.
- ❻ Use display knob 2 to select the record mode you intend to use (“REPL” = REPLACE, “OVER” = OVERDUB, “STEP” = STEP, and “GRID” = GRID). At this point you can also use display knob 1 to determine whether the pattern will loop or not during recording.



	Parameter	Values	Function
🔊 ❶	Loop on/off	ON, OFF	Determines whether or not the pattern will loop during recording.
🔊 ❷	Recording type	Replace (Realtime) Overdub (Realtime) Step (Step) Grid (Step)	Selects the recording method.
🔊 ❸	Keypad velocity	001 ... 127, RND1 ... 4	Specifies the note velocity value for the RM1x keyboard. Higher values produce louder sound. There are also four “random velocity” settings which produce different degrees of random velocity variation. “RND1” produces the smallest variation and “RND4” produces the greatest variation.
🔊 ❹	BPM	25 ... 300	Sets tempo for pattern playback.
	Track number	01 ... 16	Shows the current selected section. Section selection can be accomplished by the keyboard method described on page 27.
	Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.
	Measure		Sets recording start location; or shows current recording location.
	Length		Sets phrase length, in measures.
	Time Signature	1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4	Sets the pattern’s time signature.
	Track status		The highlighted track number indicates the currently selected track.
	Phrase name		Indicates the currently selected phrase.

* For information about how to change values, refer to the Basic Operation (page 26).

Recording type

The PATTERN mode offers four different phrase recording types: two realtime types and two step types.

The REPLACE type records performance data in real time, overwriting any data already present in the destination user phrase. The new data replaces the previous data. This is the type to use when you wish to redo a phrase that you are not satisfied with or that you no longer need. (page 51)

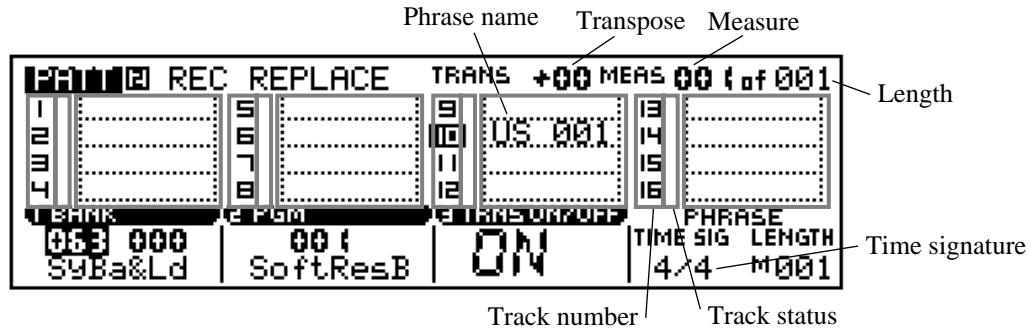
The OVERDUB type - the second realtime type - records onto the selected phrase while leaving its previous data in place. This is the method to use when you need to create a complex, multilayer phrase. (page 51)

The STEP type lets you compose your performance by “writing” it down one event at a time. This is a non-realtime,

step recording method - similar to the process of writing musical notations onto music paper. This method supports “overdubbing,” since events are not removed unless you explicitly erase them. (page 52)

The GRID type lets you record 1-measure phrases by entering notes on a 16th-note “grid” formed by the white keys of the RM1x keyboard. The pitch, gate time, and velocity of each note entered can be set via the display knobs. (page 54)

If the style to be recorded and recording mode have already been selected in the PATTERN mode, you can engage the record ready mode directly from the PATCH display. In this case the PATCH display will appear as shown below.



Parameter	Values	Function
Bank MSB / LSB		Selects the voice to be used for playing the phrase. Refer to the separate List Book.
Program number		Selects the voice to be used for playing the phrase. Refer to the separate List Book.
Transpose on/off		Turns transposition on or off.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.
Measure		Sets recording start location; or shows current recording location.
Length	001 ... 256	Indicates phrase length, in measures.
Time Signature	1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4	Indicates the pattern's time signature.
Track status	M, S	Indicates track SOLO or track MUTE. The highlighted track number indicates the currently selected track.
Phrase name		Indicates the currently selected phrase. You select the number at the PATCH screen. (page 47) You can use the Phrase Name pattern job to assign the phrase an arbitrary phrase name. (page 95)

* For information about how to change values, refer to the Basic Operation (page 26).

▣ Realtime Recording (Replace, Overdub)

You use this recording method when you want to input your phrase in real time. You can input the phrase directly either at the microkeyboard, or else through a remote MIDI keyboard or other such MIDI device. Or you can record (copy) a phrase from a computer or from another sequencer.

The PATTERN mode offers two realtime phrase recording methods: REPLACE and OVERDUB.

You use the REPLACE method when you want to create a entirely new phrase or overwrite an existing phrase. This method erases any data already existing in the selected phrase.

You use OVERDUB when you want to overdub new data onto the phrase's existing data. This allows you to build up a complex, multilayered phrases.

- ❶ After completing the "Preparing to Record" procedure described above, select the track to record via the RM1x keyboard as described on page 27.
- ❷ Set the BPM to the value you want to record at. It's sometimes easier to set a slow tempo for realtime recording, so you have plenty of time to enter the data.
- ❸ Press the PLAY button to begin recording. The metronome will sound and you'll be given a one-measure count-in prior to the first measure actually recorded. The count-in is also indicated by negative numbers in the "MEAS" parameter. Play the required part either on the RM1x keyboard or via an external MIDI keyboard.
- ❹ Press the STOP button when you're ready to stop recording. The normal PATTERN play mode is automatically re-selected when you stop recording, and you'll automatically be returned to the top (first measure) of the pattern.
- ❺ Repeat steps 1 through 4 to record other tracks, as required.
If you input an incorrect note, you can remove it on a subsequent round by holding down the [SHIFT] button together with the same note key - hold both of these keys down as the recording passes the point where the original (bad) note was entered.

note

- You can use pattern job 00 (Undo/Redo) to cancel a recording that you have just made. This allows you to recover data that you have inadvertently over-recorded. (page 82)
- Remember to set other appropriate parameters (such as BPM, click beat, click mode, and recording count; see page 133) before beginning the recording.
- If you want true recording of velocity values, enter the data from a remote MIDI keyboard.

Step Recording

You use this recording mode to create a recording one note at a time, setting appropriate values for each note's length, velocity, and so on.

When EVENT TYPE = Note:

Labels: Track number, Pointer, Event type, Time signature.

When EVENT TYPE = PB:




Labels: Track number, Pointer, Event type, Time signature.

When EVENT TYPE = CC:

Labels: Track number, Pointer, Event type, Time signature.

Parameter	Values	Function
① Pointer		Current note position.
② Step	0060, 0080, 0120, 0160, 0240, 0320, 0480, 0960, 1920	The "size" of the current recording step. This determines to what position the pointer will advance after a note has been entered.
③ Keypad velocity	001 ... 127, RND1 ... 4	The velocity value of the note to be entered
④ Value	-8192 ... +8191 (EVENT TYPE=PB), 000 ... 127 (EVENT TYPE=CC), PAD	Specifies the value for event types other than "Note." This parameter only appears when an EVENT TYPE other than "Note" is selected. Press the [ENTER] button to actually enter the specified value.
⑤ Gate time	001 ... 200	The length of the entered note. Used to produce legato, staccato, and other effects.
<input type="checkbox"/> F1 Rest		Enters a rest of the currently selected note length at the note pointer position.
<input type="checkbox"/> F2 Tie		Lengthens the previously entered note by "tying" another note of the same length and pitch to it.
<input type="checkbox"/> F3 Delete		Deletes the note or chord at the note pointer.
<input type="checkbox"/> F4 BkDelete		Moves the note pointer backward by the currently selected note length and deletes the corresponding note or chord.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Event type	Note, PB, CC[000] ... CC[119]	Specifies the type of event to be entered.
Time Signature	1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4	Indicates the pattern's time signature.

* For information about how to change values, refer to the Basic Operation (page26).

- ❶ After completing the “Preparing to Record” procedure described above, select the track to record via the RM1x keyboard as described on page 27.
- ❷ Press the PLAY  button to begin recording. The STEP record display shown above will appear.
- ❸ Use the display knobs to set the STEP, PAD VELO, and GATE TIME parameters as required.
- ❹ Enter a note.
Once the note parameters have been specified, the note can be entered simply by playing the appropriate key on the RM1x keyboard (or on your external MIDI keyboard). A dot corresponding to the entered note will appear on the note display and the note pointer will advance to the next note position. Chords can be entered simply by moving the note pointer back to a note and entering another note at the same location (this can be repeated as many times as necessary). See “Moving Around In the Note Display”, below.
During STEP recording you can press the PLAY  button to start playback and monitor the material being recorded.
- ❺ Repeat steps 3 and 4 until the current track is complete, then press STOP  to stop recording.

- note** • Under step recording, note registration occurs when you release the key(s), rather than when you press them. This makes it easy to enter a block chord: you can pick out the notes one by one and then release them all at the same time.

The Note Display

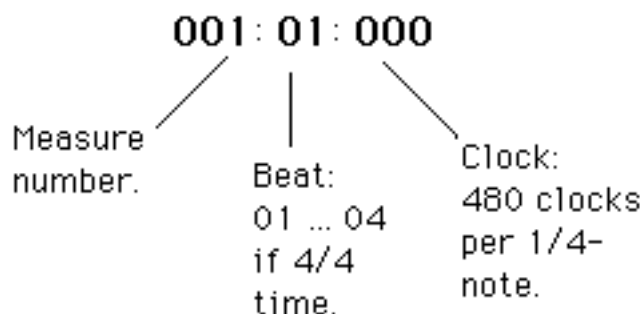
The note display shows up to four 1/4-notes worth of data at once (that’s one measure in 4/4 time). Each triangle on the display equals a 32nd-note step. If the selected time signature results in more than four 1/4 notes per measure, then the display will scroll to show the extra notes.

Moving Around In the Note Display

Use Display Knob 1 to move the note pointer to any position at which you want to enter a note, or to any note that you want to delete. You will actually hear the appropriate note or chord when the note pointer is moved to an existing note symbol. When you move the note pointer past the end of the note display, the next measure will appear. If you move past the last measure in the phrase, the first measure of the phrase will appear.

The Numeric POINTER Display

The POINTER area of the step record display shows the current position of the note pointer in measures, 1/4-note beats, and clocks (there are 480 clocks per 1/4 note). If you’re not sure what measure you’re seeing on the note display while recording, check the POINTER display.



PAD Entry of Non-note Values

When an event type other than “Note” is selected during step recording, values can be entered via the RM1x keyboard when the VALUE parameter is set to PAD.

• PB Events

When the Pitch Bend (PB) event type is selected and the VALUE parameter is set to PAD, the full -8192 ... +8191 parameter range is assigned to the RM1x keyboard.

While holding the [OCT UP] button, pressing the leftmost key enters the value “±0000,” and each key to the right increases the value by approximately 341 per semitone. The rightmost key enters “+8191.”

While holding the [OCT DOWN] button, pressing the rightmost key enters the value “±0000,” and each key to the left decreases the value by approximately 341 per semitone. The leftmost key enters “-8192.”

The keyboard can be used without holding the [OCT UP] or [OCT DOWN] button, but in this case the center key produces a value of “±0000” while keys to the left and right decrease and increase the value by approximately 341 per semitone, respectively. The leftmost key enters “-4096” while the rightmost key enters “+4096.”

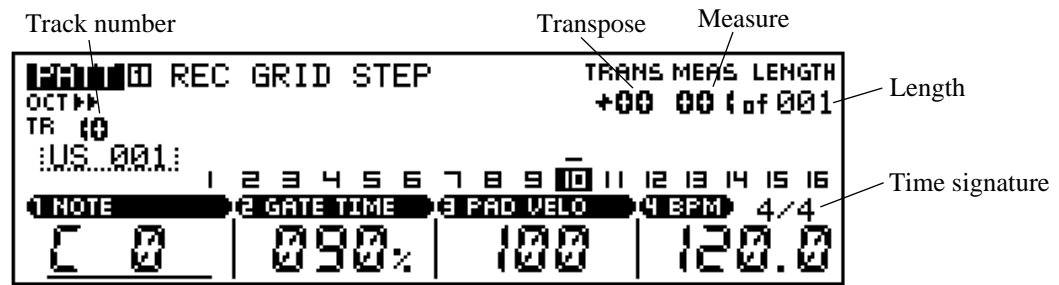
• CC Events

When the Control Change (CC) event type is selected and the VALUE parameter is set to PAD, the full 000 ... 127 parameter range is assigned to the RM1x keyboard.

The leftmost key enters a value of “000,” and each key to the right increases the value by 5 or 6 per semitone. The rightmost key enters “127.”

Step Recording (Grid)

The GRID recording mode allows for fast, easy recording of one-measure phrases via a 16th-note “grid” formed by the white keys on the RM1x keyboard.



Parameter	Values	Function
1 Note	C-2 ... G8	Specifies the pitch of the note to be entered.
2 Gate time	001% ... 999%	The length of the entered note. Used to produce legato, staccato, and other effects.
3 Keypad velocity	001 ... 127, RND1 ... RND4	The velocity value of the note to be entered.
4 BPM	025 ... 300	Sets the BPM rate at which the pattern will play during recording.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.
Measure		Indicates playback start location; or shows current playback location.
Length		Indicates phrase length, in measures.
Time Signature	1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4	Indicates the pattern's time signature.

* For information about how to change values, refer to the Basic Operation (page 26).

- 1 After completing the “Preparing to Record” procedure described above, select the track to record via the RM1x keyboard as described on page 27.
- 2 Press the PLAY button to begin recording. The GRID record display shown above will appear.
- 3 Use the Display Knobs to set the NOTE (pitch), GATE TIME, and PAD VELO parameters as required. The NOTE parameter can also be set by pressing the appropriate key on the RM1x keyboard while holding the [SHIFT] button.
- 4 Enter a note.
Once the note parameters have been specified, notes can be entered at any 16th-note position within the 1-measure pattern simply by pressing the appropriate white key on the RM1x keyboard. Each of the

16 white keys corresponds to a 16th note. When a note is entered on the grid the corresponding key LED will light. Notes can be “erased” simply by pressing the appropriate white key a second time so that its indicator goes out. Only notes with the currently specified pitch will be indicated by the key LEDs. Chords can be entered simply by entering another note with a different pitch at the same location. If an odd time signature such as 5/4 is specified, the [OCT DOWN] and [OCT UP] buttons can be used to shift the grid so that the extra note positions can be accessed.

During GRID recording you can press the PLAY button to start playback and monitor the material being recorded.

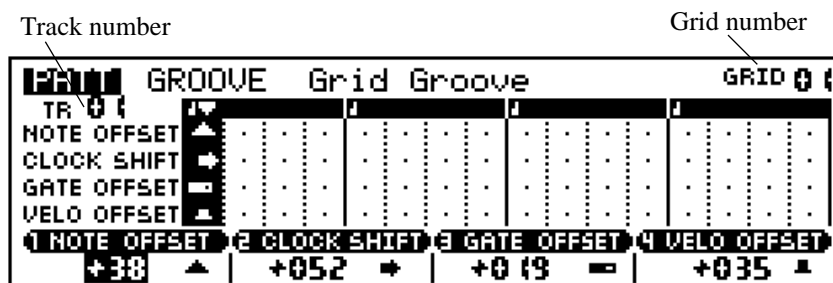
- 5 Repeat steps 3 and 4 until the current track is complete, then press STOP to stop recording.

3. Groove

Grid Groove

The RM1x Grid Groove function makes it possible to adjust the pitch, timing, length, and velocity of notes in a specified track via a 1-measure 16th-note grid to create “grooves” that would not be possible with precise sequencer-like programming. The Grid Groove function affects pattern and arpeggio playback without actually changing the sequence data. The Grid Groove settings will be individually retained in memory for each user style, but when applied to a preset style the Grid Groove settings will be lost as soon as a different style is selected.

- note** • When the GRID GROOVE display is showing, playing the RM1x keyboard produces no sound and solo track assignments cannot be changed.



	Parameter	Values	Function
1	Note offset	-99 ... 00 ... +99	Raises or lowers the pitch of the selected note(s) in cent increments.
2	Clock shift	-120 ... 000 ... +120	Shifts the timing of the selected note(s) forward or back ward in clock increments.
3	Gate offset	-120 ... 000 ... +120	Lengthens or shortens the selected note(s).
4	Velocity offset	-127 ... 00 ... +127	Increases or decreases the velocity of the selected note(s).
	Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
	Grid number	-36 ... +36	Shows the grid number.

* For information about how to change values, refer to the Basic Operation (page26).

- From the PATTERN or PATCH mode press the SUBMODE [GROOVE] button to go to the Grid Groove display.
- Press the PLAY button to start pattern playback if you want to monitor pattern playback while setting up the groove.
- Select the track you want to work on via the RM1x keyboard as described on page 27.
- Use the white keys on the RM1x keyboard to select the note position you want to adjust. The GRID parameter in the upper right corner of the display can also be used to select note positions. Selected note positions will be highlighted on the grid in the LCD display, and the indicators on the corresponding keys of the keyboard will light. Each white key corresponds to a 16th note location in the 1-measure groove.

Pressing the same key toggles the corresponding note position on and off. You can also select a single note position and de-select all others at the same time by pressing a white key while holding the [SHIFT] button.

- Adjust the groove parameters as required for the selected note positions using the NOTE OFFSET, CLOCK SHIFT, GATE OFFSET, and VELO OFFSET knobs. Icons indicating that offset has been applied will appear in the appropriate locations. The icons also indicate the direction of offset and roughly the degree of offset applied. If the pattern is longer than 1 measure, the groove settings will apply in the same way to each measure of the pattern.

- note** • When the pattern to which Grid Groove is applied has a time signature which is longer than 4 beats (e.g. 6/4, 12/8), the 5th beat is affected in the same way as the 1st beat on the Grid Groove display, the 6th beat corresponds to the 2nd beat on the display, and so on.

Recording the Grid Groove Settings

The grid groove settings can actually be merged into the sequence data as follows.

- ❶ Make the Grid Groove settings as described above.
- ❷ Press the [PATTERN] button to go to the Pattern playback mode.
- ❸ Press the REC button to engage the record standby mode.
- ❹ Set the REC TYPE parameter to “OVERDUB.”
- ❺ Press the PLAY button to begin recording. You don’t actually need to record any new data; the grid groove setting will automatically be recorded.
- ❻ Press the STOP button to stop recording after the pattern has played through once. The Grid Groove settings will automatically be initialized when recording is stopped.

4. Play FX

The PLAY FX submode lets you adjust a number of pattern playback parameters to change the sound and feel of the pattern without affecting the actual sequence data. The PLAY FX settings affect both pattern and arpeggio playback. In addition to timing and articulation parameters such as beat stretch, clock shift, gate time, and velocity offset, the PLAY FX submode includes a Harmonize feature which allows unison harmony, octave harmony, and the addition of parallel harmony for even further sonic flexibility.

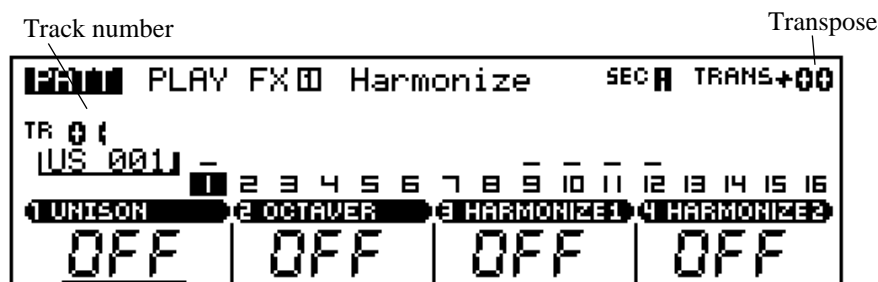
Each style stores its own PLAY FX settings. When you change to a different style, the new style's settings automatically become effective. Note that the PLAY FX settings apply to all 16 sections within the style.

You can continue to replay the selected pattern while working in the PLAY FX submode. The Sequencer buttons (▶, ◻, ◀, ◀ / ▶) continue to operate. This means that you can monitor the results of your changes as you make them.

◻ Harmonize

The Harmonize feature adds considerable flexibility to the RM1x play effects by allowing unison harmonization to create deliberate out-of-phase effects, octave harmony, and the addition of 2 parallel harmony lines.

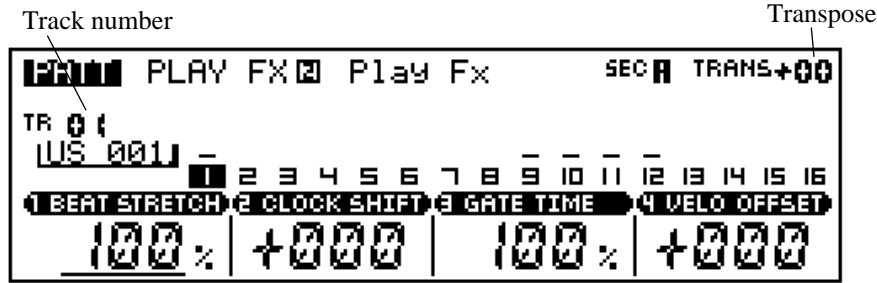
The Harmonize settings will be individually retained in memory for each user style, but when applied to a preset style the Harmonize settings will be lost as soon as a different style is selected.



Parameter	Values	Function
① Unison	OFF, x2 ... x8	Specifies the number of unison notes to be played (at the same pitch). This can be used to thicken the sound and produce deliberate out-of-phase effects.
② Octaver	-10 ... OFF ... +10	Produces an octave harmony line the specified number of octaves above or below the original notes.
③ Harmonize 1	-99 ... OFF ... +99	Produces a parallel harmony line the specified number of semitones above or below the original notes.
④ Harmonize 2	-99 ... OFF ... +99	Produces a parallel harmony line the specified number of semitones above or below the original notes.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

* For information about how to change values, refer to the Basic Operation (page26).

□ Play Fx



Parameter	Values	Function
1 Beat stretch	25%, 33%, 50%, 66%, 75%, 100%, 125%, 150%, 200%, 300%, 400%	Proportionally adjusts playback length of phrases on track. If the meter is set to 4/4, for example, then setting the scale time to 50% compresses the meter to 2/4, while setting it to 75% compresses the meter to 3/4. A 150% scale time expands the meter to 6/4; a 200% time expands it to 8/4. Note timing also changes accordingly. At 50% scale, a quarter note in the original phrase converts into an eighth note; at 66%, into a quarter-note triplet; at 75%, into a dotted eighth; at 150%, into a dotted quarter; at 200%, into a half note. This scaling feature makes it easy to set up complex rhythms within your patterns.
2 Clock shift	-480 ... 0 ... +480	Shifts playback timing, in clock-cycle increments. See below for detail.
3 Gate time	000% ... 100% ... 200%	Gate-time modifier, used to adjust the original gate times. See below for detail.
4 Velocity offset	-127 ... 0 ... 127	Offset value, applied to the original velocities. See below for detail.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

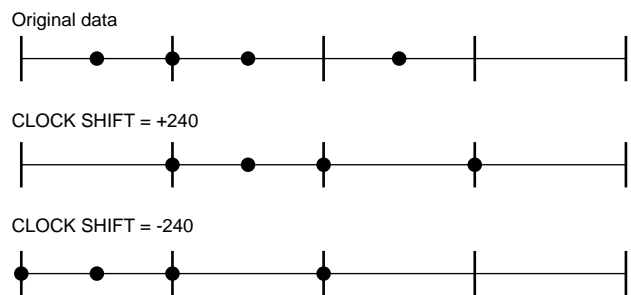
* For information about how to change values, refer to the Basic Operation (page26).

Clock shift

You use this parameter to shift the playback timing by a specified number of clock cycles.

On the RM1x, one clock cycle is equivalent to 1/480 quarter note.

A negative value shifts the timing backward (toward the beginning of the song), while a positive value shifts the timing forward. A setting of +480, for example, will effectively delay the playback timing by one beat.



- note**
- It is not possible to shift the playback timing backwards past the song's original start point. If you set the value to -300, for instance, all song data in the first 300 clock cycles of the recording will be shifted back exactly to the start point.

Gate time

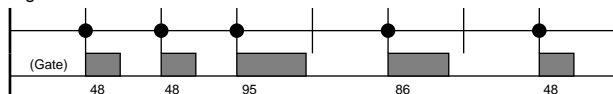
This value adjusts the gate times of the notes on the track. Adjustment is made by multiplying the original gate time by the modifier value (percentage).

The gate time denotes the length of time that a note is held. For non-percussive voices, the gate time is equal to the actual playback time span.

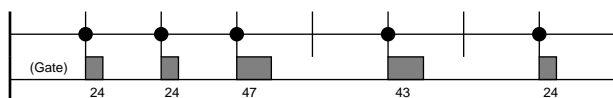
If you set this value to 100%, the original gate times will be used. Setting the value below 100% will lower the gate times, while higher values will increase them.

If an adjusted gate-time value is less than 1, the RM1x will use a value of 1.

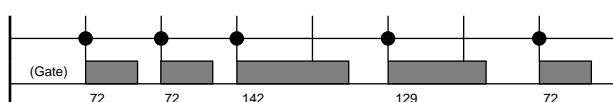
Original data



Gate time modifier = 50%



Gate-time modifier = 150%

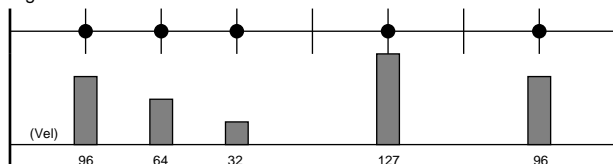


Velocity offset

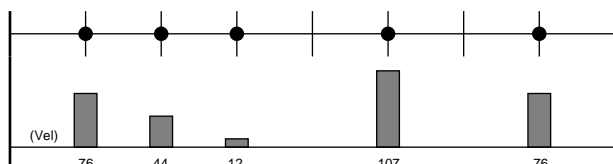
You use this parameter to apply an offset to the track's velocity values.

Positive values increase the playback velocity, while negative values decrease it.

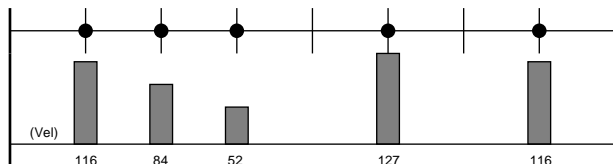
Original data



VELOCITY OFFSET = -20



VELOCITY OFFSET = +20



Recording the PLAY FX Settings

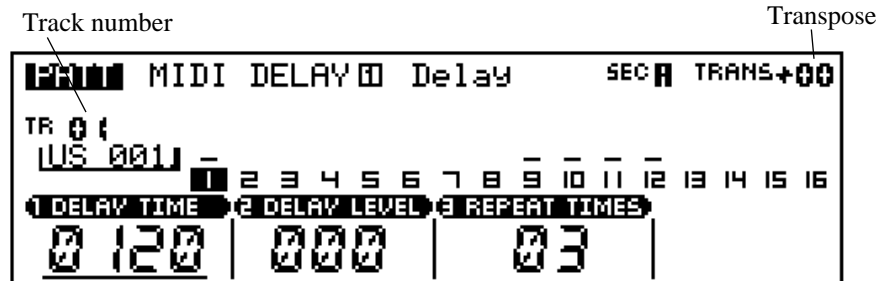
The grid groove settings can actually be merged into the sequence data as follows.

- ❶ Make the PLAY FX settings as described above.
- ❷ Press the [PATTERN] button to go to the Pattern playback mode.
- ❸ Press the REC button to engage the record standby mode.
- ❹ Set the REC TYPE parameter to "OVERDUB."
- ❺ Press the PLAY button to begin recording. You don't actually need to record any new data; the grid groove setting will automatically be recorded.
- ❻ Press the STOP button to stop recording after the pattern has played through once. The PLAY FX settings will automatically be initialized when recording is stopped.

5. MIDI delay

MIDI Delay submode creates delay effects that can sound much the same as those created by conventional delay effect units, but the delays are created by manipulating the MIDI note data rather than the audio signal.

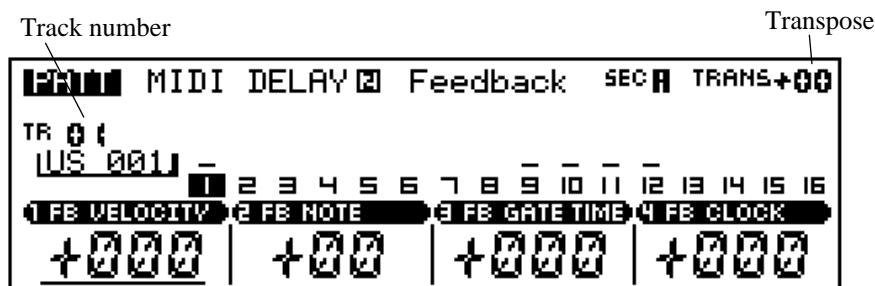
□ Delay



Parameter	Values	Function
① Delay time	0030, 0040, 0060, 0080, 0120, 0160, 0240, 0320, 0360, 0480, 0720, 0960, 1920 (0030 ... 1920)	Specifies the length of the delay. Please note that the values do not change continuously when using Display Knob 1. The delay time can be adjusted in 1-step increments from 0030 to 1920 by placing the cursor at the DELAY TIME parameter and using the [NO -1]/[YES +1] buttons. The values correspond to MIDI clocks (480 clocks per quarter note), thus a setting of "120" produces a 16th-note delay, a setting of "240" produces a 8th-note delay, etc.
② Delay level	000 ... 127	Specifies the level (volume) of the delay sound as a percentage. The higher the value the louder the delay sound.
③ Repeat times	00 ... 64	Sets the number of delay repeats. A setting "3," for example, produces 3 repeats.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

* For information about how to change values, refer to the Basic Operation (page26).

Feedback



Parameter	Values	Function
① Feedback velocity	-127 ... 000 ... +127	Offsets the velocity of the delayed notes, thereby affecting the level of the delay sound. By offsetting the feedback velocity of the delayed note, this parameter affects the level of the delay sound and how the repeats decay. Positive values produce increasing repeat level, while negative values produce decreasing repeat level.
② Feedback note	-24 ... 00 ... +24, RND	Offsets the pitch of the delayed notes so that each repeat will have a different pitch. By setting an appropriate FB NOTE value it is possible to produce delays that sound like glissandos or even arpeggios. Each increment corresponds to a semitone. The "RND" setting produces delay repeats with random pitch.
③ Feedback gate time	-100 ... 000 ... +100	Offsets the gate time of the delayed notes by the specified percentage so the repeated notes become longer or shorter. Positive settings produce gradually longer repeated notes, while negative settings have the opposite effect.
④ Feedback clock	-100 ... 000 ... +100	Offsets the timing of the delayed notes in clock increments. Positive settings result in an increasingly longer delay time from repeat to repeat, while negative settings have the opposite effect.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

* For information about how to change values, refer to the Basic Operation (page 26).

Recording the MIDI delay Settings

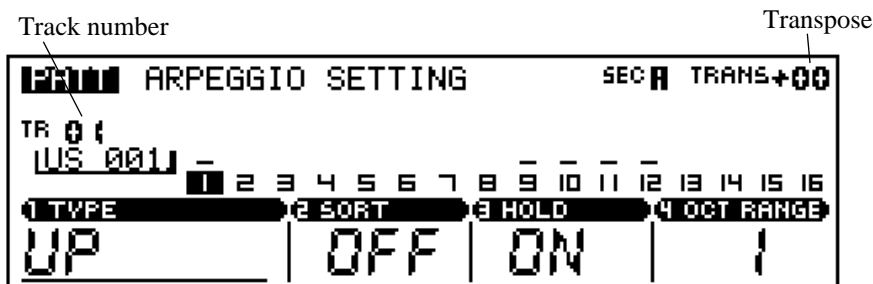
The MIDI delay settings can actually be merged into the sequence data as follows.

- ① Make the MIDI delay settings as described above.
- ② Press the [PATTERN] button to go to the Pattern playback mode.
- ③ Press the REC button to engage the record standby mode.
- ④ Set the REC TYPE parameter to "OVERDUB."
- ⑤ Press the PLAY button to begin recording. You don't actually need to record any new data; the MIDI delay setting will automatically be recorded.
- ⑥ Press the STOP button to stop recording after the pattern has played through once. The MIDI delay level setting will automatically be set to 0 when recording is stopped.

