

USING THE UNIT SAFELY

FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS







CAUTION Notices

Instructions intended to alert the user to the risk of death or severe injury should the unit be used incorrectly.

Instructions intended to alert the user to the risk of injury or material damage should the unit be used incorrectly.

Damage refers to damage or destruction of effects caused with the unit in the home and all its accessories, as well to domestic appliances.

About the Symbols

	The  symbol alerts the user to important instructions or warnings. The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
	The  symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
	The  symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

ALWAYS OBSERVE THE FOLLOWING

WARNING

Read the user manual.



Do not modify the unit. The only modification that provides safety is followed in the instructions; see the options; see the manual.



Do not replace parts or accessories (e.g., headphones) without the instructions. Refer to the manual for the correct replacement parts.



Do not use the unit on wet floors.



Do not use the unit on wet floors.



Do not use the unit on wet floors.

Do not use the unit on wet floors; or are exposed to high levels of vibration.


Be sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces.





WARNING


- If this adaptor is used while it is emitting smoke, generating a strange odor or making an abnormal noise, it could cause fire or electric shock. Turn off the main switch immediately, then be sure to pull the power plug from the outlet. After making sure that smoke is no longer emitted, take it to your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.
- During a thunder storm, do not touch the electric plug. Doing so could cause electric shock.
- Be sure to use only the AC adaptor supplied with the unit. Also, make sure the line voltage at the installation matches the input voltage specified on the AC adaptor's body. Other AC adaptors may use a different polarity, or be designed for a different voltage, so their use could result in damage, malfunction, or electric shock.
- Do not excessively twist or bend the power cord, nor place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!
- This unit, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the unit, and consult an audiologist.


⚠ WARNING


- Do not allow any objects (e.g., flammable material, coins, pins); or liquids of any kind (water, soft drinks, etc.) to penetrate the unit. 


- Immediately turn the power off, remove the AC adaptor from the outlet, and request servicing by your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page when:
 - The AC adaptor, the power-supply cord, or the plug has been damaged; or
 - Objects have fallen into, or liquid has been spilled onto the unit; or
 - The unit has been exposed to rain (or otherwise has become wet); or
 - The unit does not appear to operate normally or exhibits a marked change in performance.


- In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit. 

- Protect the unit from strong impact. (Do not drop it!) 


- Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through. 


- Before using the unit in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page. 


- Always turn the unit off and unplug the AC adaptor before attempting installation of the memory DIMM board (p. 14). 


- DO NOT play a CD-ROM disc on a conventional audio CD player. The resulting sound may be of a level that could cause permanent hearing loss. Damage to speakers or other system components may result. 


⚠ CAUTION


- The unit and the AC adaptor should be located so their location or position does not interfere with their proper ventilation. 


- Always grasp only the plug on the AC adaptor cord when plugging into, or unplugging from, an outlet or this unit. 


- Whenever the unit is to remain unused for an extended period of time, disconnect the AC adaptor. 


- Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children. 


- Never climb on top of, nor place heavy objects on the unit. 


- Never handle the AC adaptor or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit. 


- Before moving the unit, disconnect the AC adaptor and all cords coming from external devices. 

- Before cleaning the unit, turn off the power and unplug the AC adaptor from the outlet (p. 34). 

- If the power plug is damaged, or if the plug is loose when plugged into the outlet, do not use the AC power adapter. Doing so could cause electric shock, short circuit, or fire. 

- Whenever you suspect the possibility of lightning in your area, disconnect the AC adaptor from the outlet. 

- Install only the specified memory DIMM board. Remove only the specified screws (p. 14). 

- Should you remove ground screws and screws fastening the expanding memory cover, make sure to put them in a safe place out of children's reach, so there is no chance of them being swallowed accidentally. 

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IMPORTANT NOTES

In addition to the items listed under “USING THE UNIT SAFELY” on p. 2–3, please read and observe the following:

Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- The AC adaptor will begin to generate heat after long hours of consecutive use. This is normal, and is not a cause for concern.
- Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.

Placement

- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum. To alleviate the problem, change the orientation of this unit; or move it farther away from the source of interference.
- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.
- Observe the following when using the unit’s CD-RW drive. For further details, refer to “Before Using Compact Discs” (p. 10).
 - Do not place the unit near devices that produce a strong magnetic field (e.g., loudspeakers).
 - Install the unit on a solid, level surface.
 - Do not move the unit or subject it to vibration while the drive is operating.
- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Excessive heat can deform or discolor the unit.
- To avoid possible breakdown, do not use the unit in a wet area, such as an area exposed to rain or other moisture.

Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzine, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Additional Precautions

- Unfortunately, it may be impossible to restore the contents of data that was stored on a CD-R/RW disc once it has been lost. Roland Corporation assumes no liability concerning such loss of data.
- Use a reasonable amount of care when using the unit’s buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- Never strike or apply strong pressure to the display.
- If you put stickers or adhesive tape on the panel surface, peel slowly. Or the prints may be removed together.
- When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable’s internal elements.
- To avoid disturbing your neighbors, try to keep the unit’s volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).
- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.
- Use a cable from Roland to make the connection. If using some other make of connection cable, please note the following precautions.
 - Some connection cables contain resistors. Do not use cables that incorporate resistors for connecting to this unit. The use of such cables can cause the sound level to be extremely low, or impossible to hear. For information on cable specifications, contact the manufacturer of the cable.

Electric wave obstacle

- CD-RW drive is authorized to conform to the chapter 15, and the regulation for the division B digital devices of the FCC regulation, which is for the prevention of electric wave obstacle by the installation in the residence. CD-RW drive generates, uses or radiates radio frequency energy, and may cause obstacle to the radio communication if you use it in irregular manners. If the wave jamming may happen on the radio and TV, please try the following. But we cannot guarantee that the obstacle is completely eliminated.
 - Turn off the power of CDX-1.
 - Change the location and direction of the antennae of the radio and TV.
 - Keep CDX-1 and the receiver away.


- Supply the power to CDX-1 and the receiver from the different power outlet.
- Consult your nearest Roland Service Center or authorized Roland distributor in your country.

Laser beam

- If you operate the operating section, controlling section and drive section of this device in irregular manners, harmful ray may be radiated. Laser beam radiated from the optical pickup is harmful to your eyes and body. Please observe the following.
 - Do not attempt to open the optical pickup unit.
 - When you need repair service, call your nearest Roland Service Center or authorized Roland distributor in your country.

Before Using Compact Discs

Handling the CD-RW Drive

- Install the unit on a solid, level surface in an area free from vibration.
- Avoid using the unit immediately after it has been moved to a location with a level of humidity that is greatly different than its former location. Rapid changes in the environment can cause condensation to form inside the drive, which will adversely affect the operation of the drive and/or damage discs. When the unit has been moved, allow it to become accustomed to the new environment (allow a few hours) before operating it.
- Remove any disc from the drive before powering up or down.
- To avoid the risk of malfunction and/or damage, insert only discs with  into the CD-RW drive. Never insert any other type of disc. Avoid getting paper clips, coins, or any other foreign objects inside the drive.
- When you carry CDX-1, remove the disc from the loading tray. Do not carry the device with the loading tray downward.
- Avoid vibration and shock during operating. Do not carry with the power on.
- The pickup is designed to be dust-proof. Do not use pickup cleaners, since they may cause malfunction.

Handling Compact Discs (CD-R/RW/ROM)

- Upon handling the discs, please observe the following.
 - Do not touch the recorded surface of the disc.
 - Do not use at the places with dust.
 - Do not leave the disc in the direct sunlight or enclosed vehicle (proper temperature: 10-50 degree centigrade).
- Avoid touching or scratching the shiny underside (encoded surface) of the disc. Damaged or dirty discs may not be read/write properly. Keep your discs clean using a commercially available CD cleaner.

- Keep the disc in the case.
- Do not keep the disc in the CD-RW drive for a long time.
- Do not put a sticker on the label of the disc.
- Wipe the disc with a soft and dry cloth radially from inside to outside. Do not wipe along circumference.
- Do not use benzine, record cleaner spray or solvents of any kind.
- Do not bend the disc.

Copyright

- Unauthorized recording, distribution, sale, lending, public performance, broadcasting, or the like, in whole or in part, of a work (musical composition, video, broadcast, public performance, or the like) whose copyright is held by a third party is prohibited by law.
- When exchanging audio signals through a digital connection with an external instrument, this unit can perform recording without being subject to the restrictions of the Serial Copy Management System (SCMS). This is because the unit is intended solely for musical production, and is designed not to be subject to restrictions as long as it is used to record works (such as your own compositions) that do not infringe on the copyrights of others. (SCMS is a feature that prohibits second-generation and later copying through a digital connection. It is built into MD recorders and other consumer digital-audio equipment as a copyright-protection feature.)
- Do not use this unit for purposes that could infringe on a copyright held by a third party. Roland assumes no responsibility whatsoever with regard to any infringements of third-party copyrights arising through your use of this unit.

About the License Agreement

- The CDX-1 and its CD-R capability are designed to allow you to reproduce material to which you have copyright, or material which the copyright owner has granted you permission to copy. Accordingly, reproduction of Music CD or other copyrighted material without permission of the copyright owner avoiding technical prohibiting features of second-generation and later copying like SCMS or others constitutes copyright infringement and may incur penalties even in case such reproduction is for your own personal use and enjoyment (private use). Consult a copyright specialist or special publications for more detailed information on obtaining such permission from copyright holders.

Introduction

Before you begin

Check the contents of the package

The CDX-1 is packaged with the following items. Please make sure that you have all of them.

- CDX-1 (one unit)
- CD-RW blank disc (one)
- Demo disc (Songs, Samples) (one)
- CDX-1 Owner's Manual (this document)
- Effect Patch List
- AC Adopter: USB-2U

About the included disc

- **Demo disc (multitrack recording)**

This is a demo disc containing a multitrack recording. When you play it back, the state of the multitrack recording will be reproduced. (→ “Listening to the demo disc”; p. 45)

NOTE

DO NOT play the demo disc on a conventional audio CD player. The resulting sound may be of a level that could cause permanent hearing loss. Damage to speakers or other system components may result.

Main features of the CDX-1

Easy operation from recording/editing to audio CD production

- The CDX-1 is designed to be operated as easily as a cassette tape recorder, even by beginners. From recording and editing to producing an audio CD, you can experience the power of digital recording from the day you first take it out of the box.
- The liquid crystal display shows icons to indicate various types of information.

Sampling functionality

- The CDX-1's **Sampling function** lets you record your favorite audio material to a pad (p. 53). You can freely edit the sampled materials. Since edited samples can be added to the instrumental performances that you record, this function gives you a wide range of possibilities for song creation.
- WAVE files can be loaded from a mixed-mode CD (AUDIO+WAVE) and assigned to pads. Simply select from the WAVE files that appear in the display, and press [YES/ENTER].
 - “Loading a Windows WAVE file” (p. 58)



WAVE file (p. 207)

Versatile CD play functions

- Without using any other equipment, you can play back a CD on the CDX-1 while you press the pads to play samples, or input a mic or guitar.

Rhythm Guide function

- The **Rhythm Guide function** makes it easy to capture phrases or musical ideas that come to mind. Simply select an appropriate rhythm pattern, and set the tempo.
 - “Using the rhythm guide” (p. 116)

A diverse array of connectors

- The CDX-1 provides four type of input jacks. Since a high impedance phone jack (GUITAR/BASS) is also provided, a guitar or bass can be connected directly.
- RCA phone type MASTER jacks (stereo) are provided.
- Both coaxial type and optical type digital I/O connectors are provided, allowing digital connections to audio devices (e.g., CD players, DAT recorders, MD recorders).
- MIDI connectors (IN, OUT/THRU) are provided. You can synchronize the performance with an external MIDI sequencer, or play the rhythm guide (p. 116) on an external MIDI sound module.
 - “Using the CDX-1 with other MIDI devices” (p. 151)

Digital audio workstation

All processes are fully digital

In addition to a digital mixer and digital disc recorder, the CDX-1 contains two digital effects processors.

Bounce-recording (p. 125), effect processing, mixdown (p. 133), and completing your original CD since a CD-R/RW drive is built in, all processes of the music production process including editing, are performed in **full-digital** form, preventing any loss of audio signal quality.

Two versatile digital effects processors

The CDX-1 contains two types of effect unit. One type is for recording (insert effect; p. 141) and the other type is independent send/return effects (loop effect; p. 145). These two types can be used simultaneously. This means that the CDX-1 is all you need to produce a sophisticated song without using external effect devices.

A variety of simulations and effects are provided as insert effects, including amp simulations generated using **COSM** technology. In addition to effects for guitar, numerous multi-effects for vocals or keyboard are also provided.

As loop effects, you can use a broad range of spatial-type effects in stereo, including chorus, delay, and reverb effects that are indispensable for mixdown (p. 133).

By using insert effects and loop effects simultaneously, you can perform all effect processing at once—from creative sound-making to placement in the sound field.

Undo/Redo function

The Undo/Redo function lets you cancel the results of an editing and a recording mistake.

- “Undoing a recording/editing operation” (p. 138)

Quick movement to a point

You can assign a marker to a desired location (point). If you assign markers to locations such as the end of the opening or the beginning of a solo, you will be able to move instantly to the point where you wish to begin listening.

- “Assigning markers within a song—Marker” (p. 129)






Expanding the memory

The CDX-1 comes with 32 MB of memory into which audio samples can be loaded. However, in some cases, 32 MB of memory will be insufficient for loading large amounts of data. In such a case, you will have to add separately sold memory (DIMM). Memory can be expanded up to 128 MB.

Before expanding the memory, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor.

Precautions for expanding memory

- Always turn the unit off and unplug the AC adaptor before attempting installation of the memory DIMM board. 
- Install only the specified memory DIMM board. Remove only the specified screws. 
- To avoid the risk of damage to internal components that can be caused by static electricity, please carefully observe the following whenever you handle the board.
 - Before you touch the board, always first grasp a metal object (such as a water pipe), so you are sure that any static electricity you might have been carrying has been discharged.
 - When handling the board, grasp it only by its edges. Avoid touching any of the electronic components or connectors.
 - Save the bag in which the board was originally shipped, and put the board back into it whenever you need to store or transport it.
- Do not touch any of the printed circuit pathways or connection terminals.
- Never use excessive force when installing a circuit board. If it doesn't fit properly on the first attempt, remove the board and try again.
- When circuit board installation is complete, double-check your work.
- When turning the unit upside-down, get a bunch of newspapers or magazines, and place them under the four corners or at both ends to prevent damage to the buttons and controls. Also, you should try to orient the unit so no buttons or controls get damaged.
- When turning the unit upside-down, handle with care to avoid dropping it, or allowing it to fall or tip over.
- Use a Philips screwdriver of the appropriate size to avoid damaging the screw heads (a number of 2 screwdriver). If an unsuitable screwdriver is used, the head of the screw may be stripped.
- Turn the screwdriver counter-clockwise to loosen the screws-turn it clockwise to tighten them. 
- Be careful not to cut your hand on the edge of the cover or the opening edge while removing the cover.
- Be careful not to let the screws drop inside the CDX-1's body.
- Do not touch the circuitry or the connectors.
- Do not force a memory board into its slot. If it can't be inserted smoothly, take it out, check its orientation and try again.

MEMO

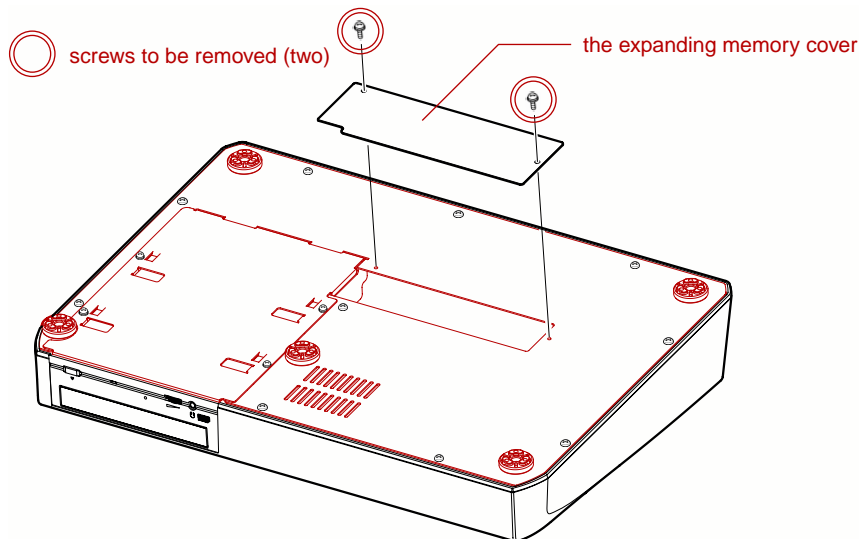
If you add 128 MB of separately sold memory, the standard 32 MB of memory will no longer be used.

NOTE

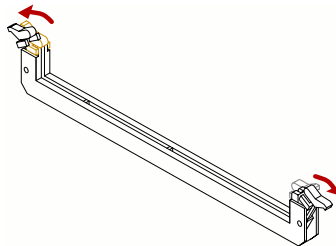
In case of expanding memory other than 128 MB of memory, turn on the power, a message "Wrong DIMM Type! Turn off the power, and replace w/correct one" appears, and. At this time, the CDX-1 will not operate normally.

How to expand the memory

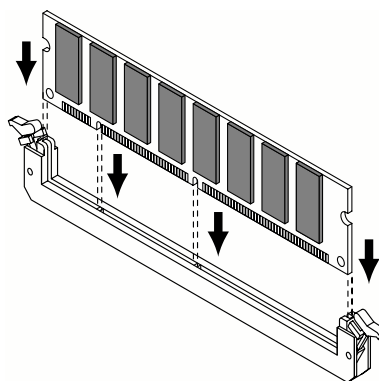
1. Turn off the power to the CDX-1 and any connected equipment, and then disconnect all cables attached to the CDX-1.
2. Turn the CDX-1 upside-down, and remove the expanding memory cover.



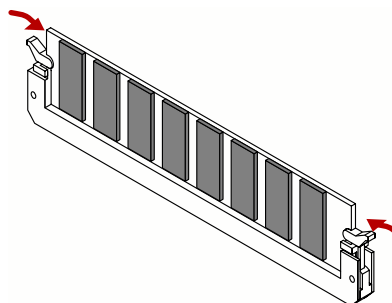
3. Press outward the white clips at either end of the socket should be in the downward position.



4. Paying attention to the location of the notch on the memory module and the orientation, insert it vertically within the guides at either side of the socket.



5. Move the white clips upward, and press them until the memory module is locked in place.



6. Return the CDX-1's top cover to its original position.

NOTE

When turning the unit upside-down, get a bunch of newspapers or magazines, and place them under the four corners or at both ends to prevent damage to the buttons and controls. Also, you should try to orient the unit so no buttons or controls get damaged.

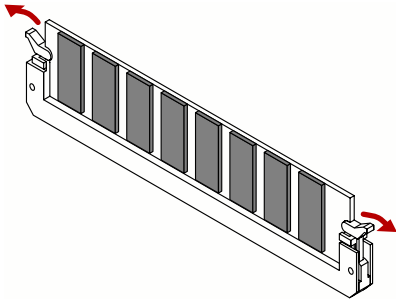
HINT

If you have difficulty inserting the memory module, try tilting it a bit and inserting one end at a time.