6. Arpeggio

This submode can be used to create simple automatic arpeggios based on notes played on the RM1x keyboard.

Arpeggio Setting



Parameter	Values	Function
1 Type	OFF, UP, DOWN, ALTER1, ALTER2, RANDOM	Specifies the arpeggio type. Normally the arpeggio will play based on the order in which the keys are pressed. But when the SORT parameter (below) is "ON," the arpeggio will play according to the selected TYPE regardless of the order in which the keys are pressed. "UP" produces an ascending arpeggio. "DOWN" produces a descending arpeggio. "ALTER1" and "ALTER2" produce different types of alternating arpeggio. And "RANDOM" produces a random arpeggio.
2 Sort	ON, OFF	Determines whether the arpeggio notes will or will not be "sorted" according to the selected arpeggio TYPE (above).
3 Hold	ON, OFF	Determines whether the arpeggio will continue to play when the notes are released or not. When this parameter is "ON," the arpeggio will continue to play when the notes played on the RM1x keyboard or an external keyboard are released. When "OFF" the arpeggio will stop as soon as the notes are released.
4 Octave range	1 ... 4	Specifies the range of octaves the arpeggio will cover. When set to "1," the arpeggio will include only the notes played on the keyboard. When set to "2," "3," or "4," the arpeggio will be automatically extended to cover the specified number of octaves.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

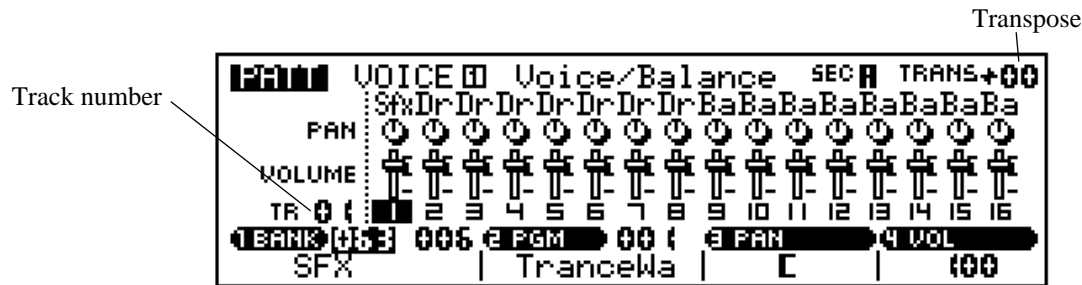
* For information about how to change values, refer to the Basic Operation (page26).

7. Voice

You use the Voice submode to set various parameters (such as voice, pan, volume, and effects) for each of the pattern tracks. You can set voice values separately for each style. The values apply to all sections (Sections A to P) of the style. For general information about voice and effect, refer to Chapter 1. (pages 37, 39)

- note** • The playback buttons (▶, ◻, ◀, ◀/▶) continue to function while you are adjusting the settings, so that you can monitor the results of your changes as you make them.

□ Voice Balance



Parameter	Values	Function
1 Bank	(Refer to the separate List Book.)	Selects the voice bank. Refer to the separate List Book for a complete listing of the RM1x voices. When "**** Phrase" appears here the bank and program change number will be switched according to the current phrase data. When any other bank number is selected the display bank and program numbers will be used for all sections.
2 Program number	(Refer to the separate List Book.)	Selects the voice (voice number). Refer to the separate List Book for a complete listing of the RM1x voices.
3 Pan	Random, L63 ... C ... R63	Sets sound positioning for stereo playback. L63 sets the position all the way to the left; R63 sets it all the way to the right. If you set the pan to Random, the position changes at random each time a new note is sounded. The pan value changes during playback in accordance with the track's MIDI pan data.
4 Volume	000 ... 127	Sets sound volume. During playback, the volume changes in accordance with the track's MIDI volume data.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... 0 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

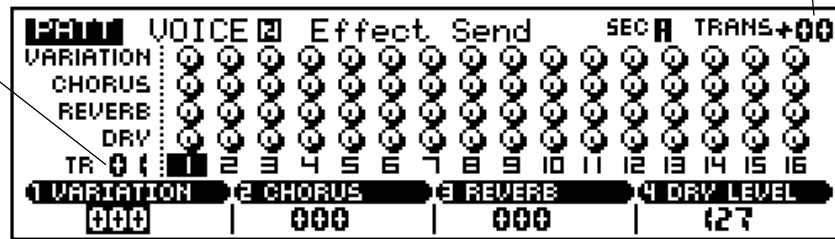
* For information about how to change values, refer to the Basic Operation (page 26).

Effect Send

When variation connection = System

Transpose

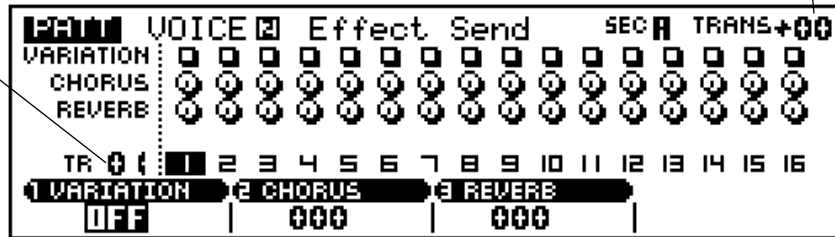
Track number



When variation connection = Insertion

Transpose

Track number



Parameter	Values	Function
① Variation send level (When variation connection =System)	000 ... 127	Sets signal level to variation-effect block.
① Variation switch (When variation connection =Insertion)	ON, OFF	Selects use/nonuse of variation effect. Note that you can set the switch ON for one track only. (When you set the value to ON, any other ON setting automatically changes to OFF.
② Chorus send level	000 ... 127	Sets signal level to chorus-effect block.
③ Reverb send level	000 ... 127	Sets signal level to reverb-effect block.
④ Dry level (When variation connection =System)	000 ... 127	Specify for each track the amount that is sent to the Dry line of the effect. Setting appears only if variation type is set to System.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... 0 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

* For information about how to change values, refer to the Basic Operation (page26).

8. Voice Edit

You use this page to edit the sound characteristics of the voice(s) played on the selected track. You can make separate edit settings for each track.

Settings do not apply to the voices themselves, but only to the track. If the track's voice changes, the settings operate on the new voice. If you use the same voice on different tracks with different edit settings, the sound characteristics may be quite different.

These settings are applied as offsets to the voice's original, internal settings.

EG

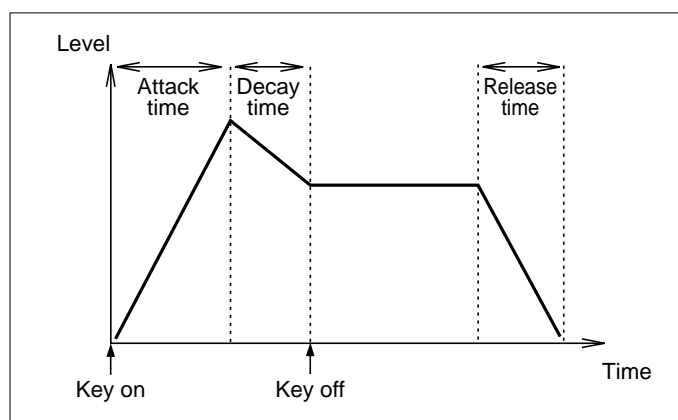


Parameter	Values	Function
1 Attack Time	-64 ... 00 ... +63	Sets the time it takes for the sound to climb to its peak volume, starting from its initial level of 0 (at the moment when the “key” is first “struck”). Low values produce a rapid volume rise, while higher values produce a more gradual climb.
2 Decay Time	-64 ... 00 ... +63	Sets the time it takes for the volume to drop from its peak level to its “sustain” level. Lower values produce crisper, clearer sounds.
3 Release Time	-64 ... 00 ... +63	Sets the time it takes for the volume to fall to 0 following the “physical” release of the note. The lower the value, the faster the sound will go off.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... 0 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

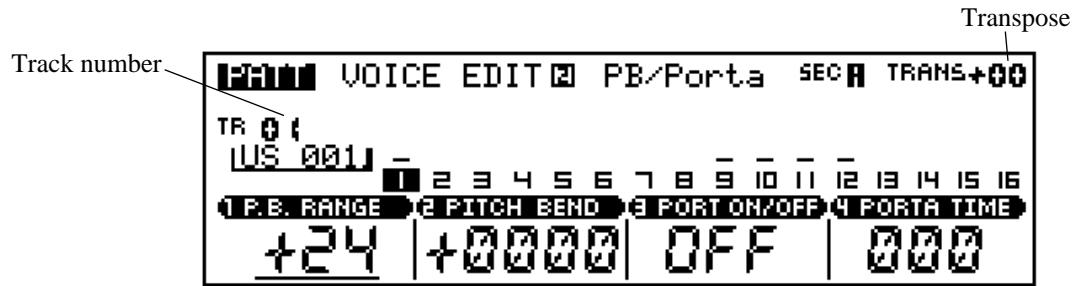
* For information about how to change values, refer to the Basic Operation (page26).

These values control how volume changes over time, starting with the initial note strike and ending at the point where the sound dies out. (Note that “EG” stand for envelope generator.)

EG



▢ Pitch Bend/Portamento



Parameter	Values	Function
① Pitch Bend range	-24 ... 0 ... +24	Sets the range of the pitch change that can be controlled by PITCH BEND knob for each part. With a setting of +12, the pitch will change one octave when pitch bend is fully raised or lowered. With negative settings, the direction of pitch change will be inverted.
② Pitch Bend	-8192 ... 0000 ... +8191	Specifies a "preset" pitch bend value for the current track.
③ Portamento Switch on/off	ON, OFF	Specify whether or not portamento will be applied to each part. Portamento is a function that smoothly changes the pitch between two notes of different pitch. Portamento will not apply to drum voices or SFX kit voices.
④ Portamento time	000 ... 127	Specifies the pitch change speed to each part when the Portamento Switch = ON. Higher values will cause the pitch to change more slowly. Lower values will produce a faster change.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... 0 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

* For information about how to change values, refer to the Basic Operation (page26).

□ LFO

The RM1x LFO (Low Frequency Oscillator) can be used to modulate pitch, filter cutoff frequency, or amplitude to create a wide range of modulation effects.



Parameter	Values	Function
① LFO rate	-64 ... 00 ... +63	Sets the speed of the LFO. Higher values produce faster LFO variation.
② Pitch depth	000 ... 127	Sets the depth of LFO pitch modulation. Periodic pitch modulation produces a vibrato-type effect. This parameter determines how deeply the LFO modulates pitch, and thus the depth of the resultant vibrato.
③ Filter depth	000 ... 127	Sets the depth of LFO filter modulation. Periodic filter cutoff frequency modulation produces a wah-wah pedal type effect. This parameter determines how deeply the LFO modulates filter cutoff frequency, and thus the depth of the resultant effect.
④ Amp. depth	000 ... 127	Sets the depth of LFO amplitude modulation. Periodic amplitude modulation produces a tremolo effect. This parameter determines how deeply the LFO modulates amplitude, and thus the depth of the resultant tremolo.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... 0 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

* For information about how to change values, refer to the Basic Operation (page26).

Filter



Parameter	Values	Function
1 Cutoff	-64 ... 0 ... +63	Sets the filter cutoff frequency. See below for detail.
2 Resonance	-64 ... 0 ... +63	Sets the filter resonance. See below for detail.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... 0 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.

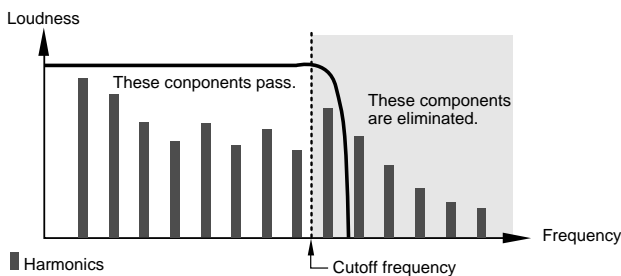
* For information about how to change values, refer to the Basic Operation (page26).

Cutoff

The CUTOFF value sets the cutoff frequency for the RM1x's low-pass filter. Adjusting this value changes the voice's timbre. Settings are stored separately for each track.

Note that the filter is a low-pass type: it filters out the frequencies above (higher than) the cutoff point.

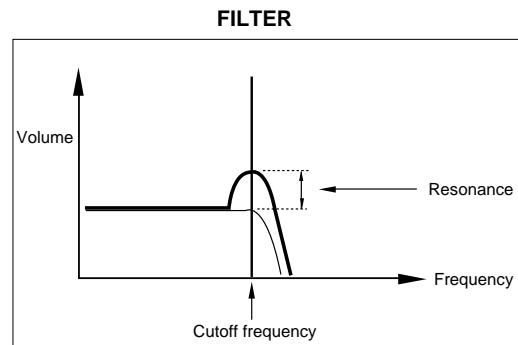
Setting the cutoff to a high value will allow the high-frequency harmonics (overtones) to pass, producing a relatively bright sound that is true to the voice's waveform. Setting the cutoff to a low value will block out the higher harmonics, producing a darker and smoother sound.



Resonance

The RESONANCE value sets the resonance for the low-pass filter. As with the CUTOFF value, the RESONANCE setting affects the voice's timbre. Again, you can set the value separately for each track.

The term resonance here refers to the amplification (boost) applied to the frequencies in the vicinity of the cutoff point. A boost to the overtones within this range can have a significant impact on the sound. With careful adjustment, you can get very effective resonance characteristics - such as the body resonance of a string instrument, or the distinctive slur of an analog synthesizer.



9. Effect

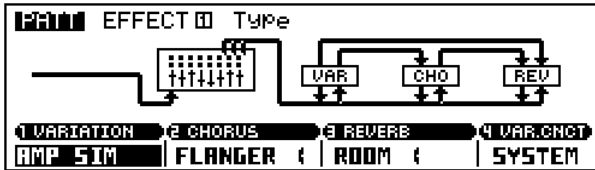
You use the Pattern Effects submode to select and set up the effects applied to the pattern.

The variation connection setting determines how the RM1x handles effects processing. For more information, refer to Chapter 1. (page 39)

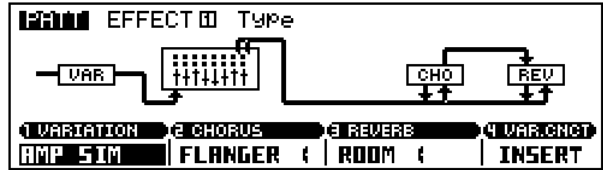
note • The playback buttons (▶, ■, ◀, ◀/▶) continue to function while you are adjusting the settings, so that you can monitor the results of your changes as you make them.

□ Type

When variation connection = System:



When variation connection = Insertion:



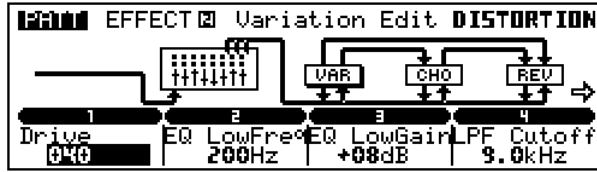
	Parameter	Values	Function
1	Variation type	(Refer to the separate List Book.)	Selects the variation effect type. Refer to the separate List Book for a complete listing of the RM1x effect types.
2	Chorus type	(Refer to the separate List Book.)	Selects the chorus effect type. Refer to the separate List Book for a complete listing of the RM1x effect types.
3	Reverb type	(Refer to the separate List Book.)	Selects the reverb effect type. Refer to the separate List Book for a complete listing of the RM1x effect types.
4	Variation connection	Insertion, System	Selects handling of variation effect. This setting determines whether the variation effect is handled as an insertion effect or as a system effect. (See the illustrations on pages 40, 41) If you set this value to Insertion, then you can apply the variation effect to no more than a single track. In this case, you can also use an assignable controller to control one of the parameters for the effect in real time. If you set the value to System, then the variation effect operates in the same way as the chorus and reverb effects - so that you can apply it to all tracks, and set values for the send and return levels.

* For information about how to change values, refer to the Basic Operation (page26).

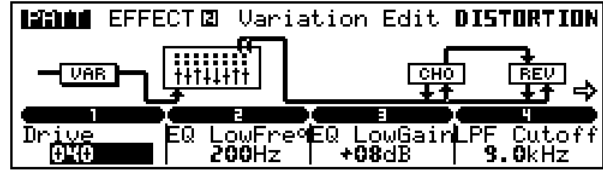
Variation Edit

page1

When variation connection = System:



When variation connection = Insertion:



Parameter	Values	Function
(Available parameters vary according to the type.)	(Refer to the separate List Book.)	Refer to the separate List Book for a complete listing of the RM1x effect parameters.

- ①
- ②
- ③
- ④

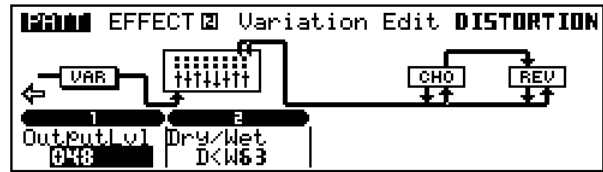
* For information about how to change values, refer to the Basic Operation (page26).

page2

When variation connection = System:



When variation connection = Insertion:

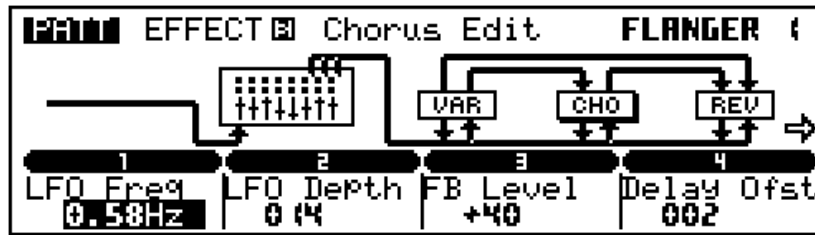


Parameter	Values	Function
(Available parameters vary according to the type.)	(Refer to the separate List Book.)	Refer to the separate List Book for a complete listing of the RM1x effect parameters.
Send Variation to Chorus	000 ... 127	Sets level on bus from variation effect block to chorus block. Setting appears only if variation type is set to System.
Dry/wet balance	D63>W ... D=W ... D<W63	Sets balance between wet sound (sound passed through variation effect) and dry (non-effected) sound. Setting appears only if variation type is set to Insertion.
Send Variation to Reverb	000 ... 127	Sets level on bus from variation effect block to reverb block. Setting appears only if variation type is set to System.
Variation Pan	L63 ... C ... R63	Sets stereo positioning of signal from variation effect block. Setting appears only if variation type is set to System.

* For information about how to change values, refer to the Basic Operation (page26).

Chorus Edit

page1



Parameter	Values	Function
1 LFO Frequency	0.00Hz ... 39.7Hz	Sets delay modulation frequency.
2 LFO Depth	000 ... 127	Sets delay modulation depth.
3 FB Level	-63 ... 00 ... +63	Sets level at which the delay output is returned to the input (negative values invert the phase).
4 Delay Offset	000 ... 063	Sets offset value for delay modulation.

* For information about how to change values, refer to the Basic Operation (page26).

page2



Parameter	Values	Function
3 Send Chorus to Reverb	000 ... 127	Sets level on bus from chorus block to reverb block.
4 Chorus Pan	L63 ... C ... R63	Sets stereo positioning of signal from chorus block.

* For information about how to change values, refer to the Basic Operation (page26).

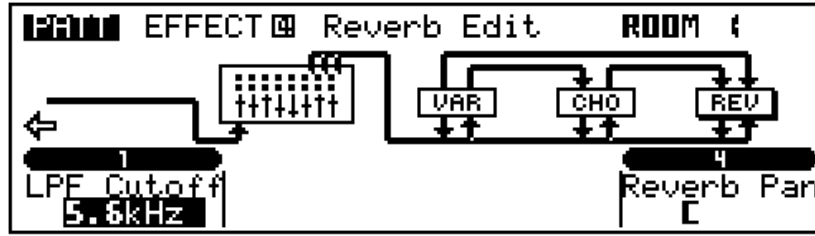
Reverb Edit

page1



Parameter	Values	Function
1 Reverb time	0.3s ... 30s	Sets reverb length.
2 Diffusion	00 ... 10	Sets spread of the reverb.
3 InitDelay	00 ... 63	Sets delay time until the early reflections.
4 HPF Cutoff	THRU, 22Hz ... 8.0kHz	Sets frequency at which the high pass filter will cut the low range.

* For information about how to change values, refer to the Basic Operation (page26).



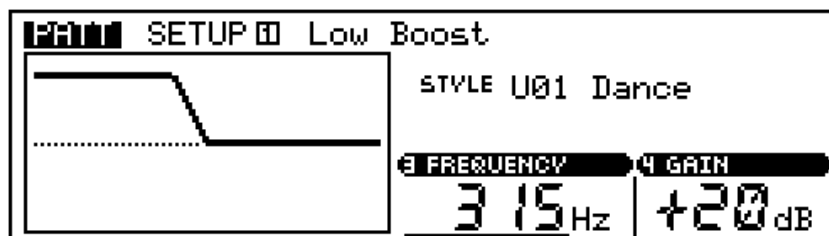
Parameter	Values	Function
LPF Cutoff	1.0Hz ... 18kHz, THRU	Sets frequency at which the low pass filter will cut the high range.
Reverb Pan	L63 ... C ... R63	Sets stereo positioning of signal from reverb block.

* For information about how to change values, refer to the Basic Operation (page26).

10. Setup

□ Low Boost

This feature can be used to boost or cut the low frequencies. Both the cutoff frequency and gain are adjustable for maximum flexibility.

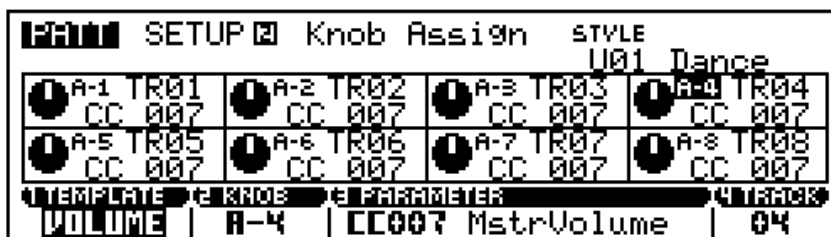


Parameter	Values	Function
③ Frequency	50Hz ... 2.0KHz	Sets the cutoff frequency of the low boost equalizer.
④ Gain	-24 dB ... 0dB ... +24dB	Sets the amount of low-frequency boost or cut. Positive settings boosts the lows, while negative settings produce low-frequency cut.

* For information about how to change values, refer to the Basic Operation (page26).

Knob Assign

This function makes it possible to assign different parameters to the RM1x's 8 realtime controller knobs (see page 29 for more on the controller knobs).



Parameter	Values	Function
1 Template	DEFLT, VOLUME, PAN, REVERB, CHORUS, VARI.,	This parameter provides a selection of preset knob assignments, including the RM1x's default assignments (more below). The "DEFLT" setting recalls the RM1x's default knob assignments (corresponding to the assignments labeled on the panel). The "VOLUME" template assigns each knob to control volume on the corresponding track — the "A" group controls tracks 1 through 8, and the "B" group controls tracks 9 through 16. The "PAN," "REVERB," "CHORUS," and "VARI." templates assign the knobs to control pan, reverb send level, chorus send level, and variation effect send level, respectively, on the corresponding tracks in the same way.
2 Knob number	A1 ... A8, B1 ... B8	Selects a knob for assignment. The "A" group assignments (A1 ... A8) are selected when the [KNOB] button indicator is lit, and the "B" group assignments (B1 ... B8) are selected when the [KNOB] button indicator is out.
3 Parameter	DEFLT, CC007, CC010, CC091, CC093, CC094 (CC001 ... CC030, CC032 ... CC119)	Specifies the parameter to be assigned to the currently selected knob. "DEFLT" is the default parameter. "CC007" is master volume. "CC010" is pan. "CC091" is reverb send level. "CC093" is chorus send level. "CC094" is variation effect send level. Please note that the values do not change continuously when using display knob 3. Parameters can be selected in 1-step increments from CC001 to CC119 by placing the cursor at the PARAMETER and using the [NO -1]/[YES +1] buttons.
4 Track	AUTO, 01 ... 16	Specifies the track to which control will be applied by the currently selected controller knob. When "AUTO" is selected control will be applied to the track selected in the PATTERN or SONG playback mode.

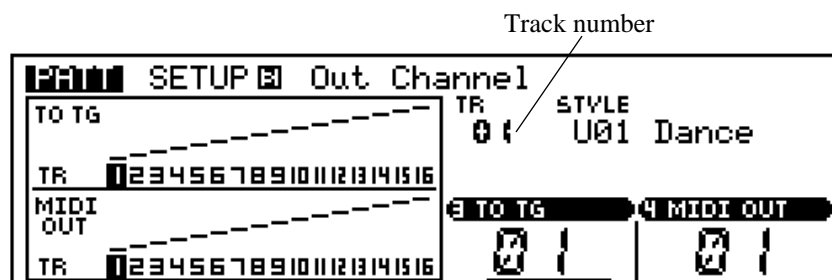
* For information about how to change values, refer to the Basic Operation (page26).

□ Out Channel

You use the TO TG setting to set the track's output channel to the tone generator block.

You use the MIDI OUT settings to assign each track to a MIDI OUT channel.

The RM1x stores separate channel arrangements for each style. The assignments automatically change each time you switch to a different style.



Parameter	Values	Function
③ TO TG channel setup	OFF, 01 ... 16	Sets up channel transmission to the tone generator block. When set to OFF, track data is not sent to TG block.
④ MIDI OUT channel setup	OFF, 01 ... 16	Sets up channel transmission to the MIDI OUT connector. When set to OFF, RM1x does not send data to MIDI OUT.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.

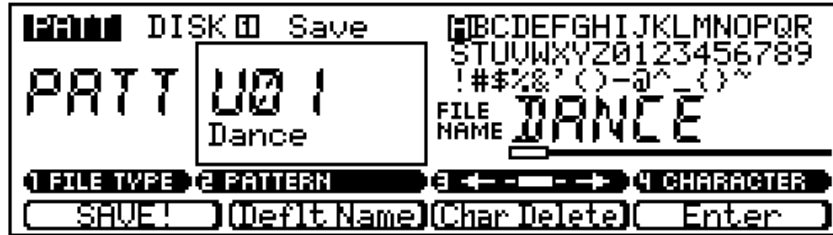
* For information about how to change values, refer to the Basic Operation (page26).

11. Disk

In the Disk submode, data can be transferred between a floppy disk and the RM1x. The Disk submode contains the following five groups of operations.

Save	Lets you save data from internal memory to floppy disk.
Load	Lets you load files from floppy disk into internal memory.
Rename	Lets you modify the filename of a file that was saved on floppy disk.
Delete	Lets you delete a file from floppy disk.
Format	Lets you format (initialize) a floppy disk.

□ Save



Parameter	Values	Function
① File type	PATT, SMF, SMF+TG Header, ALL	Specifies the file type. You can select one of five types of file to be saved. For details on the types of file, refer to “Types of file used by the RM1x.” (page 43)
② Style number	U01 ... U50	Selects the user style to be saved.
③ File name location		Sets the character cursor at any location within the 8-character file name.
④ File name Character	A ... ~	Selects a character to be inserted at the current character location.
<input type="checkbox"/> F1	-	Executes the save operation.
<input type="checkbox"/> F2	-	Automatically enters the default file name.
<input type="checkbox"/> F3	-	Moves the character cursor back one location and deletes the character at that location.
<input type="checkbox"/> F4	-	Enters the character selected by display knob 4 (CHARACTER) at the current character location in the file name.

* For information about how to change values, refer to the Basic Operation (page26).

- ① Insert a properly formatted floppy disk into the RM1x disk drive — shutter first with the label side facing upward. Insert the disk carefully until it clicks into place. If you need to format a disk first, see “Format” on page 79.
- ② Use Display Knobs 1 and 2 to specify the type and number of the file to be saved.
Please note that when saving a pattern data as an SMF file it is also necessary to specify the section to be saved via the keyboard (the keyboard indicator corresponding to the selected section will flash).
- ③ Enter a new file name if necessary. Use Display Knobs 3 and 4 to select a character location and character, then press the F4 function button (Enter) to enter the specified character at the selected location. Repeat until the file name is complete.
- ④ Press the F1 function button (SAVE!). The “Are you sure? (Yes/No)” confirmation prompt will appear on the display.
- ⑤ Press the [YES+1] button to go ahead with the save operation, or the [NO-1] button to cancel. An “Executing” bar graph will appear while the data is being saved.

- note**
- Before a floppy disk can be used to save data, it must first be formatted. (page 79)
 - If the size of the data to be saved is greater than the free area of the floppy disk, a message of “Disk Full” will appear. If this occurs, delete unwanted files from the disk, and try the Save operation once again.
 - Be careful that you do not accidentally delete important data from the disk.
 - When saving a style, memory numbers for which there is no data will be displayed as “*****”. If you attempt to save such styles, a message of “No Data” will appear, and it will not be possible to execute the Save operation.
 - The disk write-protect slide must be in the write-enable position to perform a save operation. If it is not, the “Write Protected!” error message will appear when you attempt to execute the save operation.

□ Load

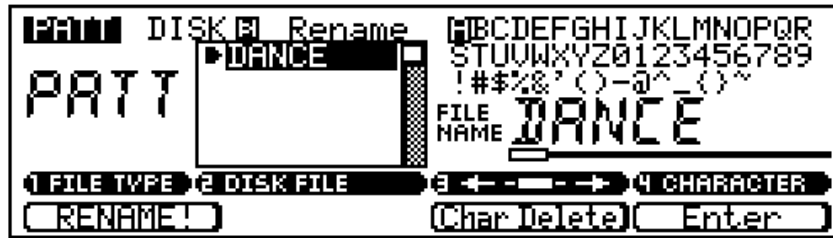


Parameter	Values	Function
1 File type	PATT, ALL	Specifies the file type. You can select one of two types of file to be loaded. For details on the types of file, refer to "Types of file used by the RM1x." (page 43)
2 Disk file		Selects the file to be loaded.
4 Style/section	U01 ... U50 / A ... P	Selects the loading destination style and/or section.
F1 LOAD!	-	Executes the load operation.
F4 PrePlay	-	Plays the file before you execute loading if you have selected Pattern as the file type, and if a Standard MIDI File format 0 file is selected. This is a convenient way to check the contents of the file.

* For information about how to change values, refer to the Basic Operation (page26).

- 1 Insert the disk containing the file you want to load into the RM1x disk drive.
 - 2 Use Display Knob 1 to select the type of file you want to load: "PATT" to show only pattern files in the file list, or "ALL" to show all available files in the file list.
 - 3 Use Display Knob 2 to select the file you want to load from the file list on the display.
 - 4 Use Display Knob 4 to select the user pattern to which you want the data to be loaded.
Please note that when loading an SMF file it is also necessary to specify the section to which the data is to be loaded via the keyboard (the keyboard indicator corresponding to the selected section will flash).
 - 5 Press the F1 function button (LOAD!). The "Are you sure? (Yes/No)" confirmation prompt will appear on the display.
 - 6 Press the [YES + 1] button to go ahead with the load operation, or the [NO - 1] button to cancel. An "Executing" bar graph will appear while the data is being loaded.
- note**
- When an All Data file is loaded, all data in memory such as Patterns, Pattern chains, Phrases, Songs, and System setup data will be overwritten. If internal memory contains data that you wish to save, save it to disk before loading other data.
 - If the data to be loaded is larger than the remaining free memory, a message of "Memory Full" will appear. If this occurs, delete unneeded data and repeat the Load operation.

□ Rename

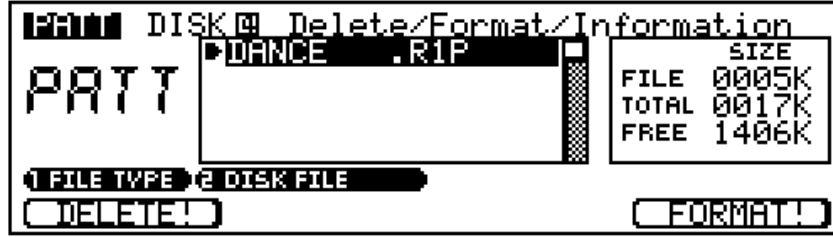


Parameter	Values	Function
❶ File type	PATT, ALL	Specifies the file type. You can select one of two types of file to rename. For details on the types of file, refer to “Types of file used by the RM1x.” (page 43)
❷ Disk file		Selects the file to rename.
❸ File name location		Sets the character cursor at any location within the 8-character file name.
❹ File name Character	A ... ~	Selects a character to be inserted at the current character location.
F1 RENAME!	-	Executes the rename operation.
F3 Character Delete	-	Moves the character cursor back one location and deletes the character at that location.
F4 Enter	-	Enters the character selected by Display Knob 4 (CHARACTER) at the current character location in the file name.

* For information about how to change values, refer to the Basic Operation (page26).

- ❶ Make sure the disk containing the file you want to rename is properly inserted into the RM1x floppy disk drive.
 - ❷ Use Display Knob 1 to select the type of file you want to rename: “PATT” to show only pattern files in the file list, or “ALL” to show all available files in the file list.
 - ❸ Use Display Knob 2 to select the file you want to rename from the file list on the display.
 - ❹ Enter a new file name. Use Display Knobs 3 and 4 to select a character location and character, then press the F4 function button (Enter) to enter the specified character at the selected location. Repeat until the file name is complete.
 - ❺ Press the F1 function button (RENAME!). “Executing” will appear while the file is being renamed.
- note**
- If the filename extension of an SMF file is renamed, it may become impossible to load the file.
 - The disk write-protect slide must be in the write-enable position to perform a rename operation. If it is not, the “Write Protected!” error message will appear when you attempt to execute the rename operation.

❑ Delete/Format/Information



Parameter	Values	Function
① File type	PATT, ALL	Specifies the file type. You can select one of two types of file to delete or format. For details on the types of file, refer to "Types of file used by the RM1x." (page 43)
② Disk file		Selects the file to delete.
☐ F1	DELETE!	Executes the delete operation.
☐ F4	FORMAT!	Executes the format operation.

* For information about how to change values, refer to the Basic Operation (page26).

Delete

- ① Insert the disk containing the file you want to delete into the RM1x disk drive.
- ② Use Display Knob 1 to select the type of file you want to delete: "PATT" to show only pattern files in the file list, or "ALL" to show all available files in the file list.
- ③ Use Display Knob 2 to select the file you want to delete from the file list on the display.
- ④ Press the F1 function button (DELETE!). The "Are you sure? (Yes/No)" confirmation prompt will appear on the display.
- ⑤ Press the [YES + 1] button to go ahead with the delete operation, or the [NO - 1] button to cancel. "Executing" will appear while the data is being deleted.

- note**
- If Delete is executed, the specified file will be lost forever and cannot be recovered. Before executing this operation, be sure that you really want to delete the file.
 - If data is already saved on the disk, be careful not to format it. If you format the disk, all the previously recorded data will be deleted.
 - The "Disk Information" area located in the right of the screen shows the size of the selected file, the total size of all files, and the free area on the floppy disk. You can refer to this area when deciding which files to delete.

Format

- ① Insert the disk you want to format into the RM1x disk drive.
- ② Press the F4 function button (FORMAT!). The "Are you sure? (Yes/No)" confirmation prompt will appear on the display.
- ③ Press the [YES + 1] button to go ahead with the format operation, or the [NO - 1] button to cancel. An "Executing" bar graph will appear while the disk is being formatted.

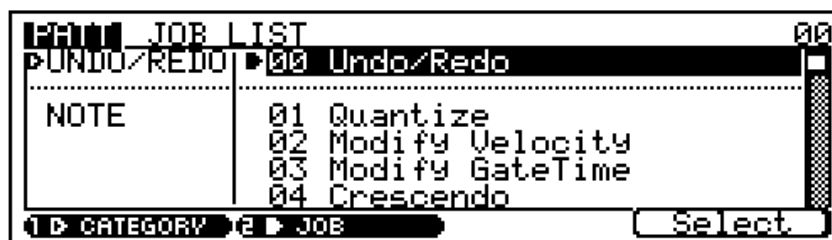
12. Job

You use the RM1x's pattern jobs to perform various operations on phrases and patterns.

You select the job from the job list using the Display Knob 1, 2 or the CURSOR buttons. You can also make your selection using the F4 button.

Job List

Category	Values	Function	page
UNDO/REDO	00 Undo/Redo	If UNDO: Cancel the last operation. If REDO: Cancel the last UNDO	82
NOTE	01 Quantize	Quantize note events within selected segment of selected user phrase.	82
NOTE	02 Modify Velocity	Change velocities in selected segment of selected user phrase.	84
NOTE	03 Modify Gate Time	Change gate times in selected segment of selected user phrase.	85
NOTE	04 Crescendo	Gradually increase/decrease velocity over selected segment.	86
NOTE	05 Transpose	Transpose all notes over selected segment.	87
NOTE	06 Glide	Produces smooth glides from note to note in the selected segment.	87
NOTE	07 Create Roll	Inserts repeated note data in the specified segment to create rapid rolls.	88
NOTE	08 Chord Sort	Sort each chordal note event (within specified segment) by pitch.	88
NOTE	09 Chord Separate	Break each chordal note event (within specified segment) into individual notes, separated by designated delay time.	89
EVENT	10 Shift Clock	Shift all data (within specified segment) by specified number of clock cycles.	89
EVENT	11 Copy Event	Copy all events in specified segment to designated destination.	89
EVENT	12 Erase Event	Erase all events over selected segment (and replaces with rests).	90
EVENT	13 Extract Event	Move events of specified type from specified segment of one phrase to same segment in another.	90
EVENT	14 Create Continuous Data	Creates the specified type of continuous control change data in the specified segment.	91
EVENT	15 Thin Out	Reduce repetitions of specified event type (within specified segment).	91
EVENT	16 Modify Control Data	Changes of offsets the values of all occurrences of the specified type of control change data with the specified segment.	92
EVENT	17 Time Stretch	Expand or compress timing over specified segment.	92
PHRASE	18 Copy Phrase	Copy phrase into specified destination.	92
PHRASE	19 Exchange Phrase	Exchanges the contents of two specified phrases.	93
PHRASE	20 Mix Phrase	Mix one phrase into another.	93
PHRASE	21 Append Phrase	Append one phrase to another.	93
PHRASE	22 Split Phrase	Split phrase into two phrases.	94
PHRASE	23 Get Phrase	Create user phrase from selected song data.	94
PHRASE	24 Put Phrase	Copy user phrase into song.	95
PHRASE	25 Clear Phrase	Delete all data from user phrase.	95
PHRASE	26 Phrase Name	Assign name to user phrase.	95
TRACK	27 Copy Track	Copies the data from one specified track to a second specified track.	95
TRACK	28 Exchange Track	Exchanges the contents of two specified tracks.	96
TRACK	29 Clear Track	Delete all data from selected track, cancel voice setting, and reinitialize play effects.	96
TRACK	30 Normalize Play Effect	Actually applies the PLAY FX and GRID GROOVE settings to the sequence data, overwriting the existing sequence data.	96
TRACK	31 Divide Drum Track	Separates the note events in a specified track and places the notes corresponding to different drum instruments in separate tracks.	97
PATTERN	32 Copy Pattern	Copy data from selected pattern track into destination pattern track.	97
PATTERN	33 Append Pattern	Append one pattern to another.	97
PATTERN	34 Split Pattern	Split pattern into two patterns.	98
PATTERN	35 Clear Pattern	Delete all data from selected pattern.	98
PATTERN	36 Style Name	Assign a name to the selected style.	98



	Parameter	Values	Function
1	Category	UNDO/REDO, NOTE, EVENT, PHRASE, TRACK, PATTERN	Selects the category.
2	Job	00 ... 36	Selects the job.
F4	Select		Jumps to the job currently selected in the job list.

To Select a Job

- 1 Press the SUBMODE [JOB] button. You will be presented with a job “menu.”
- 2 Select a job. There are several ways to do this, as listed below:

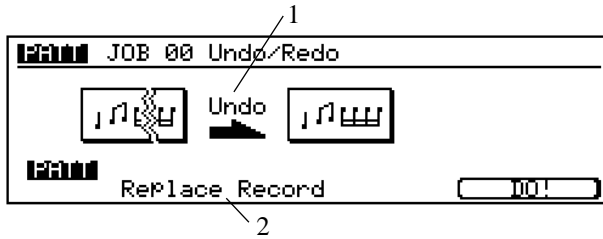
note • Do not switch off the power while a job is executing (while the “Executing...” message is on the screen), as this may cause destruction of your recorded data.

CURSOR buttons	Use the CURSOR buttons to scroll to the desired job, then press the Select function button (F4, below “Select” on the display).
Display Knobs	Use the knob below “JOB” on the display to scroll through the job list, then press the Select function button (F4, below “Select” on the display). You can also use the CATEGORY knob to switch between job categories (listed to the left of the jobs).
[NO - 1]/[YES + 1] buttons	Press the [NO - 1] or [YES + 1] button once briefly to single-step through the menu in the corresponding direction, or hold the button for continuous scrolling. When the desired job has been highlighted, press the Select function button (F4, below “Select” on the display).
Numeric Selection	Use the numeric entry method described on page 26 to enter the number of the desired job. The job number will flash in the upper right corner of the display. Then press the [EXIT] button.

- 3 Press the F4 function button (Select) to go to the selected job.
- 4 Set the job parameters as required. The job parameters are described in the job descriptions which follow.
- 5 Press the F4 function button (DO!) to execute the job.

Undo/Redo

Job 00 Undo/Redo



The Undo job cancels the changes you made in your most recent patch session, recording session, editing session, or job, restoring the data to its previous state. This allows you to recover from accidental data loss.

The Redo job, which becomes available only after you execute an Undo, cancels the Undo and restores the changes.

The Undo/Redo job is effective on PATTERN mode patch sessions, and on PATTERN mode and SONG mode recording sessions, editing sessions, and jobs (with the exception of the Song Name and Phrase Name jobs).

The Undo job is effective only on the most recent data changes. If you run a recording session and then an editing session, for example, the Undo will be available only for the editing session. (But note that if you move to a recording, editing, or job screen and then quit without making any changes, this does not count as a session.)

You can undo and then redo the same change as many times as you like (provided that you don't make any other changes in between). This can be useful when you want to compare two versions of your data.

1. Undo/Redo indication

The screen displays the word Undo or Redo to indicate the job that is currently available.

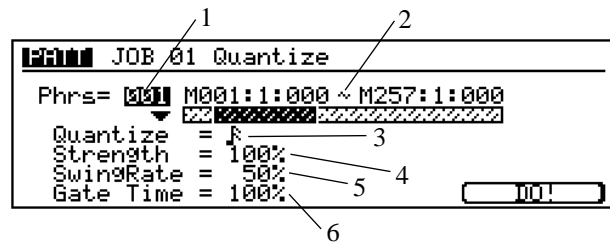
As soon as you execute an Undo, the job name changes to Redo. The Redo will remain available until you change data again.

2. Undo/Redo target

The two entries at the bottom of the screen identify the data-change currently available for undoing or redoing. This will be the most recently executed editing, recording, or job-related data change. (In the example above, the most recent change was made by running the Quantize job under the PATTERN mode.)

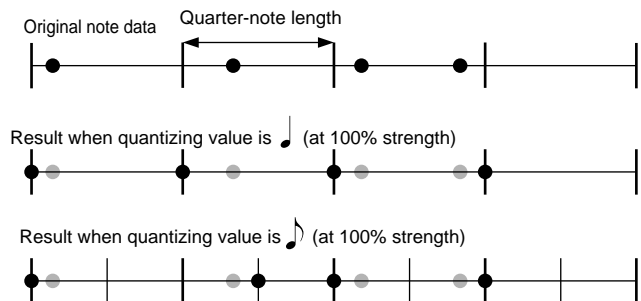
Note

Job 01 Quantize



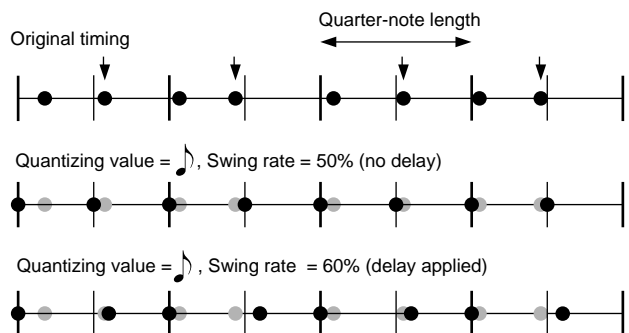
This job quantizes note events over a specified segment of a specified track. Quantizing is the process of adjusting the timing of note events by pulling them closer to the nearest interval boundary (or quantizing line). You can use this feature, for example, to improve the timing of a performance you recorded in real time.

Before running the job, you must set the musical interval (or quantizing value) that you want to use. This value sets the distance between adjacent quantizing lines. The figure below illustrates the concept for quarter-note and eighth-note quantizing values.



The quantizing strength determines how closely notes are pulled toward the nearest quantizing line.

The swing rate can be used to slightly delay the note events in every even-numbered interval, thereby adding a “swing” to the music. If you are using an eighth-note quantizing value, for example, the delay applies to all notes starting within the second, fourth, sixth, or eighth interval of the measures, as illustrated.



Finally, you can further improve the swing by adjusting the gate times of the notes in every other interval.

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256


2. Segment (M001:1:000 ~ M257: 1:000)










Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 999:8:479

3. Quantizing value

The Quantize value selects the quantizing interval. You can set the value using the [NO - 1] or [YES + 1] button, or by pressing the appropriate note key on the numeric keypad.

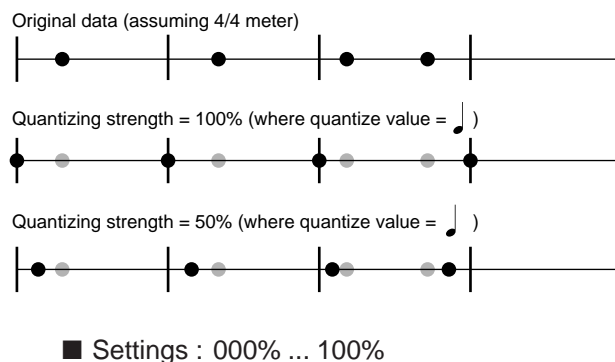
Notice that the settings create both “normal” and “triplet” intervals over the same space. The  for example, sets quantizing lines at every eighth-note spacing and at every eighth-note-triplet spacing.

- Settings :
-  32nd-note intervals
 -  16th-triplet intervals
 -  16th-note intervals
 -  8th-triplet intervals
 -  8th-note intervals
 -  Quarter-note-triplet intervals
 -  Quarter-note intervals
 -  16th-note and 16th-triplet intervals
 -  8th-note and 8th-triplet intervals

4. Strength

The Strength value sets the degree by which note events are pulled toward the nearest quantizing line.





A setting of 100% pulls each note event all the way to the nearest quantizing line. A setting of 50% pulls each note only halfway to the nearest quantizing line.



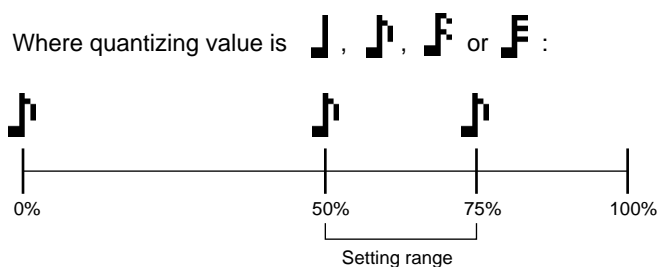
5. Swing rate

This setting lets you apply a delay to the notes in every even-numbered quantizing interval (but see below) to produce a more swinging rhythm. This adjustment is carried out after quantizing is completed: first the notes are quantized, and then the swing delay (if any) is applied.




If you are using a 32nd, 16th, 8th, or quarter-note quantizing value, the RM1x applies the delay to every even-numbered interval. If you are using an 8th-note, for example, then the notes in the first 8th-note interval are normal, the notes in the second 8th-note interval are delayed, the notes in third interval are normal, and so on.

If you are using one of the triplet quantizing values, then the RM1x applies the delay to the notes in every third interval. If you are using the  or  quantizing value, the RM1x applies the delay to the non-triplet part of the rhythm only (to the  or  rhythm only).

The “swing rate” is given as a scale value indicating the position for the shifted “beat.” For non-triplet rhythms, a value of 50% leaves the position unchanged, while higher values apply a delay. (In this case, 100% represents double the length of the quantizing interval.) The available settings depend on the rhythm type, as described below.





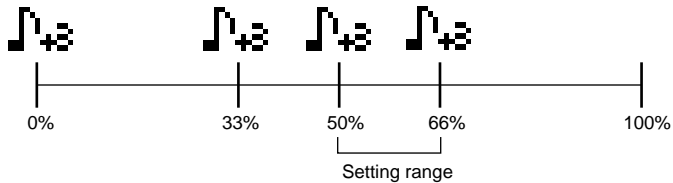
For the quantizing values indicated above, a 50% setting produces no adjustment, so that the even-numbered interval remains exactly centered. Higher values shift the interval to the right, to produce an added swing. The maximum setting is 75%, which shifts the interval by an amount equal to one-half the quantizing value.



Where quantizing value is ,  or  :



With the triplet quantizing values (see above), the RM1x applies the shift to the third interval only. In this case, a 66% setting produces no adjustment (so that the third interval remains at its original position). Higher values shift the interval to the right. The maximum setting is 83%, which shifts the interval by an amount equal to one-half the quantizing value. (Notice that in this case, the 100% scale represents three times the quantizing length.)




Where quantizing value is ,  :





In the case of normal-plus-triplet quantizing values, the RM1x applies the shift only to the non-triplet part of the rhythm, as illustrated above. In this case, a setting of 50% produces no shift, while higher values shift the even interval to the right. Note that the maximum setting is 66%, which moves the interval all the way up to the position of the third note in the triplet rhythm. (The 100% scale represents double the  or  quantizing length.)

■ Settings :

If quantizing value is , , ,  : 50% ... 75%

If quantizing value is ,  or  : 66% ... 83%

If quantizing value is  or  : 50% ... 66%

note

- If you set STRENGTH below 100%, notes may lie at arbitrary locations within the interval prior to the “swing-rate” shift. In this case, the RM1x will slide all of the notes within the interval by an equal amount.
- Where STRENGTH is less than 100%, therefore, it is possible that the swing adjustment may push some notes into the next interval. If the RM1x must push a note beyond one or more notes lying in the next interval, it will shift these other notes to the same location as well.

6. Swing Gate Time

This value applies a proportional adjustment to the gate timing of the notes within the swing-adjusted intervals.

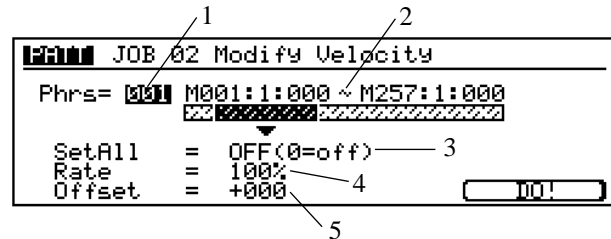
The gate time is the length of time that a note is held. You can use this setting, therefore, to lengthen or shorten the notes in the swing-adjusted intervals.

A setting of 100% leaves the original gate time unchanged. Higher settings increase the gate time, while lower settings shorten it.

If an adjusted gate-time value is less than 1, the RM1x sets the value to 1.

■ Settings : 000% ... 100% ... 200%

Job 02 Modify Velocity



This job alters the velocity values of the specified range of notes (pitches) in the specified segment of the designated track. Remember that velocity refers to the force with which a note is struck. The precise effect of a velocity change varies according to the voice: in most cases a higher velocity produces a louder sound.

Using this job, you can choose to set all targeted notes to an identical velocity value, or you can apply a relative (linear) adjustment to the original velocity values.

If making a relative adjustment, you use two parameters: the Rate and the Offset. The Rate value applies a proportional change to the velocity value, while the Offset value (which is applied after the Rate adjustment) adds a fixed value. The relation is as follows:

Adjusted velocity = (original velocity X Rate) + Offset.

If the adjustment result is less than 1, the RM1x sets the value to 1. If the result is higher than 127, the RM1x sets the value to 127.

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 999:8:479

3. Set all

Use this parameter if you want to set the velocities of all targeted notes to the same fixed value (1 to 127). If you do not want to use this feature (if you want to make the linear adjustment instead), set the value to Off.

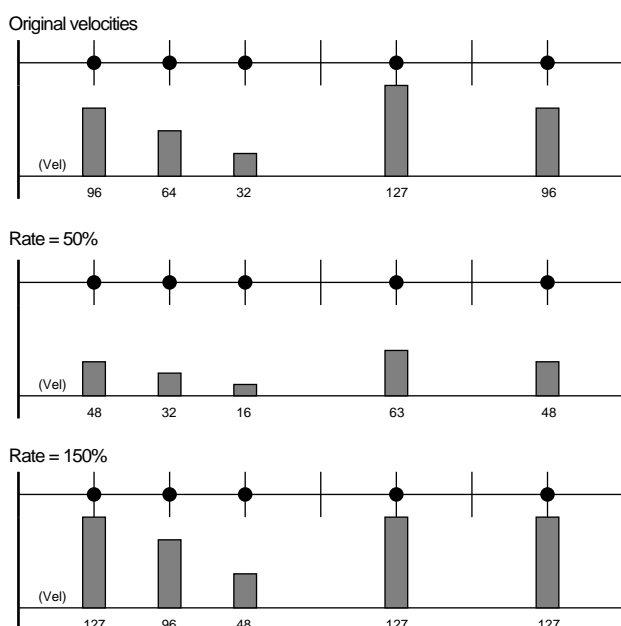
Note that if the setting is other than Off, the Rate and Offset values are ignored.

■ Settings : Off (0), 001 ... 127

4. Rate

The Rate parameter applies a proportional change to the velocities of all targeted notes. A setting of 100% produces no change; a setting of 50% cuts the velocities in half; a setting of 200% causes the velocities to double.

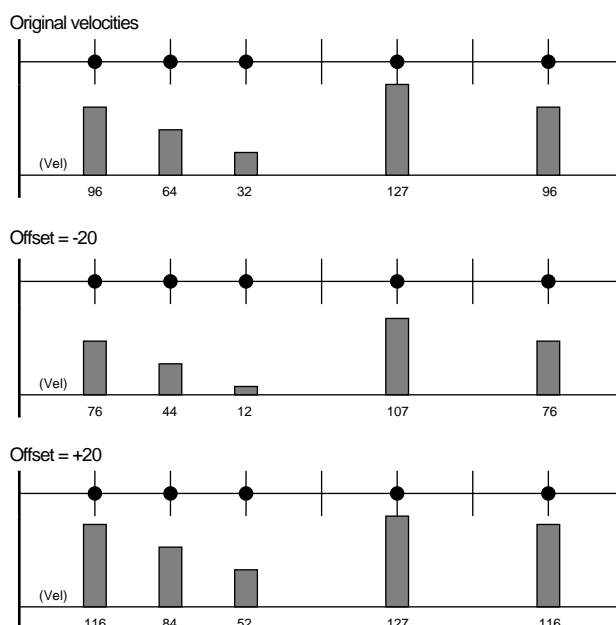
■ Settings : 000% ... 100% ... 200%



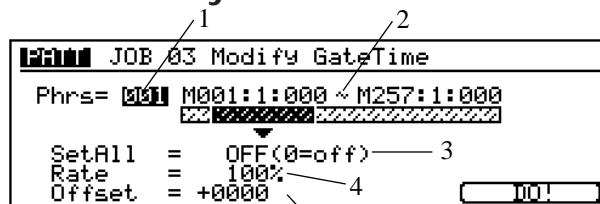
5. Offset

This parameter adds a fixed value to each of the Rate-adjusted velocity values. A setting of 0 produces no change. Positive values increase the velocity, while negative values decrease it.

■ Settings : -99 ... +00 ... +99



Job 03 Modify Gate Time



This job alters the gate times of the specified range of notes (pitches) in the specified segment of the designated track. The gate time refers to the length of time that a note is held. For non-percussive voices, the gate time is equal to the actual playback time span.

Using this job, you can choose to change all targeted notes to some fixed gate time, or you can apply a relative (linear) adjustment to the original gate times.

If making a relative adjustment, you use two parameters: the Rate and the Offset. The Rate value applies a proportional change to the gate time, while the Offset value (which is applied after the Rate adjustment) adds a fixed value. The relation is as follows:

Adjusted gate time

$$= (\text{original gate time} \times \text{Rate}) + \text{Offset}.$$

If the adjustment result is less than 1, the RM1x sets the value to 1.

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 257:1:000

3. Set all

Use this parameter if you want to set all targeted notes to some identical gate time (1 to 999). If you do not want to use this feature (if you want to make the linear adjustment instead), set the value to Off.

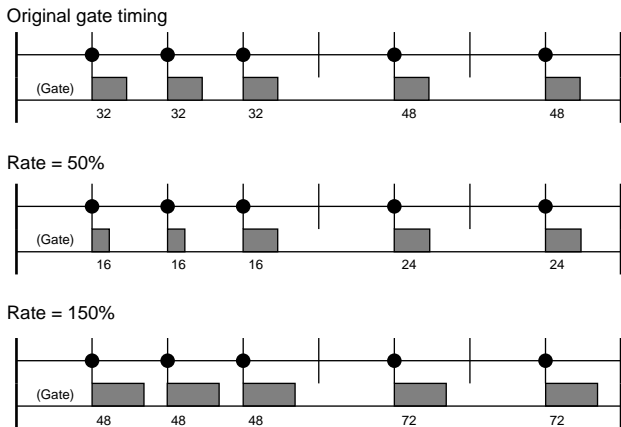
Note that if the setting is other than Off, the Rate and Offset values are ignored.

■ Settings: Off (0), 0001 ... 9999

4. Rate

The Rate parameter applies a proportional change to the gate timing of all targeted notes. A setting of 100% produces no change; a setting of 50% cuts the gate time in half; a setting of 200% causes the gate time to double.

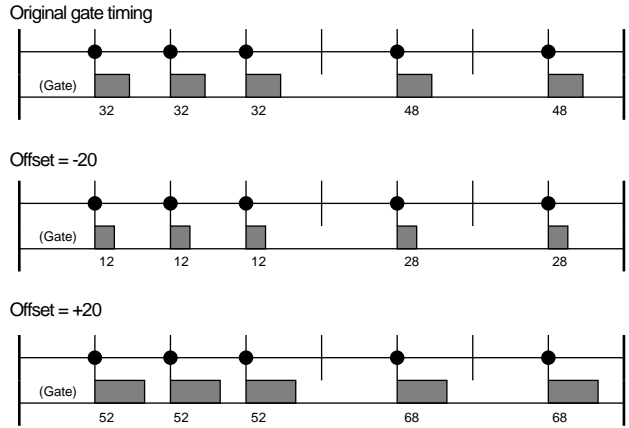
■ Settings: 000% ... 100% ... 200%



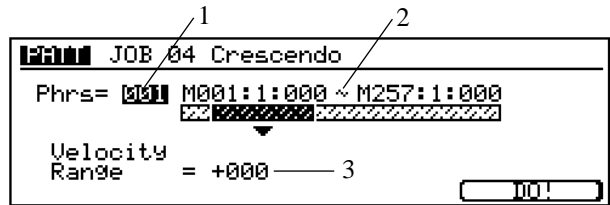
5. Offset

This parameter adds a fixed value to each of the Rate-adjusted gate times. A setting of 0 produces no change. Positive values increase the gate time, while negative values decrease it.

■ Settings: -9999 ... +0000 ... +9999



Job 04 Crescendo



You use this job to apply a crescendo or decrescendo to the specified range of notes (pitches) in the specified segment of the designated track. The RM1x produces the effect by applying a slight velocity adjustment (offset) at the beginning of the segment, with the offset increasing gradually up until the end of the segment.

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 257:1:000

3. Velocity Range

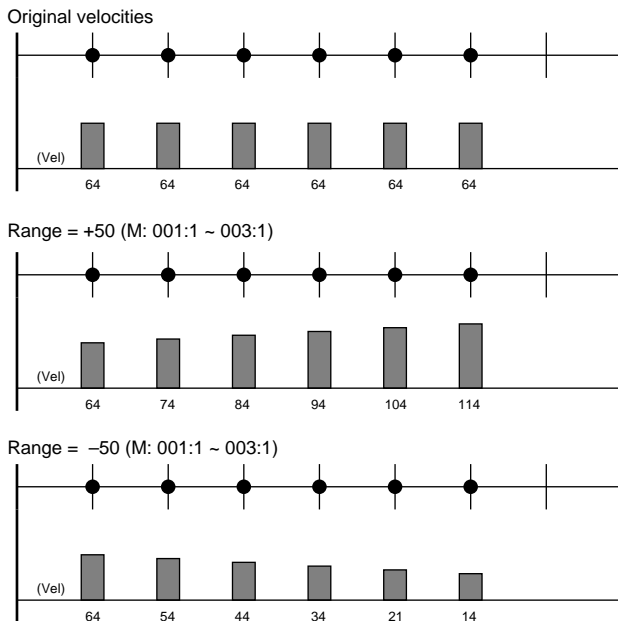
You use the Velocity Range parameter to set the intensity of the crescendo.

This setting selects the value added to the velocities of notes at the final meter and beat of the segment. The RM1x gradually increases the amount added to (or sub-

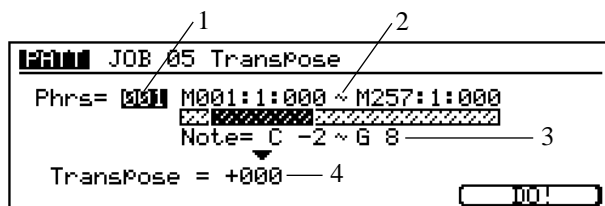
tracted from) the velocities within the segment, beginning with a “0” amount at the beginning of the segment, and ending with the full Range amount at the end of the segment.

Velocity cannot be less than 1 or higher than 127. Adjusted values below 1 are raised to 1, adjusted values above 127 are set to 127.

■ Settings : -127 ... 0 ... +127



Job 05 Transpose



You use this job to transpose a specified range of notes (pitches) in a specified segment of the designated track. You set the transposition level in semitone increments.

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 257:1:000

3. Note range (Note = C-2~G8)

Sets the note range to be transposed.

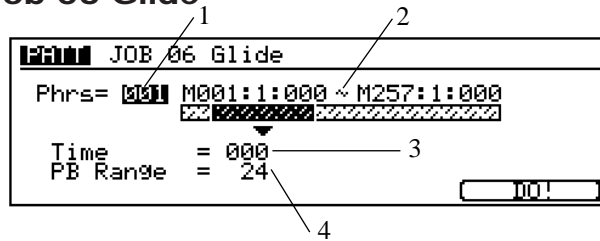
■ Settings : C-2 ... G8

4. Transpose

The Transpose value sets the number of transposition intervals (semitones). A value of +12 would transpose all targeted notes up by exactly one octave, while a value of -12 would transpose down by an octave.

■ Settings : -127 ... +000 ... +127

Job 06 Glide



Replaces all notes following the first note in the specified segment with pitch bend data, producing smooth glides from note to note.

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 257:1:000

3. Time

Specifies the length of the glide. Higher values produce a longer glide between notes.

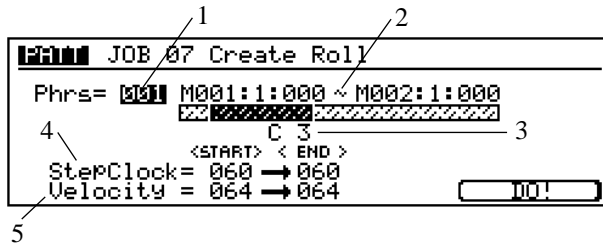
■ Settings : 000 ... 100

4. PB Range

Specifies the maximum pitch bend range to be applied by the glide job in semitone increments.

■ Settings : 01 ... 24

Job 07 Create Roll



Creates a series of repeated notes in the specified segment with the specified continuous changes in clock step and velocity. This job is ideal for creating fast “rolls.”

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 257:1:000

3. Note (C3)

Sets the note to be rolled.

■ Settings : C-2 ... G8

4. StepClock

Specifies the size of the step (i.e. the number of clocks) between each note in the roll. Both the starting and ending clock values can be specified, making it easy to create rolls in which the step size varies from note to note.

■ Settings : 001 ... 999

5. Velocity

Specifies the velocity of each note in the roll. Both the starting and ending velocity values can be specified, making it easy to create rolls in which the velocity varies from note to note.

■ Settings : 001 ... 127

Sorting is by pitch. If notes E3, C3, and G3 all begin at the same time, the job adjusts the sequence to C3, E3, G3 (if the Type setting is “up”) to G3, E3, C3 (if “down”).