Removing the memory

To remove the memory module, reverse the installation procedure.

1. Simultaneously press outward the white clips located at either end of the socket.



2. Remove the memory module from the socket.

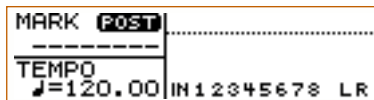
Verifying that the memory is recognized by the CDX-1

Before re-connecting the CDX-1 to any peripheral devices, check to verify that the added memory is being correctly recognized.

Verify that the memory module has been installed in the socket correctly

1. Turn on the power, as described in “Turning On the Power” (p. 33).

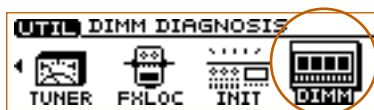
After several seconds when the CDX-1 starts up normally, the post-fader screen appears.



2. Press [UTILITY].

The Menu are displayed as icon.

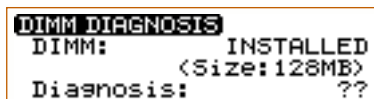
3. Press CURSOR [] to select the DIMM Diagnosis icon.



4. Press [YES/ENTER].

The DIMM Diagnosis screen appears.

“DIMM” will indicate status the expanding internal memory. If the memory has been detected correctly, this will indicate “INSTALLED.”



- * If “DIMM” shows “NOT INSTALLED” even though you installed expanding memory, the added memory has not been detected correctly. As described in “Turning off the power” (p. 34), turn off the power. Please re-install the memory correctly, as described in “How to expand the memory” (p. 15).

5. Press [DISPLAY] to return to the Basic screen.

NOTE

In case of expanding memory other than 128 MB of memory, turn on the power, a message “Wrong DIMM Type! Turn off the power, and replace w/correct one” appears, and. At this time, the CDX-1 will not operate normally.

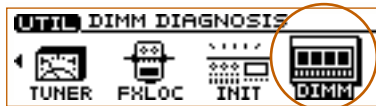
Memory read/write test—DIMM diagnostics

You can perform a read/write test to see whether the additional wave memory you installed can be used by the CDX-1. Perform this test after installing memory, or if an error message relating to memory is displayed.

1. Press [UTILITY].

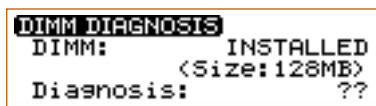
The Menu are displayed as icon.

2. Press CURSOR [] to select the DIMM Diagnosis icon.



3. Press [YES/ENTER].

The DIMM Diagnosis screen appears.



4. Press [YES/ENTER] to execute the check.

When the test is complete, a screen appears showing its results.

Memory boards that have successfully passed the write/read test are marked “OK” at the “Diagnosis.”

Memory boards that have not passed the write/read test are marked “NG” at the “Diagnosis.”

- * **Memory for which “NG” is displayed cannot be used with the CDX-1.** In this case, turn off the power as described in “Turning off the power” (p. 34). Then remove the memory as described in “Removing the memory” (p. 16).
- * If any pad/sequence is held in internal memory of CDX-1 when you carry out DIMM diagnosis, the message “You’ll lose PAD/SEQ by diagnosis. Sure?” appears. If you are ready to execute the check, press [YES/ENTER]. Press [NO/EXIT], DIMM diagnosis will be canceled.

5. Press [DISPLAY] to return to the Basic screen.

MEMO

“Diagnosis: ??” means that the DIMM has not been diagnosed. Even if the memory has been diagnosed, the result of diagnosis will be lost when the power is off, and “Diagnosis: ??” appears when you turn the power on next time.

NOTE

If the internal memory of the CDX-1 already contains pad/sequence, it will be lost when this procedure is performed. If you wish to keep the pad/sequence, you must save it on a CD-RW disc.

→ “Saving Pad/Sequence” (p. 67)

Learning about CD-R/RW discs

What is a CD-R/RW disc?

The CDX-1 lets you record your performances on a CD-RW disc, and finally use a CD-R disc to create an original audio CD. First, here's some basic information on CD-R discs and CD-RW discs.

What is a CD-R disc?

CD-R (Compact Disc Recordable) is a CD to which data can be written. Data can be written only once to a CD-R disc. It is not possible to erase or move the data that has been written. However, you make up to 99 additions to a CD-R disc, as long as free capacity remains.

What is a CD-RW disc?

CD-RW (Compact Disc ReWritable) is a CD that can be written and erased. Data that has been written can be erased, and new data written. A CD-RW disc can be written and erased approximately 1000 times.

Writing to a CD-R disc

There are several ways to write to a CD-R disc. The CDX-1 uses **track at once** when it creates an original audio CD.

- **Track at once:**

This method allows writing to be added on a single CD-R disc. As long as capacity remains on the CD-R disc, up to 99 additional writes can be performed as long as you do not **finalize** the disc. However, if you are writing audio data, it cannot be played on a conventional CD player until you finalize the disc. Also, once a CD-R disc has been finalized, no further additions can be made.




Finalize (p. 204)

Discs for use on the CDX-1

The CDX-1 contains various functions, and the discs it uses will differ depending on the function.

List of usable discs for each operation

Operation	Disc 	CD-R discs	high-speed compatible CD-RW discs
Playing a audio (CD-DA)		OK	
Multitrack recording			OK
Creating a original audio CD		OK	
Backing up song data			OK
Saving pad/sequence data			OK
CD direct recording		OK	

Recommended CD-R/CD-RW discs

● CD-R Disc



You can use CD-R discs that carry these logos.

● CD-RW Disc



You must use **high-speed compatible CD-RW discs** that carry this logo. The CDX-1 cannot use CD-RW discs that are not high-speed compatible.

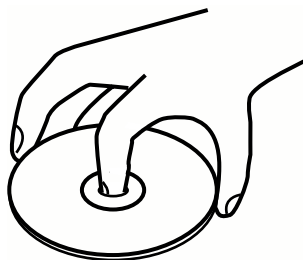
Also, we recommend that you use CD-RW discs made by the following manufacturers, whose products Roland has successfully tested for writing.

Ricoh Corporation, Mitsubishi Chemical Corporation

CD-R/RW disc handling and cleaning

Disc handling

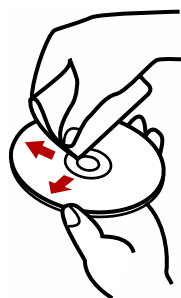
- Do not place a disc in direct sunlight for an extended period of time.
- Hold a disc by inserting a finger in the center hole and pressing your thumb against the outer edge. Be careful not to get fingerprints on, or scratch the recording surface of the disc (the green surface).



- Do not drop or stack discs.
- Do not place heavy objects on a disc, or subject it to strong physical shock.
- Do not affix stickers to the label surface of the disc. If a disc is used with a sticker affixed, read/write errors can occur, or the disc may be scratched.
- When writing a title on the label surface of the disc, use a soft-tipped writing implement such as a felt pen.
- To protect the disc, keep it in its original case.

Disc cleaning

- If dust or dirt adheres to a disc, gently wipe it off with a soft dry cloth. Always wipe from the center of the disc outward toward the outer edge. Never wipe the disc in the direction of rotation.



1 PEAK indicators

2 INPUT SENS knobs



3 INPUT SELECT button

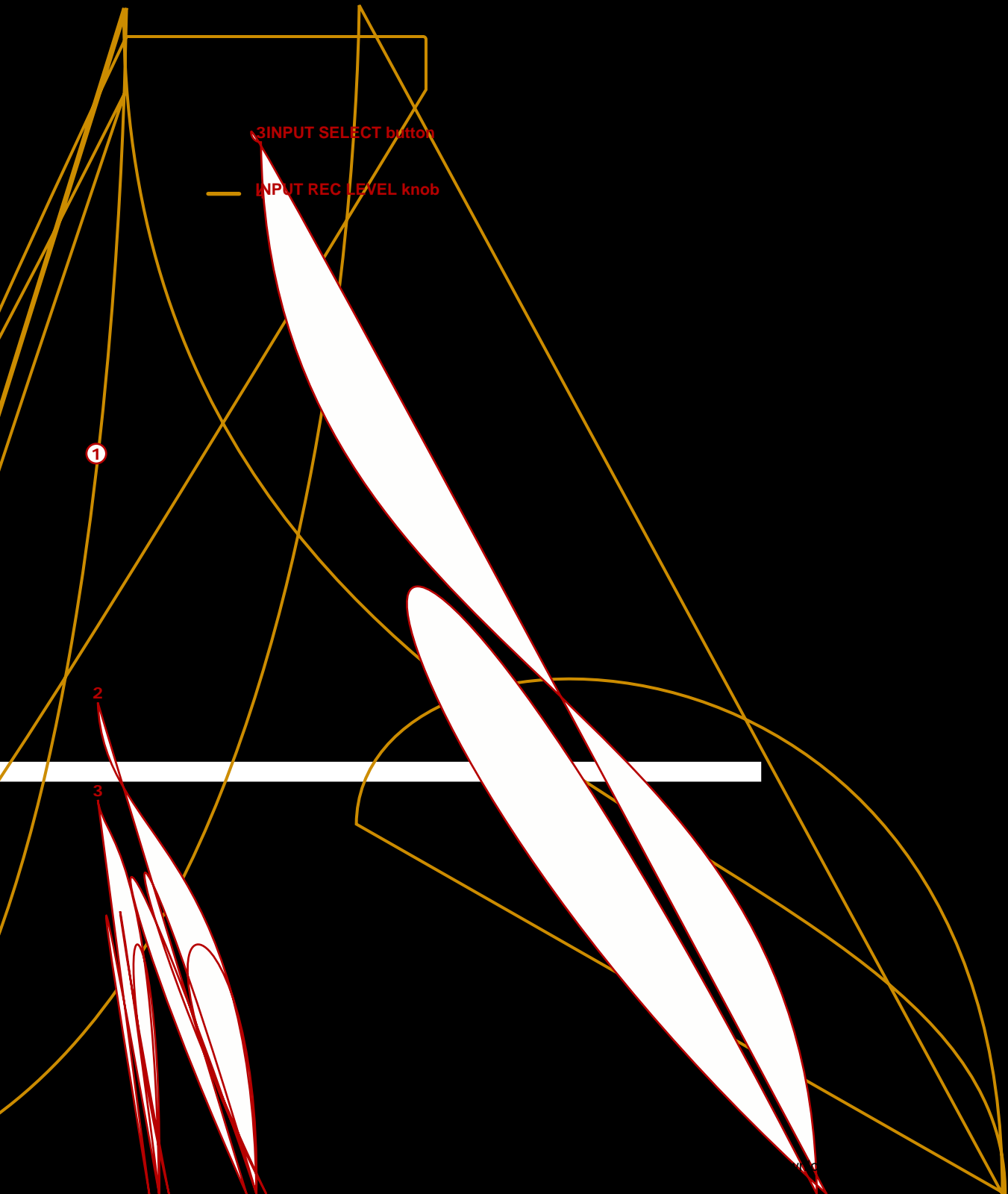
INPUT REC LEVEL knob



1

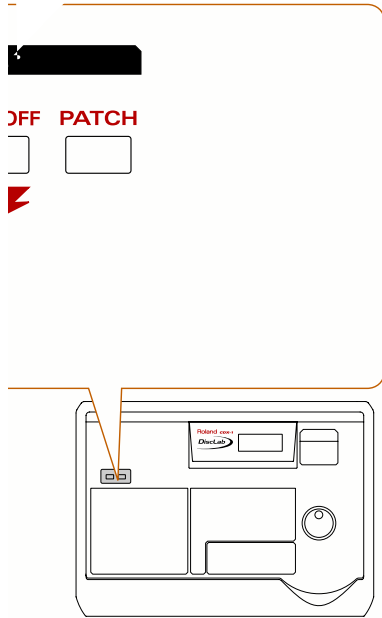
2

3





effect.
Insert effect algorithm



Effect on and off.

parameters displayed in unit type of curve.

LOOP EFFECTS section

Here you can make settings for the loop effects.

→ “Using the loop effects” (p. 145), “Mixer effect parameters functions” (p. 174)

JELAY button

This button accesses a screen where you can set the volume (send level) that is sent from each audio track to the chorus/delay/doubling loop effect, and a screen where you can edit the chorus/delay/doubling settings.

* Chorus/delay/doubling cannot be used simultaneously. You can select and use only one at a time.

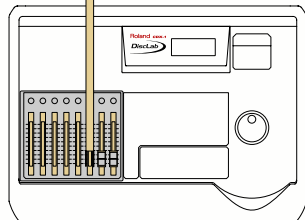
REVERB button

This button accesses a screen where you can set the volume (send level) that is sent from each audio track to the loop

12ON/OFF button

PATCH button12

Volume of the headphones.

AUDIO TRACK section**STATUS buttons 1–8**

These switch the status of each audio track. The current status is shown by the color of the button.

- Extinguished: Sound will not be output (i.e., muted).
- Lit in green: The track is ready for playback.
- Blinking in red: The track is selected as a recording destination.
- Lit in red: The track is now being recorded.

AUDIO TRACK faders

These adjust the volume of each audio track.

TRACK EDIT section**PAN Button**

This displays a screen where you can set pan (left/right positioning of the sound) for each audio track.

- “Setting the left/right position (pan) of an input sound” (p. 113), “Setting the left/right position of each audio track” (p. 132)

EQ (Equalizer) Button

This accesses a screen where you can make equalizer settings to modify the tone of each audio track.

- “Adjusting the tone of each audio track—Equalizer” (p. 132)

RHYTHM GUIDE section

Here you can make settings for the Rhythm Guide function.

- “Using the rhythm guide” (p. 116)

ON/OFF button

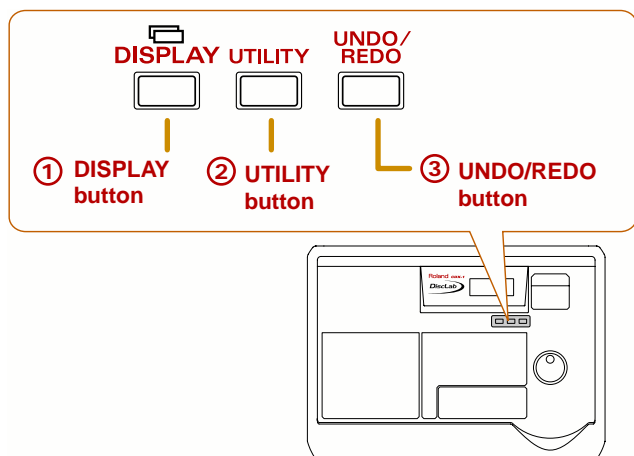
Pressed to cycle the Rhythm Guide function through the available selections: Auto → On → Off.

PATTERN/TEMPO button

This accesses a screen where you can set the rhythm pattern and tempo.

Panel Descriptions

DISPLAY, UTILITY and UNDO/REDO Button



① DISPLAY Button

Use these to move between screen pages in the display.

→ “Switching among the Basic screen” (p. 37)

② UTILITY Button

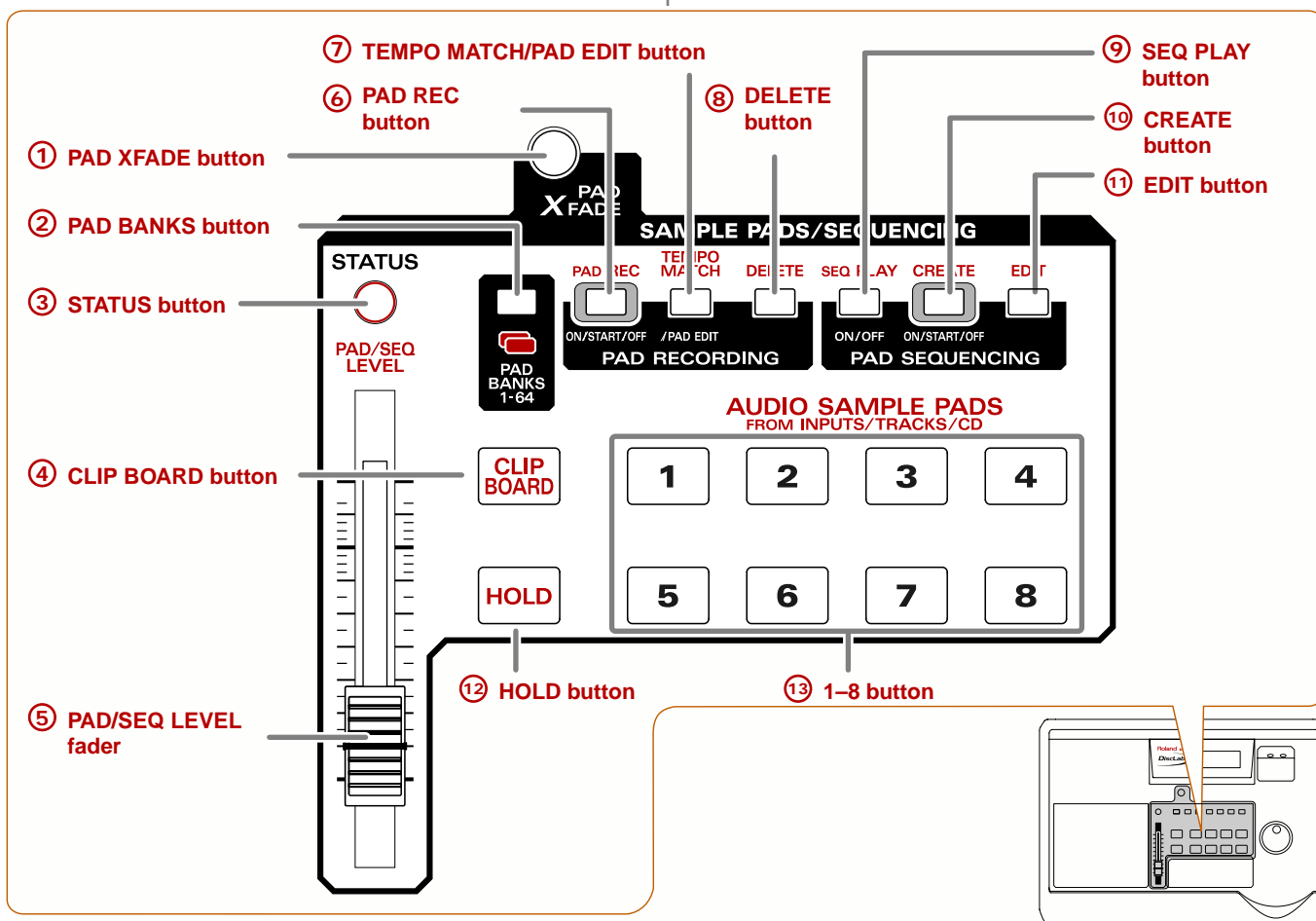
Displays a screen where you can access a variety of functions, including formatting a CD-RW disc, backing up samples, and initializing the system.

③ UNDO/REDO Button

Cancel the last-performed recording, sampling, or editing operation, and return to the previous state. By pressing [UNDO/REDO] once again, you can bring back the canceled recording or re-execute the editing operation.