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 257:1:000

3. Type








Determines how the chord note data is sorted. If “up” the notes are sorted in ascending order. If “down” the notes are sorted in descending order. “up&down” sorts chord notes on downbeats in ascending order and chord notes on up beats in descending order. “down&up” sorts chord notes on downbeats in descending order and chord notes on up beats in ascending order.

■ Settings : up, down, up&down, down&up

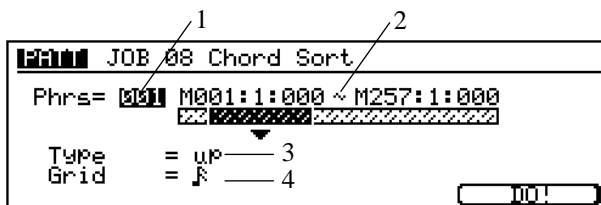
4. Grid

Specifies the “grid” timing which will determine what note groups are considered chords. Notes falling within the specified grid step will be treated as chords.

■ Settings :

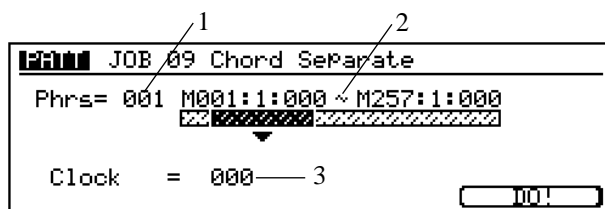
-  32nd-note intervals
-  16th-triplet intervals
-  16th-note intervals
-  8th-triplet intervals
-  8th-note intervals
-  Quarter-note-triplet intervals
-  Quarter-note intervals

Job 08 Chord Sort



This job “sorts” chord events (simultaneous note events) by order of pitch. The sort is reflected in the EDIT page listing, and determines the separation sequence used by the Chord Separate job (see next page).

Job 09 Chord Separate



This job plays opens each chord formation (within the specified segment of the specified track) into its individual notes, inserting a specified delay between each note.

If the Clock value is set to 30, a block chord consisting of elements C3, E3, G3 will be played as a C3 (at the chord's original timing) followed 30 cycles later by the E3, and then another 30 cycles later by the G3. This feature is useful, for example, when you want to open up guitar strokes.

Note that it is not possible to break chords over the next measure boundary or into the next chord.

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 257:1:000

3. Clock cycles

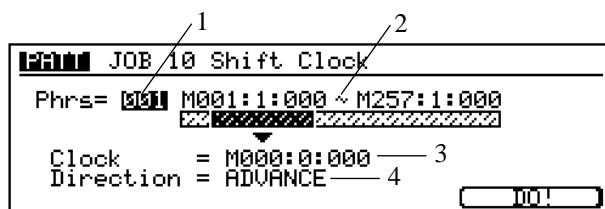
The Clock value sets the number of clock cycles inserted between adjacent chord notes.

Note that there are 480 clock cycles per beat.

■ Settings: 000 ... 999

□ Event

Job 10 Shift Clock



This job executes a time shift of all data events on the selected segment of the selected track. The shift is executed in clock-cycle increments.

If you wish to move events by one or more full beats or measures, you may find it easier to use the Copy Event job. (below)

Note that this job will never move an event past the designated segment's start or end points; any event that would otherwise move past this point is instead deposited at the segment's border.

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 257: 1:000

3. Clock

The Clock value sets the number of measure, beat, and clock for the data shift.

Note that there are 480 cycles per beat.

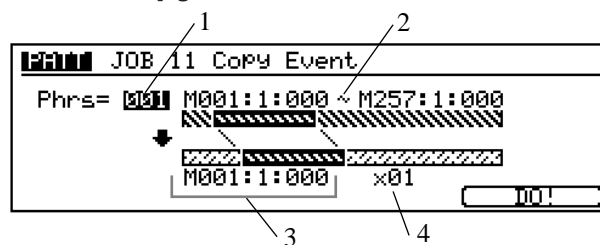
■ Settings : Measure: beat : clock
001:1:000 ... 255: 3:479

4. Direction

Specifies the direction in which the data will be shifted. "ADVANCE" moves the data toward the beginning of the piece (i.e. notes will sound earlier), while "DELAY" shifts the data toward the end of the piece (i.e. notes will sound later).

■ Settings : ADVANCE, DELAY

Job 11 Copy Event



This job copies all data from a specified source area (phrase) to a specified destination, overwriting any data already existing at the destination.

1. Source phrase

The Phrs value selects the track from which the data are copied.

■ Settings : 001 ... 256

2. Source segment

The upper “M” values set the phrase segment from which data are copied.

- Settings: Measure: beat:clock
001:1:000 ... 257:1:000

3. Start point of destination segment

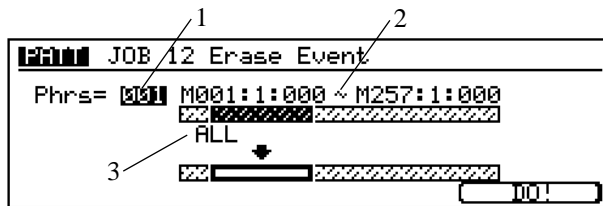
The lower “M” value set the start point for the copy on the destination phrase.

- Settings: Measure: beat:clock
001:1:000 ... 257:4:479

4. Times

This multiplier specifies the number of times the segment is copied.

- Settings : 01 ... 99

Job 12 Erase Event

This job clears all data from the specified segment of the designated style, so that the segment becomes silent.

1. Phrase setting: Phrs

Sets the phrase from which data are to be cleared.

- Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

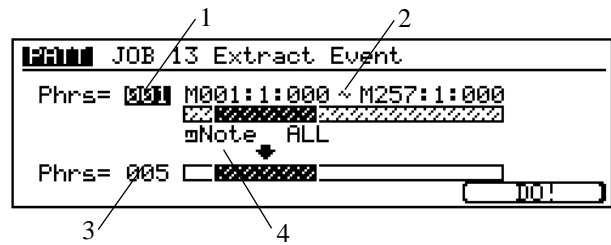
Sets the area of the phrase to be cleared.

- Settings : Measure: beat : clock
001:1:000 ... 999:8:479

3. Event

Sets the event type to be cleared (at the center of the screen).

- Settings : Note Note events
- PC Program change
- PB Pitch bend
- CC Control change (Any single control-change message type 000 to 127, or all control-change messages)
- CAT Channel aftertouch
- PAT Polyphonic aftertouch
- EXC System exclusive
- ALL All events

Job 13 Extract Event

This job moves all instances of specified event data from a selected segment of a phrase to the same segment on a different phrase. Following the operation, the targeted events no longer exist in the source segment.

If data already exist at the destination side, the extracted data and existing data are mixed.

1. Source phrase

The upper Phrs setting selects the phrase from which events are to be extracted.

- Settings : 001 ... 256

2. Source segment (M001:1:000~M257:1:000)

Select the phrase segment for the extraction.

- Settings : Measure: beat : clock
001:1:000 ... 257:1:000

3. Destination phrase

The lower Phrs setting selects the destination phrase.

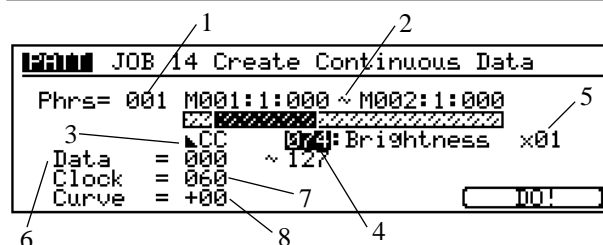
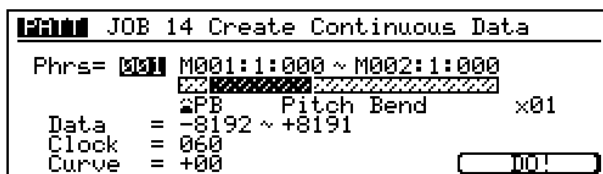
- Settings : 001 ... 256

4. Event

Select the event type to be extracted (at the center of the screen).

- Settings : Note Note events
- PC Program change
- PB Pitch bend
- CC Control change (Any single control-change message type 000 to 127, or all control-change messages)
- CAT Channel aftertouch
- PAT Polyphonic aftertouch
- EXC System exclusive

Job 14 Create Continuous Data



Creates continuous control change data over the range of the specified segment. This can be useful for inserting precise pitch bends and other control variations.

1. Phrase setting: Phrs

Sets the phrase to which adjustment is applied.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase over which adjustment is carried out. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 999:8:479

3. Event Type

Selects the event type to be created (at the center of the screen).

■ Settings : PB (Pitch bend), CC (Control change), CAT (Channel aftertouch), EXC (System exclusive)

4. Control Change No.

When "CC" is selected the cursor can be moved to the control change number to specify the type of the control change data to be created.

■ Settings : 000 ... 127

5. Times

This multiplier specifies the number of times the data created within the specified segment is to be repeated.

■ Settings : 01 ... 99

6. Data

Specifies the lower and upper limits for the data to be created. The left value is the low limit, and the right value is the upper limit.

■ Settings : 000 ... 127, -8192 ... +8191 (Event Type=PB)

7. Clock

Specifies the number of clocks between each created event to be inserted.

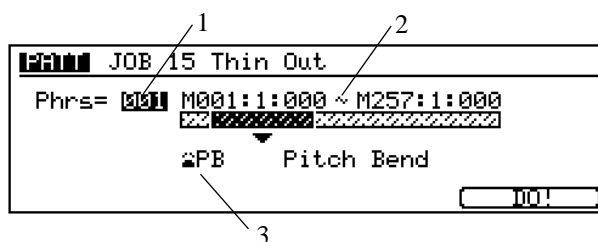
■ Settings : 001 ... 999

8. Curve

Specifies the degree of positive or negative "curvature" that will be applied to the continuous data. "+00" produces a linear curve. Positive values create an increasingly positive curve (i.e. upward curve), and negative values produce an increasingly negative curve (i.e. downward curve).

■ Settings : -16 ... +16

Job 15 Thin Out



You use this job to remove some occurrences of a specified non-note event within the designated segment of a selected track. The purpose is to reduce the data volume and free up additional memory.

Specifically, the job will remove every other occurrence of the event in areas where the event recurs within 60 clock cycles. The job will not remove an event that is separated from the previous occurrence by at least 60 clock cycles.

1. Phrase setting: Phrs

Selects the target phrase.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase to be thinned. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

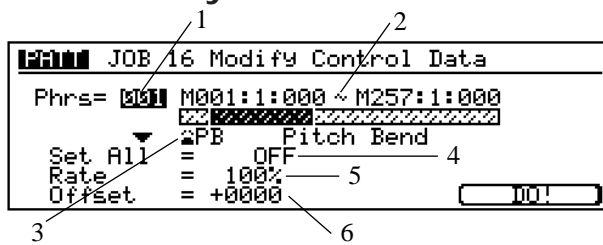
■ Settings : Measure: beat : clock
001:1:000 ... 257:1:000

3. Event type

Selects the targeted event type.

■ Settings : PB (Pitch bend), CC (Any single Control Change message type, 000 to 127), CAT (Channel aftertouch), PAT (Polyphonic aftertouch)

Job 16 Modify Control Data



Changes or offsets the values of all occurrences of the specified type of control change data of the specified segment.

1. Phrase setting: Phrs

Selects the target phrase.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the area of the phrase to be modified. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat : clock
001:1:000 ... 257:1:000

3. Event Type

Selects the event type to be adjusted (at the center of the screen).

■ Settings : PB (Pitch bend), CC (Any single Control Change message type, 000 to 127), CAT (Channel aftertouch), PAT (Polyphonic aftertouch)

4. Set All

Specifies a fixed value to which all occurrences of the specified type of control change data will be set. Set this parameter "OFF" if you want to offset the values of the data using the Rate and Offset parameters, below.

■ Settings : OFF, 000 ... 127, -8192 ... +8191 (Event Type=PB)

5. Rate

Sets the ratio between the lower and higher control change values. A setting of "100%" maintains the original relationship between the control values, lower settings produce a narrower range, and higher values produce a wider range.

■ Settings : 000 ... 200

6. Offset

Determines the amount of offset applied to the control change values. "-" settings reduce the values while "+" settings increase the values.

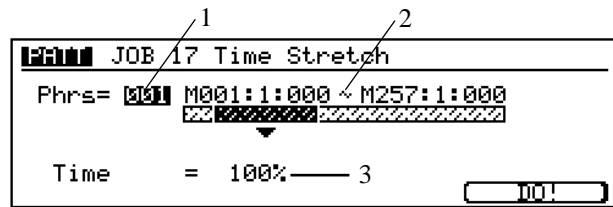
New Control Change Values

= Original Control Change Values x rate/100
+ offset

(If the right side of the equation is less than 0, the new value becomes 1)

■ Settings : -127 ... 127, -8192 ... +8191 (Event Type=PB)

Job 17 Time Stretch



This job expands or compresses the timing over the selected segment on the selected phrase.

The operation affects all event timing, note step times, and note gate times.

1. Phrase setting: Phrs

Selects the target phrase.

■ Settings : 001 ... 256

2. Segment (M001:1:000 ~ M257: 1:000)

Sets the target area of the phrase. The first segment sets the measure, beat, and clock for the start point; the second segment sets the end point.

■ Settings : Measure: beat: clock
001:1:000 ... 257:1:000

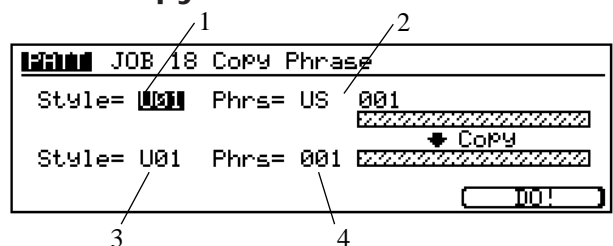
3. Time

The Time parameter sets the time multiplier.

■ Settings : 025% ... 400%

□ Phrase

Job 18 Copy Phrase



This job copies a selected phrase (either user phrase or preset phrase) to the designated user phrase.

The source-side Style parameter is meaningful only if you are copying from a user phrase.

If the destination phrase does not yet exist, this job will create it. If it does exist, the job will delete its original data.

1. Source style

The upper Style value selects the style containing the user phrase to be copied. The value is meaningful only if you are copying a user phrase; the RM1x ignores the setting if you are copying a preset phrase.

■ Settings : U01 ... U50 P01 ... P60

2. Source phrase

The upper Phrase value selects the phrase to be copied.

- Settings : Any preset phrase, or user phrase 001 to 256

3. Destination style

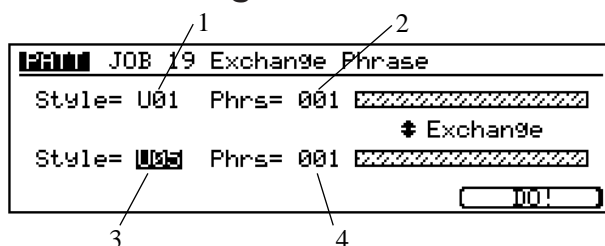
The lower Style value selects the style that will contain the destination phrase.

- Settings : U01 ... U50

4. Destination phrase

The lower Phrase value selects the destination phrase (user phrase).

- Settings : 001 ... 256

Job 19 Exchange Phrase

Exchanges the contents of two specified phrases.

1. Style

Specifies the first style containing the phrase data to be exchanged.

- Settings : U01 ... U50

2. Phrase

Specifies the first phrase containing the data to be exchanged.

- Settings : 001 ... 256

3. Style

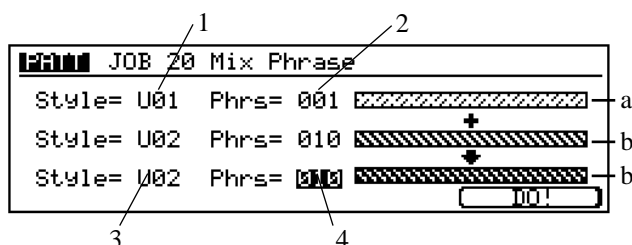
Specifies the second style containing the phrase data to be exchanged.

- Settings : U01 ... U50

4. Phrase

Specifies the second phrase containing the data to be exchanged.

- Settings : 001 ... 256

Job 20 Mix Phrase

This job mixes all data from two selected user phrases into the second of these phrases.

1. Source style (Style “a”)

The first Style value selects the style containing the source phrase (phrase “a”).

- Settings : U01 ... U50

2. Source phrase (Phrase “a”)

The first Phrase value selects the source phrase. This is the phrase containing the data to be mixed into the destination phrase. Following the mix, the content of the source phrase remains unchanged.

- Settings : 001 ... 256

3. Destination style (Style “b”)

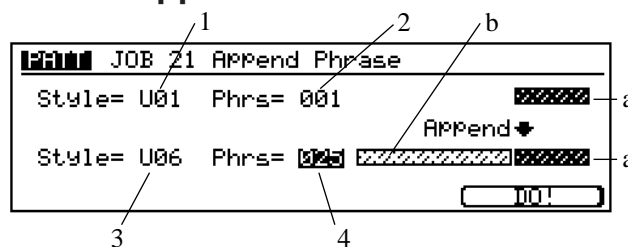
The second Style value selects the style containing the destination phrase (phrase “b”).

- Settings : U01 ... U50

4. Destination phrase (Phrase “b”)

The second Phrase value selects the destination phrase. The original content of this phrase becomes mixed with the content from phrase “a”.

- Settings : 001 ... 256

Job 21 Append Phrase

This job attaches the content of a selected user phrase (phrase “a”) onto the end of another user phrase (phrase “b”). After completion of the job, phrase “a” remains unchanged.

If you attempt to append data such that phrase “b” would become longer than 256 measures (the maximum phrase length), the RM1x returns the “Illegal Input” message and the job does not execute.

1. Source style (Style “a”)

The upper Style value selects the style containing the source user phrase (phrase “a”).

- Settings : U01 ... U50

2. Source phrase (Phrase “a”)

The upper Phrase value selects the source phrase (user phrase). Following job execution, the content of the source phrase remains unchanged.

- Settings : 001 ... 256

3. Destination style (Style “b”)

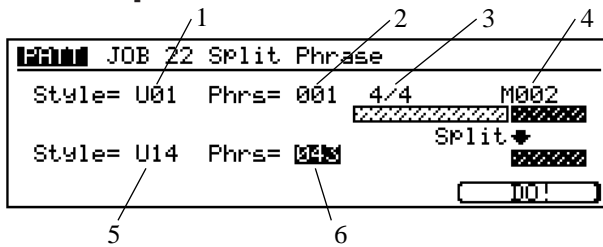
The lower Style value selects the style containing the destination phrase (phrase “b”).

■ Settings : U01 ... U50

4. Destination phrase (Phrase “b”)

The lower Phrase value selects the phrase to which the source phrase is attached.

■ Settings : 001 ... 256

Job 22 Split Phrase

This job splits a selected user phrase into two user phrases.

The job splits the phrase at the first beat of the specified measure. The initial portion of the phrase (up to the split) remains in its original location, while the remainder of the phrase moves into the specified destination.

The job overwrites any data already existing in the destination phrase.

1. Source style

The upper Style value selects the style containing the user phrase to be split.

■ Settings : U01 ... U50

2. Source phrase

The upper Phrase value selects the user phrase to be style.

■ Settings : 001 ... 256

3. Split time signature

Sets the time signature of the destination style

■ Settings : 1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4

4. Split point

The “M” value selects the measure at which the phrase is split. This becomes the start point of the destination phrase.

■ Settings : 001 ... source-phrase length

5. Destination style

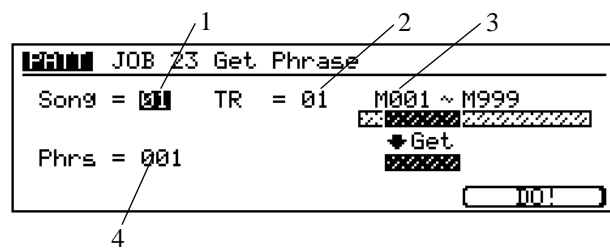
The lower Style value selects the destination style.

■ Settings : OFF, U01 ... U50

6. Destination phrase

The lower Phrase value selects the split destination.

■ Settings : OFF, 001 ... 256

Job 23 Get Phrase

This job creates a user phrase from a specified segment of song data. Specifically, it copies a segment of sequence-track data from a song into the designated destination phrase.

The RM1x sets the time signature (meter) for the new phrase equal to the meter recorded in the initial measure of the source segment. (Note that meter value applies to the entire phrase. Any meter changes that occur within subsequent measures of the source segment are ignored.)

Maximum phrase length is 256 measures. If you attempt to copy a segment that is longer than 256 measures, the screen returns the “Illegal Input” message and the job does not execute.

The job overwrites any data already existing in the destination phrase.

The job does not copy voice and tempo settings.

1. Source song

The Song value selects the song containing the source data.

■ Settings : 01 ... 20

2. Source track

The Track value selects the sequence track containing the source data.

■ Settings : 01 ... 16

3. Segment

The “M” values select the source segment, by its location (in measures) on the source track. The first value gives the initial measure; the second value gives the final measure.

■ Settings : Initial measure: 001 ... 999

Final measure: 001 ... 999

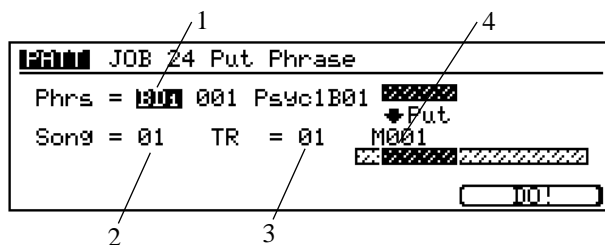
(where final measure - initial measure ≤ 256, and final measure ≥ initial measure)

4. Destination phrase

The Phrase value sets the phrase number for the destination user phrase.

■ Settings : 001 ... 256

Job 24 Put Phrase



This job copies a selected user phrase into a specified area of a selected song. Any data previously existing in the destination area is erased.

You select the source phrase by its style and phrase numbers. You select the destination by song number, track number (sequence track), and measure number (location on track).

The job does not copy meter, voice, or tempo settings. The phrase's meter (time signature) has no effect on the copy.

1. Source phrase (Category, Number)

The Phrase value selects the phrase to be copied.

■ Settings : 001 ... 256

2. Destination song

The Song value selects the destination song.

■ Settings : 01 ... 20

3. Destination track

The Track value selects the sequence track onto which the phrase is to be copied.

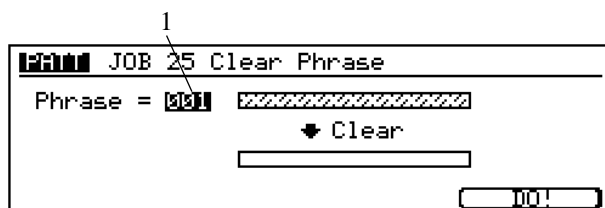
■ Settings : 01 ... 16

4. Track location

The "M" value selects the starting measure, on the sequence track, for the copy.

■ Settings : 001 ... 999

Job 25 Clear Phrase



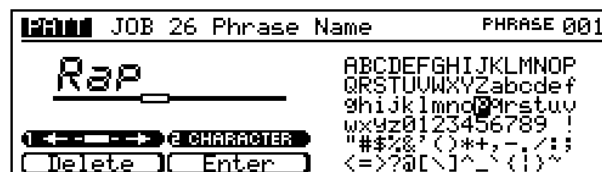
This job deletes all data from the selected user phrase, and reinitializes the phrase table.

1. Phrase

The Phrase value selects the user phrase to be deleted.

■ Settings : 001 ... 256

Job 26 Phrase Name

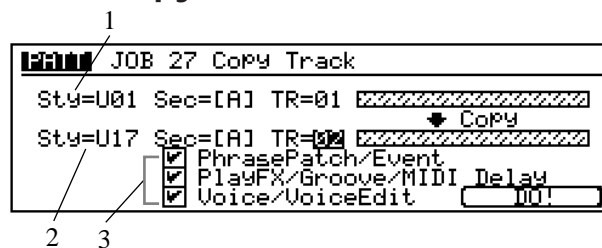


You use this job to set or change the name for a (non-empty) user phrase. The name can be up to 8 characters long.

Use Display Knobs 1 and 2 to select a character location and character, then press the F2 function button (Enter) to enter the specified character at the selected location. The F1 function button (Delete) can be used to back up one character location and delete the character at that location. Repeat until the phrase name is complete.

Track

Job 27 Copy Track



This job copies all data (of the selected type) from selected source track to selected destination track. You can copy track data from a single section of a selected style.

The copy operation overwrites any data previously existing on the destination track.

1. Source style, section, and track

The first three settings select the source track.

■ Settings : Style U01 ... U50
Section A ... P
Track 1 ... 16

2. Destination style, section, and track

The second group of settings selects the destination track.

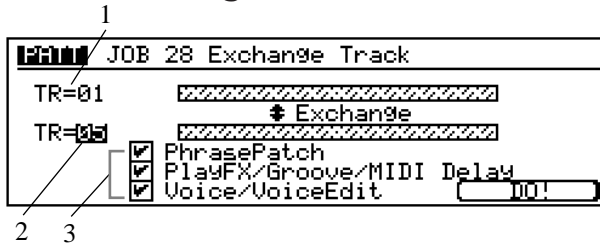
■ Settings : Style U01 ... U50
Section A ... P
Track 1 ... 16

3. Data type

These check boxes determine the type(s) of data to be copied. Move the cursor to a check box and use the [YES +1] button to turn the check mark on if you want the corresponding type of data to be copied, or use the [NO -1] button to turn the check mark off if you don't want the corresponding type of data to be copied.

- Settings : Copy the corresponding data type.
- Do not copy this data type.

Job 28 Exchange Track



Exchanges the specified type of data between two specified tracks.

1. Track

Specifies the first of the two tracks between which data will be exchanged.

2. Track

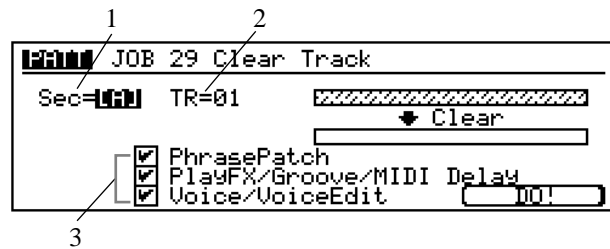
Specifies the second of the two tracks between which data will be exchanged.

3. Data type

These check boxes determine the type(s) of data to be exchanged between the specified tracks. Move the cursor to a check box and use the [YES +1] button to turn the check mark on if you want the corresponding type of data to be exchanged, or use the [NO -1] button to turn the check mark off if you don't want the corresponding type of data to be exchanged.

- Settings : Exchange the corresponding data type.
- Do not exchange this data type.

Job 29 Clear Track



This job deletes all data (of the selected type) from the selected pattern track, or from all pattern tracks.

1. Section

The Sec setting selects the section to be cleared.

- Settings : A ... P

2. Track

The TR setting selects the track to be cleared.

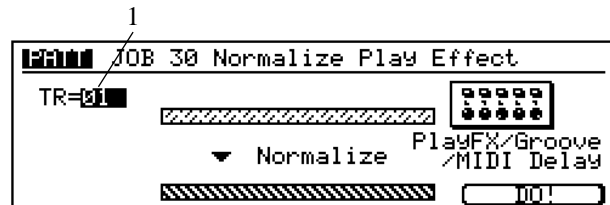
- Settings : 01 ... 16

3. Data type

These check boxes determine the type(s) of data to be deleted. Move the cursor to a check box and use the [YES +1] button to turn the check mark on if you want the corresponding type of data to be deleted, or use the [NO -1] button to turn the check mark off if you don't want the corresponding type of data to be deleted.

- Settings : Delete the corresponding data type.
- Do not delete this data type.

Job 30 Normalize Play Effect



This job rewrites the data in the selected sequence track so that the new data incorporates the current Play Fx/Groove/MIDI Delay settings (pages 57, 55, 60). In other words, the external Play Fx/Groove/MIDI Delay values are internalized into the track's MIDI event data.

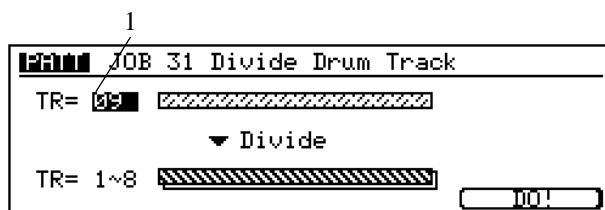
After rewriting the track's sequence data, the job reinitializes the track's play-effect parameters.

1. Track

The TR value selects the track to be normalized.

- Settings : 01 ... 16 Normalize the corresponding sequence track.
- All Normalize all sequence tracks.

Job 31 Divide Drum Track



Separates the note events in a specified track and places the notes corresponding to different drum instruments in separate tracks (tracks 1 through 8). If the source track is a track between 1 and 8 the data in that track will be overwritten. Data other than note events will be copied to all 8 tracks. By separating the drum instruments in this way it becomes possible to edit then or apply effects individually, as well as apply realtime control to individual drum instruments during playback.

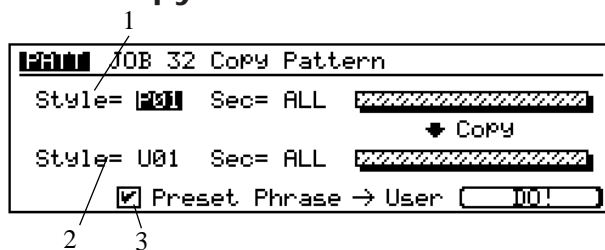
1. Track

Specifies the source track to be divided.

■ Settings : 01 ... 16

□ Pattern

Job 32 Copy Pattern



This job copies all data from a selected source style to a selected destination style. You can copy track data from a single section of a selected style, or from all sections of the style.

The copy operation overwrites any data previously existing on the destination style.

1. Source style, section

The first group of settings selects the source style and section(s).

If you set Sec to “ALL”, the RM1x automatically sets the corresponding destination value to “ALL”. (If you change an “ALL” setting to a number or letter, the RM1x automatically deselects the “ALL” setting at the destination side.)

■ Settings : Style U01 ... U50
Section A ... P, ALL

2. Destination style, section

The second group of settings selects the destination style and section(s).

Again, if you set Section to “ALL”, the RM1x automatically sets the corresponding source value to “ALL”.

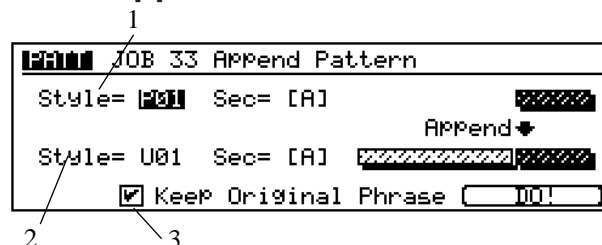
(And if you change an “ALL” setting to a number or letter, the RM1x automatically deselects the “ALL” setting at the source side.)

■ Settings : Style U01 ... U50
Section A ... P, ALL

3. Preset phrase → User

Check this box if you want to copy a preset phrase to a user phrase.

Job 33 Append Pattern



This job attaches a copy of the selected user pattern (pattern “a”) onto the end of another user pattern (pattern “b”). After completion of the job, the original pattern “a” remains unchanged.

If you attempt to append data such that pattern “b” would become longer than 256 measures, the RM1x returns the “Illegal Input” message and the job does not execute.

1. Source pattern (pattern “a”)

The upper Style and Section settings select the source pattern.

■ Settings : Style U01 ... U50
Section A ... P

2. Destination pattern (pattern “b”)

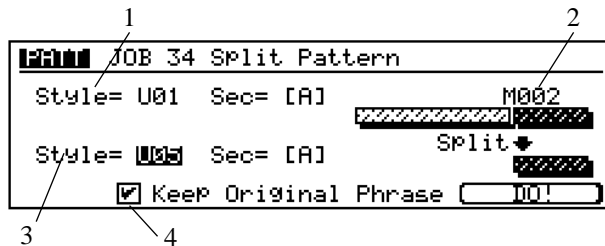
The lower Style and Section settings select the pattern to which the source pattern is attached.

■ Settings : Style U01 ... U50
Section A ... P

3. Keep Original Phrase

Check this box if you do not want to alter the original phrase data.

Job 34 Split Pattern



This job splits a selected pattern into two patterns.

The job splits the pattern at the first beat of the specified measure. The initial portion of the pattern (up to the split point) remains in its original location, while the portion starting after the split point is moved and becomes the destination pattern. (If no phrases start after the split point, the destination pattern becomes empty.)

The job overwrites any data already existing in the destination pattern.

1. Source style, section

The upper Style and Section settings select the pattern to be split.

■ Settings : Style U01 ... U50
Section A ... P

2. Split point

The “M” value selects the measure at which the pattern is split. This becomes the start point of the destination phrase.

■ Settings : 001 ... source-pattern length

3. Destination style, section

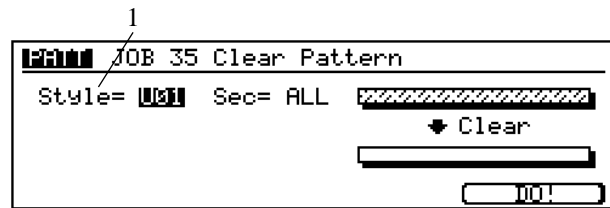
The lower Style and Section settings select the new location for the portion of the pattern that begins at the split point.

■ Settings : Style U01 ... U50
Section A ... P

4. Keep Original Phrase

Check this box if you do not want to alter the original phrase data.

Job 35 Clear Pattern



This job deletes all data from the selected pattern(s).

If you set Style to “ALL”, the job executes a total deletion - removing all sections of all styles. In this case, the job also reinitializes all play-effect and pattern-voice settings for all styles.

Note that it is not possible to Undo a total deletion. Be sure that you really want to delete all patterns before executing a Style=ALL deletion.

If you set Style to a numerical value and set Section to “ALL”, the job deletes all sections (all patterns) within the selected style. It also reinitializes all play-effect and pattern-voice settings for that style. (If you make an error with this type of deletion, however, you can recover by running an Undo.)

1. Style and section

The style and section values select the pattern(s) to be deleted.

If you set Style to “ALL”, then Section is also forced to “ALL”.

■ Settings : Style U01 ... U50, ALL
Section A ... P, ALL

Job 36 Style Name



You use this job to set or change the style name. Maximum length for these names is 8 characters.

Use display knobs 1 and 2 to select a character location and character, then press the F2 function button (Enter) to enter the specified character at the selected location. The F1 function button (Delete) can be used to back up one character location and delete the character at that location. Repeat until the style name is complete.

13. Edit

You use the Pattern EDIT submode to edit the contents of a user phrase. You can adjust or delete any of the MIDI events that constitute the phrase, and you can add new events.

The RM1x offers two different editing screens: an Event list and a View Filter display.

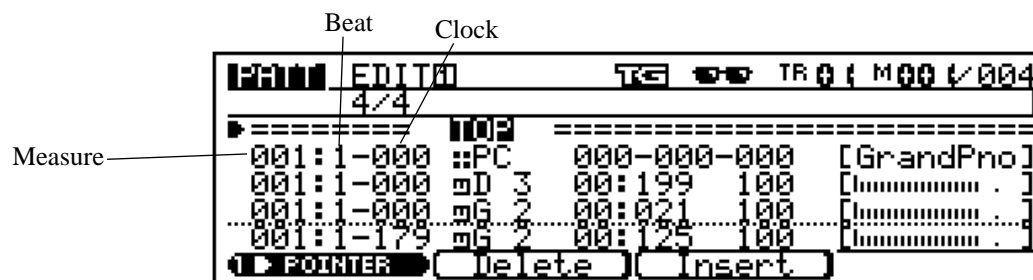
□ Edit

The event list presents a listing of the track's MIDI events, in order of their occurrence. Each entry shows an event's location in time, its name, and its numerical arguments. You are free to adjust the location or any of the argument values. You can delete any of the events, or insert new ones.

When you record a performance onto a sequence track, you are recording it as a series of MIDI events. Each event corresponds to a specific MIDI action. The striking of a note is a "note event", the switching of a voice is a "program change event", and so on.

Most event specifications must include information indicating how the event is to be carried out. A note-event specification, for example, must identify the note (the note name), the note's time span (the gate time), and the note's force (the velocity).

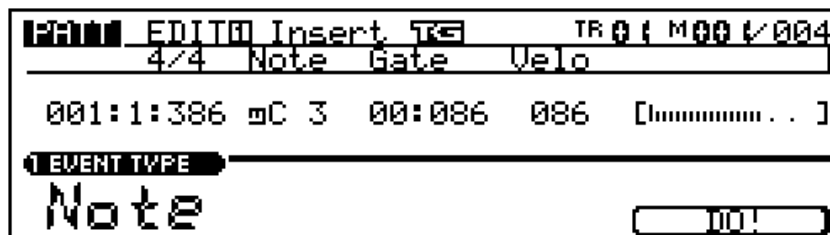
The first item on the event list is Top, while the last item is End. These items are for marking purposes only; they do not represent events, and they cannot be edited.



- ①
- F2
- F3

Parameter	Values	Function
Pointer	-	Moves the pointer to individual events.
Delete	-	Deletes the event at the current pointer location.
Insert	-	Inserts a specified event at the current pointer location.
Measure	001 ... 999	The number of the measure in which the corresponding event is located.
Beat	1 ... 16	The number of the beat at which the corresponding event is located.
Clock	000 ... 479	The number of the clock at which the corresponding event is located.

* For information about how to change values, refer to the Basic Operation (page26).



- ①

- F4

Parameter	Values	Function
Event type	Note, PB, PC, CC, CAT, PAT, RPN, NRPN, Exc, XG RPN, XG NRPN, XG Exc System, XG Exc Effect, XG Exc Multi, XG Exc Drum	Specifies the type of event to be inserted.
DO!		Actually inserts the specified event at the current pointer location.

* For information about how to change values, refer to the Basic Operation (page26).

Editing Existing Events

To edit the data in the edit display, use Display Knob 1 (POINTER) or the vertical cursor buttons to move the pointer to an event you want to edit, use the lateral cursor buttons to move the cursor to the data item you want to edit, then edit as required via either the [NO -1] and [YES +1] buttons or keyboard (the keyboard can be used for note entry as well as numeric entry as described on page 26). The edited event will flash on the display. Press the F4 function button (DO!) to actually enter the edited data (the event will stop flashing). To abort an edit simply move the pointer to a new event location without pressing the F4 (DO!) function button.

Inserting Events

To insert an event use Display Knob 1 (POINTER) or the vertical cursor buttons to move the pointer to an event which is at the location at which you want to insert the new event, and press the F3 function button (Insert). The EDIT Insert display will appear. Use Display Knob 1 to select the type of event you want to insert. Then use the cursor buttons to move to data items within the even shown on the display and edit as required. The precise insert location can also be specified in this way. The types of events available for insertion are listed below. When the desired event has been specified, press the F4 function button (DO!) to actually insert the event, or the [EXIT] button to abort and return to the main editing display. Please note that values for “Exc” events (system exclusive) must be entered in hexadecimal format.

[Event type list]

Event type	Function
Note (Note number)	These messages convey keyboard performance data. Each message includes a specific note number which corresponds to the key which is pressed, a velocity, and a gate time.
PB (Pitch Bend)	This message conveys movements of the PITCH BEND Knob
PC (Program Change)	This message is used to select voices. Refer to the separate List Book for a complete listing of the RM1x voices.
CC (Control Change)	These messages control volume or pan etc. Each controller has its own control number
CAT (Channel aftertouch)	This message conveys the pressure which is applied to the keyboard after playing a note in order to create tonal changes (for an entire MIDI channel)
PAT (Polyphonic aftertouch)	This message conveys the pressure that is applied to the keyboard after playing a note (for individual note numbers)
RPN (Registered Parameter Number)	This message is used to specify part parameters such as Pitch Bend Sensitivity or Tuning etc
NRPN (Non Registered Parameter Number)	This message is used to set sound parameters such as vibrato or detune, etc.
Exc (System Exclusive)	A type of MIDI message used to exchange data unique to a specific model or type of device.
XG RPN (XG Registered Parameter Number)	RPN data using an XG parameter name
XG NRPN (XG Non Registered Parameter Number)	NRPN data using an XG parameter name
XG Exc System (XG System Exclusive)	System Exclusive (XG System) message using an XG parameter name.
XG Exc Effect (XG Effect System Exclusive)	System Exclusive (XG Effect) message using an XG parameter name.
XG Exc Multi (XG Multi part System Exclusive)	System Exclusive (XG Multi part) message using an XG parameter name.
XG Exc Drum (XG Drum setup System Exclusive)	System Exclusive (XG Drum setup) message using an XG parameter name.

- note**
- Refer to the “MIDI Data Format” section of the separate List Book for details.
 - XG is a tone generator format developed by Yamaha which expands the GM specification to provide the richer expressiveness and upward data compatibility that is demanded by today’s more sophisticated computer peripheral environment.

Editable Event Parameters

The parameters and value ranges for editable items are listed below. For each type of event the main edit display is shown on the left while the corresponding insert edit display is shown on the right.

1) Note

PATTERN EDITOR				TR 01 M00 / 004
4/4	Note	Gate	Velo	
===== TOP =====				
001:1-000	ΔPan	[010]	+00	[.....]
001:1-000	::PC	000-000-000		[GrandPno]
001:1-000	m0 3	00:199	100	[.....]
001:1-000	m6 2	00:021	100	[.....]

PATTERN EDITOR Insert				TR 01 M00 / 004
4/4	Note	Gate	Velo	
===== TOP =====				
001:1:386	mC 3	00:086	086	[.....]

EVENT TYPE: Note

Note	Gate	Velocity
C-2 ... G8	00:001 ... 99:479	001 ... 127

2) Pitch Bend

PATTERN EDITOR				TR 01 M00 / 004
4/4	Data			
===== TOP =====				
001:1-448	mA 2	00:100	100	[.....]
001:2-026	ΔPB	+010		[.....]
001:2-026	mPAT C -2	000		[.....]
001:2-026	mB 2	00:081	100	[.....]
001:2-088	m0 3	00:101	100	[.....]

PATTERN EDITOR Insert				TR 01 M00 / 004
4/4	Data			
===== TOP =====				
001:1:386	ΔPB	+0000		[.....]

EVENT TYPE: PB

Data
-8192 ... +8191

3) Program change

PATTERN EDITOR				TR 01 M00 / 004
4/4	Bank	PC#		
===== TOP =====				
001:1-000	::PC	000-000-000		[GrandPno]
001:1-000	m0 3	00:199	100	[.....]
001:1-000	m6 2	00:021	100	[.....]
001:1-179	m6 2	00:125	100	[.....]

PATTERN EDITOR Insert				TR 01 M00 / 004
4/4	Bank	PC#		
===== TOP =====				
001:1:386	::PC	000-000-000		[GrandPno]

EVENT TYPE: PC

Bank Select MSB	Bank Select LSB	PC#
000 ... 127	000 ... 127	000 ... 127

4) Control Change

PATTERN EDITOR				TR 01 M00 / 004
4/4	Ctrl#	Data		
===== TOP =====				
001:1-000	ΔPan	[010]	+00	[.....]
001:1-000	::PC	000-000-000		[GrandPno]
001:1-000	m0 3	00:199	100	[.....]
001:1-000	m6 2	00:021	100	[.....]

PATTERN EDITOR Insert				TR 01 M00 / 004
4/4	Ctrl#	Data		
===== TOP =====				
001:1:386	ΔBank-M[000]	000		[.....]

EVENT TYPE: CC

Ctrl#	Data
000 ... 127	000 ... 127

5) Channel aftertouch

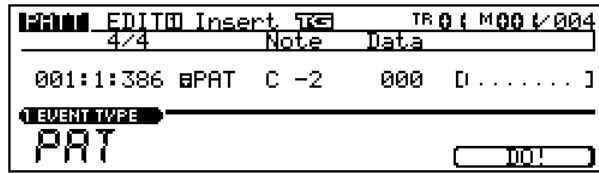
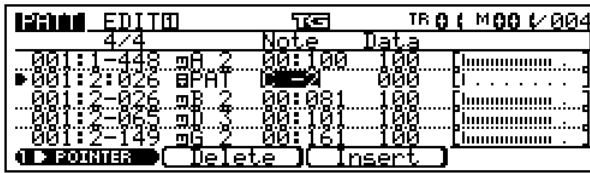
PATTERN EDITOR				TR 01 M00 / 004
4/4	Data			
===== TOP =====				
001:1-000	m0 3	00:199	100	[.....]
001:1-000	m6 2	00:021	100	[.....]
001:1-179	m6 2	00:125	100	[.....]
001:1-181	mCAT	000		[.....]
001:1-181	mB 2	00:124	100	[.....]

PATTERN EDITOR Insert				TR 01 M00 / 004
4/4	Data			
===== TOP =====				
001:1:386	mCAT	000		[.....]

EVENT TYPE: CAT

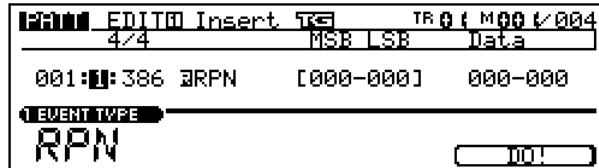
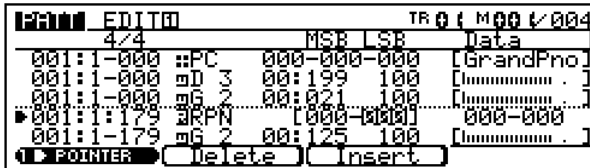
Data
000 ... 127

6) Polyphonic aftertouch



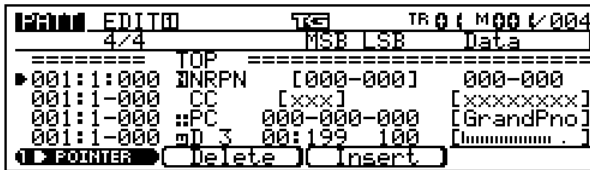
Note	Data
C-2 ... G8	000 ... 127

7) RPN



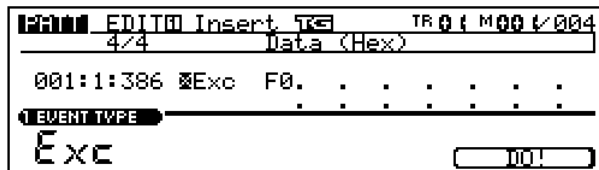
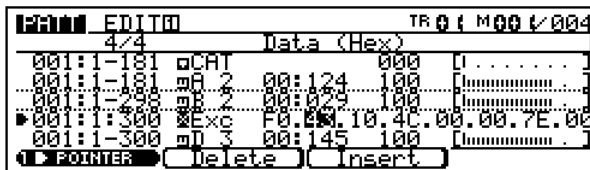
Parameter				Data
Display	Name	MSB	LSB	
PB Sens	Pitch Bend Sensitivity	000	000	000 ... 127, ***
FnTune	Fine tune	000	001	-64 ... +63, ***
CsTune	Coarse tune	000	002	-64 ... +63, ***
Null	Null	127	127	***

8) NRPN



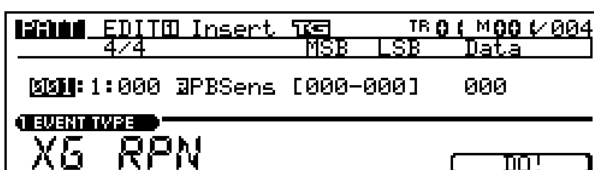
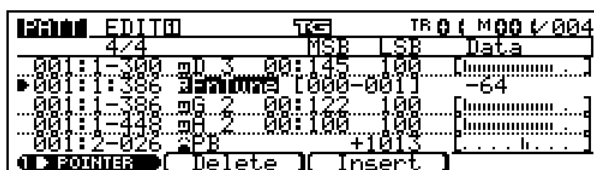
MSB	LSB	Data
000 ... 127	000 ... 127	000 ... 127

9) Exclusive



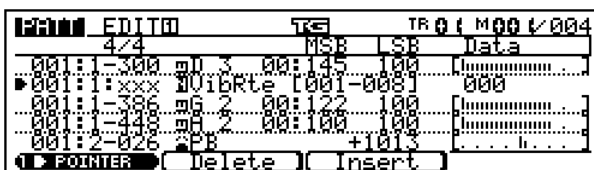
Data (Hex) needs to be entered using hexadecimal values.
 Refer to the "MIDI Data Format" section of the separate List Book for details.

10) XG RPN



Parameter				Data
Display	Name	MSB	LSB	
PB Sens	Pitch Bend Sensivity	000	000	000 ... 127, ***
FnTune	Fine tune	000	001	-64 ... +63, ***
CsTune	Coarse tune	000	002	-64 ... +63, ***
Null	Null	127	127	***

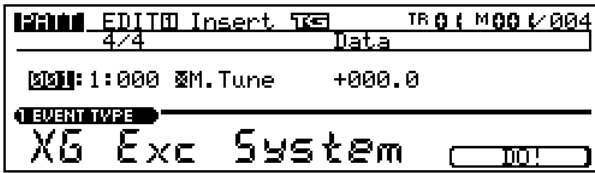
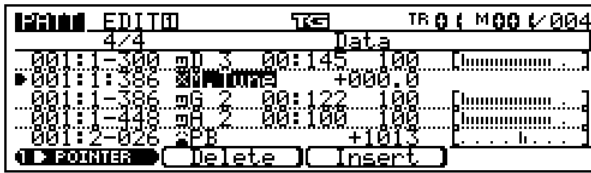
11) XG NRPN



Parameter				Data
Display	Name	MSB	LSB	
VibRte	Vibrato rate	001	008	000 ... 127, ***
VibDpt	Vibrato depth	001	009	000 ... 127, ***
VibDly	Vibrato delay	001	010	000 ... 127, ***
Cutoff	Filter Cutoff Frequency	001	032	000 ... 127, ***
Resonan	Filter Resonance	001	033	000 ... 127, ***
AtckTm	EG Attack time	001	099	000 ... 127, ***
DcayTm	EG Decay time	001	100	000 ... 127, ***
RlseTm	EG Release time	001	102	000 ... 127, ***
* DrCut	Drum Filter Cutoff Frequency	020	Note (C-2 ... G8)	000 ... 127, ***
* DrReso	Drum Filter Resonance	021	Note (C-2 ... G8)	000 ... 127, ***
* DrAtRt	Drum EG Attack Rate	022	Note (C-2 ... G8)	000 ... 127, ***
* DrDcRt	Drum EG Decay Rate	023	Note (C-2 ... G8)	000 ... 127, ***
* DrPtCs	Drum Pitch Coarse	024	Note (C-2 ... G8)	000 ... 127, ***
* DrPtFn	Drum Pitch Fine	025	Note (C-2 ... G8)	000 ... 127, ***
* DrLevl	Drum Level	026	Note (C-2 ... G8)	000 ... 127, ***
* DrPan	Drum Pan	028	Note (C-2 ... G8)	000 ... 127, ***
* DrRev	Drum Reverb Send Level	029	Note (C-2 ... G8)	000 ... 127, ***
* DrCho	Drum Chorus Send Level	030	Note (C-2 ... G8)	000 ... 127, ***
* DrVar	Drum Variation Send Level	031	Note (C-2 ... G8)	000 ... 127, ***

* Not supported by the tone generator block.

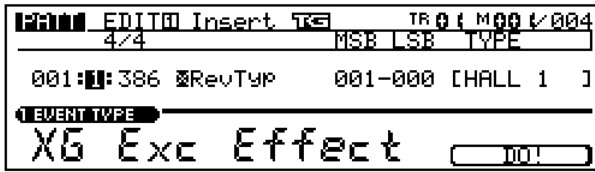
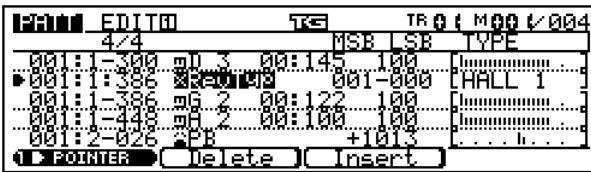
12) XG system exclusive (system)



Parameter	Data
M.Tune (Master Tune)	-102.4 ... +102.3
M.Vol (Master Volume)	000 ... 127
* M.Attn (Master Att)	000 ... 127
Trans (Transpose)	-64 ... +63
* DrRset (Drum Setup Reset)	Dr1 ... Dr9
XG On (XG system on)	-
PmRset (All Parameter Reset)	-
GM On	-

* Not supported by the tone generator block.

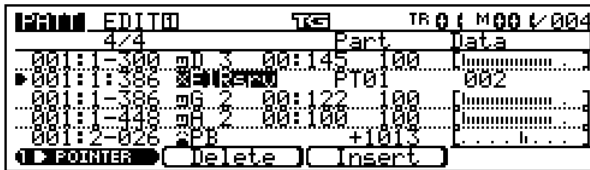
13) XG system exclusive (effect)



Parameter		Data
Display	Name	
RevTyp	Reverb Type	Refer to the "Effect Parameter List" section of the separate List Book for details.
RevP1	Reverb Parameter 1	
•	•	
•	•	
RevP10	Reverb Parameter 10	
RevRtn	Reverb Return	000 ... 127
RevPan	Reverb Pan	L64 ... C ... R63
RevP11	Reverb Parameter 11	Refer to the "Effect Parameter List" section of the separate List Book for details.
•	•	
•	•	
RevP16	Reverb Parameter 16	
ChoType	Chorus Type	
ChoP1	Chorus Parameter 1	
•	•	
•	•	
ChoP10	Chorus Parameter 10	
ChoRtn	Chorus Return	000 ... 127
ChoPan	Chorus Pan	L64 ... C ... R63
ChToRv	Send Chorus to Reverb	000 ... 127
ChoP11	Chorus Parameter 11	Refer to the "Effect Parameter List" section of the separate List Book for details.
•	•	
•	•	
ChoP16	Chorus Parameter 16	
VarType	Variation Type	
VarP1	Variation Parameter 1	
•	•	
•	•	
VarP10	Variation Parameter 10	
VarRtn	Variation Return	000 ... 127
VarPan	Variation Pan	L64 ... C ... R63

Parameter		Data
VrToRv	Send Variation to Reverb	000 ... 127
VrToCh	Send Variation to Chorus	000 ... 127
VrCnct	Variation Connection	INS, SYS
VrPart	Variation Part	000 ... 127
MWVar	MW Variation Control Depth	-64 ... +63
BndVar	Bend Variation Control Depth	-64 ... +63
CATVar	CAT Variation Control Depth	-64 ... +63
AC1Var	AC1 Variation Control Depth	-64 ... +63
AC2Var	AC2 Variation Control Depth	-64 ... +63
VarP11	Variation Parameter 11	Refer to the "Effect Parameter List" section of the separate List Book for details.
•	•	
•	•	
VarP16	Variation Parameter 16	

14) XG system exclusive (multi)



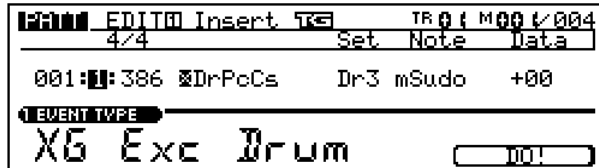
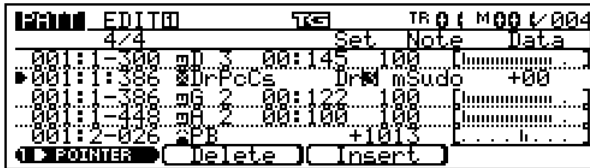
Parameter		Part	Data
Display	Name		
* EIRsrv	Element Reserve	PT01 ... PT99	000 ... 127
Bank-M	Bank Select MSB	PT01 ... PT99	000 ... 127
Bank-L	Bank Select LSB	PT01 ... PT99	000 ... 127
Pgm#	Program Number	PT01 ... PT99	001 ... 128
* RcvCh.	Receive Channel	PT01 ... PT99	001 ... 127, OFF
M/P	Mono / Poly	PT01 ... PT99	POLY, MONO
KOnAsn	Same Note Number Key On Assign	PT01 ... PT99	SNGL, MULT, INST
* PtMode	Part Mode	PT01 ... PT99	NORM, DRUM, DrS1 ... DrS9
NtShft	Note Shift	PT01 ... PT99	-64 ... +63
Detune	Detune	PT01 ... PT99	-12.8 ... +12.7
Vol	Volume	PT01 ... PT99	000 ... 127
VelDep	Velocity Sens Depth	PT01 ... PT99	000 ... 127
VelOfs	Velocity Sens Offset	PT01 ... PT99	000 ... 127
Pan	Pan	PT01 ... PT99	Rnd(Random), L63 ... C ... R63
NLim-L	Note Limit Low	PT01 ... PT99	C-2 ... G8
NLim-H	Note Limit High	PT01 ... PT99	C-2 ... G8
DryLvl	Dry Level	PT01 ... PT99	000 ... 127
ChoSnd	Chorus Send	PT01 ... PT99	000 ... 127
RevSnd	Reverb Send	PT01 ... PT99	000 ... 127
VarSnd	Variation Send	PT01 ... PT99	000 ... 127
VibRte	Vibrato Rate	PT01 ... PT99	-64 ... 0 ... +63
VibDep	Vibrato Depth	PT01 ... PT99	-64 ... 0 ... +63
VibDly	Vibrato Delay	PT01 ... PT99	-64 ... 0 ... +63
Cutoff	Filter Cutoff Frequency	PT01 ... PT99	-64 ... 0 ... +63
Resnan	Filter Resonance	PT01 ... PT99	-64 ... 0 ... +63
Attack	EG Attack Time	PT01 ... PT99	-64 ... 0 ... +63
Decay	EG Decay Time	PT01 ... PT99	-64 ... 0 ... +63
Release	EG Release Time	PT01 ... PT99	-64 ... 0 ... +63
MWP-Cn	MW Pitch Control	PT01 ... PT99	-64 ... 0 ... +63
MWF-Cn	MW Filter Control	PT01 ... PT99	-9600 ... 0 ... +9450
MWA-Cn	MW Amplitude Control	PT01 ... PT99	-64 ... 0 ... +63
MWP-Dp	MW LFO Pitch Modulation Depth	PT01 ... PT99	000 ... 127
MWF-Dp	MW LFO Filter Modulation Depth	PT01 ... PT99	000 ... 127

* Not supported by the tone generator block.

Parameter		Part	Data
Display	Name		
MWA-Dp	MW LFO Amplitude Modulation Depth	PT01 ... PT99	000 ... 127
Bnp-Cn	Bend Pitch Control	PT01 ... PT99	-64 ... 0 ... +63
BnF-Cn	Bend Filter Control	PT01 ... PT99	-9600 ... 0 ... +9450
BnA-Cn	Bend Amplitude Control	PT01 ... PT99	-64 ... 0 ... +63
BnP-Dp	Bend LFO Pitch Modulation Depth	PT01 ... PT99	000 ... 127
BnF-Dp	Bend LFO Filter Modulation Depth	PT01 ... PT99	000 ... 127
BnA-Dp	Bend LFO Amplitude Modulation Depth	PT01 ... PT99	000 ... 127
CATP-C	CAT Pitch Control (Handled as LFO Pitch Depth by the tone generator block.)	PT01 ... PT99	-64, ... 0 ... +63
CATF-C	CAT Filter Control (Handled as LFO Filter Depth by the tone generator block.)	PT01 ... PT99	-9600 ... 0 ... +9450
CATA-C	CAT Amplitude Control (Handled as LFO Amp Depth by the tone generator block.)	PT01 ... PT99	-64, ... 0 ... +63
CATP-D	CAT LFO Pitch Modulation Depth	PT01 ... PT99	000 ... 127
CATF-D	CAT LFO Filter Modulation Depth	PT01 ... PT99	000 ... 127
CATA-D	CAT LFO Amplitude Modulation Depth	PT01 ... PT99	000 ... 127
PortSw	Portament Switch	PT01 ... PT99	OFF, ON
PortTm	Portament Time	PT01 ... PT99	000 ... 127
PEGInt	Pitch EG Initial Level	PT01 ... PT99	-64, ... 0 ... +63
PEGAtk	Pitch EG Attack Time	PT01 ... PT99	-64, ... 0 ... +63
PEGRLv	Pitch EG Release Level	PT01 ... PT99	-64, ... 0 ... +63
PEGRtm	Pitch EG Release Time	PT01 ... PT99	-64, ... 0 ... +63
* VelLmL	Velocity Limit Low	PT01 ... PT99	000 ... 127
* VelLmH	Velocity Limit High	PT01 ... PT99	000 ... 127

* Not supported by the tone generator block.

15) XG system exclusive (drum)





Parameter		Set	Note	Data
Display	Name			
* DrPcCs	Drum Pitch Coarse	Dr1 ... Dr9	C-2 ... G8	-64 ... 0 ... +63
* DrPcFn	Drum Pitch Fine	Dr1 ... Dr9	C-2 ... G8	-64 ... 0 ... +63
* DrLevl	Drum Level	Dr1 ... Dr9	C-2 ... G8	000 ... 127
* DrAltG	Drum Alternate Group	Dr1 ... Dr9	C-2 ... G8	OFF, 001 ... 127
* DrPan	Drum Pan	Dr1 ... Dr9	C-2 ... G8	Rnd, L63 ... C ... R63
* DrRev	Drum Reverb Send	Dr1 ... Dr9	C-2 ... G8	000 ... 127
* DrCho	Drum Chorus Send	Dr1 ... Dr9	C-2 ... G8	000 ... 127
* DrVar	Drum Variation Send	Dr1 ... Dr9	C-2 ... G8	000 ... 127
* DrKyAs	Drum Key Assign	Dr1 ... Dr9	C-2 ... G8	SNGL, MULT
* DrNtOf	Drum Receive Note Off	Dr1 ... Dr9	C-2 ... G8	OFF, ON
* DrNtOn	Drum Receive Note On	Dr1 ... Dr9	C-2 ... G8	OFF, ON
* DrCut	Drum Filter Cutoff Frequency	Dr1 ... Dr9	C-2 ... G8	-64 ... 0 ... +63
* DrResn	Drum Filter Resonance	Dr1 ... Dr9	C-2 ... G8	-64 ... 0 ... +63
* DrAttk	Drum EG Attack Time	Dr1 ... Dr9	C-2 ... G8	-64 ... 0 ... +63
* DrDcy1	Drum EG Decay 1 Time	Dr1 ... Dr9	C-2 ... G8	-64 ... 0 ... +63
* DrDcy2	Drum EG Decay 2 Time	Dr1 ... Dr9	C-2 ... G8	-64 ... 0 ... +63

* Not supported by the tone generator block.

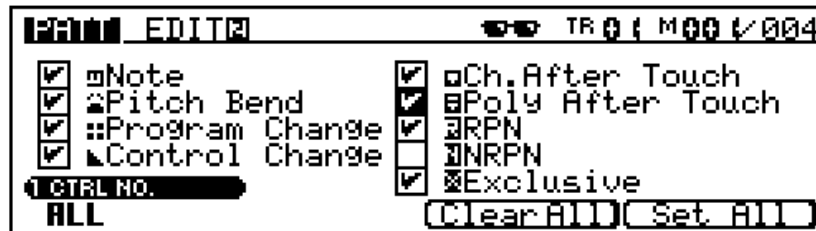
View Filter

The RM1x's "View Filter" lets you select the event types that appear on the editing screens. To select an event for display, place a checkmark in the box next to the event name. To filter out an event type (so that it does not appear on the list), remove the checkmark so that the box is empty.

Under the default setup all event types are shown, and the View Filter mark  does not appear. If you choose to filter out one or more event types, the View Filter mark  appears at the top of the editing screens to remind you that the filter is on.

As an example, assume that you want to work on note events only. In this case, you will probably want to filter out all other event types from the event list - since this will make the list easier to follow, and will protect against accidental changes to other events. To set the filter to block out all non-note events, remove checkmarks from all boxes other than the Note box.

You can remove all checkmarks at once by pressing the F3 button (ClearAll). To set checkmarks into all boxes, press the F4 button (Set All).



Parameter	Values	Function
Control Number	000 ... 119, ALL	Specifies Control Change number.
<input type="checkbox"/> F3 Clear All		Removes all checkmarks at once.
<input type="checkbox"/> F4 Set All		Sets checkmarks into all boxes.

14. Split

Split

This function allows a specified range of measures to be copied from the current section (pattern) to a specified section in a specified user style.



Parameter	Values	Function
1 Start measure	001 ... 256	Specifies the first measure in the range to be copied.
2 End measure	001 ... 256	Specifies the last measure in the range to be copied.
3 Style number	U01 ... U50	Specifies the destination style number.
4 Section	A ... P	Specifies the destination section.
DO!	-	Press the F4 function button to actually cut and copy the specified pattern data to the specified style and section.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.
Measure	001 ... 256	Sets playback start location; or shows current playback location.