→ “Undoing a recording/editing operation” (p. 138)

SAMPLE PADS/SEQUENCING Section



① PAD X FADE (pad crossfade) button

Use this button to play pad samples while crossfading.

If you press another pad while a sample is already sounding, the currently sounding sample will be faded-out, and the sample of the pad you pressed subsequently will fade-in and begin sounding.

→ “Crossfading the pads you play—Pad Crossfade” (p. 71)

② PAD BANKS Button

This displays a list of the 64 pad banks.

→ “Switching pad banks” (p. 54)

③ STATUS Button

The color of the button will indicate the current status.

Lit in green: Play back samples and the sequence track.

Lit in red: Record to the pads or sequence track.

* *In order to play back a sequence track, turn PAD SEQUENCING [SEQ PLAY] on (lit).*

④ CLIPBOARD Button

Use this when you want to copy a sample from one pad to another.

→ “Copying a sample to another pad—Clipboard” (p. 82)

⑤ PAD/SEQ LEVEL fader

This adjusts the volume of the pad samples and sequence.

⑥ PAD REC (pad recording) button

This button starts/ends sampling.

→ “Sampling to a pad” (p. 56)

⑦ TEMPO MATCH/PAD EDIT button

Pressed to toggle between the Tempo Match setting screen and the Sample Edit screen.

⑧ DELETE button

This button deletes the sample of a pad.

→ “Deleting samples individually” (p. 65)

⑨ SEQ PLAY (sequence play) button

Turns the Sequencing function on/off.

Turn this on (lit) when you wish to edit or play a sequence track.

⑩ CREATE Button

Use this when you wish to create a sequence (i.e., to record a sequence of pads).

→ Recording pad operations as you play pads—Realtime Recording” (p. 90), “Recording pad operations at the specified interval—Step Recording” (p. 93)

⑪ EDIT Button

The Sequence Track Edit screen appears.

→ “Editing a sequence track” (p. 98)

⑫ HOLD Button

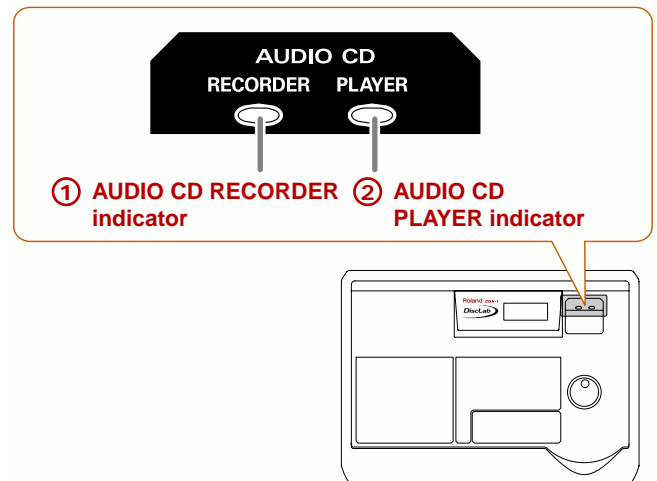
The sound will continue playing even after you release your hand from the pad.

→ “Making the sound continue even after you release the pad—Hold” (p. 72)

⑬ 1–8 Buttons

Up to eight samples can be assigned to these pads. Pads to which a sample is assigned will light. The way in which the sample plays and stops can be specified independently for each pad.

→ “Changing how a pad start and stops sounding—Pad Play” (p. 70)

AUDIO CD Section

* *If you insert a not finalized CD-R disc, both the RECORDER and PLAYER indicators will light.*

① AUDIO CD RECORDER indicator

This will light when a new CD-R disc is inserted.

This indicates that the audio input from an external source, the sound of samples being played using pad crossfade, or the playback sound from a sequence track can be recorded directly to a CD-R disc.

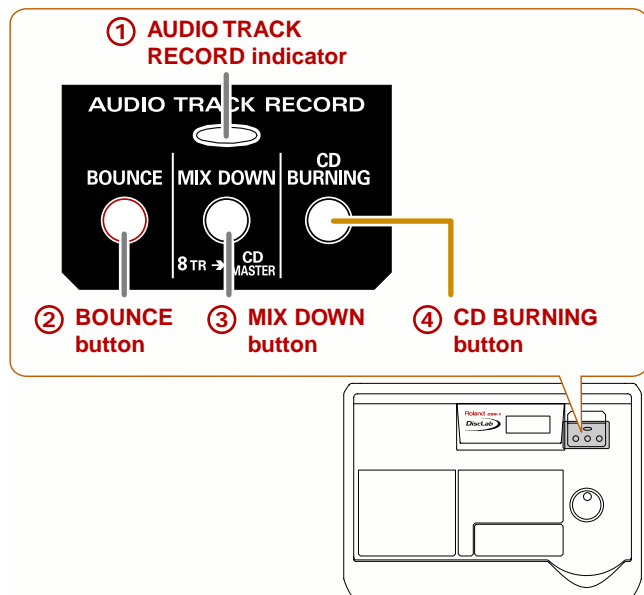
→ “CD direct recording” (p. 159)

② AUDIO CD PLAYER indicator

This will light when an audio CD is inserted.

This indicator will also light if you insert a CD-R disc written audio data.

AUDIO TRACK RECORD Section



1 AUDIO TRACK RECORD indicator

This will light when a CD-RW disc for use by the CDX-1 (formatting; p. 110) is inserted.

2 BOUNCE Button

This button switches to Bounce recording. Use this when you wish to combine multiple audio tracks (1–6 tracks) into two audio tracks.

→ “Combining the performances of multiple audio tracks—BOunce Recording” (p. 125)

3 MIX DOWN Button

This button switches to Mixdown mode. Use this when you wish to combine audio tracks into a master track in order to create an original CD.

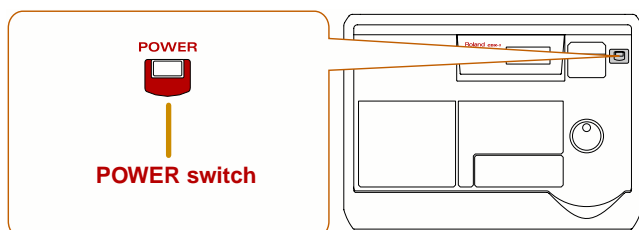
→ “Mixing down” (p. 133)

4 CD BURNING Button

This will light when CD Burning mode.

→ “Completing your original CD—CD Burning” (p. 135)

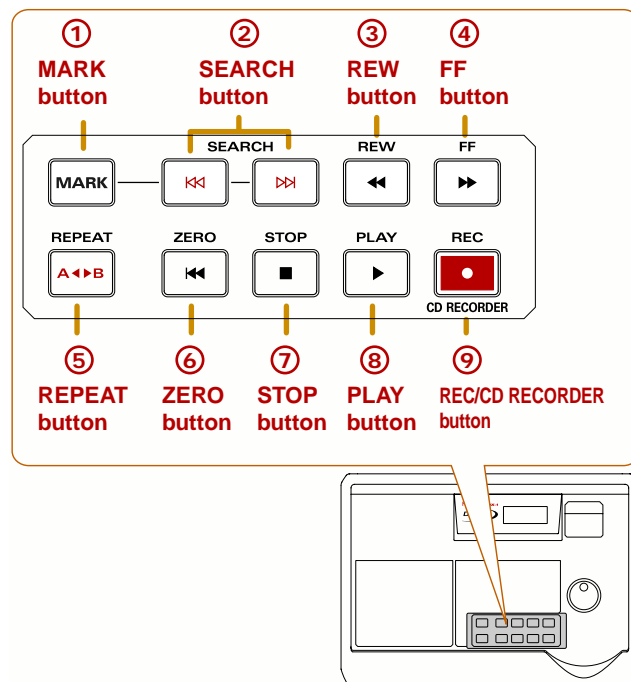
Power Switch



POWER Switch

This is the power switch. It turns the power of the CDX-1 on/off.

Transport section



1 MARK button

This button assigns a marker at the desired location of the song. When you press [MARK], a marker will be assigned to the current location of the song. If you have registered a marker, you will be able to jump instantly to the desired point in the song.

→ “Assigning Markers within a song—Markers” (p. 129)

2 SEARCH buttons

• SEARCH [<<<]

<When the CD Player is in use>

If the song is stopped, this button takes you back to the previous song. If the song is playing, it returns you to the beginning of the currently playing song.

→ “Moving to the previous/next track” (p. 50)

<During multitrack recording/playing>

This button takes you to the location of the previous marker.

→ “Moving to the location of a marker” (p. 129)

• SEARCH [>>>]

<When the CD Player is in use>

Jump to the next song.

<During multitrack recording/playing>

This button moves you to the location of the next marker.

3 REW (rewind) button

The song will rewind while you hold down the button.

④ FF (fast-forward) button

The song will fast-forward while you hold down the button.

⑤ REPEAT button

You can specify a region that you wish to hear, and play it back repeatedly.

- “Specify a region and play it back repeatedly—the Repeat function” (CD Player; p. 51), “Repeatedly play back a specified region—the Repeat function” (Multitrack recording; p. 128)

⑥ ZERO button



Returns to the beginning of the song.

⑦ STOP button

Stops recording or playback of the song.

⑧ PLAY button

Plays back songs.

When REC [] is blinking, pressing PLAY [] will start recording.

⑨ REC/CD RECORDER (recording/CD recorder) button

This is the Record button. In addition to the Recording operation, it is also used for manual punch-in/out.

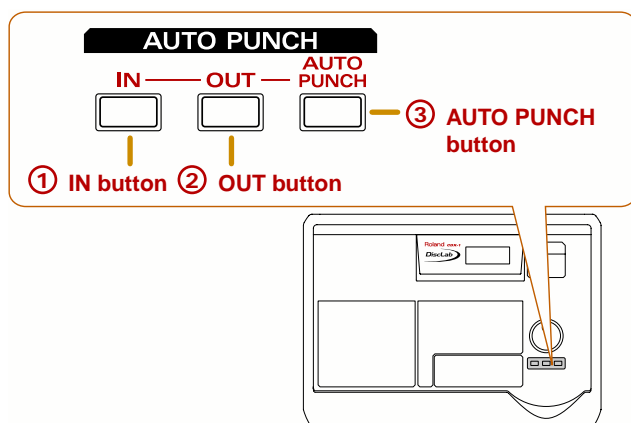
- “Using the Record button to punch-in/out” (p. 121)

Blinking: indicates recording-standby status.

Lit: indicates that recording in progress.

AUTO PUNCH section

Here you can make settings for the punch-in/out function.

**① IN button**

This button specifies the punch-in location. When you press [IN], the current location will be memorized as the punch-in location. After you have specified the punch-in location, you can press [IN] to move to the punch-in location.

② OUT button

This button specifies the punch-out location. When you press [OUT], the current location will be memorized as the punch-out location. After you have specified the punch-out location, you can press [OUT] to move to the punch-out location.

③ AUTO PUNCH button

This turns the auto punch-in/out function on/off. When this is on, the button will light. By using the auto punch-in/out function, you can automatically punch-in/out at the previously specified locations.

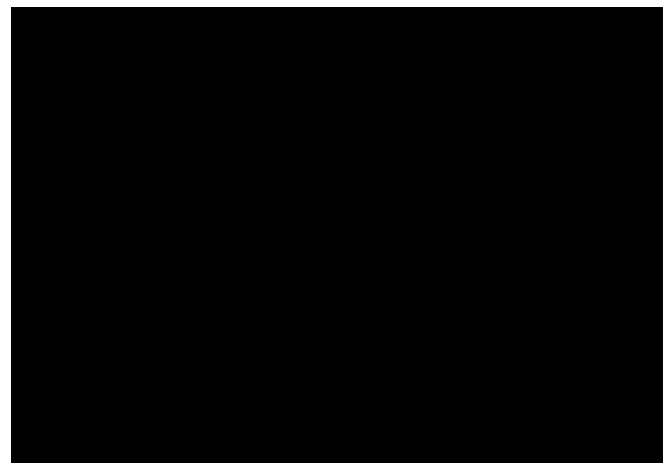
- “Automatically punching-in/out at the specified locations—Auto punch-in/out” (p. 122)

PREVIEW section

Here you can make settings for the Preview function.

By using the Preview function, you can precisely adjust the current location while listening to the sound.

- “Cueing to a precise location—Preview” (p. 139)

**SCRUB button**

This button causes an extremely short region of sound that ends or begins at the current location to be played repeatedly (p. 140).

TO button

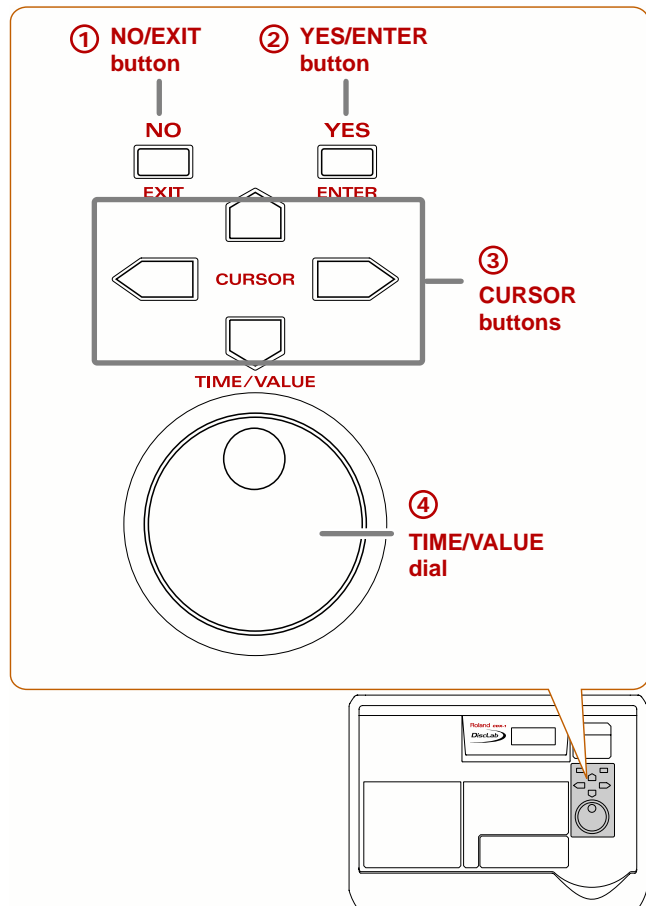
This button plays the sound from a point one second earlier than the current location to the current location (once only). If you are in Scrub mode, pressing [TO] will select **the region ending at the current location** as the scrub region.

FROM button

This button plays the sound from the current location to a point one second later (once only).

If you are in Scrub mode, pressing [FROM] will select **the region beginning at the current location** as the scrub region.

Control section



① NO/EXIT Button

Press this when you wish to return to the previous screen (i.e., the next higher screen in the hierarchy). You can also press this to respond “no” to a message displayed in the screen.

② YES/ ENTER Button

Press this to execute a menu selection. You can also press this to respond “yes” to a message displayed in the screen.

③ CURSOR Button

When making various settings, use these buttons to move the cursor to the item you wish to set. In screens that consist of multiple pages, these buttons are also used to move between pages.

④ TIME/VALUE Dial

In screens where there are no items to set, such as the Pre/post-fader screen (p. 37) and Sequence Play List screen (p. 37), use these buttons to move the current location of the song.

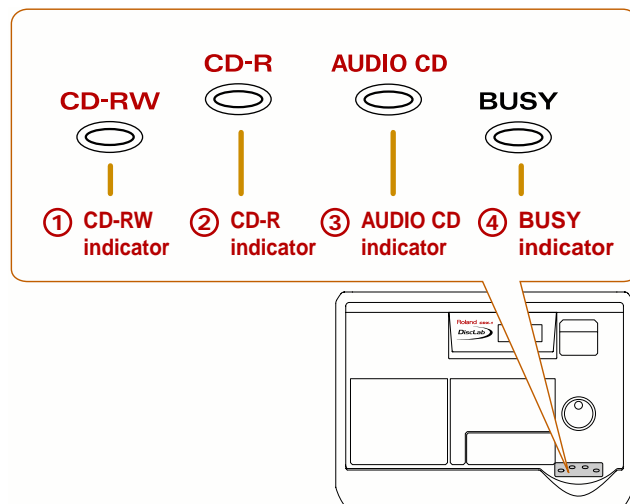
When making settings for various functions, these modify the value of the item selected by the cursor.



If you turn the TIME/VALUE dial clockwise, the value will increase continuously. If you turn the dial counterclockwise, the value will decrease continuously.

CD-RW/CD-R/AUDIO CD indicator section

An indicator will light to show the type of CD that is inserted.



① CD-RW indicator

Indicates that a CD-RW disc is inserted.

② CD-R indicator

Indicates that a CD-R disc is inserted.

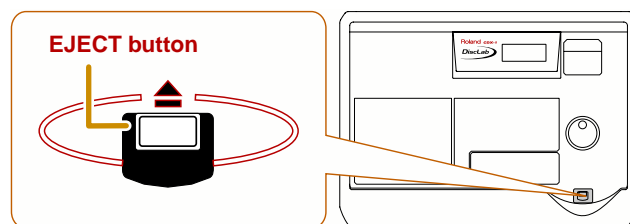
③ AUDIO CD indicator

Indicates that an audio CD type disc is inserted.

④ BUSY indicator

This indicator will light in red when the inserted CD is being read or written.

Eject button



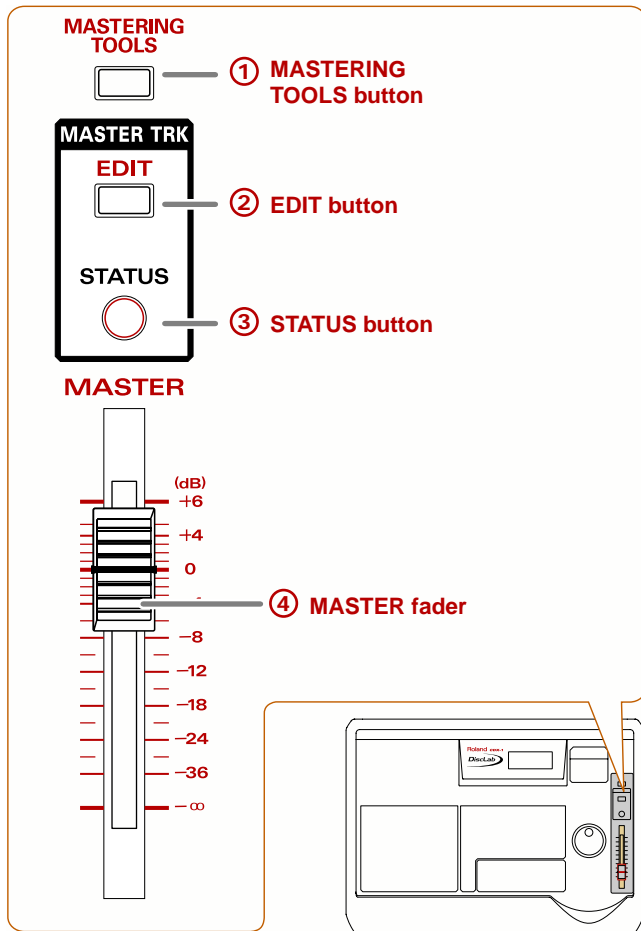
Eject button

This button opens or closes the CD disc tray.