* For information about how to change values, refer to the Basic Operation (page26).

After specifying the start and end measures of the range of pattern data you want to copy from the current style and section, and after specifying the destination style and section, press the F4 function key (DO!). “Executing” will appear on the display briefly while the data is being copied.

The SPLIT function makes the process of splitting a section into multiple sections of the same length fast and easy. After

the first SPLIT operation the START MEAS and END MEAS parameters will automatically be set in preparation to copy the next range of measures: START MEAS will be set to the previous END MEAS + 1, and END MEAS will be set to specify a measure range of the same length as the preceding range copied.

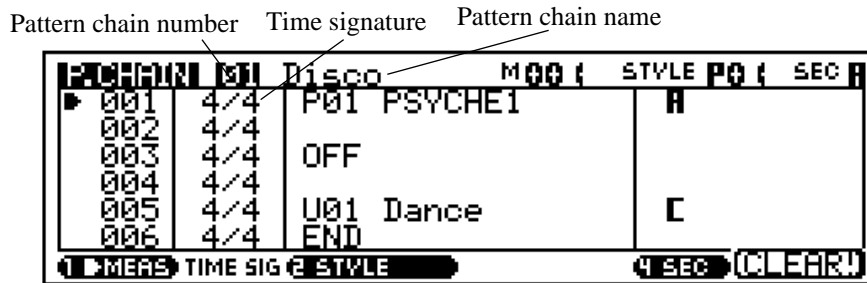
Chapter 3. PATTERN CHAIN MODE

The PATTERN CHAIN mode makes it possible to specify a sequence of patterns to be played back automatically.

1. PATTERN CHAIN Playback	110
2. Disk	111
3. Job	112

1. PATTERN CHAIN Playback

The main PATTERN CHAIN display can be used to specify and edit the sequence of patterns to be played in the Pattern Chain mode.



Parameter	Values	Function
1 Measure		Positions the pointer (on the left side of the display) at the beginning of any measure within the chain for pattern entry or playback.
2 Style	OFF, P01 ... P60, END, U01 ... U50	Selects the style. "OFF" mutes the corresponding measure (i.e. no sound is produced), and "END" causes pattern chain playback to stop at that measure.
4 Section	A ... P	Selects the section.
F4 CLEAR!	-	Deletes the style or section at the current cursor location.
Pattern chain number/ Pattern chain name	01 ... 20	Selects one of the 20 available pattern chains.
Time Signature	1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4	Specifies the the time signature of the current measure.

* For information about how to change values, refer to the Basic Operation (page26).

To Create and Play a Chain

- 1** Select a measure.

Use Display Knob 1 to locate the measure pointer at the measure you want to insert a pattern (normally you will start a chain at measure 001). A pattern will only play up until the next specified pattern. For example, if an 8-measure pattern is specified at measure 001, then the next pattern is specified at measure 005, the first pattern will only play up to measure 004 then the second pattern will begin playing from measure 005.
- 2** Enter a pattern at the selected measure.

Use Display Knob 2 to specify a style, and display knob 4 to specify the section of the style corresponding to the desired pattern. "OFF" and "END" measures can be entered via Display Knob 2. You can also specify the section via the keyboard as described on page 28. It is not necessary to re-enter the style and section for subsequent measures over which you want the pattern to play. If it is an 8-measure pattern, for example, and you want it to play for the full 8 measures before the next measure begins, you can leave the next 7 measures blank and then enter the next pattern on the following measure.

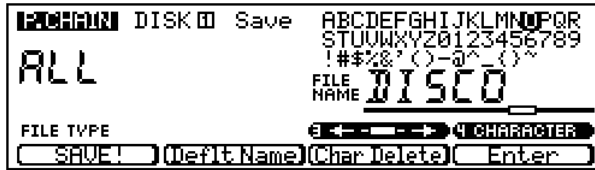
Specified styles and sections can be cleared by moving the pointer to the appropriate measure and pressing the F4 function button (CLEAR!).
- 3** Specify a time signature, if necessary.

Move the cursor to the time signature parameter and use the [NO -1]/[YES +1] buttons to change the time signature of the selected measure, if necessary. If the new time signature setting results in a total number of beats which are fewer than the corresponding pattern(s), the excess beats will be truncated to fit the specified time signature. On the other hand, if the new time signature setting results in a greater number of beats than the original pattern, the pattern will be looped to fill the specified number of beats.
- 4** Play the chain. Press the PLAY button to begin chain playback from the current measure.

2. Disk

Disk functions in the PATTERN CHAIN mode are essentially the same as those in the PATTERN mode, except that only the “ALL” file type is available. Refer to the PATTERN mode disk functions beginning on page 76.

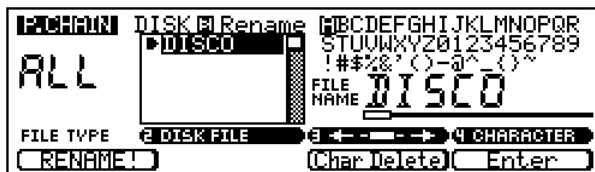
Save



Load



Rename



Delete/Format/Information



3. Job

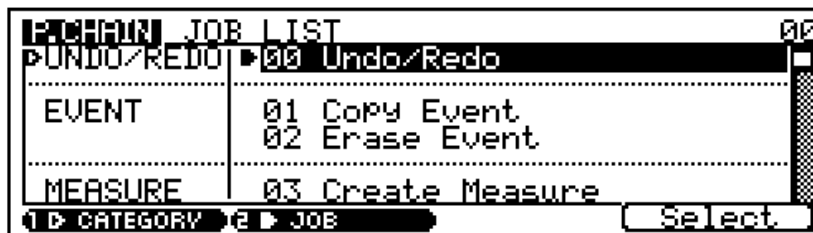
You use the RM1x's pattern chain jobs to perform various operations on phrases and patterns.

You select the job from the job menu using the Display Knob 1, 2 or the CURSOR buttons. You can also make your selection using the F4 button.

Note that the job menu is too large to fit entirely on the screen. But you can scroll through the list using the Display Knob 1, 2 or the CURSOR buttons.

Job List

Category	Values	Function	See page
UNDO/REDO	00 Undo/Redo	If UNDO: Cancel the last operation. If REDO: Cancel the last UNDO	113
EVENT	01 Copy Event	Copy all events in specified segment to designated destination.	113
EVENT	02 Erase Event	Erase all events over selected segment (and replaces with rests).	113
MEASURE	03 Create Measure	Insert empty measures into all tracks.	113
MEASURE	04 Delete Measure	Delete specified measures from all tracks.	113
CONVERT	05 Convert to Song	Converts the Pattern Chain data to Song data and places the results in the normal song tracks after converting the data to standard MIDI format.	114
CHAIN	06 Copy Chain	Copy data from selected pattern chain into destination pattern chain.	114
CHAIN	07 Clear Chain	Delete all data from selected pattern chain.	114
CHAIN	08 Chain Name	Assign a name to the selected pattern chain.	114



Parameter	Values	Function
① Category	UNDO/REDO, EVENT, MEASURE, CONVERT, CHAIN	Selects the category.
② Job	00 ... 08	Selects the job.
☐ F4 Select		Jumps to the job currently selected in the job list.

To Select a Job

Same as in the PATTERN mode. Refer to page 81.

CAUTION!

Do not turn off the power while a job is executing (while the "Executing..." message is on the screen), as this may cause destruction of your recorded data.

□ Undo/Redo

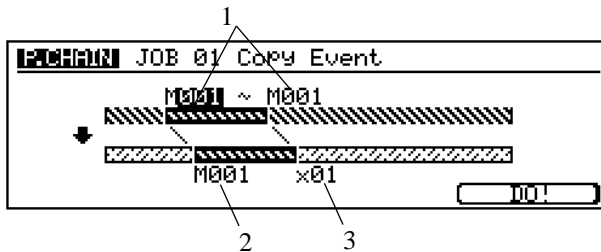
Job 00 Undo/Redo



Exactly the same as in the PATTERN mode (page 82).

□ Event

Job 01 Copy Event



This job copies all data from a specified source area (pattern chain) to a specified destination, overwriting any data already existing at the destination.

1. Source segment

The upper “M” values set the segment from which data are copied.

■ Settings : Measure 001 ... 999

2. Start point of destination segment

The lower “M” value sets the start point for the copy on the destination phrase.

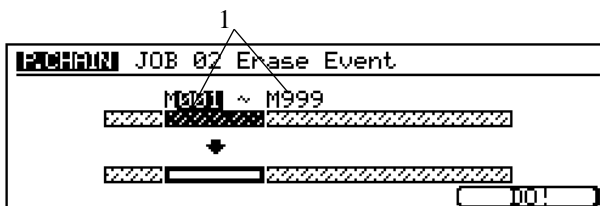
■ Settings : Measure 001 ... 999

3. Times

This multiplier specifies the number of times the segment is copied.

■ Settings : 01 ... 99

Job 02 Erase Event



This job clears all data from the specified segment of the designated pattern chain, so that the segment becomes silent.

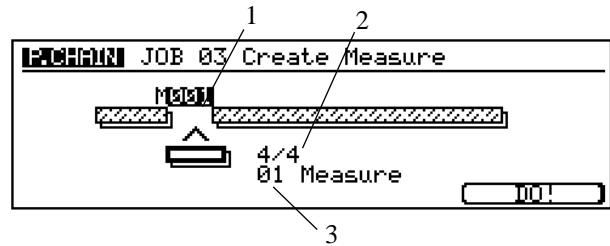
1. Segment (M001 ~ M999)

Sets the area of the pattern chain to be erased.

■ Settings : Measure 001 ... 999

□ Measure

Job 03 Create Measure



This job inserts one or more empty measures into the same location on all tracks.

1. Insertion point

The “M” value sets the position for the insertion. Specifically, the value sets the measure number (within the pattern chain) for the first inserted measure. A value of 001, for example, inserts the measures at the very beginning (so that the first inserted measure becomes Measure 1).

■ Settings : 001 ... 999

2. Time signature

You can select any time signature that you like. You may find it convenient to use this parameter when you need to create a pattern that incorporates meter changes.

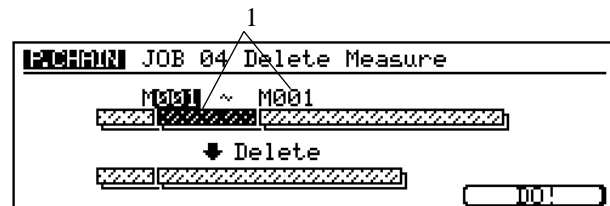
■ Settings : 1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4

3. Number of measures to insert

You can set the number of measures to be inserted.

■ Settings : 01 ... 99

Job 04 Delete Measure



This job removes a segment consisting of one or more measures. The segment is removed from all tracks.

The area that trails the deleted segment shifts forward (toward the start of the pattern chain) to fill in the gap.

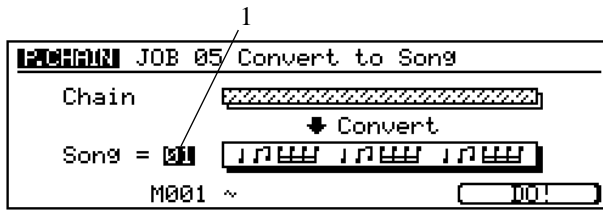
1. Range

The “M” values set the segment to be removed. The first value gives the number of the first measure of the segment; the second value gives the number of the final measure.

■ Settings : 001 ... 999

Convert

Job 05 Convert to Song



This job converts the Pattern Chain data to Song data and places the results in the normal song tracks after converting the data to standard MIDI format. The expanded data is placed in song tracks 1 through 16. Any previous data in those tracks will be erased!

1. Song

Specifies the Song number to which the converted data will be saved.

■ Settings : 01 ... 20

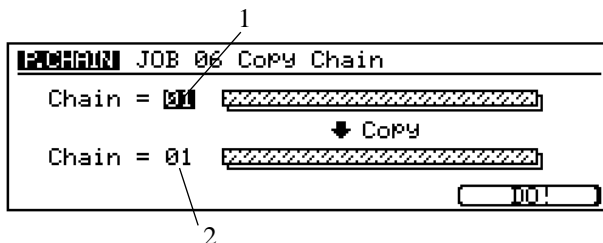
2. Start Measure

Specifies the measure from which the converted data will start in the destination Song.

■ Settings : 001 ... 999

Chain

Job 06 Copy Chain



This job copies the selected pattern chain (including PLAY FX and VOICE submode settings) into another pattern chain location. Following the copy, the selected pattern chain will exist at two pattern chain locations.

The copy operation causes loss of any data already existing in the destination pattern chain.

1. Source pattern chain

The first Chain value selects the Pattern chain to be copied.

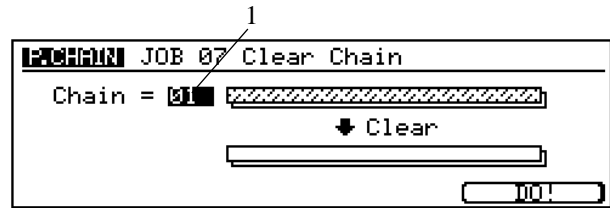
■ Settings : 01 ... 20

2. Destination pattern chain

The second Chain value selects the destination.

■ Settings : 01 ... 20

Job 07 Clear Chain



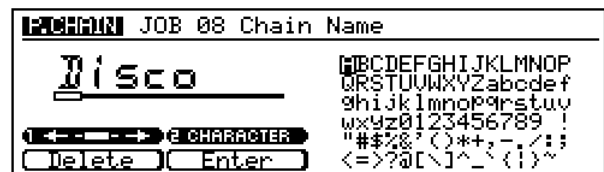
This job deletes all data from the selected pattern chain.

1. Chain

Selects the pattern chain to be deleted.

■ Settings : 01 ... 20

Job 08 Chain Name



You use this job to set or change the name for the currently selected pattern chain.

Use Display Knobs 1 and 2 to select a character location and character, then press the F2 function button (Enter) to enter the specified character at the selected location. The F1 function button (Delete) can be used to back up one character location and delete the character at that location. Repeat until the chain name is complete.

Chapter 4. SONG MODE

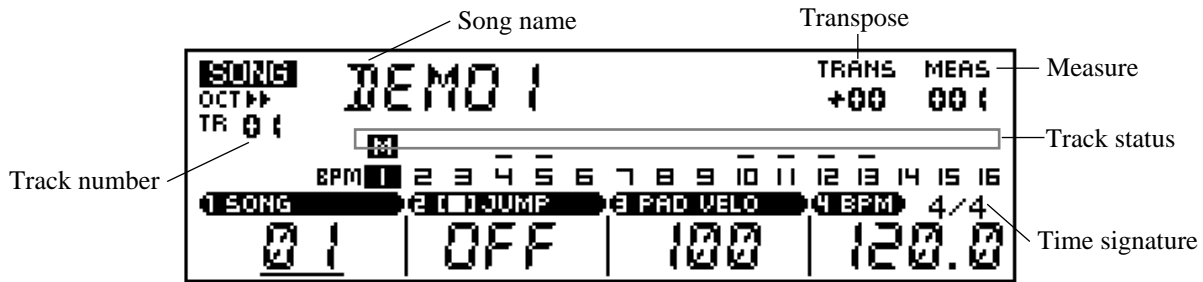
You use SONG mode to play, edit, and record your songs. This chapter explains all SONG mode operations.

The RM1x's song memory has room for 20 songs. Each song can comprise as many as 16 sequence tracks and 1 BPM (tempo) track.

Playback and recording in the SONG mode is essentially the same as in the PATTERN mode. Conceptually, the only difference is that the SONG mode is designed for recording and playing back complete songs, while the PATTERN mode is intended for recording and playing shorter phrases and patterns. The only functional differences are that the SONG mode allows setting odd time signatures, punch-in recording, and multitrack recording in which all tracks can be recorded simultaneously (from an external MIDI sequencer or computer).

1. SONG Playback	116
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5. MIDI delay	119
6. Arpeggio	119
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8. Voice Edit	120
9. Effect	120
10. Setup	121
11. Disk	122
12. Job	123
13. Edit	128
14. Split	129

1. SONG Playback



Parameter	Values	Function
1 Song number / name	U01 ... U20	Selects the song.
2 Jump	OFF, 001 ...	Specifies the measure the RM1x will "jump" to when the STOP <input type="checkbox"/> button is pressed. When "OFF" the playback locations remains where it is when playback is stopped.
3 Keypad velocity	001 ... 127, RND1 ... RND4	Specifies the note velocity value for the RM1x keyboard. Higher values produce louder sound.
4 BPM	25 ... 300	Sets tempo for song playback.
Track number	01 ... 16, BPM	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.
Measure		Sets playback start location; or shows current playback location.
Time Signature	1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4	Sets the song's time signature.
Track status	M, S	Indicates track SOLO or track MUTE. The highlighted track number indicates the currently selected track.

* For information about how to change values, refer to the Basic Operation (page 26).

To select and play a song

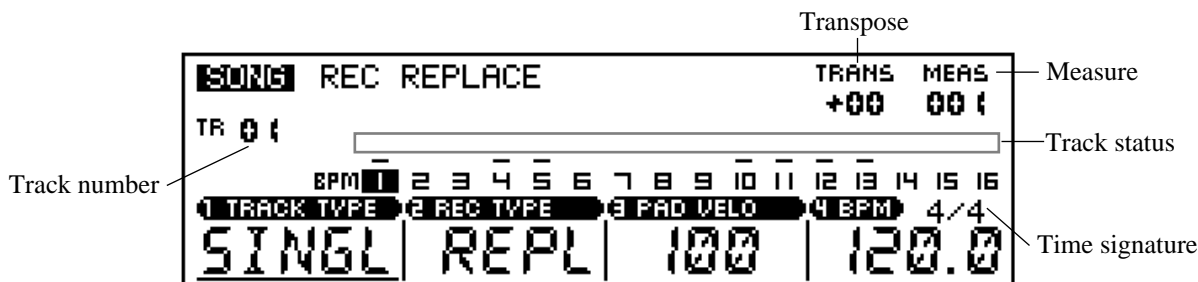
- 1 Make sure the SONG mode is selected (if necessary, press the MODE [SONG] button). "SONG" should appear in the upper left-hand corner of the LCD display.
- 2 Use Display Knob 1 to select a song (01 ... 20).
- 3 Press PLAY to start playback.
The PLAY button indicator will flash at the current BPM rate, the velocity bars above active tracks will indicate playback level in the corresponding tracks, and the MEAS parameter will indicate the current measure during playback.
- 4 Select tracks via the keyboard as described on page 27, and use the realtime controller knobs to change parameters as required during playback.
In the SONG mode playback will stop automatically when the end of the song is reached.
- 5 Press STOP if you want to stop playback before the end of the song.

2. Recording

You use SONG RECORDING mode to record your songs.

You start a recording session from the SONG PLAY screen by pressing the REC button. This puts you into Recording Standby. You can then select the recording method and set the relevant parameters, before beginning the actual recording.

Refer to the PATTERN mode recording instructions (page 49) for details on recording using the REPLACE, OVERDUB, STEP, and GRID recording modes. The SONG mode additionally allows PUNCH-IN recording, which will be described below.



Parameter	Values	Function
① Track Type	Single, Multi	Specifies SINGLE or MULTI-TRACK recording. When SINGLE is selected only a single track is recorded at a time as in the PATTERN mode. When MULTI is selected all 16 tracks can be recorded at the same time via the corresponding MIDI channels. Please note that only the REPLACE, OVERDUB, and PUNCH-IN recording modes are available when MULTI is selected.
② Recording type	Replace (Realtime) Overdub (Realtime) Punch In (Realtime) Step (Step) Grid (Step)	Selects the recording method.
③ Keypad velocity	001 ... 127, RND1 ... RND4	Specifies the note velocity value for the RM1x keyboard. Higher values produce louder sound.
④ BPM	25 ... 300	Sets tempo for song playback.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.
Measure		Sets recording start location; or shows current recording location.
Time Signature	1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4	Sets the song's time signature.
Track status	MUTE, SOLO	Indicates track SOLO or track MUTE. The highlighted track number indicates the currently selected track.

* For information about how to change values, refer to the Basic Operation (page 26).



Realtime Recording (Replace, Overdub)

Same as in the PATTERN mode. Refer to page 51.

- note** • When Replace recording is used in the SONG mode, only the recorded measures will be replaced (the entire track is replaced in the PATTERN mode).

Realtime Recording (Punch In)

Punch-in recording is a special type of realtime recording in which you specify a range of measures you want to record, leaving all other material on the track intact. This is particularly useful for re-recording a short segment of an otherwise perfect track — so you don't have to re-record the entire track.

- For punch-in recording use Display Knob 2 to select the PUNCH mode after engaging the record ready mode (step 6 of the "Preparing To Record" record process, described on page 49).
- If necessary select the track you want to record on via the keyboard as described on page 27.
- Specify the "punch-in" and "punch-out" points, the punch-in point being the measure and beat at which recording will begin, and the punch-out point being the measure and beat at which recording will end. Move the cursor to the punch-in and punch-out measure and beat parameters and set as required. Then, before actually starting recording, set the measure parameter a few measures before the punch-in point so you'll be ready to record when the punch-in point is reached.
- Start the punch-in operation by pressing the PLAY  button (there is no count-in when punch-in recording is started). Recording will begin automatically at the specified punch-in point.
- Recording will stop, but playback will continue, when the punch-out point is reached. Press the STOP  button to stop playback.

Recording the BPM Track

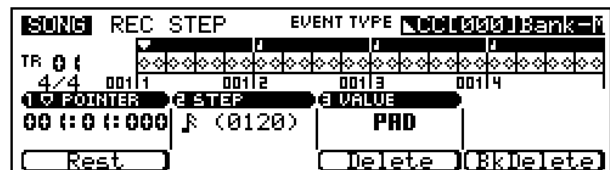
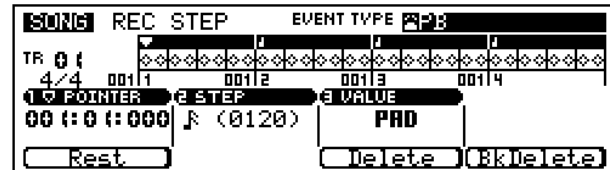
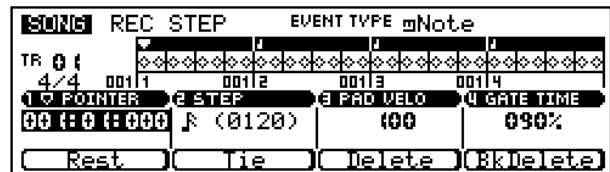
The SONG mode has a BPM track in addition to standard recording tracks 1 through 16. The BPM track can be used to record BPM changes which will be reproduced when the song is played back.

To record BPM data simply select the BPM track for recording, begin recording in the Replace or Punch In mode, and use display knob 4 to enter the BPM changes as required.

Step Recording

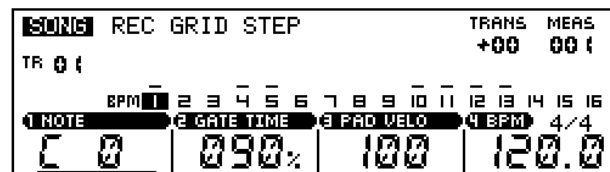
Same as in the PATTERN mode. Refer to page 52.

- note** • BPM data can be recorded to the BPM track in the STEP record mode in the same way that other control change data can be recorded to the normal tracks.



Step Recording (Grid)

Same as in the PATTERN mode. Refer to page 54.

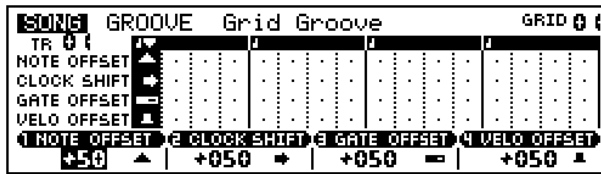


- note** • The GRID record mode cannot be selected if the BPM track is selected for recording.

3. Groove

Grid Groove

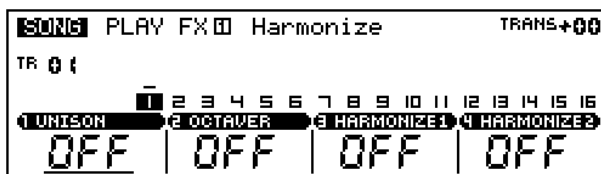
Same as in the PATTERN mode. Refer to page 55.



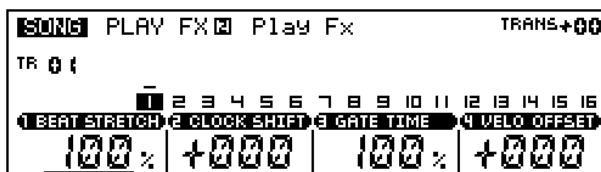
4. Play FX

Same as in the PATTERN mode. Refer to page 57. The only difference is that in the SONG mode you will not need to specify a section since the concept of “sections” only applies in the PATTERN mode.

Harmonize



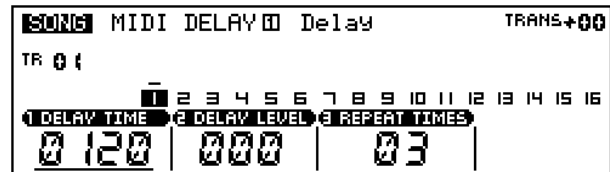
Play Fx



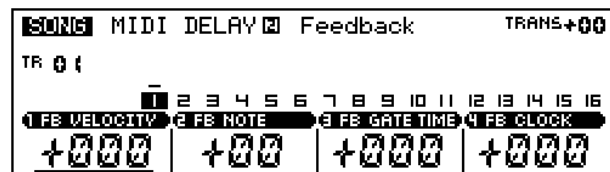
5. MIDI delay

Same as in the PATTERN mode. Refer to page 60. The only difference is that in the SONG mode you will not need to specify a section since the concept of “sections” only applies in the PATTERN mode.

Delay



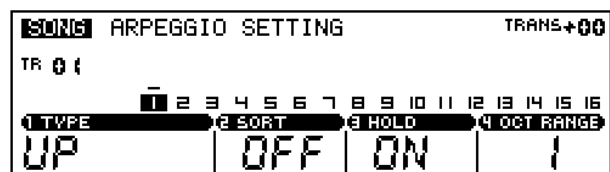
Feedback



6. Arpeggio

Same as in the PATTERN mode. Refer to page 62. The only difference is that in the SONG mode you will not need to specify a section since the concept of “sections” only applies in the PATTERN mode.

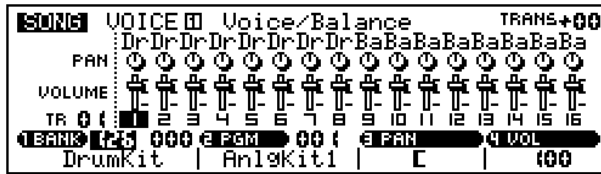
Arpeggio Setting



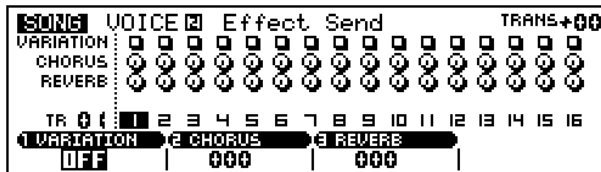
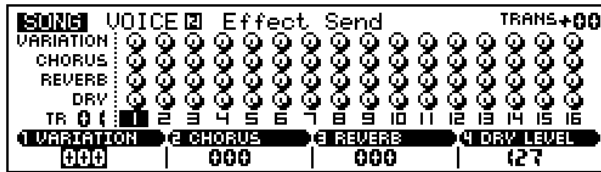
7. Voice

Same as in the PATTERN mode. Refer to page 63. The only difference is that in the SONG mode you will not need to specify a section since the concept of “sections” only applies in the PATTERN mode.

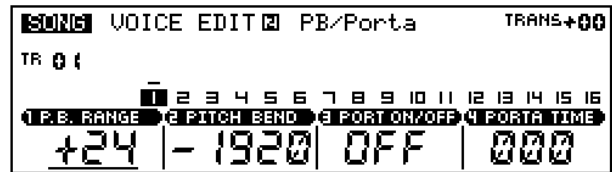
☐ Voice Balance



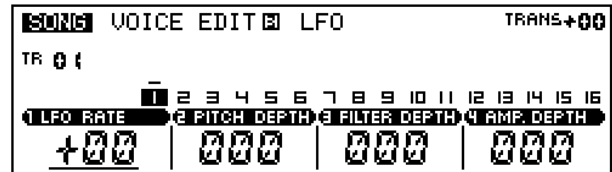
☐ Effect Send



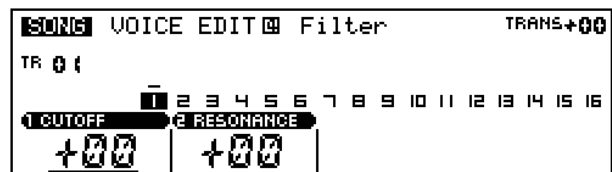
☐ Pitch Bend/Portamento



☐ LFO



☐ Filter

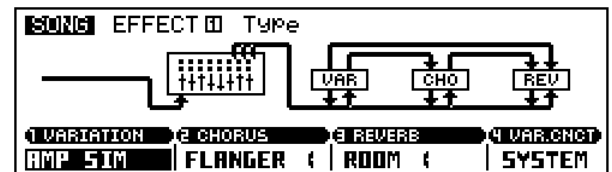


9. Effect

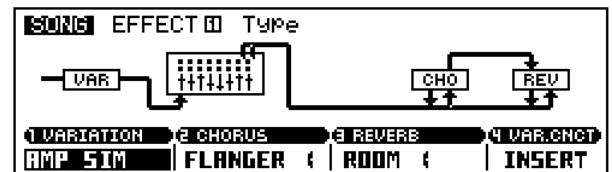
Same as in the PATTERN mode. Refer to page 69.

☐ Type

When variation connection = System:



When variation connection = Insertion:



8. Voice Edit

Same as in the PATTERN mode. Refer to page 65. The only difference is that in the SONG mode you will not need to specify a section since the concept of “sections” only applies in the PATTERN mode.

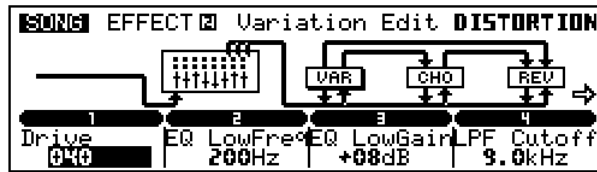
☐ EG



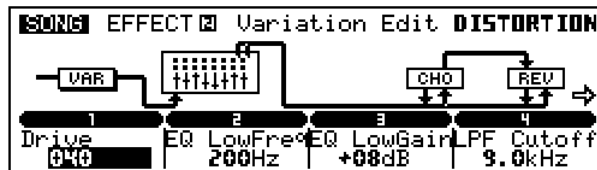
Variation edit

page1

When variation connection = System:

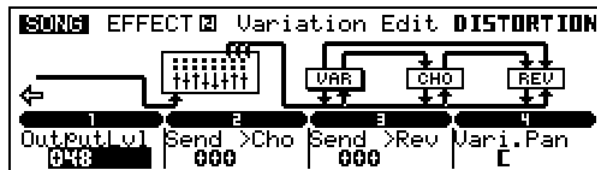


When variation connection = Insertion:

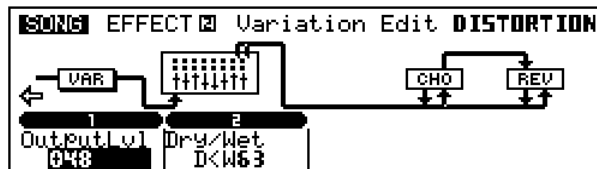


page2

When variation connection = System:

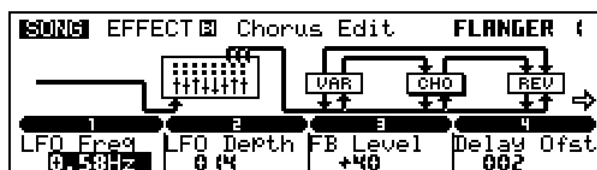


When variation connection = Insertion:

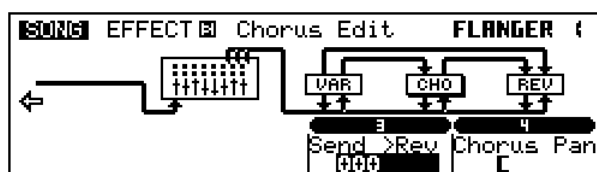


Chorus edit

page1



page2

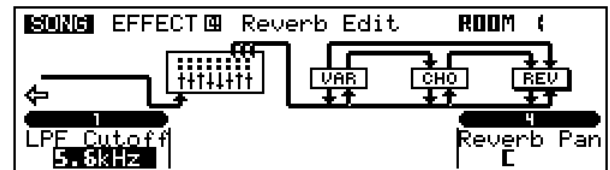


Reverb edit

page1



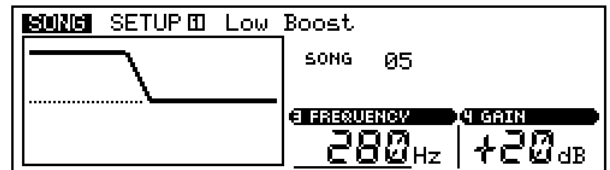
page2



10. Setup

Same as in the PATTERN mode. Refer to page 73.

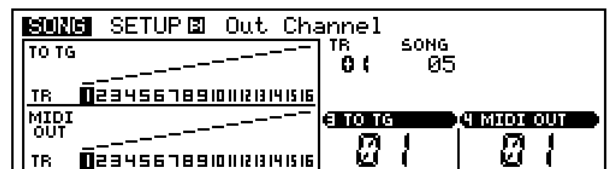
Low Boost



Knob Assign



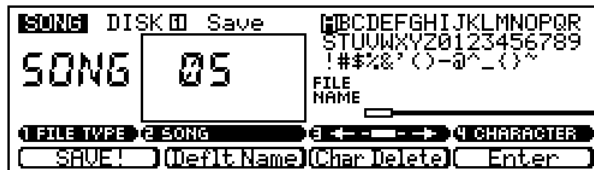
Out Channel



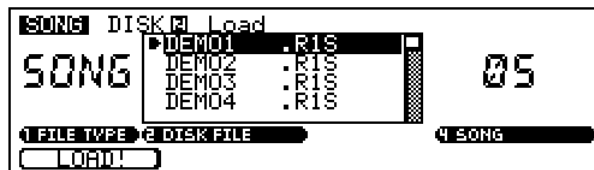
11. Disk

Disk functions in the SONG mode are essentially the same as those in the PATTERN mode, except that the “PATT” file type is not available. Refer to the PATTERN mode disk functions beginning on page 76. Also refer to the “About Floppy Disks” section on page 42 for additional information.

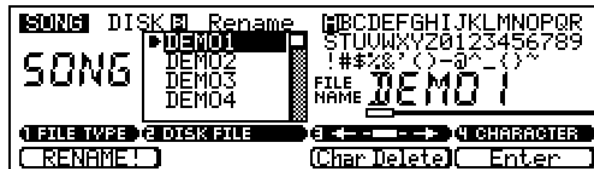
Save



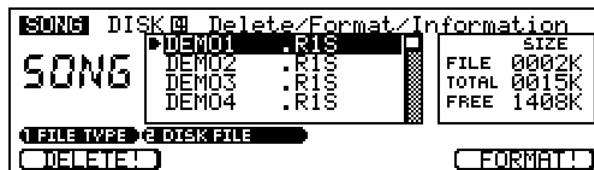
Load



Rename



Delete/Format/Information



12. Job

You use the RM1x's song jobs to perform various operations on the songs that you have recorded.

You select the job from the job menu using the Display Knob 1, 2 or the CURSOR buttons. You can also make your selection using the F4 button.

Note that the job menu is too large to fit entirely on the screen. But you can scroll through the list using the Display Knob 1, 2 or the CURSOR buttons.

□ Job List

Category	Values	Function	See page
UNDO/REDO	00 Undo/Redo	If UNDO: Cancel the last operation. If REDO: Cancel the last UNDO	124
NOTE	01 Quantize	Quantize note events within selected segment of selected user phrase.	124
NOTE	02 Modify Velocity	Change velocities in selected segment of selected user phrase.	124
NOTE	03 Modify Gate Time	Change gate times in selected segment of selected user phrase.	124
NOTE	04 Crescendo	Gradually increase/decrease velocity over selected segment.	125
NOTE	05 Transpose	Transpose all notes over selected segment.	125
NOTE	06 Glide	Produces smooth glides from note to note in the selected segment.	125
NOTE	07 Create Roll	Inserts repeated note data in the specified segment to create rapid rolls.	125
NOTE	08 Chord Sort	Sort each chordal note event (within specified segment) by pitch.	125
NOTE	09 Chord Separate	Break each chordal note event (within specified segment) into individual notes, separated by designated delay time.	125
EVENT	10 Shift Clock	Shift all data (within specified segment) by specified number of clock cycles.	125
EVENT	11 Copy Event	Copy all events in specified segment to designated destination.	125
EVENT	12 Erase Event	Erase all events over selected segment (and replaces with rests).	126
EVENT	13 Extract Event	Move events of specified type from specified segment of one phrase to same segment in another.	126
EVENT	14 Create Continuous Data	Creates the specified type of continuous control change data in the specified segment.	126
EVENT	15 Thin Out	Reduce repetitions of specified event type (within specified segment).	126
EVENT	16 Modify Control Data	Changes of offsets the values of all occurrences of the specified type of control change data with the specified segment.	126
EVENT	17 Time Stretch	Expand or compress timing over specified segment.	126
MEASURE	18 Create Measure	Insert empty measures into all tracks.	126
MEASURE	19 Delete Measure	Delete specified measures from all tracks.	127
TRACK	20 Copy Track	Copies the data from one specified track to a second specified track.	127
TRACK	21 Exchange Track	Exchanges the contents of two specified tracks.	127
TRACK	22 Mix Track	Mix one track into another. (Target track can be in a different song.)	127
TRACK	23 Clear Track	Delete all data from selected track, cancel voice setting, and reinitialize play effects.	127
TRACK	24 Normalize Play Effect	Actually applies the PLAY FX and GRID GROOVE settings to the sequence data, overwriting the existing sequence data.	127
TRACK	25 Divide Drum Track	Separates the note events in a specified track and places the notes corresponding to different drum instruments in separate tracks.	128
SONG	26 Copy Song	Copy data from selected song into destination song.	128
SONG	27 Clear Song	Delete all data from selected song.	128
SONG	28 Song Name	Assign a name to the selected song.	128



	Parameter	Values	Function
1	Category	UNDO/REDO, NOTE, EVENT, MEASURE, TRACK, SONG	Selects the category.
2	Job	00 ... 28	Selects the job.
F4	Select		Jumps to the job currently selected in the job list.

To Select a Job

Same as in the PATTERN mode. Refer to page 81.

CAUTION!

Do not turn off the power while a job is executing (while the "Executing..." message is on the screen), as this may cause destruction of your recorded data.

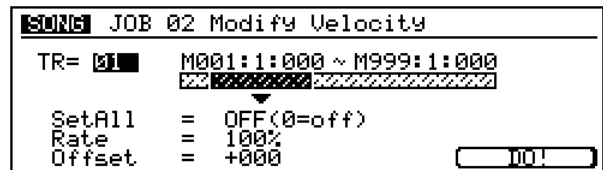
Undo/Redo

Job 00 Undo/Redo



Same as in the PATTERN mode. Refer to page 82.

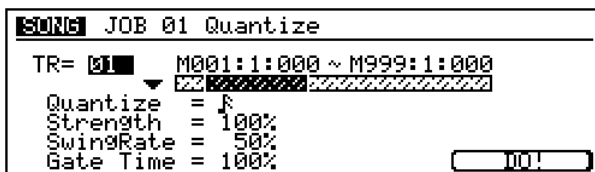
Job 02 Modify Velocity



Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 84.

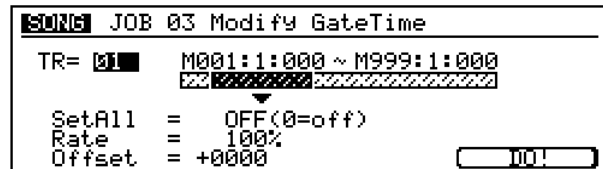
Note

Job 01 Quantize



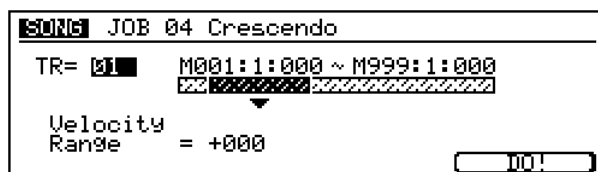
Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 82.

Job 03 Modify Gate Time



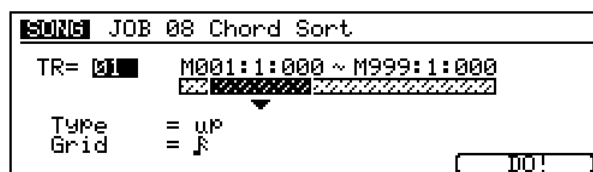
Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 85.

Job 04 Crescendo



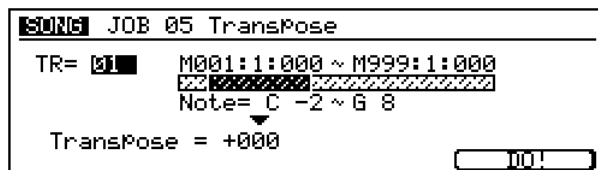
Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 86.

Job 08 Chord Sort



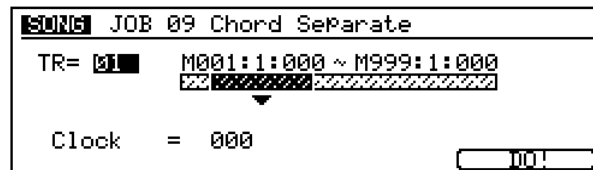
Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 88.

Job 05 Transpose



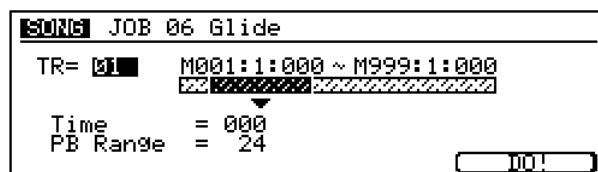
Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 87.

Job 09 Chord Separate



Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 89.

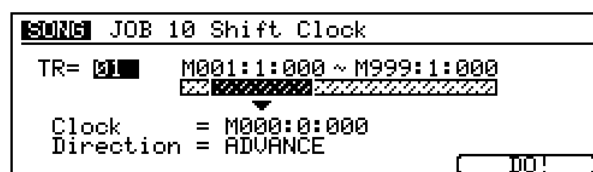
Job 06 Glide



Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 87.

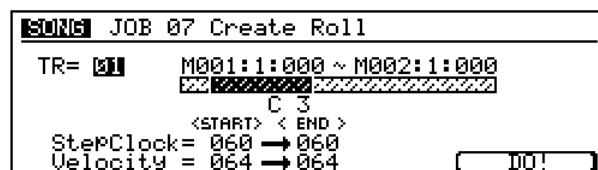
Event

Job 10 Shift Clock



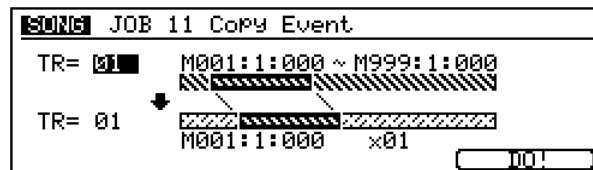
Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 89.

Job 07 Create Roll



Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 88.

Job 11 Copy Event



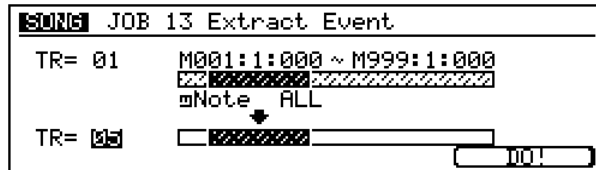
Essentially the same as in the PATTERN mode except that TRACKS are selected rather than PHRASES, and the selectable measure range is greater. Refer to page 89.

Job 12 Erase Event



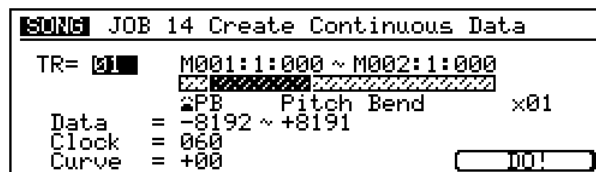
Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 90.

Job 13 Extract Event



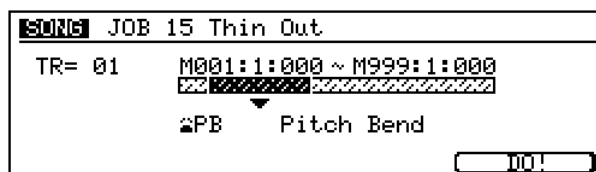
Essentially the same as in the PATTERN mode except that a TRACKS are selected rather than PHRASES, and the selectable measure range is greater. Refer to page 90.

Job 14 Create Continuous Data



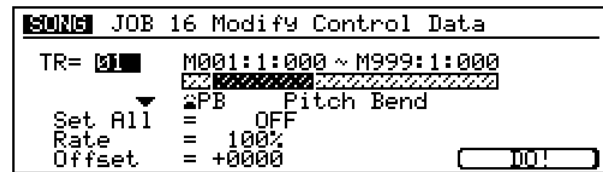
Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 91.

Job 15 Thin Out



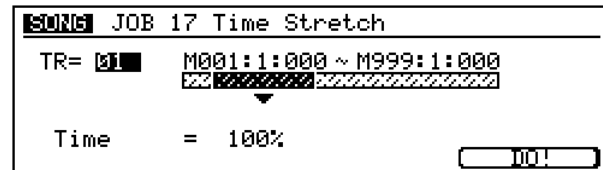
Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 91.

Job 16 Modify Control Data



Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 92.

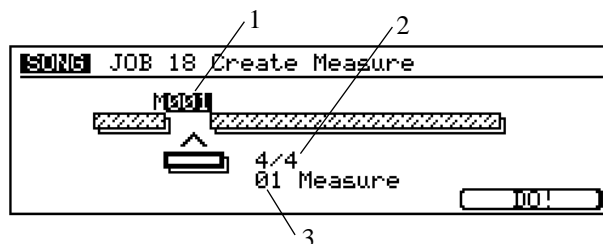
Job 17 Time Stretch



Essentially the same as in the PATTERN mode except that a TRACK is selected rather than a PHRASE, and the selectable measure range is greater. Refer to page 92.

Measure

Job 18 Create Measure



This job inserts one or more empty measures into the same location on all tracks.

1. Insertion point

The “M” value sets the position for the insertion. Specifically, the value sets the measure number (within the song) for the first inserted measure. A value of 001, for example, inserts the measures at the very beginning (so that the first inserted measure becomes Measure 1).

■ Settings : 001 ... 999

note • If you set the insertion point past the end of the song, the RM1x will append the empty measure(s) to the end of Track 1 only.

2. Time Signature

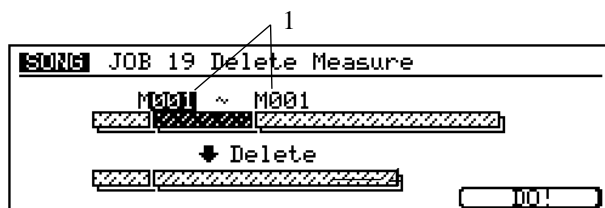
You can select any meter that you like. You may find it convenient to use this parameter when you need to create a song that incorporates meter changes.

■ Settings : 1/16 ... 16/16; 1/8 ... 16/8; 1/4 ... 8/4

3. Number of measures to insert

■ Settings : 01 ... 99

Job 19 Delete Measure



This job removes a segment consisting of one or more measures. The segment is removed from all tracks.

The area that trails the deleted segment shifts forward (toward the start of the song) to fill in the gap.

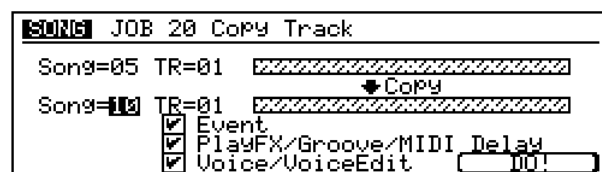
1. Range

The “M” values set the segment to be removed. The first value gives the number of the first measure of the segment; the second value gives the number of the final measure.

■ Settings : 001 ... 999

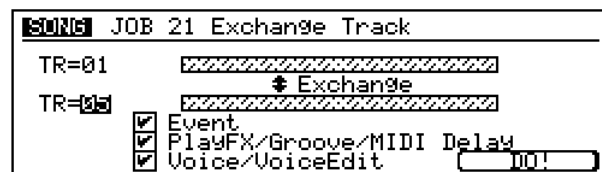
□ Track

Job 20 Copy Track



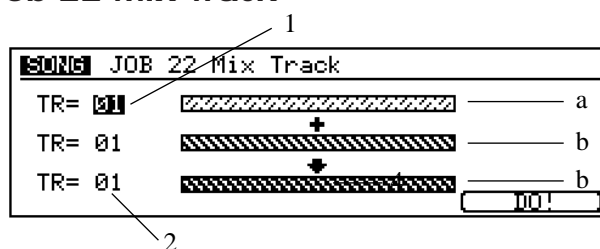
Essentially the same as in the PATTERN mode except that in the SONG mode you will not need to specify a section and the data types are different. Refer to page 95.

Job 21 Exchange Track



Essentially the same as in the PATTERN mode except that the data types are different. Refer to page 96.

Job 22 Mix Track



This job mixes all data from a selected sequence track onto another sequence track. The two tracks do not have to be in the same song.

When the operation is completed, the source track remains unchanged, while the destination track contains both its original data and a copy of the source track’s data.

1. Source track (Track “a”)

The first TR value selects the source track. This is the track containing the data to be mixed into the destination track. Following the mix, the source track’s content will remain unchanged.

■ Settings : 01 ... 16

2. Destination track (Track “b”)

The second TR value selects the destination track. The original content of this track becomes mixed with the content from Track “a.”

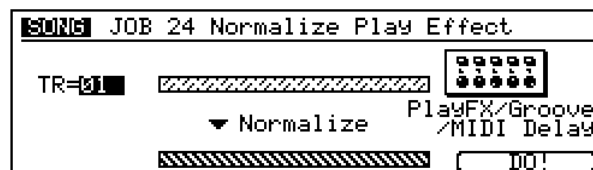
■ Settings : 01 ... 16

Job 23 Clear Track



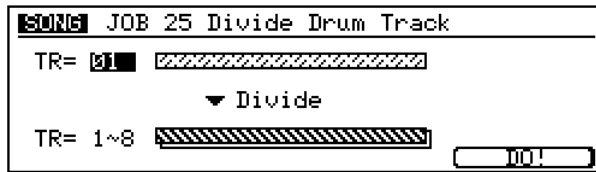
Essentially the same as in the PATTERN mode except that in the SONG mode you will not need to specify a section and the data types are different. Refer to page 96.

Job 24 Normalize Play Effect



Same as in the PATTERN mode. Refer to page 96.

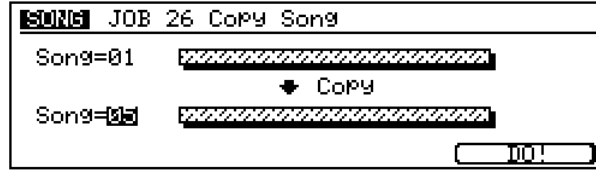
Job 25 Divide Drum Track



Same as in the PATTERN mode. Refer to page 97.

□ Song

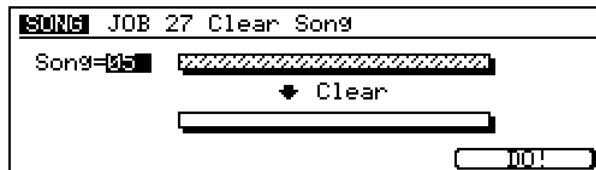
Job 26 Copy Song



Same as in the PATTERN mode. Refer to page 97. The only difference is that in the SONG mode you will not need to specify a section since the concept of “sections” only applies in the PATTERN mode.

- Settings: Song U01 ... U20

Job 27 Clear Song



Same as in the PATTERN mode. Refer to page 98. The only difference is that in the SONG mode you will not need to specify a section since the concept of “sections” only applies in the PATTERN mode.

- Settings: Song U01 ... U20

Job 28 Song Name

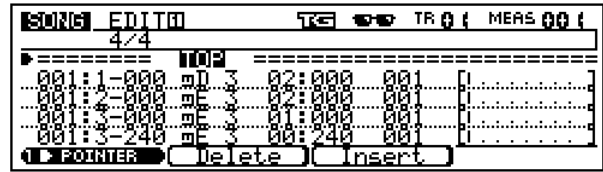


Same as in the PATTERN mode. Refer to page 98.

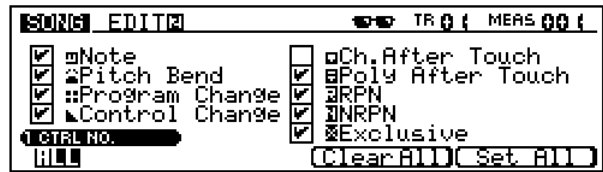
13. Edit

Same as in the PATTERN mode. Refer to page 99.

□ Edit



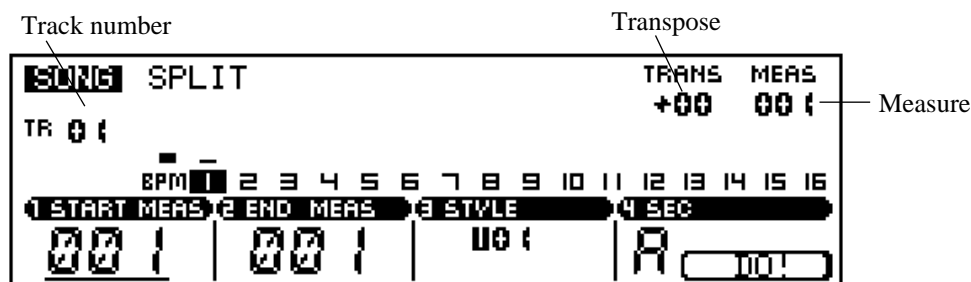
□ View Filter



14. Song Split (Song to Pattern)

Split

This function allows a specified range of measures to be copied from the current song to a specified section in a specified user style.



Parameter	Values	Function
1 Start measure	001 ... 999	Specifies the first measure in the range to be copied.
2 End measure	001 ... 999	Specifies the last measure in the range to be copied.
3 Style number	U01 ... U60	Specifies the destination style number.
4 Section	A ... P	Specifies the destination section.
<input type="checkbox"/> F4 DO!		Press the F4 function button (DO!) to actually cut and copy the specified song data to the specified style and section.
Track number	01 ... 16	Shows the current selected track number. Track number selection can be accomplished via this parameter, or by the keyboard method described on page 27.
Transpose	-36 ... +36	Shows the current transpose value. Transposition can be accomplished via this parameter, or by the keyboard method described on page 27.
Measure	001 ... 999	Sets playback start location; or shows current playback location.

* For information about how to change values, refer to the Basic Operation (page 26).

After specifying the start and end measures of the range of song data you want to copy, and the destination style and section, press the F4 function key (DO!). "Executing" will appear on the display briefly while the data is being copied.

The SPLIT function makes the process of splitting a song into multiple sections of the same length fast and easy.

After the first SPLIT operation the START MEAS and END MEAS parameters will automatically be set in preparation to copy the next range of measures: START MEAS will be set to the previous END MEAS + 1, and END MEAS will be set to specify a measure range of the same length as the preceding range copied.

MEMO

A large area of dotted lines for writing notes.

SONG MODE

Chapter 5. UTILITY MODE

This chapter explains Utility mode.

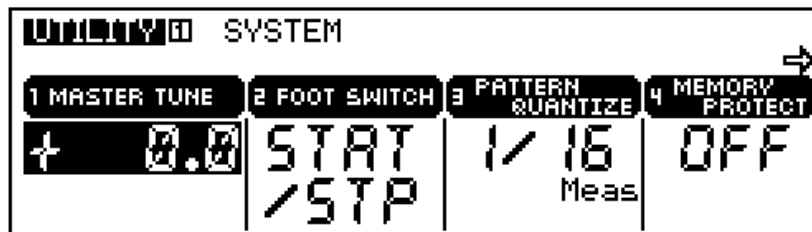
Utility mode is where you can make system settings and MIDI-related settings.

1. System	132
2. MIDI Setup	135
3. MIDI filter	137

1. System

Here you can make settings for system-related parameters, such as Master Tune.

▣ page 1



	Parameter	Values	Function
❶	Master tune	-102.4 ... 0 ... +102.3	Sets the overall tuning of the entire RM1x in 0.1 cent steps. The pitch of drum voices cannot be adjusted here. One cent is 1/100th of a semitone.
❷	Footswitch	START/STP, SEC, SUS, TAP	Sets the function of the footswitch connected to the rear panel FOOT SW connector. For details, see the list below.
❸	Pattern Quantize	1, 1/16	Sets the quantize value for pattern switching during playback. When set to "1" patterns (sections) will always switch on the first beat of the measure during playback. When "1/16" is selected patterns (sections) can be switched on any 16th beat during playback.
❹	Memory Protect on/off	ON, OFF	Turns memory protection on or off. When "ON" no operations which alter or overwrite the contents of the RM1x memory can be performed (e.g. record or edit or job), preventing accidental changes to the memory or tampering.

* For information about how to change values, refer to the Basic Operation (page26).

[Footswitch function list]

START/STP	Each time the footswitch is pressed, the song or pattern will alternately start or stop.
SEC	Each time the footswitch is pressed, the Section of the pattern will be switched in the order of A - P.
SUS	All notes played while the footswitch is held will be sustained until the footswitch is released.
TAP	This useful function lets you use the footswitch to tap out the BPM (Tempo) . Simply tap (press/release) the footswitch three times, and the song or pattern starts automatically at the BPM you tapped. The BPM can also be changed during playback by tapping the footswitch three times at the desired tempo.

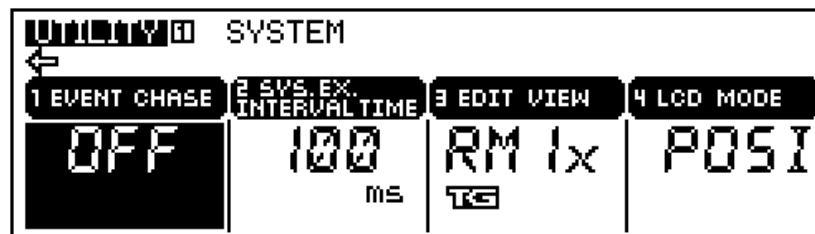
□ page2



Parameter	Values	Function
① Click mode	OFF, REC, REC/PLAY, ALL	Determines when the click feature (metronome) is used. "OFF" disables the click feature. "REC" uses click for realtime recording only. "REC/PLAY" uses click for realtime recording and playback. "ALL" always use click.
② Click beat	16, 08, 04, 02, 01	Sets the click interval.
③ Recording count	OFF, 1 Meas, 2 Meas, 3 Meas, 4 Meas, 5 Meas, 6 Meas, 7 Meas, 8 Meas	Sets the number of preliminary measures used as a lead-in for realtime recording.
④ LED display	BPM, MEAS	Determines whether the BPM display will normally show beats per minute (BPM) or measure numbers (MEAS).

* For information about how to change values, refer to the Basic Operation (page26).

□ page3



Parameter	Values	Function
① Event chase	OFF PC PC, PB, CTRL ALL	See below.
② System exclusive interval time	000 ms, 100 ms, 200 ms, 300 ms, 400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms	See below.
③ Edit view	NORM, RM1x TG	Specifies the normal (NORMAL) or RM1x TG edit view mode for the PATTERN and SONG EDIT modes. When the "RM1x TG mode is selected the EDIT mode display will conform to the parameters of the RM1x tone generation block.
④ LCD mode	POSI, NEGA	Determines whether the LCD display will consist of black characters on a light background (POSI), or light characters on a black background (NEGA).

* For information about how to change values, refer to the Basic Operation (page26).

Event chase

Event Chase is a function that rapidly plays back the specified types of event when a song, pattern, or phrase is played back from the middle or when it is rewound or fast-forwarded. This ensures that voice selections and pitch changes etc. will be correct for the location when playback begins.

If a song or phrase which uses program changes or pitch bend changes is played back from the middle or is rewound or fast-forwarded, the playback may use unexpected voices or the wrong pitch. Such problems can occur if the section of the song or phrase that was skipped over contains events such as program changes or pitch bends.

If the Event Chase function is used, the specified type(s) of event will be played back at high speed from the beginning whenever a song or phrase is played back from the middle. This will mean that a certain length of time may elapse from the moment the Start command is given until playback actually begins, or that the rewind/fast-forward speed will be slower.

If Event Chase is set to ALL, large amounts of MIDI data will be transmitted from the MIDI OUT connector, which can cause MIDI errors to occur on the external MIDI device that is receiving this data.

■ Settings :

OFF	Event Chase will not be performed.
PC	Program Change events.
PC, PB, CTRL	Program Change, Pitch Bend, and Control Change events.
ALL	All events other than notes.

System exclusive interval time

When system exclusive data (bulk data) recorded in a sequence track is played back, an interval of the duration specified by this setting will be inserted between each 1 KB (kilobyte) of data.

When bulk data that was recorded is re-transmitted to an external MIDI device, limitations of the receiving device's bulk data processing power may result in MIDI errors. By setting an appropriate Interval Time, you can transmit bulk data at a rate that the receiving device is able to process.

In sequence tracks, each unit of system exclusive data is recorded in a single location of time. However when this data is played back, the Interval Time function will insert a delay between each 1 KB of data. The delay is specified in units of 100 ms (1/10 second).

If MIDI errors occur on the receiving device, increase the Interval Time setting and try transmitting the data again.

2. MIDI Setup

The MIDI pages let you make MIDI settings for the RM1x.

□ page1



	Parameter	Values	Function
1	MIDI sync	INTR, MIDI, MTC	Selects whether the RM1x will use its own internal clock or whether it will use MIDI Clock or MTC messages received from the MIDI IN connector. You will need to make this setting when synchronizing the RM1x with external MIDI devices. See the MIDI sync setting below.
2	MTC Start offset	hours:minutes:seconds:frames Hours 00 - 23 Minutes 00 - 59 Seconds 00 - 59 Frames 00 - 29	Specifies the delay from when MIDI Time Code is received until when the sequencer is started, in hours:minutes: seconds:frames. When synchronizing with an MTC-compatible MTR etc., use this setting to make the song begin simultaneously.
3	MIDI control	OFF, IN, OUT, IN/OUT	Determines whether MIDI Song Position Pointer (F2), Start (FA), Continue (FB), and Stop (FC) data will be transmitted and/or received by the RM1x. When "OFF" none of the above data is transmitted or received. When "IN" the above data is received only. When "OUT" the above data is transmitted only. When "IN/OUT" the above data is both transmitted and received.
4	Echo back	OFF, THRU, RecM	Echo Back is a function by which data received at a MIDI IN connector is re-transmitted from a MIDI OUT connector. These parameters are the echo back settings.

* For information about how to change values, refer to the Basic Operation (page26).

■ MIDI sync setting :

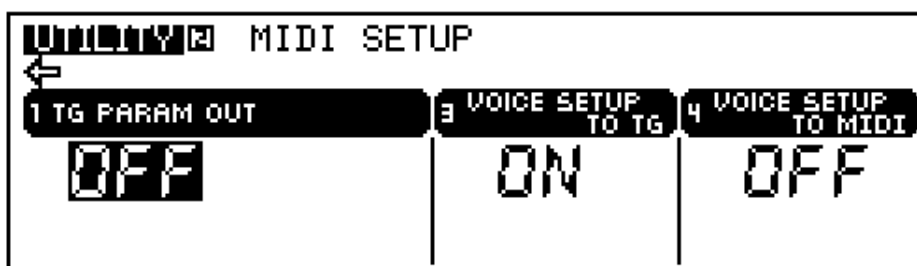
Internal	With a setting of Internal, the RM1x will use its own internal clock. Select this setting if you are using the RM1x by itself or as the master device in a system that is synchronized by MIDI Clock messages.
MIDI	With a setting of MIDI, the RM1x will be controlled by MIDI Clock messages received from MIDI IN. Select this setting if you are using the RM1x as a slave device for synchronized play. This is the setting to use when synchronizing the RM1x to an external MIDI device.
MTC	MTC is an acronym for MIDI Time Code, and is a type of timecode that can be exchanged between MIDI device via a MIDI cable. MTC indicates time as "hours:minutes: seconds:frames". One second consists of 30 frames. The RM1x does not output MTC. If you wish to synchronize using MTC, you will need a device that is able to output MTC such as Yamaha MD8.