If you need to remove the CD after the power has been turned off, you must turn on the power once again and press [EJECT] to remove the CD. If you attempt to remove the CD by force, you may damage the disc tray.

MASTER Section



① MASTERING TOOLS Button

This button switches “**mastering tools kit**” (p. 134) effect on and off. If CD BURNING mode is selected, this will be turned on automatically.

② EDIT Button

Access a screen where you can set the master balance.

→ “Adjusting the overall volume balance—Master balance” (p. 132)

③ STATUS Button

Shows the status of the Master track. The current state is shown by the color of the button.

→ Mixdown (p. 133), CD Burning (p. 135)

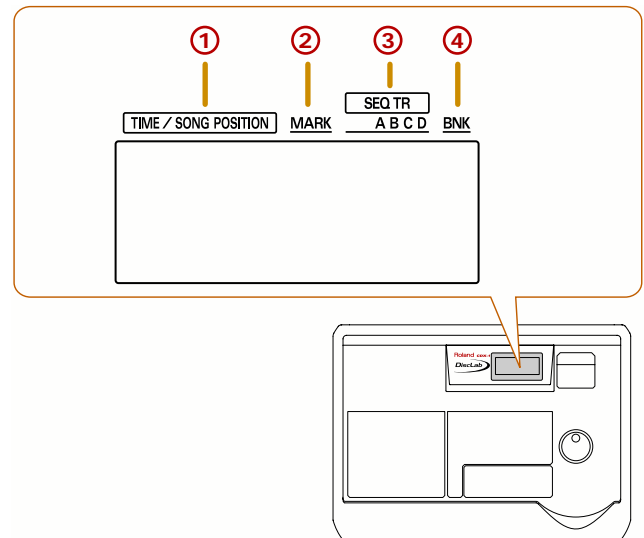
- Blinking in red: Indicates currently in recording-standby mode.
- Lit in red: Indicates currently recording
- Lit in green: Recorded Master track data is being played back.

④ MASTER fader

You can adjust the overall volume level

Display Section

Various information regarding operation will be displayed here.



① TIME/SONG POSITION

<When the CD Player is in use>

Indicates the current time location of the song in “Current track number/Minute/Second.”

<When the multitrack is in use>

Indicates the current time location of the song in “Hour/Minute/Second/Frame.”

● Frame display

The number displayed after the current time indicates the number of frames for the current location in the song.

At the factory settings, one second is set to 30 frames (non-drop). This is one type of a specification known as MTC (MIDI Time Code), and when you use the CDX-1 to play in synchronization with another MIDI device, you will need to set both devices to the same MTC type.

→ “Using MTC (Master)” (p. 154)

<When the sequence is in use>

Indicates the current time location of the song in “Measure/Beat/Tick.”


② MARK

This shows the number of the marker at the current location. If no marker is registered at the current location, the number of the marker immediately before the current location will be displayed.

If the current location is earlier than marker number “001,” or if no marker has been registered, the display will indicate “---”.

→ “Assigning markers within a song—Marker” (p. 129)

③ SEQ TR (Sequence Track)

This indicates  the sequence track that is selected as the playback destination.

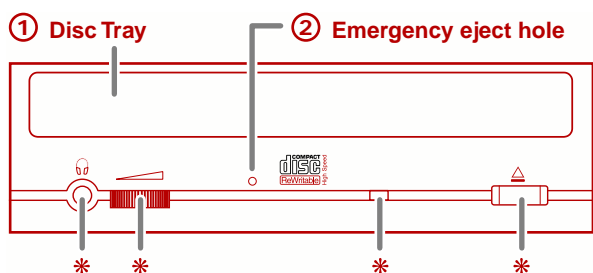
→ “Playing a sequence track” (p. 96)

④ BNK (Pad Bank)

This indicates the number of the currently selected pad bank.

→ “Switching pad banks” (p. 54)

Front Panel



① Disc Tray

Place the CD to be loaded on this tray.

② Emergency eject hole

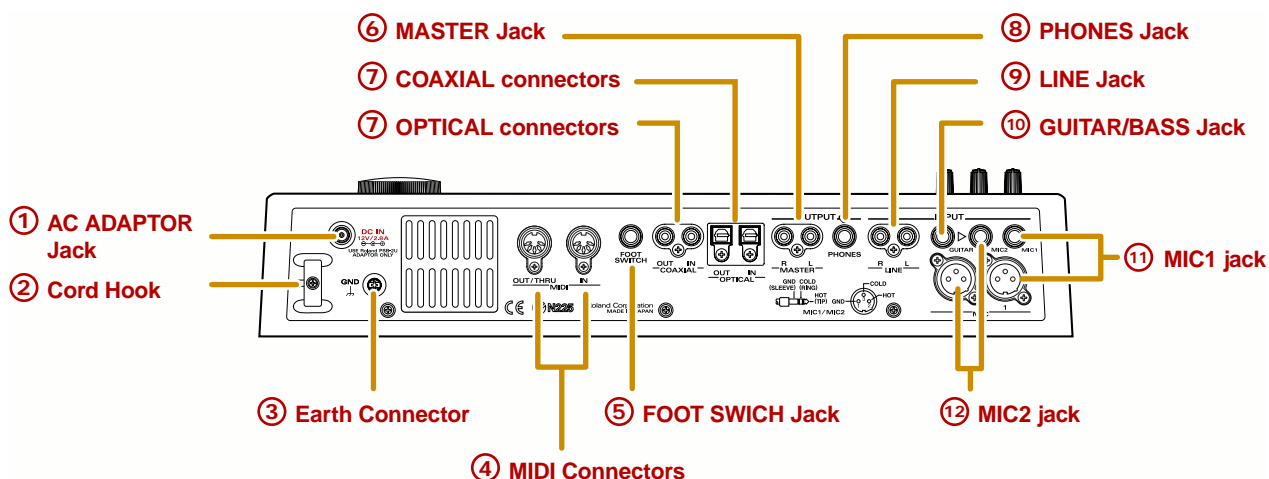
This hole allows the disc tray to be opened in case of emergency.

→ “If the disc tray does not open” (p. 36)

NOTE

The jack and button marked by the * symbol cannot be used.

Rear Panel



① AC ADAPTOR Jack

Connect the supplied AC adaptor to this jack.

NOTE

You must use only the included PSB-2U AC adaptor. Use of any other adaptor may cause overheating or malfunctions.

② Cord Hook

Wrap the cable around this hook so that the AC adaptor cable is not pulled out accidentally.

* If the AC adaptor is disconnected during operation, your important recorded data may be lost.

③ Earth Connector

Connect the ground cable here.

NOTE

In some cases, a Electric Guitar etc. is connected, the metallic part of the panel may sometimes feel rough and grainy. This is due to an infinitesimal electrical charge, which is absolutely harmless. However, if you are concerned about this, connect the ground terminal (see figure) with an external ground. When the unit is grounded, a slight hum may occur, depending on the particulars of your installation. If you are unsure of the connection method, contact the nearest Roland Service Center, or an authorized Roland distributor, as listed on the “Information” page.

Unsuitable places for connection

- Water pipes (may result in shock or electrocution)
- Gas pipes (may result in fire or explosion)
- Telephone-line ground or lightning rod (may be dangerous in the event of lightning)

④ MIDI Connectors (IN, OUT/THRU)

Connect an external MIDI device (e.g., MIDI controller or MIDI sequencer) here.

- **IN**

Receives MIDI messages from another MIDI device. Connect this to the MIDI OUT connector of your external MIDI device.

- **OUT/THRU**

This connector transmits MIDI messages. Connect it to the MIDI IN connector of your external MIDI device.

MEMO

On the CDX-1, a single connector doubles in use for MIDI OUT and MIDI THRU. At the factory settings, this functions as a MIDI OUT connector. You may change the setting as needed.

⑤ FOOT SWITCH Jack

This is an input jack for connecting a separately sold foot switch (DP-2, FS-5U). You can use a foot switch to play or stop the song remotely, or to punch-in/out.

- ➔ “Playing a sample from a connected foot switch” (p. 75),
“Using a foot switch to punch-in/out” (p. 122)

⑥ MASTER Jack

These are output jacks for the analog audio signal. The MASTER fader adjusts the volume.

⑦ OPTICAL, COAXIAL connectors (IN, OUT)**NOTE**

Digital audio signals cannot be recorded simply by connecting a digital audio device to the OPTICAL or COAXIAL connector. If you wish to recorded digital audio signals, you must change the settings as described in “In order to make a Digital recording with CD player” (p. 148).

- **IN**

These connectors are for connecting digital audio devices such as a CD player or MD recorder. There are two types of connector: optical and coaxial.

- * If digital audio devices are connected to both optical and coaxial connectors, the input from COAXIAL IN will take priority. By pressing INPUT SELECT [DIGITAL] you can switch the inputs.

- **OUT**

These connectors output a digital audio signal (stereo). There are two types of connectors: optical and coaxial. Optical and coaxial connectors can be used simultaneously.

- * The sound that is output will be the same as master out.

⑧ PHONES Jack

Stereo Headphones (sold separately) are connected here.

⑨ LINE Jack

These are input jacks for analog audio signals. Connect them to an audio device such as a CD player or to a keyboard or rhythm machine.

⑩ GUITAR/BASS Jack

An electric guitar or bass can be connected to this jack. Since this is a high-impedance input, a guitar or bass can be connected directly.



Impedance (p. 205)

⑪ MIC1 jack/phone type, XLR type

These jacks allow you to connect a mic. If you are recording a vocal alone, use the MIC1 jack. Phone-type and XLR-type jacks are provided.

- * Do not use identically numbered phone-type and XLR-type MIC jacks simultaneously.
- * The phone-type jack is TRS, and supports both balanced and unbalanced connections.

⑫ MIC2 jack/phone-type, XLR-type

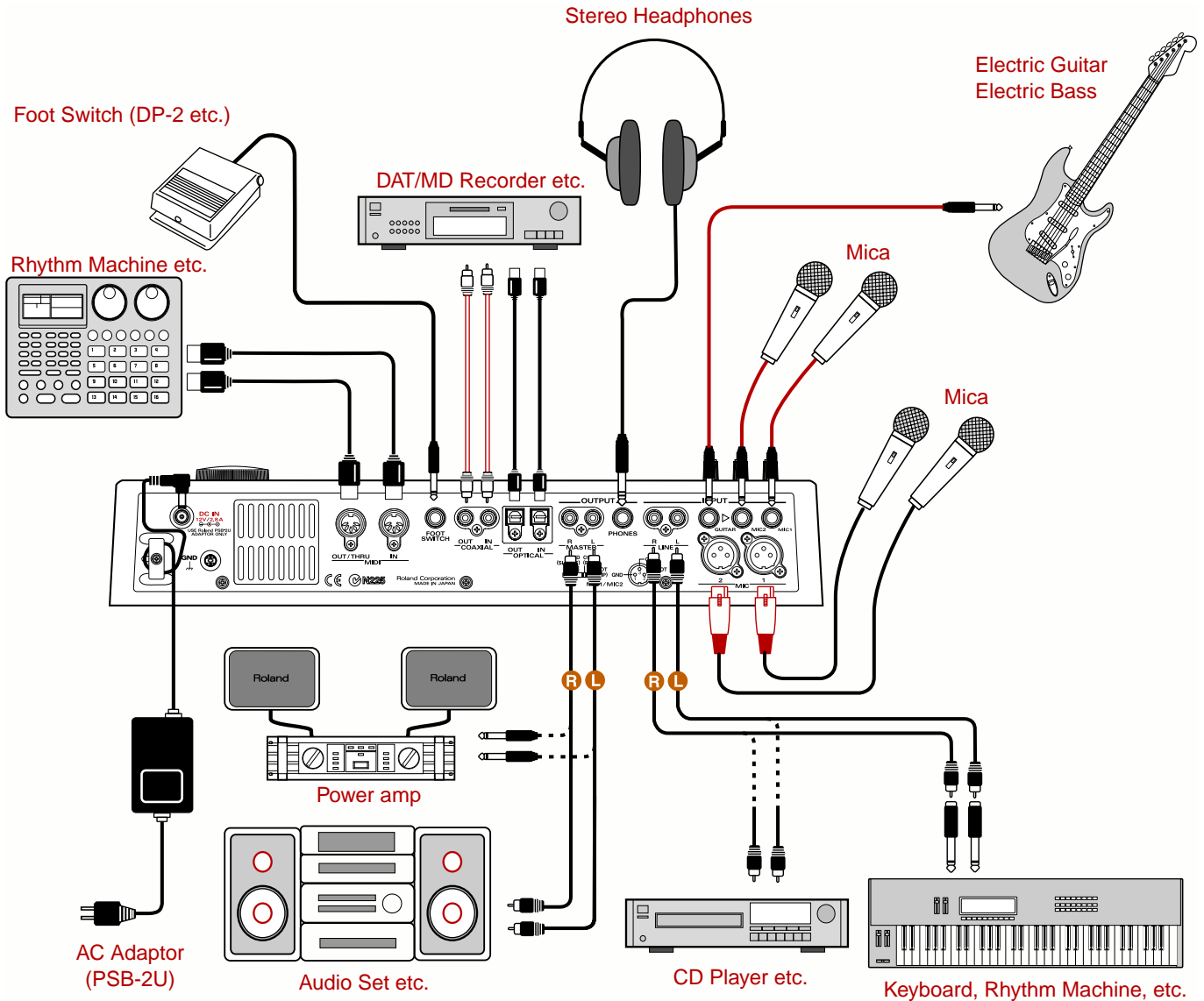
These jacks allow a mic to be connected. Use them if you are recording acoustic guitar with a mic, or if you are recording a chorus together with MIC1. Both phone-type and XLR-type jacks are provided.

- * Do not use identically numbered phone-type and XLR-type MIC jacks simultaneously.
- * The phone-type jack is TRS, and supports both balanced and unbalanced connections.
- * If an instrument is connected to the GUITAR/BASS jack, the input from the GUITAR/BASS jack will take priority. The input from the mic connected to MIC2 (phone-type/XLR-type) cannot be recorded.

Basic operation of the CDX-1

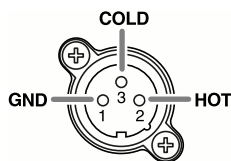
Connecting peripheral equipment

Make connections as shown in the diagram below. Before you begin making connections, be sure that the power of all equipment is turned off.

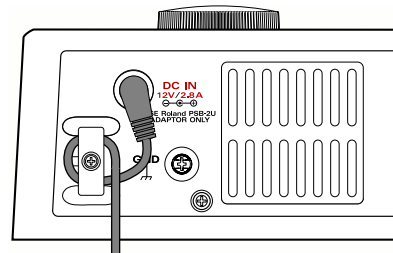


NOTE

- To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.
- The pin assignment for the XLR type connectors is as shown below. Before making any connections, make sure that this pin assignment is compatible with that of all your other devices.
- Howling could be produced depending on the location of microphones relative to speakers. This can be remedied by:
 - Changing the orientation of the microphone(s).
 - Relocating microphone(s) at a greater distance from speakers.
 - Lowering volume levels.



- To prevent the inadvertent disruption of power to your unit (should the plug be pulled out accidentally), and to avoid applying undue stress to the AC adaptor jack, anchor the power cord using the cord hook, as shown in the illustration.



- Do not use identically numbered phone-type and XLR-type MIC jacks simultaneously.
- Please connect or disconnect the foot switch after you turn off the power.

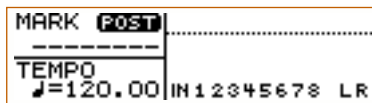
Turning the Power On and Off

* Once the connections have been completed (p. 32), turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.

Turning On the Power

1. Turn the volume of the connected equipment down to the minimum level.
2. Lower the MASTER fader to the lowest position.
3. Turn on the power of the equipment connected to the INPUT jacks.
4. Press the POWER switch to turn on the power of the CDX-1.

After several seconds, the CDX-1 will start up normally and the post-fader screen appears.



```
MARK POST|.....  
-----  
TEMPO  
♩=120.00|IN12345678 LR
```

5. Turn on the power of the equipment connected to the OUTPUT jack.
6. Raise the volume of the connected equipment to appropriate levels.

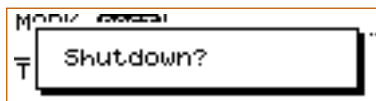
Turning Off the Power

NOTE

- To turn off the power of the CDX-1, you must use the POWER switch rather than unplugging the AC adaptor from the outlet or disconnecting the AC ADAPTOR jack.
 - If you turn off the power without using the POWER switch while the internal CD-RW drive is operating, the CD-RW drive may malfunction.
 - If the power supply is interrupted due to an unexpected power failure or other cause, avoid moving the CDX-1, and turn the power on once again when the power resumes.
 - CDX-1 saves some parameters like system setting when power turned off. For this reason if you simply unplug the AC adaptor without using the POWER switch, the mixer settings, effect patch data, and unsaved sample data will all be lost. Please use caution.

1. Turn off the power of the connected equipment in the opposite order from which they were turned on (p. 33).
2. Press the Power Switch.

The message "Shutdown?" appears in the display.



3. If you are ready to turn off the power, press [YES/ENTER].

The power will turn off.

Press [NO/EXIT], shutdown will be canceled.

- If the display asks "You'll lose PAD/SEQ data during shutdown. Sure?"

If any pad/sequence is held in internal memory of CDX-1 when you carry out shutdown, the message "You'll lose PAD/SEQ data during shutdown. Sure?" appears.

1. If you are ready to turn off the power, press [YES/ENTER].

The power will turn off.

- * If a CD-RW disc is inserted in CDX-1, a message "Save SONG before shutdown?" appears. In this case, see following process of "If the display asks Save SONG before shutdown?"

Press [NO/EXIT], shutdown will be canceled.

- If the display asks "Save SONG before shutdown?"

When the CD-RW disc is inserted in CDX-1, the message "Save SONG before shutdown?" appears in the display.

1. If you wish to save the song data, press [YES/ENTER].

A message "Processing..." appears and CDX-1 saves setting of SONG (Parameter of Mixer, effects etc.) in CD-RW disc. When saving is completed, the power will turn off.

If you press [NO/EXIT], power will be turned off without saving of data. All the settings (Mixer, effects etc.) after inserting CD-RW disc will be lost.

MEMO

Once you carry out turning off the power, pad/sequence held in internal memory of CDX-1 will be lost. If you wish to keep the pad/sequence, you must save it on a CD-RW disc before shutdown. → "Saving Pad/Sequence" (p. 67).



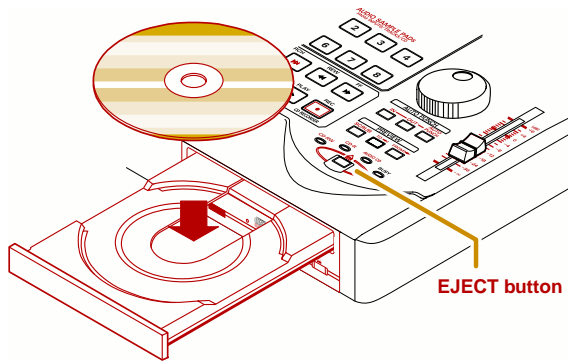
For details of saved Song settings, refer to "Saving Song settings on a CD-RW disc" (p. 126).

MEMO

This message appears even in case you have not changed setting of Song.

Inserting/removing a disc

Inserting a disc



- 1. Press the EJECT button.**
The disc tray will open.
- 2. Place the disc on the disc tray.**
- 3. Press the EJECT button once more.**
The disc tray will close.
The disc tray will also close if you press lightly on the front of the tray.

Time to mount disc

CDX-1 carries out the followings when mounting the discs.

- Inspecting CD-RW disc to improve preciseness of writing
- Optimize CD-RW drive
- Load various data like audio files

Thus, it take some time to complete mounting od discs, The time length to mount disc is varied depending on amount of Pad/Sequence data. Mounting of discs including no Pad/Sequence data completes in approximately 3 minutes. Mounting takes approximately 8 minutes at most.

NOTE

If you transport the CDX-1 with a CD left in the disc tray, the CD or drive may be damaged. Before transporting or moving the CDX-1, you must remove the CD from the disc tray.

a
a
a
r
s case,

of the tray.

message "Save SONG before eject?"

[YES/ENTER].

a CDX-1 saves setting of SONG (Parameter of
When saving is completed, the disc tray will open.

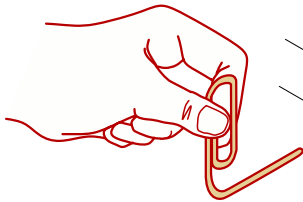
e "Eject disc? (not saved)" appears.

saving of data. All the settings (Mixer, effects etc.)
l be lost.



For details of saved Song settings, refer to "Saving Song settings on a CD-RW disc" (p. 126).


of the power of the D
ert a thin object such as a
he disc tray will open.



Switching among the Basic screens

The basic display screens of the CDX-1 are accessed by pressing [DISPLAY], located below the screen. As described below, there are five Basic screens, which you can cycle through by pressing [DISPLAY].

- * The AUDIO CD PLAYER indicator and/or the AUDIO CD RECORDER indicator is lit, pressing [DISPLAY] will cycle you through the CD Player screen and Sequence Play List screen displays.

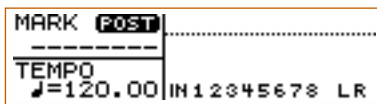
However, CD RECORDER [] blinks (recording-standby mode), only the CD Recorder screens will be displayed.



CD Player screen (p. 48)

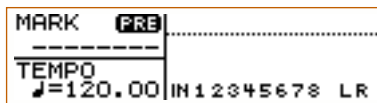
The Basic screens

Post-fader (level meter) screen



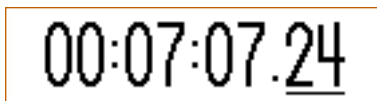
This screen shows the levels after the signals have passed through the audio track faders (post-fader). During multitrack recording (p. 113), the meters indicate the recording levels of those tracks.

Pre-fader (level meter) screen



This screen shows the levels before the signals have passed through the audio track faders (pre-fader). Use the Pre-fader screen when you wish to check the input levels.

Big Time screen



The current location of the song will be displayed in large characters using the full size of the display. The units indicated can be switched "Measure/Beat /Tick" or "Hour/Minute/Second/Frame."

→ Refer to "Switching the Big Time display." (p. 38)

Sequence Play List screen



This screen shows the status of the sequence (p. 88). The location and length of the boxes (rectangles) indicates how phrases are arranged in the sequence track.

Song Information screen (at the time of using CD-RW disc)



This screen shows information about the song (CD-RW disc).

→ Refer to "Viewing information on the song (CD-RW disc)-Song Information screen." (p. 39)

If you are confused about operations or screens —Going back to the Basic screen

While you are still unfamiliar with operation, you may come upon a screen you do not recognize. If this occurs, you can press [DISPLAY] to return to one of the Basic screens (the most-recently selected one). (Refer to “The Basic screens,” above.)

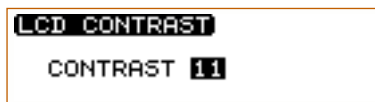
Adjusting the brightness of the screen display—Contrast

The contrast of the display will change depending on the viewing angle and the temperature. If you have difficulty reading the display, use the following procedure to adjust the contrast.

1. Press [UTILITY].
The Menu are displayed as icon.
2. Make sure that the cursor is located at the LCD Contrast icon.



3. Press [YES/ENTER].
The LCD Contrast Setting screen appears.



4. Turn the TIME/VALUE dial to adjust the contrast.
5. Press [DISPLAY] to return to the Basic screen.

Switching the Big Time display

The units indicated can be switched “Measure/Beat /Tick” or “Hour/Minute/Second/Frame.”

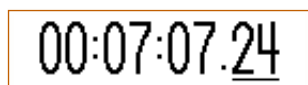
1. Press [UTILITY].
The Menu are displayed as icon.
2. Press CURSOR [] to select the System icon.



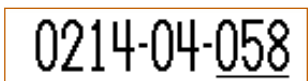
3. Press [YES/ENTER].
The System settings screen appears.
4. Press CURSOR [] [] to move the cursor to “Time Disp.”
5. Turn the TIME/VALUE dial to select “TIME CODE” or “MEASURE.”

● Time Disp:

TIME CODE: Display “Hour/Minute/Second/Frame.”



MEASURE: Display “Measure/Beat /Tick.”



6. Press [DISPLAY] to return to the Basic screen.

MEMO

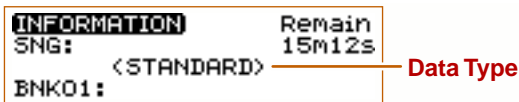
Hold down [UTILITY] and turn the TIME/VALUE dial, the contrast of display will be changed.

Viewing information on the CD-RW disc —Song Information screen

You can view information about the CD-RW disc (song) inserted in the CDX-1.


1. Press [DISPLAY] to switch among the Basic screen.

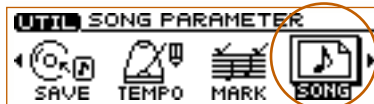
The Information screen appears.



- Remain:** This displays remaining capacity (time) for editing in min./sec. When mixdown mode (p. 133) is selected, this displays remaining capacity (time) for recording on mastering track (internal).
- SNG:** This displays the name of the CD-RW disc.
→ “Naming a song (CD-RW disc)” (below section).
- Data Type:** This will indicate the data type that was selected when the CD-RW disc was formatted.
→ “Preparing a CD-RW disc for use—Format” (p. 110)
- BNK:** This shows the pad bank number and name.
→ “Naming a pad bank” (p. 55)

Naming a song (CD-RW disc)

1. Press [UTILITY].
The Menu are displayed as icon.
2. Press CURSOR [] to select the Song Parameter icon.



3. Press [YES/ENTER].

The Song Parameter screen appears.



4. Make sure that the cursor is located at the “Name” line.
5. Use CURSOR to move to the desired character location, and turn the TIME/VALUE dial to input characters.
6. Press [DISPLAY] to return to the Basic screen.

NOTE

Remaining capacity for editing different from remaining capacity for recording. Even in case the displayed time in “Remain” shows some capacity is remaining, CDX-1 stops recording when remaining capacity for recording run out. The capacity differs recording to data type (p. 111).

MEMO

CDX-1 automatically stops recording when remaining capacity for recording is 00m00s. If you optimize the disc, remaining capacity for recording may increase. → “Increasing the free space on a CD-RW disc—Optimize Disc” (p. 127)

Returning the CDX-1 to the factory settings—Initialize

The current settings of the CDX-1 can be returned (initialized) to the factory settings. The following parameters can be initialized.

- **Global Parameter**

- Tuner parameters
- System parameters
- MIDI parameters
- Marker parameters
- Tempo map parameters

- **Effect patch data**

All user patches: U001–U100

- **Mixer parameters**

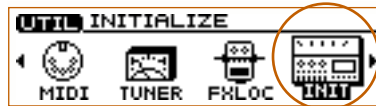
PAN, EQ, DELAY, REVERB, Effects location, Master balance

Here we will describe the procedure for initializing the Global parameters.

1. Press [UTILITY].

The Menu are displayed as icon.

2. Press CURSOR [] to select an Initialize icon



3. Press [YES/ENTER].

The Initialize Menu are displayed as icon appears.

4. Make sure that the cursor is located at the Initialize Global Parameters icon



5. Press [YES/ENTER].

The display will ask “Initialize Global Param. Are you sure?”

6. When you wish to initialize, press the [YES/ENTER].

To cancel the operation, press [NO/EXIT].

When initialization is complete, you're returned to the Basic screen.



For details on each parameter and its default value, refer to “Parameter list” (p. 208).

MEMO

To initialize other parameters, select the icon for the parameters you wish to initialize in step 3. For the meaning of the Initialize icons, refer to the separate column “The meaning of each Initialize icon” (p. 41).

The meaning of each Initialize icon

● Initialize Global Parameters icon



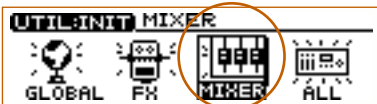
When you select this icon, Global parameters (p. 40) will return to the factory settings.

● Initialize Effect Patch icon



When you select this icon, effect patches U001–U100 will be initialized to the factory settings.

● Initialize Mixer Parameters icon



When you select this icon, the mixer parameters will be initialized to the factory settings.

● Initialize All Parameters icon



When you select this icon, the global parameters, effect patches, and mixer parameters will all be initialized.

The display screen contrast will also be initialized to the factory setting.

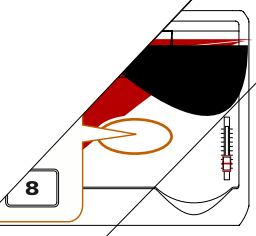


“What is a patch?” (p. 141)

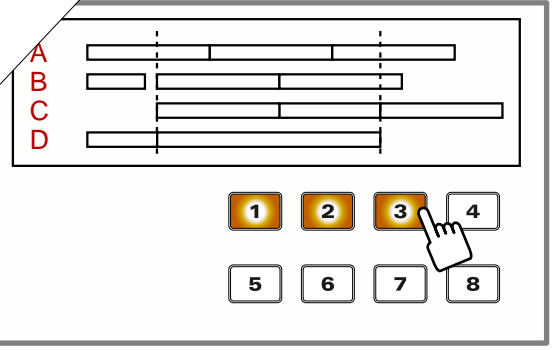
MEMO

“Mixer parameters” refer to the parameters that can be set in the screens accessed by pressing [PAN], [EQ], [DELAY], and [REVERB].





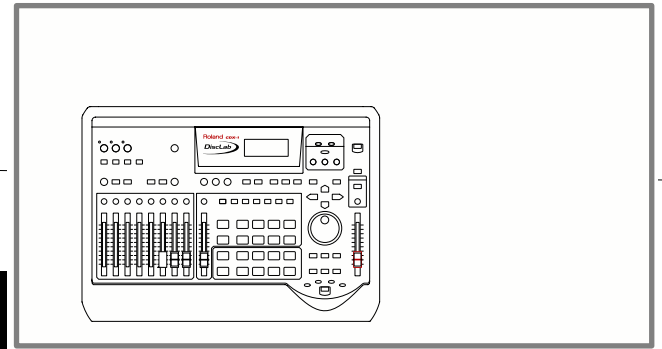
ing CD ("clip audio" collection)
files, and assign the sounds to pads.
d" (p. 56)



they play.

Freely combine the sounds of pads to create your song.
Record the pad operations on the sequence track.

→ "Arranging audio samples to create a song—Sequence" (p. 88)

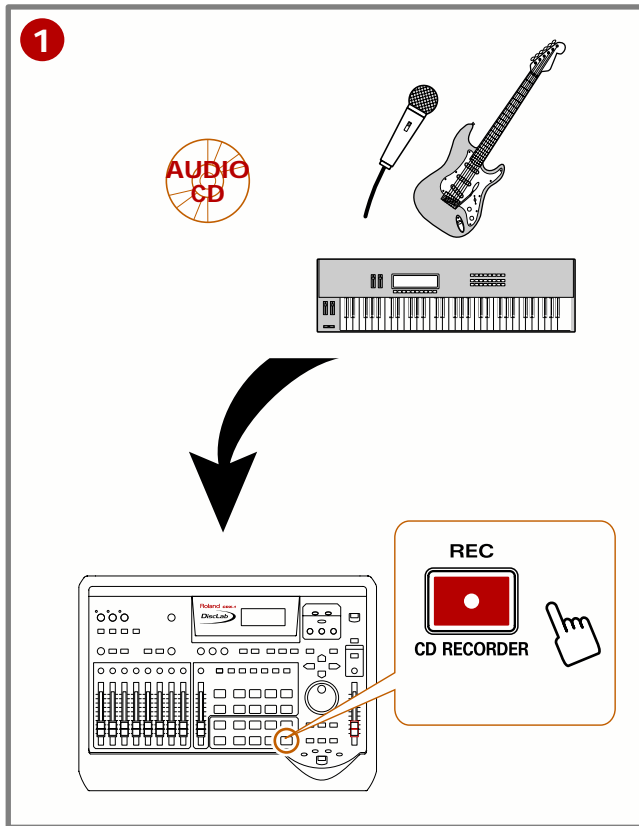


Record the playback sound of the sequence track directly onto
a CD-R disc.

→ "Recording the sequence playback on a CD-R disc" (p. 163)

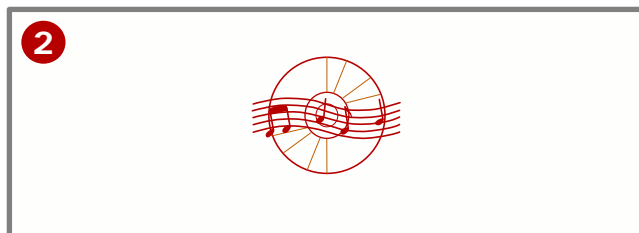
What you need to do to create your own CD

Path 4



Record external audio sources directly to a CD-R disc, without using the audio tracks.

→ "Recording an external audio source to a CD-R disc"
(p. 161)



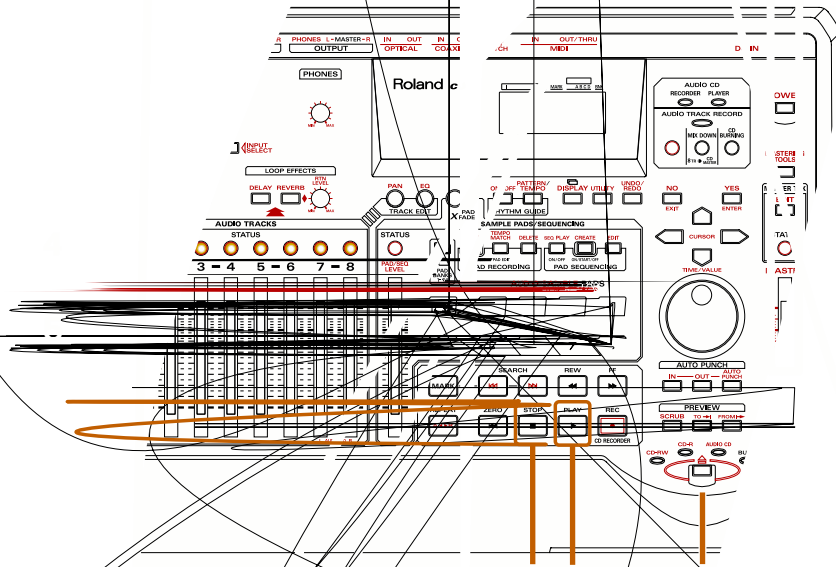
This completes your original audio CD.

do to

emo

demo disc a

emo se ng.



that your source reproduction system (i.e., amp or
connected.

in "Turning On the Power" (p. 33), turn on the
discs described in "Inserting a disc" (p.
of the audio tracks enough times to

faders (1-8) to the 0 dB position

MEMO

Using marker stop function
(p. 131), the play back from
demo CD stops at the end of
first song. Press PLAY [▶] to
do play back of next-song.

◀◀ 1 . press PLAY [▶] once again, and
). ng.

◁ fader

e volume.

◻ ed with the master balance.

◻ e 1 to the phones jack is adjusted with the

r no sound even when you turn up the volume with



"Adjusting the overall volume
balance—Master Balance"
(p. 132)

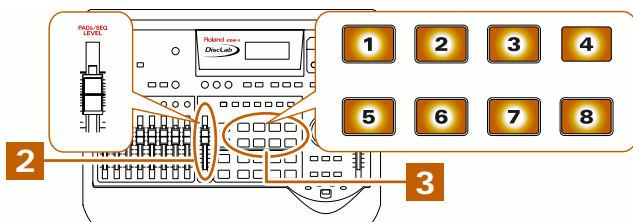
What you need to do to create your own CD

Adjusting the volume of each audio track—AUDIO TRACK faders

The volume of audio tracks 1–8 is adjusted with the AUDIO TRACK faders (1–8).

- * If the [STATUS] of an audio track is extinguished, no sound will be heard, regardless of the position of the AUDIO TRACK fader. To play back the track, press [STATUS] enough times to get it to light in green.

Press pads to play back audio samples

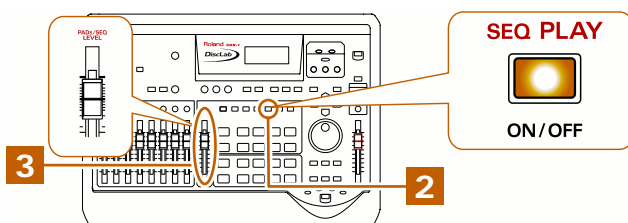


1. Press STOP [■] to stop demo song playback.
The eight pads will light. Pads that are lit contain audio samples (sounds).
2. Press a pad that is lit.
The audio samples of that pad will sound. You can press up to four pads simultaneously to layer their sounds. Go ahead and press pads to hear their sounds.

MEMO

If the [STATUS] of all audio tracks is lit in green, all pads will be dark while the audio tracks are playing back, and pressing the pads will not produce sound. If you extinguish [STATUS] for a pair of audio tracks 1-2, 3-4, 5-6, or 7-8, you will be able to play pad sounds. (→ “Playing pads while audio tracks play back” p. 69)

Playing back the sequence track



1. Press STOP [■] to stop demo song playback.
2. Press PAD SEQUENCING [SEQ PLAY].
[SEQ PLAY] will light, and the Sequence Play List screen appears.
3. Press ZERO [◀◀] to return the SONG POSITION to “0001-01-000” (beginning of the song).
4. Press PLAY [▶].
The sequence track will play back.
5. Press STOP [■].
Playback will stop. Press ZERO [◀◀] and then press PLAY [▶] once again, and playback will start from the beginning.



HINT

If you switch pad banks, the pads will contain other samples. → “Switching pad banks” (p. 54)

MEMO

At this time, the [STATUS] of all audio tracks will go dark (silent). The sequence track will play back.