■ Echo back settings :

Off	Echo back will not be performed. When connecting the RM1x's MIDI IN and MIDI OUT connectors to an external MIDI device, select Off.
Through	Echo back will be performed from the MIDI OUT connector.
RecMonitor	Echo back will be performed according to the Out Channel MIDI OUT settings of the Keyboard Track or the Recording Track. When using an external MIDI keyboard and external MIDI tone generator to record on RM1x's tracks, select RecMonitor.

- note** • System exclusive messages of 128 bytes or longer will not be echoed back.

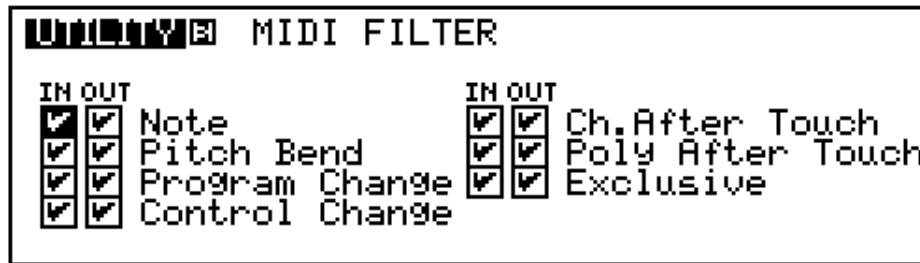
□ page2



	Parameter	Values	Function
1	TG param out	OFF, ON	When parameter values are modified in Voice submode or Effect submode, this setting specifies whether the operation will be transmitted in realtime from the MIDI OUT connector as MIDI data. When set to OFF, MIDI will not be output.
3	Voice setup to TG	OFF, ON	Determines whether the corresponding voice and effect settings will be sent to the RM1x tone generator when a song or style is selected. The voice and effect settings are sent to the tone generator when this parameter is "ON."
4	Voice setup to MIDI	OFF, ON	Determines whether the corresponding voice and effect settings will be transmitted via the MIDI OUT connector when a song or style is selected. The voice and effect settings are transmitted via MIDI when this parameter is "ON."

* For information about how to change values, refer to the Basic Operation (page26).

3. MIDI Filter



MIDI Filter settings allow you to strip out specified types of MIDI events from the stream of MIDI data that passes through the MIDI IN connector or MIDI OUT connector.

MIDI Filter settings apply to recording and playback of the sequencer block. They have no effect on the tone generator block.

The display indicates whether the corresponding type of MIDI event will be passed or cut.

- The specified MIDI event will not be passed.
- The specified MIDI event will be passed.

To uncheck or check a filter item, use the cursor buttons to highlight the desired check box, then use the [NO -1] button to uncheck the box or the [YES +1] button to check the box.

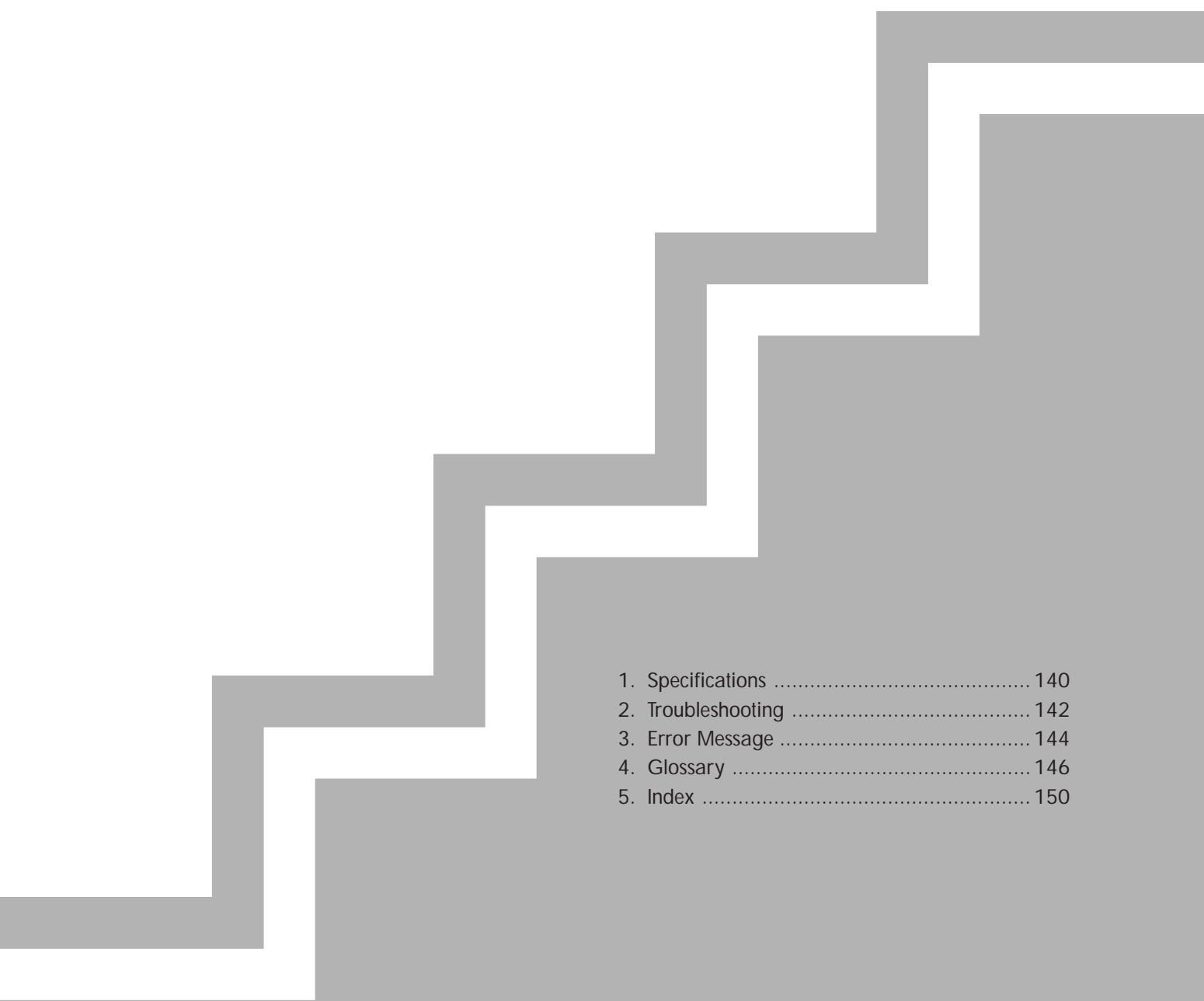
Note	Specify whether or not MIDI Note On and Note Off messages will be passed. MIDI Note On messages are produced when a note of the keyboard is pressed, and Note Off messages when a note is released. If these MIDI messages are cut, there will be no sound.
Pitch Bend	Specify whether or not MIDI Pitch Bend messages will be passed. MIDI Pitch Bend messages are produced when the PITCH wheel (knob) is operated. They are used to smoothly change the pitch.
Program Change	Specify whether or not MIDI Program Change messages and the control change messages Bank Select MSB and LSB will be passed. Program Change, Bank Select MSB and LSB are MIDI messages used to select voices.
Control Change	Specify whether or not MIDI Control Change messages will be passed. MIDI Control Change messages convey many types of information, such as Modulation Wheel, Pan, and Volume.
Channel Aftertouch	Specify whether or not MIDI Channel Aftertouch messages will be passed.
Polyphonic Aftertouch	Specify whether or not MIDI Polyphonic Aftertouch messages will be passed.
System Exclusive	Specify whether or not MIDI System Exclusive messages will be passed. MIDI System Exclusive messages are used to reset the tone generator and to operate internal parameters.

MEMO

A large area of dotted lines for writing a memo.

UTILITY MODE

APPENDIX



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1. Specifications

Sequencer block







Data capacity	approximately 110,000 notes
Note resolution	480 clocks per quarter note
Polyphony	64 notes
BPM (Tempo)	25.0 - 300.0
Recording method	Realtime Recording (Replace) Realtime Recording (Overdub) Realtime Recording (Punch In) - only the Song mode Step Recording Grid Step Recording
Tracks	Pattern : 16 tracks Song : 16 tracks, BPM track
Patterns	960 preset patterns (60 styles x 16 sections) 800 user patterns (50 styles x 16 sections) Measures : Up to 256
Phrases	Over 7,000 preset phrases 256 user phrases/1 user style
Pattern Chain	20 chains
Songs	20 user songs
Edit	Phrase edit Song edit
Jobs	Pattern jobs : 36 Pattern chain jobs : 8 Song jobs : 28
Split	Split song, Split pattern
Groove	Grid Groove (Note offset, Clock shift, Gate time offset, Velocity offset)
Play Fx	Harmonize (Unison, Octaver, Harmonize1, 2) Play Fx (Beat stretch, Clock shift, Gate time, Velocity offset)
MIDI delay	MIDI delay edit, Feedback edit
Arpeggio	Type (Up, Down, Alternate1, 2, Random) , Sort, Hold, Octave range
Sequence file formats	RM1x native sequence format, SMF format 0
Demo song	4 (Included disk)

Tone generator block

Type	AWM2 tone generator
Maximum polyphony	32 notes
Multi-timbral capability	16 timbres (with DVA)
Preset voices	Normal voices 654 (except GM voices) Drum voices 46 kits (except GM kits)
Effects	3 systems (Reverb effect, Chorus effect, Variation effect) Reverb 11 types Chorus 11 types Variation 43 types
Digital low boost	Frequency (50Hz - 2.0kHz), Gain (\pm 24dB)

Controls

Standby / On switch (STANDBY / ON)
Volume control (VOLUME)
Assignable knobs (x 8)
Display knobs (x 4)
CONTRAST control
Mode buttons ([PATTERN], [PATT CHAIN], [SONG], [UTILITY])
Submode buttons ([GROOVE], [PLAY FX], [MIDI DELAY], [ARPEGGIO],

	<p>[VOICE], [VOICE EDIT], [EFFECT], [SETUP], [DISK], [JOB], [EDIT], [SPLIT])</p> <p>Function buttons ([F1] - [F4])</p> <p>Knob A/B button</p> <p>Eject button</p> <p>Display button (Left, Right)</p> <p>Sequencer buttons ( ,  ,  ,  ,  , )</p> <p>Data entry buttons ([-1 NO], [+1 YES])</p> <p>Cursor buttons</p> <p>Shift button</p> <p>Keyboard mode buttons ([TRACK], [TRANSDPOSE], [NUM], [MUTE], [SECTION])</p> <p>Arpeggio on button</p> <p>Octave button ([OCT DOWN] , [OCT UP])</p> <p>Keyboard pad (E2 - F4)</p> <p>Tap tempo button</p>
Display (LCD)	<p>64 x 240 dot graphic LCD (with CFL backlight, adjustable contrast)</p>
LED indicators	<p>MODE (x 4) (green)</p> <p>REC (red)</p> <p>PLAY (green)</p> <p>TRACK (x 16) (red)</p> <p>KEYBOARD MODE - MUTE (red), SECTION (red), ARPEGGIO ON (red)</p> <p>FUNCTION BUTTON (red x 4)</p> <p>KNOB A/B (red)</p> <p>MIDI IN (red), MIDI OUT (green)</p> <p>7 segments LED (x 4)</p>
Connectors	<p>PHONES (stereo phone jack)</p> <p>OUTPUT (phone jack x 2) (L/MONO, R)</p> <p>FOOT SW</p> <p>DC IN</p> <p>MIDI IN, MIDI OUT</p>
Floppy disk drive	<p>3.5 inch 2HD (MF2HD) and 2DD (MF2DD) types</p>
Power supply	<p>AC adaptor (PA-5C)</p>
Dimensions	<p>420 mm (W) x 282 mm (D) x 98 mm (H)</p>
Weight	<p>4.4kg</p>
Included items	<p>Power adaptor (PA-5C)</p> <p>Floppy disk (Demo song)</p> <p>Owner's manual</p>

* Specifications and appearance are subject to change without notice for improvement of the product.

2. Troubleshooting

If you experience problems such as “no sound,” “incorrect sound,” or “sequencer does not operate,” please check the following points before deciding that the unit is malfunctioning. In many cases, checking these points will help you solve the problem. If this does not solve the problem, contact your nearest Yamaha dealer or the authorized distributor for your country.

Problem	Possible causes	page
No sound	<ul style="list-style-type: none"> • Is the volume raised sufficiently? Page 12 • Is the volume of each track raised? Page 63 • Is Note On data being filtered out by the MIDI filter? Page 137 • Are the effect settings wrong? Page 69 • Some filter cutoff frequency settings in the VOICE EDIT display can result in no sound. Page 68 • Are tracks muted? Page 28 • Is the TO TG channel turned off? Page 75 • Have the speakers been disconnected? Page 17 • Does the playback data contain inappropriate Volume or Expression data? Page 46 • The Groove or PLAY FX velocity offset value may be set too low. Pages 55, 58 	
Sound is distorted	<ul style="list-style-type: none"> • The volume may be turned up above clipping level. Page 12 • Have unneeded effects been set? Page 69 • Some filter resonance settings in the VOICE EDIT display can result in distorted sound Page 68 • Is the gain of the Low Boost function set too high? Page 73 • Are you using a PLAY FX Harmonize “UNISON” setting? This can sometimes sound like distortion. Page 57 	
Pitch is different than the keyboard note that was played	<ul style="list-style-type: none"> • Is the Master Tune parameter set to an extreme value? Page 132 • Is the Note Shift setting other than 0? Page 47 • Is the Transpose setting other than 0? Page 46 • Is the Groove function set to offset any notes? Page 55 • Make sure that the pitch bend knob is set to center (i.e. no pitch bend). Page 66 	
Notes are intermittently broken (notes sputter or stutter)	<ul style="list-style-type: none"> • Does the number of currently sounding notes exceed the maximum polyphony? Page 37 	
Playback does not start when you press the PLAY <input type="checkbox"/> button.	<ul style="list-style-type: none"> • Does the selected song, pattern, or phrase contain data? Pages 46, 116 • Is the MIDI Sync setting other than “INTR”? Page 135 	
Rhythm or note timing are played back differently than when recorded	<ul style="list-style-type: none"> • Are the Groove or Play FX settings being used? Pages 55, 58 	
When the pattern/song starts, the voice or effect settings that you have made disappear	<ul style="list-style-type: none"> • Does the beginning of the pattern/song contain data which resets the tone generator? Page 136 • Has data (File type “TG Header”) been loaded ? Page 43 Voice submode and Effect submode settings will be affected by the Control Change or Exclusive data within a pattern/song. 	
Can't hear the click sound	<ul style="list-style-type: none"> • In the Utility mode System page, is the Click turned off? Page 133 	
Can't change the length of a phrase	<ul style="list-style-type: none"> • Are you attempting to change the length of an already-recorded phrase? Page 46 	

The memory is full even though there are still unused patterns/songs

- Are there songs or phrases containing large amounts of data? Page 29
The memory capacity of the RM1x (approximately 110,000 notes) is for the total data of all songs and phrases. This means that if there are songs or phrases which contain large amounts of data, the memory may be full even though there are still unused songs or patterns.

Can't record a phrase or song

- Have you selected a preset pattern or phrase?
You can only record to user patterns or phrases. Page 46
- Is the Memory Protect turned on? Page 132

Can't receive or transmit MIDI bulk data

- Is the System exclusive interval time set to too small? Page 134

3. Error messages

• Monitor

No Data	When a job is executed, this will appear if the selected track or area contains no data, making the job invalid. Re-select the area.
Illegal Input	This will appear in response to inappropriate operation or input. Check your input method.
Illegal Track Number	An unavailable or otherwise improper track number has been specified. Select a different track.
Illegal Phrase Number	An unavailable or otherwise improper phrase number has been specified. Select a different phrase.
Illegal Measure	An unavailable or otherwise improper measure number has been specified. Select a different measure number.
Illegal Check Box	This message will appear if no check boxes are checked in any of the corresponding track jobs. At least one check box must be checked.
No F7 (End of Exc.)	This message indicates that no “End of Exclusive” byte (F7) was included with a MIDI exclusive data entry or edit. Be sure to include F7.
Preset Phrase	This will appear when you attempt to edit a Preset Phrase. If you wish to edit a preset phrase, you must first copy it to a User Phrase.
Preset Pattern	This will appear when you attempt to record to a Preset Pattern. You cannot record to Preset Patterns.
Pattern Length Mismatch	A job has resulted in a pattern having more than the maximum of 256 measures.
Phrase Number Overflow	All available user phrases (256 maximum) have been used up when recording, executing a job, or editing.

• System

Backup Battery Low	This will appear when the internal backup battery of the RM1x has run down. Contact nearest Yamaha dealer or the authorized distributor for your country to have the battery replaced.
Memory Full	This will appear when internal memory is full and it is not possible to record, edit, execute a job, receive MIDI, or load from floppy disk. Delete unneeded songs, patterns, or user phrases, and try the operation once again.
Factory Set	After the power is switched ON, a system diagnosis is run on the RM1x's system. If the diagnosis finds the RAM to be defective, this message will appear and the memory will be reset to its original factory settings. Data for User Song, User Patterns, and User Phrases will all be eliminated.
Memory Protect	You have attempted to execute a recording, editing, or job function when the UTILITY mode Memory Protect function is ON.

• MIDI

Exc. Adrs Error	This appears when the received Exclusive data contains an address error.
Exc. Data Error	This appears when the received Exclusive data contains a data size error.
MIDI Buffer Full	This will appear when the MIDI reception buffer of the RM1x has filled up, and processing is not possible. Try decreasing the amount of data or increasing the interval time and transmit the data once again.

• Disk

Disk Full	This will appear if the floppy disk is full and has no room to save the file. Either use a new floppy disk, or delete unneeded files before trying the operation once again.
File Not Found	When loading, this will appear if the specified file does not exist in the floppy disk. Insert the disk once again, and try the operation again.
Bad Disk Format Now? (Y/N)	The floppy disk is faulty. Press the [Yes +1] button to format the disk.
No Disk	This indicates that the floppy disk is not correctly inserted into the RM1x. Insert the floppy disk correctly.
Unformat Format Now? (Y/N)	This will appear if the floppy disk is not formatted. Press the [Yes +1] button to format the disk.
Write Protected	This will appear if the write-protect slider of the floppy disk is in the write prohibit position. Remove the floppy disk, close the write-protect slider, and try the operation once again.
Bad File	This will appear when you attempt to load a defective file.
Illegal Format	This will appear if the floppy disk is of a format which the RM1x is not able to handle. Check the contents of the disk.
Disk Changed	This will appear if you have exchanged disks when you should not have. Try the operation once again from the beginning.
Can't Change File Name	When renaming, this will appear if the floppy disk already contains a file with a name identical to the specified filename. Specify a different filename.
Illegal File	When loading, this will appear if the specified file cannot be handled by the RM1x. Check the contents of the file.
No Data	When saving data to floppy disk, this will appear if the selected song or style contains no data, and the save operation is invalid. Select a different song or style.

• Messages other than error messages

Can't Undo. Ok? (Y/N)	If executing a job would fill up the internal memory so that Undo will not be available, this message will appear. If you are sure that you will not need to Undo this job, press the [YES +1] button. To cancel without executing the job, press the [NO -1] button, and delete unneeded songs, patterns, or user phrases before trying the operation once again.
Are you sure? (Y/N)	Before an operation is executed, this message will ask you for confirmation. Use the [YES +1]/[NO -1] button to either cancel or execute.
Completed	This will appear when the current process has been completed. Press any button and the message will disappear.
Executing...	When loading, saving, or formatting, this message will appear while the job is being executed. Please wait.

4. Glossary

A

Aftertouch: MIDI messages which are transmitted when additional pressure is applied to the keyboard after notes are played.

Attack time: The time over which the volume rises from 0 when a note is played until the maximum volume is reached.

AWM2 tone generation: A method of generating sound developed by Yamaha which is based on digitally recorded waveforms. Since it generates the complex waveform of actual acoustic instruments, it provides extremely realistic sounds. Digital filtering is also built-in, allowing precise control over the tone. AWM2 is an acronym for Advanced Wave Memory 2.

B

Bank number: A number which selects a variation voice from an XG extension bank, relative to the voice selected by the Program Number from the 128 voices of the XG basic bank (GM system level 1)

Beat: When playing back or recording a song, one “beat” (a rhythmic subdivision of a measure).

BPM (Beat Per Minute): The track containing data that determines the playback tempo of the song.

Brilliance: A control or parameter that regulates the brightness of the tone. The cutoff frequency of the RM1x’s filters can be controlled to adjust the brilliance.

Bulk data: A type of System Exclusive message which contains a collection of data for the internal settings of a device.

Bus line: A route (line) that carries audio signals from each part or block. The bus lines of the RM1x include “SendVar → Cho,” “SendVar → Rev” and “SendCho Rev,” and the stereo bus line that collects the stereo output of each block.

C

Channel: The means by which the receiver receives only those MIDI messages that are sent from the specified transmitter.

Chorus: A type of effect that adds richness and depth to the sound, similar to what happens when multiple sound sources are heard simultaneously.

Click: A metronome that is sounded when playing back or recording on a sequencer.

Clock: A unit of timing resolution. On the RM1x, one clock is a length of 1/480th of a quarter note.

Control change: A group of MIDI messages that are output when a controller (modulation wheel, foot controller etc.) is operated. Each controller has its own control number.

Cutoff frequency: Filters work by allowing the portion of the signal lower than a given frequency to pass, and cutting the portion of the signal above that frequency. This frequency is referred to as the cutoff frequency.

D

Decay time: The time from when the maximum volume of a note is reached until it falls to the sustain level.

Delay: An effect (or device) that delays an audio signal. The RM1x’s Variation effect allows a delay to be applied.

Depth: The amount or degree of a setting or effect.

Dry sound: The audio signal that is not processed by an effect. Normally when using an effect, not all of the audio signal is passed through the effect. Rather, the degree of the effect is adjusted by mixing the sound that passes through the effect (the wet sound) with the sound that bypasses the effect (the dry sound).

Dump out: The process of transmitting bulk data as MIDI System Exclusive messages.

E

Echo back: The action or process in which data received at the MIDI IN connector is re-transmitted from the MIDI OUT connector.

Edit: The action of modifying or editing data.

Effect: A block (device) that processes the sound to add various effects. The RM1x provides two system effects (reverb and chorus), and one effect (variation) which can be used either as a system effect or as insertion effect.

Element: A block within the AWM2 tone generator that generates a sound. The voices of the RM1x consist of 1 to 2 elements.

Envelope Generator (EG): A block that modifies the level of the tone generator from the moment that a note is played until the sound decays to silence. The AEG controls the volume, the PEG controls the pitch, and the FEG controls the filter.

Event: A single piece (such as Note On/Off or Program Change messages) of the data which makes up a sequence.

Exclusive: See the entry for System Exclusive.

Expression: A MIDI control change message used to control the volume of a part.

F

Filter: A block which modifies the tone by cutting the output of a specific frequency portion of the sound. The RM1x has low pass filters for each element of a voice, allowing the tone to be made more mellow by cutting the higher overtones, or brighter by allowing them to pass.

Floppy disk: A type of data storage media, available in varieties such as 2DD and 2HD. In order for a device to be able to write and read data to/from a floppy disk, the disk must be formatted appropriately for that device.

Foot controller: A control device that can be used to control tone, volume or effects etc. during a performance.

Formatting: The action of initializing a floppy disk so that it can be used by a specific device.

G

Gate time: The length of time that a note actually sounds.

GM: A specification approved by the MIDI Standards Committee, standardizing the basic functionality of a tone generator, and defining the number of voices and sounds, etc.

H

Hexadecimal: A system of numbering based on 16, in which the digits increment in units of n-th powers of 16. The alphabetical characters A – F are used to express the numbers 10 – 15.

I

Insertion (effect): An effect used in Voice submode as a major factor in the character of a sound. In Song mode, an insertion effect will apply only to the specified part (unlike a system effect), meaning that you can use the insertion effect “aggressively.”

Interval time: A delay time that is inserted at regular intervals when transmitting bulk data that was recorded in a sequence track.

L

Length: On the RM1x this indicates the number of measures in the selected phrase.

LFO: An acronym for Low Frequency Oscillator, a block that produces a signal at a low frequency. The signal from the LFO can be used to modulate pitch, volume or tone to produce effects such as vibrato, tremolo and wah.

Load: The process of reading data from floppy disk into internal memory.

Location: The place within a song at which notes will be input or playback will be started, indicated as measure, beat, and clock.

Low pass filter: A type of filter which cuts the high frequencies. The sound can be brightened by raising the cutoff frequency of the filter, or darkened by lowering it.

LSB: An acronym for Least Significant Byte, referring to the lower byte of data when MIDI control change data is divided into two bytes for transmission.

M

Master tune: A parameter that adjust the overall tuning of the entire device.

Maximum polyphony: The maximum number of notes that can be played at once. The RM1x can produce 32 simultaneous notes (counted in 1-element units). If MIDI messages are received requesting more notes than the maximum polyphony allows, currently sounding notes will be turned off, and the later-received notes will be played.

MDF3: The product name of a MIDI data filer. This device receives data for the internal settings of a MIDI device in the form of System Exclusive messages, and stores them to floppy disk.

Measure: A unit of musical duration consisting of several beats.

MIDI: An acronym for Musical Instruments Digital Interface, a standard for transferring data between musical instruments. Most electronic musical instruments today implement the MIDI specification and provide MIDI connectors. Such instruments can be connected together to create remote performance or automatic performance systems.

MIDI data filer: A MIDI device that receives data for the internal settings of a MIDI device in the form of System Exclusive messages, and stores them to floppy disk. An example is the Yamaha MDF3 MIDI data filer.

Modulation wheel: A controller that can be used to smoothly modify the volume, tone or pitch while you perform.

MSB: An acronym for Most Significant Byte, referring to the upper byte of data when MIDI control change data is divided into two bytes for transmission.

Multi-timbral tone generator: A tone generator that can simultaneously produce more than one type of sound.

Mute: A function that temporarily silences a track or reduces its volume.

N

Note name: The name which specifies the pitch of a note, expressed as a character, a sharp or flat symbol, and a number indicating the octave.

NRPN: An acronym for Non Registered Parameter Number. These are a type of MIDI control change message, and are used to edit sounds via MIDI, allowing you to edit filter or EG settings, or adjust the pitch or level for each instrument of a drum voice.

O

Overdub: A method of realtime recording in which new material is recorded without erasing previously recorded tracks.

P

Pan: The parameter that sets the stereo location of a sound when it is played back in stereo. (“Pan” or “panpot” are abbreviations of “panoramic potentiometer.”) The pan parameters found in Voice Edit, song play Multi, and Effect Edit are linked.

Parameter: A setting or data item which you can modify in the various mode and submode displays.

Patch: A screen page in Pattern mode that allows you to select and playback patterns, and to create patterns by assigning phrases to each track of the pattern.

Pattern: An accompaniment pattern consisting of drums, bass and chord backing, created by connecting phrases end-to-end or by vertically stacking up to 16 parts.

Phrase: A unit of musical accompaniment played by a accompaniment part; e.g., a rhythm pattern for the rhythm part, a bass line for the bass part, or chord backing for the guitar part. Phrases are the smallest unit from which the accompaniment of a song is created.

Pitch bend: A type of MIDI message that smoothly modifies the pitch.

Portamento: An effect that smoothly changes the pitch from one note to another note. Higher settings of Portamento Time will produce a slower change, and there will be no effect with a setting of 0.

Program change: A MIDI message that selects a voice.

Program number: On the RM1x, a number specifying one of the preset sounds.

Punch in recording: A method of realtime recording in which the user specifies the punch-in and punch-out points, so that recording takes place only in that area.

Q

Quantize: A function which “tightens up” the inexact timing of notes or other events that were entered in realtime.

R

Realtime recording: A method of recording in which your performance is recorded just as you play, similar to a conventional multi-track recorder. Since the performance is recorded as you play, the musical expression and nuances of your performance will be accurately recorded.

Release time: The time over which the volume falls from the sustain level (beginning at the moment a note is released) until it reaches silence.

Replace: A method of realtime recording or punch recording in which previously recorded data is erased (replaced) as new material is recorded.

Resonance: A parameter that boosts the level of the signal in the area of the cutoff frequency. By emphasizing the overtones in this area, this can produce a distinctive “peaky” tone, making the sound brighter and harder.

Reverb: An effect that simulates the acoustical reverberance of a room or space. The sound that reaches our ear usually includes not only the direct sound, but also sound that was reflected off the walls or ceiling. Reverb creates these indirect reflections artificially. Although some reflections can be perceived individually as distinct echoes, the term “reverb” usually refers only to the indistinct “wash” of reflected sound.

RPN: An acronym for Registered Parameter Number. These MIDI messages are used to set Part settings such as Pitch Bend Sensitivity or Tuning.

S

Save: The process of saving data or songs from internal memory to floppy disk.

Section: A term referring to each of the 16 types of patterns that comprise a style. Patterns are selected by specifying the style and the section.

Send level: The amount of signal that is sent to a specified bus line for processing by an effect. The amount of signal that is returned from the effect is the “return level.”

Sensitivity: The degree to which an aspect of the sound (e.g., volume) responds to a control (e.g., note velocity).

Sequencer: A block (or device) that records, edits, modifies, and plays back a musical performance in the form of MIDI messages.

Sequence tracks: Tracks which record and playback normal MIDI sequence data.

SMF: See the entry for Standard MIDI File.

Song: A musical composition created by recording performance data on one or more tracks.

Standard MIDI File (SMF): SMF is an acronym for Standard MIDI File; a format that allows easy exchange of song data be-

tween different sequencers. Most of today’s software and hardware manufacturers provide software/hardware that can read and write Standard MIDI Files.

Step recording: The method of recording in which music is input by entering notes once by one, specifying the note length, velocity, and pitch etc. of each note.

Stereo location: The location within the stereo field from which a sound is heard. This can be modified by the Pan setting.

Style: The collective name for a set of 16 sections (A-P). Sections are put together to create a backing pattern.

Synchronization: The function or process of matching the playback or recording tempo of a device with a separate, external device such as another sequencer or a rhythm machine.

Sync: See Synchronization.

System (effect): An effect which can be applied to all parts by adjusting the Send Levels and Return Level. System effects allow reverb or chorus etc. to be applied to the overall music. The RM1x provides Reverb and Chorus as system effects. The Variation effect can also be used as a system effect.

System exclusive message: A type of MIDI message used to exchange data unique to a specific model or type of device.

T

Track: A location where musical performance data is recorded.

Transpose: Shifting the pitch in semitone steps.

Tremolo: An effect produced by cyclically modulating the volume.

Tuning: The process of matching the pitch of two or more instruments when playing in an ensemble. Normally, A3 is tuned to 440 Hz.

U

Utility mode: A mode on the RM1x in which system or MIDI settings can be made.

V

Variation effect: One of the RM1X’s effects. In Voice submode, this effect can be used aggressively as a major component of a sound. The Variation effect can function either as an insertion effect or as a system effect, and provides a wide variety of effect programs such as delay, rotary speaker, auto pan, amp simulation and auto wah in addition to reverb and chorus.

Velocity: A numerical value indicating the speed (force) with which a note was played.

Vibrato: A performance effect produced by cyclically modifying the pitch.

Voice: A sound that is built into the tone generator that can be selected and played.

Volume: A parameter or control that adjusts the volume. Track Volume adjusts the volume of each track, and Master Volume adjusts the overall volume.

W

Wah effect: An effect that cyclically modulates the tone. The RM1x produces this effect by using an LFO signal to modulate the cutoff frequency of the filter.

Wet sound: The audio signal that is processed by an effect. Normally when using an effect, not all of the audio signal is passed through the effect. Rather, the degree of the effect is adjusted by mixing the sound that passes through the effect (the wet sound) with the sound that bypasses the effect (the dry sound).

X

XG: A tone generator format developed by Yamaha which expands the GM specification to provide the richer expressiveness and upward data compatibility that is demanded by today's more sophisticated computer peripheral environment.

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