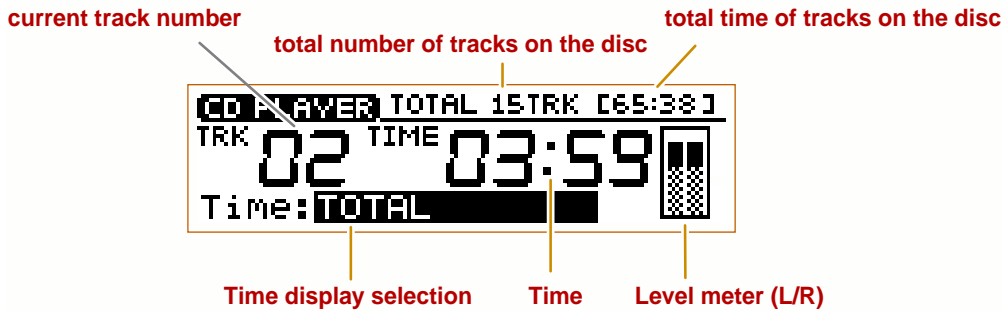
Playing an audio CD

How to play an audio CD—the CD Player

About the Display

CD Player screen

When you insert an audio CD, the CD Player screen appears.



Switching the time display

You can select one of four types of time display. Turn the TIME/VALUE dial to switch the time display.

● **Time:**

TOTAL: Display the total time from the beginning of the audio CD to the current time location.

TRACK: Display the total time from the beginning of the track to the current time location.

TOTAL REMAIN: Display the remaining time from the current time location to the end of the audio CD.

TRACK REMAIN: Display the remaining time from the current time location to the end of the track.

Playing and stopping a song

Here's how to play an audio CD on the CDX-1.

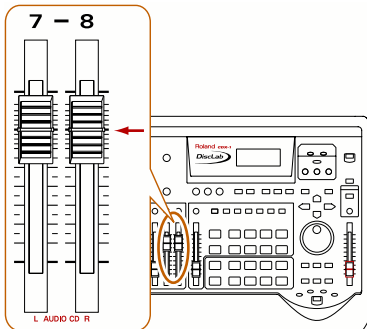
Playing/stopping an audio CD

1. Insert an audio CD as described in "Inserting a disc" (p. 35).

The CD Player screen appears.



2. Move the AUDIO CD fader (AUDIO TRACK 7-8 fader) to approximately 0 dB.



* You can make settings so that the volume of an audio CD will be adjusted only by the MASTER fader, without using the AUDIO CD fader (AUDIO TRACK 7-8 fader). In this case, the AUDIO CD fader (AUDIO TRACK 7-8 fader) will have no effect, so step 2 will not be necessary. For details refer to "Changing the way in which audio CD volume is adjusted" (p. 52).

3. Lower the MASTER fader of the CDX-1.
4. Press PLAY [▶].
The song is played back.
5. Raise the MASTER fader to adjust the master.
6. Press STOP [■].
The song stops.

MEMO

You can play back an audio CD on the CDX-1 and sample favorite phrases from the CD. For details on operation, refer to "Sampling from a CD audio clip collection inserted in the CDX-1" (p. 57).

NOTE

If [SEQ PLAY] lights, the song will not be played back.

Changing the playback location

Moving to the previous/next track

■ **When the song is stopped**

Press SEARCH [⏮] to move to the previous track.

Press SEARCH [⏭] to move to the next track.

■ **When a song is playing**

Press SEARCH [⏮] to move to the beginning of the currently playing track.

Press SEARCH [⏭] to move to the previous track.

To go back to the beginning of an audio CD

Press ZERO [⏪] to move to the beginning (Track 1) of an audio CD.

Rewind/fast-forward

■ **Rewind**

While you hold down REW [⏮], the song will rewind.

■ **Fast-forward**

While you hold down FF [⏭], the song will fast-forward.

* *These operations can be used regardless of whether the song is playing or stopped.*

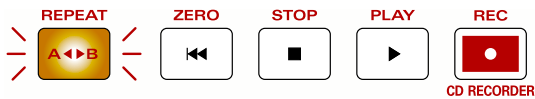
Repeatedly playing a specified region —the Repeat function

You can specify a region that you wish to hear, and hear it repeatedly.

Registering the repeat region

1. Use REW [◀◀] / FF [▶▶] to move to the location where you wish to begin repeating.
2. Press REPEAT [A ◀▶ B].

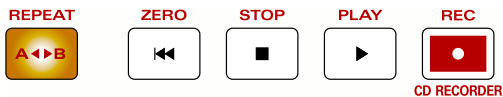
REPEAT [A ◀▶ B] will blink, indicating that the current location has been registered as the repeat start point (A).



If you wish to re-do the registration, you can cancel the registered location by pressing REPEAT [A ◀▶ B] when the current location is the same as the repeat start point (A). If the current location is beyond the repeat start point (A), press REPEAT [A ◀▶ B] twice to cancel the registration.

3. Use REW [◀◀] / FF [▶▶] to move to the location where you wish to stop repeating.
4. Press REPEAT [A ◀▶ B].

REPEAT [A ◀▶ B] will light, indicating that the current location has been registered as the repeat end point (B).



If you wish to re-do the registration, press REPEAT [A ◀▶ B] to cancel the registered location. Then re-register from the repeat start point (A).

5. When you press PLAY [▶], the region between the (A) and (B) points you registered will be played back repeatedly.

Canceling the repeat region

1. When REPEAT [A ◀▶ B] is lit, press REPEAT [A ◀▶ B].
REPEAT [A ◀▶ B] will go out. The Repeat function will be defeated, and the repeat start (A) and end (B) points you registered will also be cleared.



Changing the way in which audio CD volume is adjusted

At the factory settings, the audio CD volume is set to be adjusted by the AUDIO CD fader (AUDIO TRACK 7-8 fader) and the MASTER fader. If you wish to adjust the volume of audio CDs by using only the MASTER fader (without using the AUDIO CD fader), use the following procedure to change the setting.

1. Press [UTILITY].

The Menu are displayed as icon.

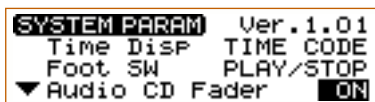
2. Press CURSOR [] to select the System icon.



3. Press [YES/ENTER].

The System settings screen appears.

4. Press CURSOR [] to move the cursor to "Audio CD Fader."



5. Turn the TIME/VALUE dial to select "OFF."

● Audio CD Fader:

This turns the audio CD fader on/off for when an audio CD is played.

ON: The audio CD fader (AUDIO TRACK 7-8 fader) and Master fader will be used.

OFF: The volume will be adjusted only by the MASTER fader.

6. Press [DISPLAY] to return to the Basic screen.

MEMO

If you wish to play the pads while listening to an audio CD (p. 69), it is convenient to make settings so that the AUDIO CD fader (AUDIO TRACK 7-8 fader) adjusts the volume, since this will allow you to adjust the pad volume and audio CD volume separately.

Collecting audio material

Recording a sound to a pad—Sampling

What is sampling?

Sampling refers to the process by which audio sources such as instruments or vocals can be digitally recorded. Audio sources that you've sampled by actually playing an instrument or by cutting part of an existing performance are referred to by the CDX-1 as **audio samples** (subsequently called "samples").

Today, the method of creating music by repeatedly playing back sampled materials (samples) and by using a sequencer to freely combine samples has become one of the most commonly used methods. Since the CDX-1 provides a Sequencer function (p. 88), you can freely arrange samples to create a song.

For example, you might start by sampling a favorite drum pattern or bass pattern. Then you might modify the tempo of these samples, and use effects to change the character of the sound while you create a new accompaniment. Finally, you can layer vocal or instrumental performances to create a new song.

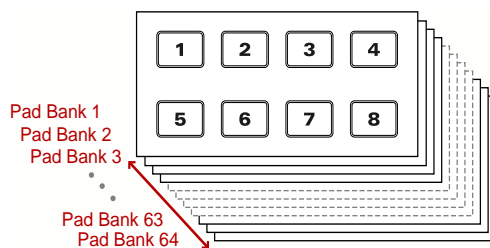
This method of music production via sampling originated in hip-hop and house music, but today has become widely used in all popular music.

Pads and banks

Eight pads and 64 pad banks

The panel buttons with numbers from 1 to 8 are **pads**. Samples can be assigned to these pads and played.

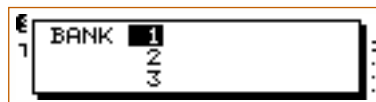
A set of eight samples assigned to the panel is called a **pad bank**. By switching pad banks you can use up to 512 samples (64 pad banks x 8).



Switching pad banks

1. Press the [PAD BANKS].

The Pad Bank List screen appears.



2. Select the pad bank (1–64) by turning the TIME/VALUE dial.

At this time, a pad in which a sample has been recorded lights. While turning the TIME/VALUE dial, allowing you to check whether or not there is a sample.

3. Press [YES/ENTER].

The pad bank will change.



In step 2, you can press a pad [1]–[8] to select pad banks 1–8.

Naming a pad bank

Each of the 64 pad banks can be given a name of up to ten characters. If you have assigned names to the pad banks, it will be easier to select the desired bank.

For clarity, you may wish to use pad bank names like the examples given below.

- Types of samples
Examples: “DrumLoop1,” “Male Voice,” “SFX”
- Dates on which you sampled
Examples: “Jan.1, 01” “5/12 pm9:30”

1. Select the pad bank to which you wish to assign a name (refer to the preceding section).
2. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, you can press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.

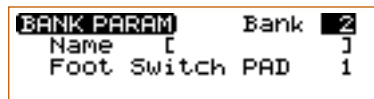





3. Press CURSOR [] to select the Bank Parameter icon.



4. Press [YES/ENTER].

The Bank Parameter screen appears.



5. Press CURSOR [] to move the cursor to “Name” line.
6. Use CURSOR [] [] to move to the desired character location, and turn the TIME/VALUE dial to input the desired character.
7. Press [DISPLAY] to return to the Basic screen.

Sampling to a pad

Sampling an external sound

As an example, we will explain how to connect a synthesizer and sample it.

1. **Connect your synthesizer to the CDX-1 as described in “Connecting peripheral equipment” (p. 32), and then press INPUT SELECT [LINE L/R].**

INPUT SELECT [LINE L/R] will light.

2. **Turn the INPUT SENS knob to adjust the input sensitivity.**

Adjust the INPUT SENS knob as high as possible without causing the peak indicator to light when you play your synthesizer strongly.

3. **Press PAD RECORDING [PAD REC].**

[PAD REC] indicator begins flashing, and the Sampling screen appears.



The lowest-numbered unused pad will automatically be selected as the sampling destination, and will blink.

4. **Turn the INPUT REC LEVEL knob to adjust the level so that level meter moves as far as possible without exceeding the dotted line in the upper portion.**

- * If you use the INPUT REC LEVEL knob to turn down the volume of the input source, the sound will be sampled to the pad at a low volume. This means that when you raise the volume of the pad for playback, noise may be more obtrusive.

The meter moves high level as possible without exceeding the limit shown as dotted line.



5. **If necessary, press a pad to change the sampling destination.**

- * If the specified pad already contains a sample, you will be asked “Overwrite?” If it is OK to delete the existing sample, press [YES/ENTER]. If you wish to keep that sample, specify a different pad that is unused. If necessary, press [PAD BANKS] to change the pad bank. (→ “Switching pad banks”; p. 54)

6. **At the appropriate moment of the performance, press [PAD REC].**

The display will indicate “Now recording...” and sampling will begin.

7. **When sampling is completed, press [PAD REC].**

When sampling is completed, the Basic screen reappears.

MEMO

- For details on the jack to use for connections and on the INPUT SELECT buttons, refer to “Panel Descriptions: Rear Panel” (p. 30), and “panel descriptions: INPUT section” (p. 21).
- At the factory settings, the CDX-1 cannot record the output of a digital audio device via the OPTICAL IN or COAXIAL IN connectors. You must change the settings as described in “In order to make a Digital recording with CD player” (p. 148).
- Use the MASTER fader to adjust the monitoring volume of the synthesizer. If you are monitoring through headphones, use the MASTER fader and the PHONES knob to adjust the volume to a comfortable level.



For details on settings in the Sampling screen, refer to “Making Settings in the sampling screen” (p. 60).



With the CDX-1’s internal effects, you can perform sampling while adding any of the internal effects to the input source. → “Using the insert effects” (p. 141), “Using the loop effects” (p. 145).

MEMO

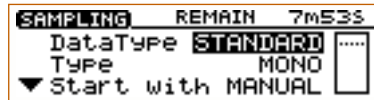
If you wish to do it over again, press [UNDO/REDO] (p. 138) after step 6.

Sampling from a CD audio clip collection inserted in the CDX-1

Here's how you can sample audio materials from a CD audio clip collection (copyright-free) inserted in the CDX-1.

1. Insert the audio clip CD into the CDX-1.
2. Press PAD RECORDING [PAD REC].

[PAD REC] indicator begins flashing, and the Sampling screen appears.



The lowest-numbered vacant pad will be automatically selected as the sampling destination, and will blink.

3. If necessary, press a pad to change the sampling destination.

* If the specified pad already contains a sample, you will be asked "Overwrite?" If it is OK to delete the existing sample, press [YES/ENTER]. If you wish to keep that sample, specify a different pad that is unused. If necessary, press [PAD BANKS] to change the pad bank. (→ "Switching pad banks"; p. 54)

4. Press PLAY [▶] to play back the audio CD, use the AUDIO CD fader (AUDIO TRACK 7-8 fader) to adjust the recording level so that level meter moves as far as possible without exceeding the dotted line in the upper portion.

* If you use the AUDIO CD fader (AUDIO TRACK 7-8 fader) to turn down the volume of the CD player, the sound will be sampled to the pad at a low volume. This means that when you raise the volume of the pad for playback, noise may be more obtrusive.

The meter moves high level as possible without exceeding the limit shown as dotted line.



5. When you adjust the volume, press STOP [■].
6. Press PLAY [▶] to play back the audio CD, and at the appropriate timing press [PAD REC].
The display will indicate "Now recording..." and sampling will begin.
7. When sampling is completed, press [PAD REC].
When sampling is completed, the CD Player screen appears.
8. Press [■] to stop playback of the audio CD.



For details on settings in the Sampling screen, refer to "Making Settings in the Sampling screen" (p. 60).



If you make settings so that the volume of an audio CD will be adjusted using the AUDIO CD fader (AUDIO TRACK 7-8 fader) (p. 52).

Recording level is fixed 0 dB when "Audio CD fader" is "OFF" (p. 52).



If you set "Start with" in the sampling screen to "[▶]", sampling will begin when you press PLAY [▶]. (p. 61)



If you wish to do it over again, press [UNDO/REDO] (p. 138) after step 7.

Loading a Windows WAVE file

Some commercially available sampling CD audio clip collections (copyright-free) designed for use in music production are mixed-mode CDs that saving both audio and WAVE files. The CDX-1 lets you load these WAVE files and assign them to the pads.

1. Insert a mixed-mode CD (AUDIO+WAVE) as described in “Inserting a disc” (p. 35).

2. Press PAD RECORDING [TEMPO MATCH] twice.

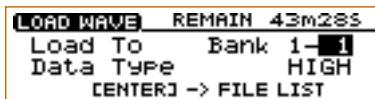
Alternatively, you can press [TEMPO MATCH] and then press CURSOR []. The Pad Edit menu are displayed as icons.



3. Press CURSOR [] to select the Load WAVE file icon.




4. Press [YES/ENTER].

The Load WAVE file screen appears.



5. Make sure that the cursor is located at the “Load To” line, press CURSOR [] [] to select the pad bank number and pad number, and specifying the pad to which the newly loading sample is assigned.

Turn the TIME/VALUE dial to set the pad bank number. To set the pad number, either press a pad or turn the TIME/VALUE dial.



6. Press CURSOR [] to move the cursor to “Data Type” line, and turn the TIME/VALUE dial to select the data type.

7. Press [YES/ENTER].


The File List screen appears.



* If the specified pad already contains a sample, you will be asked “Overwrite OK?” If it is OK to delete the existing sample, press [YES/ENTER]. If you wish to keep that sample, press [NO/EXIT] to return to the Load WAVE screen, and then specify a different pad that is unused. If necessary, press [PAD BANKS] to change the pad bank. (→ “Switching pad banks”; p. 54)

8. Press CURSOR [] [] to select the file that you wish to load.

If you wish to see contents of a folder, select folder and press [YES/ENTER].

If you press PLAY [], play back of the selected WAVE file starts. When the play back is finished, a message “Convert are you sure?” is displayed, asking you wish to load the file. If you wish load, see step 9.

Press [NO/EXIT], the File List screen reappears.

9. Press [YES/ENTER].

The display will show a message of “Completed.”, the WAVE file will be assigned to the pad.

10. Press [DISPLAY] to return to the Basic screen.



WAVE file (p. 207)



In case the name of folders or files are not readable. CDX-1 displays those “_____”




To close the folder, select “PARENT DIRECTORY” and press [YES/ENTER].




In step 8, if you wish to switch preview length of WAVE files, refer to the column “Switching of preview length of Windows WAVE files” (p. 59).

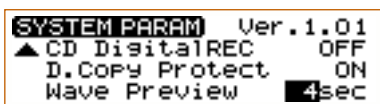
Switching of preview length of Windows WAVE files.

Preview length of WAVE files imported on “Loading a Windows WAVE file” (p. 58) can be switched.

1. Press [UTILITY].
The Menu are displayed as icon.
2. Press CURSOR [] to select the System icon.



3. Press [YES/ENTER].
The System setting screen appears.
4. Press CURSOR [] to move the cursor to “Wave Preview” line.



5. Turn the TIME/VALUE dial to select the preview time:
“1sec”–“10sec” (units: second).
6. Press [DISPLAY] to return to the Basic screen.

Using free audio sources from the Internet

If you have a computer that can connect to the Internet and a CD-R drive, you can load free audio sources (Windows WAVE files) from the Internet.

1. Connect to the Internet and download the desired free Windows WAVE files.
2. Using a CD-R drive connected to (or installed in) your computer, write the downloaded Windows WAVE file(s) to a CD-R disc.
3. Insert the above CD-R disc into the CDX-1.
4. Follow the procedure described in steps 2–10 of “Loading a Windows WAVE file.”

NOTE

CDX-1 is not able to be recorded to a CD-R disc, connect directly to the personal computer.

Making settings in the Sampling screen

The Sampling screen appears in step 3 of “Sampling an external sound” (p. 56) or step 2 of “Sampling from a CD audio clip collection inserted in the CDX-1” (p. 57). As necessary, make settings for the various items in the Sampling screen to modify the sampling settings.

Selecting the audio quality and sampling time appropriate for the material—Data Type

You can set the **data type** each time you sample. This allows you to select the audio quality and recording time appropriate for the audio material you are sampling.

1. Make sure that the cursor is located at the “Data Type” line.



2. Turn the TIME/VALUE dial to select the data type.

● Data Type

- HIGH:** Of the four types, this allows the highest-quality recording.
- STANDRD:** This type maintains high quality, while allowing longer recording time than “HIGH.” Normally you should select this type.
- LONG1:** This type allows longer recording than “STANDARD.” It is suitable for recording live performances.
- LONG2:** This allows the longest recording time of the four types.

Data type and sampling time

If you limit your selection to one data type, the available sampling time will be as follows.

Data Type	Sampling Time	
	Using standard memory	Using expansion memory
HIGH	5 minutes	43 minutes
STANDARD	7 minutes	58 minutes
LONG1	9 minutes	69 minutes
LONG2	11minutes	87 minutes

* The above sampling times are approximations for when only one data type is used. The data type can be set separately when recording each sample, and the sampling time will be different if different data types coexist.

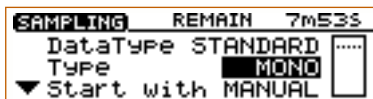


For multitrack recording, you will select the data type when you format the CD-RW disc (p. 110).

Specifying stereo or mono—Type

You can specify whether the sound will be sampled in mono or in stereo.

1. Press CURSOR [] to move the cursor to “Type” line.

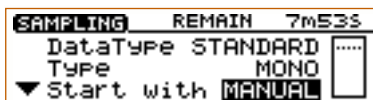


2. Turn the TIME/VALUE dial to select “STEREO” or “MONO.”


Automatically start sampling when sound is input —Start with

At the factory settings, sampling will begin manually (when you press [PAD REC]). You can change this setting so that sampling will begin automatically when audio input is detected.

1. Press CURSOR [] to move the cursor to “Start with” line.



2. Turn the TIME/VALUE dial to select a value in the range of “LEV.1”–“LEV.8.”

The value 1–8 specifies the volume at which sampling is to begin (1 is the minimum). The level specified is indicated by a small symbol () at both side of the level meter (sampling screen).

It is best to set this while actually playing sounds and watching the movement of the level meter.



3. Prepare the audio source for sampling so that it can be played immediately.

4. Press [PAD REC].

The display will indicate “Waiting trigger...,” and the CDX-1 will be in sampling-ready mode.

To abort the procedure from this state, press [PAD REC].

5. Play the audio source that you wish to sample.

When audio input is detected, the display will indicate “Now recording...,” and sampling will begin.

6. When sampling is completed, press [PAD REC].

When sampling is completed, the Basic screen reappears.

What the “Start with” setting does

This determines how sampling will begin.

MANUAL: Sampling can be started manually.

LEV.1–LEV.8: Sampling will be triggered by audio input.

PAD: Sampling will begin when you press any pad.

→ “Sampling from a pad to another pad—Resampling” (p. 63)

[]: Sampling will begin when you press PLAY [].

→ “Sampling from a CD audio clip collection inserted in the CDX-1” (p. 57)

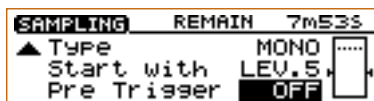
MEMO

Mono sampling requires only half the memory of stereo sampling. However, this has no effect on the number of samples that can be played simultaneously. (“Playing samples simultaneously”; p. 69)

Making sure to capture the beginning of the sound —Pre Trigger

Depending on the sampling conditions, the beginning of the sampled sound may not be captured. By setting the **pre-trigger time** appropriately, you can avoid this problem by causing sampling to begin slightly ahead of the time when you initiated sampling or when the audio input was detected.

1. Press CURSOR [] to move the cursor to "Pre Trigger" line.



2. Turn the TIME/VALUE dial to select the pre-trigger time: "OFF," "20ms," "40msms," "80ms," "160ms," or "320ms" (units: milliseconds).

NOTE

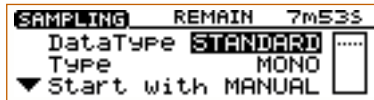
In order to set Pre-Trigger, the "Start with" setting must be "Lev.1" - "Lev.8."

Sampling from a pad to another pad —Resampling

You can press one or more pads to play their samples and “re-sample” the result. This is called **resampling**.

1. Press PAD RECORDING [PAD REC].

[PAD REC] indicator begins flashing, and the Sampling screen appears.



* If all pads already contain samples, a message of “Overwrite?” appears. In this case, press [YES/ENTER], a message disappears.

2. Press CURSOR [] to move the cursor to the “Start with” line.



3. Turn the TIME/VALUE dial to select “PAD.”

4. Press the source pad(s) and watch the meter at the right edge of the screen while you use the PAD/SEQ LEVEL fader to adjust the level.

5. Press the pad to designate the sampling destination.

* If the specified pad already contains a sample, you will be asked “Overwrite?” If it is OK to delete the existing sample, press [YES/ENTER]. If you wish to keep that sample, specify a different pad that is unused. If necessary, press [PAD BANKS] to change the pad bank. (→ “Switching pad banks”; p. 54)

6. Press [PAD REC].

The display will indicate “Waiting for PAD to start.”, and the CDX-1 will be in sampling-ready mode.

To abort the procedure from this state, press [PAD REC].

7. When you press the source pad(s), sampling will begin automatically.

8. When sampling is completed, press [PAD REC].

The display returns to the Basic screen.

NOTE

When resampling, you can play a maximum of three samples simultaneously.



For details on settings in the Sampling screen, refer to “Making settings in the sampling screen” (p. 60).

If the display indicates “Memory Full.”

If the remaining memory is completely used up during sampling, the display indicates “Memory Full.” (no remaining memory), and sampling stops.

This indication disappears when you press any button such as [DISPLAY] or [NO/EXIT] (the sounds recorded up to that point is kept on in the internal memory).

If such instances, execute the Optimize Sample function. This deletes wasted space being consumed on the memory and may secure new memory.

For details on Optimize Sample, read “Increasing the Remaining Memory—Optimize Sample” on this page.

Increasing the Remaining Memory —Optimize Sample

By executing **Optimize Sample** you can erase the unwanted data from the internal memory, may increase the amount of available space in the internal memory.

Optimize Sample will delete data as follows.

- As much as possible, data including partial waveforms used in samples and on tracks, except for those portions actually sounded (used), is deleted.
- Waveform data in each phrase on the tracks from the beginning of the waveforms to where they start playing, as well as data after points specified by “Wave End Point” (p. 105) are erased.

1. Press PAD RECORDING [TEMPO MATCH] twice.

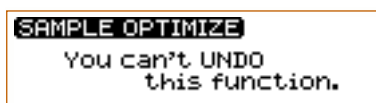
Alternatively, you can press [TEMPO MATCH] and then press CURSOR []. The Pad Edit menu are displayed as icons.

2. Press CURSOR [] to select the Optimize Sample icon.



3. Press [YES/ENTER].

A message of “You can’t UNDO this function.” appears.



4. Press [YES/ENTER].

A message of “Are you sure?” appears.

5. If you press [YES/ENTER], Optimize will be executed.

The display will show a message of “Completed.” and the Basic screen will reappear. If you press [NO/EXIT], the display of step 3 reappears without executing Optimize.

If there is no increase in the remaining memory even after Optimize Sample is executed...

If there is no increase in the remaining memory even after Optimize Sample is executed, first delete unneeded data then try Optimize Sample again.

→ “Deleting a sample—Delete Sample” (p. 65)

NOTE

- After you execute Optimize Sample, it is not possible to press [UNDO/REDO] (p. 138) to revert to the state before executing Optimize.
- After you execute Optimize Sample, editing to be the start points earlier and the end points later (p. 78) becomes impossible.
- While the processing bar appears, do not turn off the power with unplugging the AC adaptor.



HINT

A rough figure of the time remaining is indicated as “Remain **m**s” in the Sampling screen. Check this display as sampling progresses, and if the remaining memory is running out perform the Optimize Sample procedure.

Deleting a sample—Delete Sample

Here's how you can delete an unwanted sample to free up that pad.

Deleting samples individually

1. Hold down PAD RECORDING [DELETE] and Press a pad to specify the sample that you wish to delete.

The sample is deleted.

You wish to cancel to delete a sample, press [UNDO/REDO] (p. 138).

Deleting all samples of a pad bank—Bank Erase

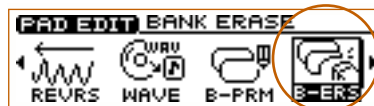
1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.

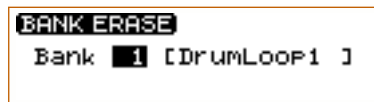


2. Press CURSOR [] to select the Bank Erase icon.



3. Press [YES/ENTER].

The Erase Bank screen appears.



4. Turn the TIME/VALUE dial to specify the pad bank to be deleted.
5. Press [YES/ENTER].
A message of "Are you sure?" appears.
6. Press [YES/ENTER] once again.
All samples of the specified pad bank will be erased.
7. If you wish to erase other pad banks, repeat steps 4 and 6.
8. Press [DISPLAY] to return to the Basic screen.

NOTE

If you carry on bank erase, a pad bank name (p. 55) will be remained without a erasing.

Preventing accidental erasure of pads —Bank Protect

The samples assigned to the pads can be protected against accidental erasure so that they are not lost by unintended operations or by inadvertently overwriting them. A protected pad bank and its samples are handled as follows.

- If you attempt to sample, a warning of “Bank is Protected.” appears, and sampling will not be possible.
- If you attempt to change setting of Pad Parameter and Pad Bank Parameter, a warning of “Bank is Protected.”
- Editing operations that would affect the contents of the pad bank, such as deleting the entire pad bank or an individual sample, will produce a warning message, and will not be executed.
- Editing operations that require you to specify a writing destination (such as rearranging samples or Time Stretch) cannot be executed if the writing destination is protected.

Protecting/unprotecting a pad bank

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.

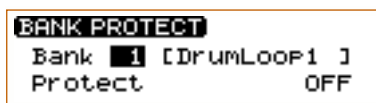



2. Press CURSOR [] to select the Bank Protection icon.



3. Press [YES/ENTER].

The Bank Protection setting screen appears.



4. Make sure that the cursor is located at the “Bank” line.
5. Turn the TIME/VALUE dial to select the pad bank that you wish to protect.
6. Press CURSOR [] to move the cursor to the “Protect” line.
7. Turn the TIME/VALUE dial to change to protect “ON” or “OFF.”
8. Press [DISPLAY] to return to the Basic screen.

Saving Pad/Sequence on a CD-RW disc

Pad and Sequence (p. 88) can be saved on a CD-RW disc.

More about saving Pad/Sequence

When you sample and create a sequence (p. 88), the Pad/Sequence is temporarily stored in the internal memory of the CDX-1. This means that you can sample and create a sequence (p. 88) even if a CD-RW disc is not inserted.

Pad/Sequence stored in internal memory will be lost when the power is turned off (p. 34) or when you mixdown (p. 133). If you wish to keep the pad/sequence, you must save it on a CD-RW disc, follow the procedure in “Saving Pad/Sequence,” below.

Saving Pad/Sequence

* *On the CDX-1, this operation does not save the following sequence-related parameters.*

In order to save the following parameters, you must perform the operation “Saving Song settings on a CD-RW disc” (p. 126).

- *The sequence track (A–D) status*
- *The state of the PAD SEQUENCING [SEQ PLAY]*
- *Tempo map*
- *“Beat” and “Tempo” settings of the Rhythm Guide*

1. Press [UTILITY].

The Menu are displayed as icon.

2. Press CURSOR [] to select the Save PAD/SEQ icon.



3. Press [YES/ENTER].

A message of “Save PAD/SEQ data?” appears.

4. Press [YES/ENTER].

The display will indicate “Saving PAD/SEQ...,” and the data will be saved. When saving is completed, the display will show a message of “Completed.”

5. Press [DISPLAY] to return to the Basic screen.



When you save Pad/Sequence, all previously saved samples on a CD-RW disc will be overwritten and lost.

Loading Pad/Sequence from a CD-RW disc

To load Pad/Sequence saved in CD-RW disc, carry out the following process.

1. Press [UTILITY].

The Menu are displayed as icon.

2. Press CURSOR [] to select the Load PAD/SEQ icon.



3. Press [YES/ENTER].

A message of “Load PAD/SEQ data?” appears.

4. Press [YES/ENTER].

The display will indicate “Loading PAD/SEQ...,” and the data will be loaded. When loading is completed, the display will show a message of “Completed.” and the Basic screen will reappear.

NOTE

In case any Pad/Sequence is held in internal memory of CDX-1, it will be overwritten by those loaded from CD-RW disc. It is recommended to save Pad/Sequence in internal memory to another CD-RW disc before loading. → “Saving Pad/Sequence” (p. 67)

If the display asks “Load PAD/SEQ data?”

If you insert a CD-RW disc containing Pad/Sequence when internal memory contains Pad/Sequence, a message of “Load PAD/SEQ data?” will be displayed. In this case, use the following procedure.

■ Use the Pad/Sequence that are stored in internal memory

In response to the “Load PAD/SEQ data?” message, press [NO/EXIT].

The Pad/Sequence stored in internal memory will continue to be available.

■ Use the Pad/Sequence from the CD-RW disc

In response to the “Load PAD/SEQ data?” message, press [YES/ENTER].

The Pad/Sequence from the CD-RW disc will be assigned to the pads.

* At this time, the Pad/Sequence stored in internal memory will be replaced. This means that the sample that was previously in internal memory will be lost. If necessary, save the Pad/Sequence on a CD-RW disc. For details refer to “Saving Pad/Sequence” (p. 67).

Playing the pad samples

Basic ways to play samples

Playing a sample

Press a pad in which a sample has been recorded (lit), and it will play.

There are 3 kinds of how a pad starts/stops sounding. For details refer to “Changing how a pad starts and stops sounding—Pad Play” (p. 70).

Adjusting the Overall Sample Volume

The overall monitoring volume of the samples you play from the pads can be adjusted by the PAD/SEQ LEVEL fader and the MASTER fader.

To adjust the volume of an individual pad sample, refer to “Adjusting the volume of a sample—Sample Level” (p. 76).

Playing samples simultaneously

Up to four samples can be played simultaneously. If you press more than four pads, the sample of the pad you pressed last will be given priority, and the sample of the pad that was pressed first will stop sounding.

Playing pads while audio tracks play back

The number of sounds that can be played simultaneously is **four stereo notes total for the audio tracks, pads, and sequence track**. Audio track playback takes priority over pad playback. This means that if seven or more audio tracks are playing, pressing a pad will not sound its sample (the pads will be extinguished).

If you wish to play back audio tracks and add samples played from the pads, the [STATUS] of at least two audio tracks must be extinguished (muted). In this case, you must turn off the audio track [STATUS] in a combination of 1-2, 3-4, 5-6, or 7-8.

Playing pads while you play back an audio CD

Sample data assigned to pads will remain in the internal memory of the CDX-1 unless mixdown (p. 133) is performed or the power is turned off (p. 34). Here's how you can use the Pad/Sequence in internal memory to play the pads while an audio CD plays back.

1. **With samples assigned to the pads (pads lit), insert an audio CD.**
2. **Press PLAY [▶].**
The audio CD plays.
3. **When you press a pad, its sample will play.**
At this time you can play up to three pads simultaneously.

Can I layer samples from another pad bank?

When you switch pad banks, the samples of the previous pad bank will stop. However, samples to which Hold (p. 72) is applied will continue to sound until Hold is defeated. You can press other pads to layer samples from another sample bank.

Even in this case, it is not possible to exceed the limit of four stereo notes.

NOTE

Depending on the status of the audio tracks, even pads that contain samples may be extinguished, and will not be playable. For details refer to “Playing pads while audio tracks play back” on this page.

NOTE

The number of samples that can be played simultaneously will not increase even if you sample in mono. However, mono sampling uses only half the memory of stereo sampling.

MEMO

When [SEQ PLAY] lights, an audio CD is inserted, and the Sequence function will automatically be turned off. Also, when you press [SEQ PLAY] turn on, an audio CD will not be played back even if an audio CD is inserted.

Changing how a pad starts and stops sounding—Pad Play

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, you can press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.



2. Make sure that the cursor is located at the pad parameter icon.



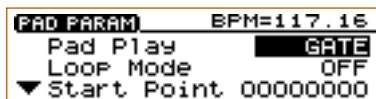
3. Press [YES/ENTER].

The pad parameter screen appears.

4. Press the pad for the sample for which you'll be making settings.

The selected pad blinks.

5. Make sure that the cursor is located at the "Pad Play" line.



6. Turn the TIME/VALUE dial to specify how the pad will sound.

● Pad Play

GATE: Press the pad → the sound begins
Release the pad → the sound stops

TRIGGER: Press the pad → the sound begins
The sound will continue even after you release the pad
Press the pad once again → the sound stops

DRUM: Press the pad → the sound will begin sounding, and will automatically stop at the sample end point (p. 78; the location specified for the sound to end)

* If you select "DRUM", the Loop Mode (p. 73) setting will be ignored, and the sound will play only once. Also if "DRUM" is selected, it will not be possible to stop the sample once it has been played. Use this setting with caution in the case of extremely long samples.

7. If you wish to make settings for other samples, press the desired pad and repeat steps 5 and 6.

8. Press [DISPLAY] to return to the Basic screen.

MEMO

If you wish to make settings for the samples of other pad banks, you must first switch the pad bank (p. 54).

Crossfading the pad samples you play —Pad Crossfade

By using Pad Crossfade, you can play pad samples without creating gaps between the sounds of each pad. Each time you press a pad, its sample will be automatically crossfaded (faded in and faded out).

Pad samples can be recorded directly to a CD-R disc only when Pad Crossfade is turned on. (→ “Recording samples played using Pad Crossfade on a CD-R disc “; p. 162)

1. **Press [PAD X FADE].**
[PAD X FADE] will light, and Pad Crossfade will be turned on.
2. **Press a pad to play its sample.**
3. **When you press another pad while the first sample is playing, the first-played sample will be faded-out, and the sample of the subsequently played pad will be faded-in as it starts playing.**
4. **To cancel Pad Crossfade, press [Pad X FADE].**
[PAD X FADE] will go out, and Pad Crossfade will be turned off.

MEMO

All pads will sound in Trigger mode, regardless of their actual mode setting.

● **Trigger mode:**
The sound will begin playing when you press the pad, and will continue playing even when you release the pad. The sound will stop when you press the pad once again.

Making the sound continue even after you release the pad—Hold

In some cases, you may want a sample whose Pad Play setting (p. 70) is set to “GATE” (start sounding when you press the pad, and stop sounding when you release it) to continue sounding even after you take your hand away from the pad. In such cases, you can use the Hold function.

Using Hold

1. **Hold down a pad that is set to “GATE,” and press [HOLD].**
[HOLD] will light, indicating that Hold has been enabled. The sample will continue playing even after you release [HOLD] or the pad.
2. **Press [HOLD] once again.**
[HOLD] will go out, Hold will be cancelled, and the sample will stop sounding.

Using Hold for multiple samples

After you have enabled Hold in step 1 of the preceding procedure,

1. **Hold down another pad and press [HOLD].**
Both samples will be held, and will continue playing even after you release [HOLD] or the pad.
2. **Press [HOLD] once again.**
[HOLD] will go out, Hold will be cancelled, and both samples will stop sounding.



Hold will not function if the Pad Play setting (p. 70) is “DRUM.”



You can obtain a result similar to Hold by setting the Hold Play setting (p. 70) to “TRIGGER.”

Playing repeatedly—Loop mode

Loop refers to a state in which a sample is played repeatedly from its start point (the beginning of the sound) to its end point (the end of the sound) (or a specified region). This function is convenient when you wish to repeatedly play a sample to create the basic rhythm.

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.



2. Make sure that the cursor is located at the pad parameter icon.



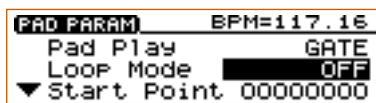
3. Press [YES/ENTER].

The pad parameter screen appears.

4. Press the pad for the sample for which you'll be making settings.

The selected pad blinks.

5. Press CURSOR [] to move the cursor to "Loop Mode" line.



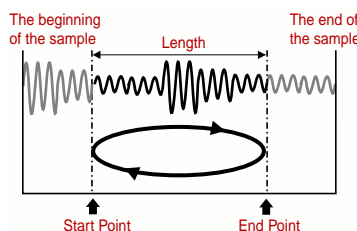
6. Turn the TIME/VALUE dial to select Loop mode.

● Loop Mode:

OFF: No looping

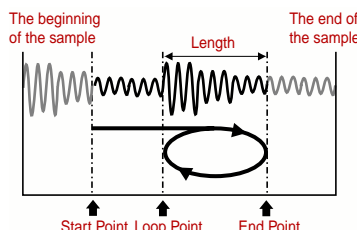
START-END:

Looping (from start point to end point)



LOOP-END:

Looping (from loop point to end point)



7. If you wish to make settings for other samples, press the appropriate pad and repeat steps 4 and 5.
8. Press [DISPLAY] to return to the Basic screen.



For the significance of each point and details on how to change the setting, refer to "Adjusting the start/end points of the sound" (p. 78).

MEMO

If you wish to make settings for a sample of another pad bank, you must first switch to that pad bank (p. 54).

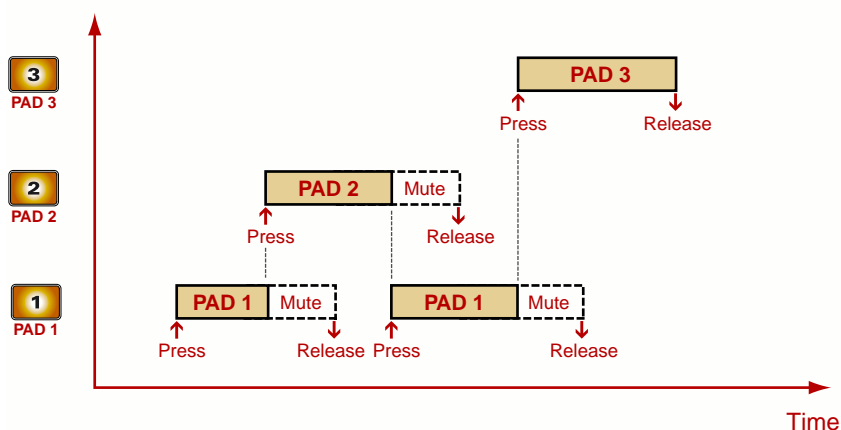
Preventing specific samples from sounding simultaneously—Mute Groups

Samples that do not need to sound simultaneously (or that you do not want to be heard simultaneously) can be assigned to the same **mute group**. The CDX-1 has seven mute groups, and samples that are assigned to the same mute group will not sound together with each other.

MEMO

If you press two or more pads that are assigned to the same mute group, the sample that was pressed first will be muted (silenced).

Playing samples that are set to the same Mute group (Example)



1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.



2. Make sure that the cursor is located at the pad parameter icon.



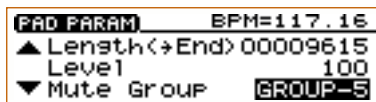
3. Press [YES/ENTER].

The pad parameter screen appears.

4. Press the pad whose sample you wish to set.

The specified pad blinks.

5. Press CURSOR [] to move the cursor to "Mute Group" line.



6. Turn the TIME/VALUE dial to select "OFF" or "GROUP-1"–"GROUP-7."
7. If you wish to make settings for another sample, press the appropriate pad and repeat steps 4 and 5.
8. Press [DISPLAY] to return to the Basic screen.



MEMO

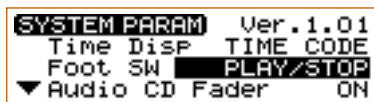
If you wish to make settings for a sample of another pad bank, you must first switch the pad bank (p. 54).

Playing a sample from a connected foot switch

If a separately sold foot switch (e.g., DP-2 or BOSS FS-5U) is connected, you can play the sample of a specified pad by pressing the foot switch.

Specifying the Function of the Foot Switch

1. Connect an optional foot switch (DP-2, BOSS FS-5U, etc.) to the FOOT SWITCH jack.
2. Press [UTILITY].
The Menu are displayed as icon.
3. Press CURSOR [] to select the System icon.
4. Press [YES/ENTER].
The System settings screen appears.
5. Press CURSOR [] to move the cursor to "Foot SW" line.
6. Turn the TIME/VALUE dial to select "SAMPLER TRIG."
7. Press [DISPLAY] to return to the Basic screen.
When you press the foot switch, the sample of the specified pad will sound.



MEMO

This parameter has only a single setting which will apply regardless of the song or the CD-RW disc.



For details on "Foot SW" parameter, refer to step 6 of "Using a foot switch to punch-in/out" (p. 122).

Specifying the pad sample that will be played by the foot switch

1. Press PAD RECORDING [TEMPO MATCH] twice.
Alternatively, press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.

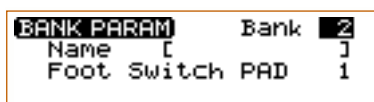



2. Press CURSOR [] to select the Bank Parameter icon.



3. Press [YES/ENTER].

The pad bank parameter screen appears.



4. Make sure that the cursor is located at the "Bank" line, and use TIME/VALUE dial to witch to the pad bank for which you wish to make settings
5. Press CURSOR [] to move the cursor to "Foot Switch PAD" line.
6. Turn the TIME/VALUE dial to select a pad number (1-8).
7. Press [DISPLAY] to return to the Basic screen.

Editing the sample of a pad

The 512 samples (8 pads x 64) stored in the CDX-1 can be edited in a variety of ways, such as by adjusting their volume or length. Samples can be edited either by creating a new sample for another pad, or by simply modifying the settings of the same pad.

Adjusting the volume of a sample— Sample Level

The volume at which a pad plays when you press it can be adjusted separately for each pad. This conveniently allows you to achieve the appropriate relative volume levels among your pads.

1. Press **PAD RECORDING** [**TEMPO MATCH**] twice.

Alternatively, press [**TEMPO MATCH**] and then press **CURSOR** [].

The Pad Edit menu are displayed as icons.



2. Make sure that the cursor is located at the **Pad Parameter** icon.




3. Press [**YES/ENTER**].

The Pad Parameter screen appears.

4. Press the pad for which you wish to make settings.

The corresponding pad blinks.

5. Press **CURSOR** [] to move the cursor to "Level" line.

6. Turn the **TIME/VALUE** dial to set the volume.

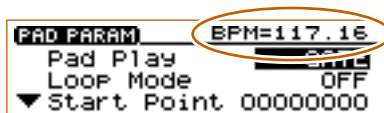
* The volume can be adjusted in a range of 0–100. This setting is also be used as the volume level when you arrange samples to create a song (p. 90–93).

7. If you wish to make settings for another sample, press the appropriate pad and repeat steps 4–6

8. Press [**DISPLAY**] to return to the **Basic** screen.

Displaying the correct tempo of a sample

The upper right of the Pad Parameter screen displays the tempo of the sample in units of BPM (Beats Per Minute: the number of beats in one minute).



However, for this to be displayed accurately, you must tell the CDX-1 the number of beats in that sample and the note value of each beat.



Initially this is set to ♩ x8 (quarter note x 8 notes).

- * The tempo (BPM) display is always calculated as 1 beat = quarter note. For example, an eighth note is calculated and displayed as half a beat, and a half note as double the length of one beat.
- * In the case of a long sample such as a narration, for which it is difficult to determine a tempo (BPM), you should set the number of beats in "x_" as 0. This produces the best results for the Time Stretch function (p. 81).

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [] .

The Pad Edit menu are displayed as icons.



2. Make sure that the cursor is located at the Pad Parameter icon.



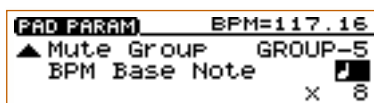
3. Press [YES/ENTER].

The Pad Parameter screen appears.

4. Press the pad for which you wish to make settings.

The corresponding pad blinks.

5. Press CURSOR [] to move the cursor to "BPM Base Note."



6. Turn the TIME/VALUE dial to select a note.
7. Press CURSOR [] to move the cursor to "X_."
8. Turn the TIME/VALUE dial to set the length of the sample as a multiple of the note value you selected in step 5.
9. Press [DISPLAY] to return to the Basic screen.

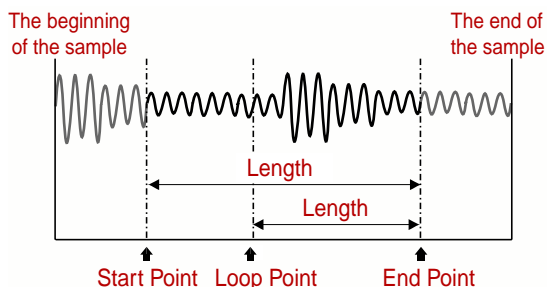


If the sample is a simple rhythm, you can just play back the sample and count, and specify that value in step 6. This is accurate and easy.

Adjusting the start/end points of the sound—Trim Sample

You can specify the portion of the sample that are played when you press the pad.

What are the Start/Loop points and Length?



- Start Point:** This is the point where the sound begins. By adjusting this, you can skip a portion of unintended silence at the beginning of a sample so that the sample starts playing at the right moment.
- Loop point:** When the sample is played repeatedly, this is the point where the repetition (the second and subsequent times) begins. Set this when you want to loop from a location other than the Start point.
- Length:** This is the length from the Start (or Loop) point to the End point (where the sound stops). By adjusting this you can skip an unintended silent portion at the end of a sample. This also determines the length of the looped area when the sample is played back repeatedly (p. 73).

MEMO

- The location of the End point (where the sound stops) is determined indirectly by the Length (the length from the Start point to the End point).
- Set the Loop mode (“Playing repeatedly”; p. 73) to specify whether the sample are looped (played repeatedly).

Setting each point

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [] .

The Pad Edit menu are displayed as icons.



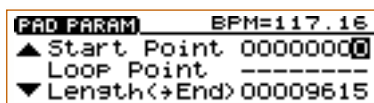
2. Make sure that the cursor is located at the Pad Parameter icon.



3. Press [YES/ENTER].

The Pad Parameter screen appears.

4. Press CURSOR [] to select the screen with the three items “StartPoint,” “LoopPoint,” and “Length (→End).”



5. Use CURSOR [] [] to move the cursor to the item you wish to set.
6. Press the pad to play the sample you are editing, and turn the TIME/VALUE dial to adjust the setting.
7. Press [DISPLAY] to return to the Basic screen.

MEMO

While changing the end point or loop point, in order to effectively edit even extremely long samples, the beginning of the sound can be automatically switched to play not from the start point, but from just before the end point.

HINT

In step 6, if you press [YES/ENTER] while the value of “StartPoint” is selected, the sample to be changed sounds from the beginning.



While listening this sound press [YES/ENTER] again, that time location is set as a start point automatically. When the “Length(→End)” or “LoopPoint” is selected, you can set the end or loop point with the same procedure as above.

Automatically removing Empty Portion at the Beginnings and Ends of Samples

This automatically removes any bank portions that may come before the sample starts to play or after the sample is finished.

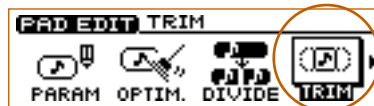
1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.

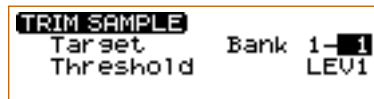




2. Press CURSOR [] to select the Trim icon.




3. Press [YES/ENTER].

The Trim Sample screen appears.



4. Make sure that the cursor is located at the "Target" line, use CURSOR [] [] to select the pad bank number and pad number for each item, specifying the sample containing the empty sections at the start and end of sound.

Select the pad bank number by turning the TIME/VALUE dial. Select the pad number either by pressing a pad or by turning the TIME/VALUE dial.

5. Press CURSOR [] to move the cursor to "Threshold" line.
6. Turn the TIME/VALUE dial to select the volume level (LEV1-LEV8) necessary for detection of the empty sections.

The higher the numeral, the greater the volume these sections can have while still being regarded as containing no sound.

7. When you have finished making the settings, press [YES/ENTER].
When remove of the empty sections is finished, "Completed." appears in the display.
8. Press [DISPLAY] to return to the Basic screen.

Expanding and Compressing a sample to modify the length or tempo

If you want the tempo or length of samples to match, you can stretch or shorten the time that the sample is played.

Matching the tempo to another sample—Tempo Match

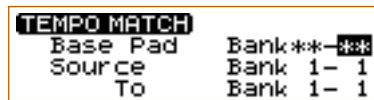
It is easier to edit your song if the materials you collected are of a consistent tempo. The CDX-1 makes it easy to match the tempo of different samples.

Since this function needs to accurately calculate the tempo in order to perform a high-quality compression or expansion, **you must first perform the procedure of “Displaying the correct tempo of a sample” (p. 77) to specify the number of beats in the original sample.**

In the case of samples for which it is difficult to calculate a tempo, such as a narration, vocal part, or a long sustained sound, set the number of beats to 0.

1. Press PAD RECORDING [TEMPO MATCH].

The Tempo Match Setting screen appears.



2. Use CURSOR [] [] [] [] to select the pad bank number and pad number for each item, specifying the desired number for each.

Turn the TIME/VALUE dial to set the pad bank number. To set the pad number, either press a pad or turn the TIME/VALUE dial.

BasePad: Specify the sample that is the standard for tempo.

Source: Specify the sample you wish to expand/compress sample.

To: Specify the pad to which the newly created sample is assigned. (*)

* If the destination pad already contains a sample, a message of “Overwrite?” appears. If it is OK to overwrite the existing sample, press [YES/ENTER].

3. When you have finished making the settings, press [YES/ENTER].

After a while, the newly created sample is assigned to the destination pad.

4. Press [DISPLAY] to return to the Basic screen.

NOTE

- Compression/expansion (Stretch) requires more processing time than other sample editing operations. Also, the audio quality of the stretched sample may be inferior to that of the original sample.
- In case the expanding/expanding level is in excess of 130% or less than 70%, the sample will not be made correct tempo.

Expanding/compressing by a specified percentage or tempo—Time Stretch

Since this function needs to accurately calculate the tempo in order to perform a high-quality compression or expansion, **you must first perform the procedure of “Displaying the correct tempo of a sample” (p. 77) to specify the number of beats in the original sample.**

In the case of samples for which it is difficult to calculate a tempo, such as a narration, vocal part, or a long sustained sound, set the number of beats to 0.

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [] .

The Pad Edit menu are displayed as icons.

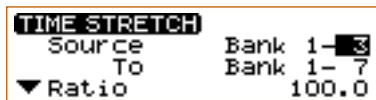


2. Press CURSOR [] to select the Time Stretch icon.



3. Press [YES/ENTER].

The Time Stretch screen appears.



4. Use CURSOR [] [] [] [] to select the pad bank number and pad number for each item, and specify the desired number for each.

To set the pad bank number, turn the TIME/VALUE dial. To set the pad number, either press a pad or turn the TIME/VALUE dial.

Source: Specify the sample you wish to expand/compress sample.

To: Specify the pad to which the expanded/compressed sample is assigned. (*)

* If the destination pad already has a sample, a message of “Overwrite?” appears. If it is OK to overwrite the existing sample, press [YES/ENTER].

5. Press CURSOR [] [] to move the cursor to “Ratio.”

Turn the TIME/VALUE dial to specify the expansion/compression in a range of 50.0–150.0%.

A setting of 100.0% is the same as the original length.

* By selecting and setting “New BPM” (new tempo) in the line below, **you can specify the expansion/compression in terms of the new tempo.** The Ratio and New BPM values always changes simultaneously.

6. When you have finished making the settings, press [YES/ENTER].

After a time, the expanded/compressed sample is assigned to the destination pad.

7. Press [DISPLAY] to return to the Basic screen.

NOTE

Compression/expansion (Stretch) requires more processing time than other sample editing operations. Also, the audio quality of the stretched sample may be inferior to that of the original sample.

Copying a sample to another pad— Clipboard

By temporarily pasting a sample into the clipboard, you can easily copy a sample from one pad to another.

1. **Hold down the pad of the sample you wish to move (the pad lights), and press [CLIP BOARD].**

[CLIP BOARD] is illuminated.

* *If [CLIP BOARD] already contains a sample, that is overwritten the existing sample.*

2. **Press [CLIP BOARD] to verify that the sample sounds.**

3. **Hold down [CLIP BOARD] and press the destination pad.**

[CLIP BOARD] goes out, and the destination pad lights.

* *If the destination pad already contains a sample, you cannot copy a sample.*

4. **Press the destination pad to verify that the sample sounds.**

Deleting a sample of [CLIP BOARD]

If you wish to delete a sample of [CLIP BOARD], hold [DELETE] and press [CLIP BOARD].

NOTE

The sample of the PAD are unable to be played back simultaneously while playing the sample of [CLIP BOARD].

Splitting a sample among several pads—Divide Sample

Sometimes after sampling an extended performance, you may wish to divide the sample into two parts, and assign them to separate pads as new samples. The Divide Sample function lets you do this. This is convenient when you wish to record a sample without pausing, and then later divide it into shorter samples and assign them to pads.

Specifying a division point and dividing a sample in two

1. Set the end point of the original sample at the location where you wish to divide the sample.

→ “Setting the points” (p. 78)

2. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, you can press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.







3. Press CURSOR [] to select the Divide icon.



4. Press [YES/ENTER].

The Divide Sample screen appears.



5. Make sure that the cursor is located at the “Type” line, and turn the TIME/VALUE dial to set “END POINT.”
6. Use CURSOR [] [] [] [] to select the pad bank number and pad number for “Source” (original sample) and “To” (destination), specifying the sample for each.

Select the pad bank number by turning the TIME/VALUE dial. Select the pad number either by pressing a pad or by turning the TIME/VALUE dial.

7. Press [YES/ENTER].

The sample are divided.

* If the destination pad already contains a sample, the “Overwrite?” message appears. If it is OK to overwrite the existing sample, press [YES/ENTER]. If you do not wish to overwrite the existing sample, press [NO/EXIT].

8. Press [DISPLAY] to return to the Basic screen.

Automatically dividing a sample at silent portions

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.

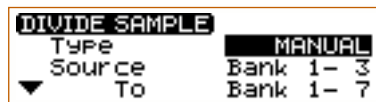


2. Press CURSOR [] to select the Divide icon.







3. Press [YES/ENTER].

The Divide Sample screen appears.



4. Make sure that the cursor is located at the “Type” row, and turn the TIME/VALUE dial to set “AUTO.”

Values of “AUTO 0.5,” “AUTO 1.0,” “AUTO 1.5,” and “AUTO 2.0” specify the length (in seconds) of the silent portion that are the standard for dividing the sample. For example, if you set this to “AUTO 1.0,” silent portions longer than one second are the boundaries of the divided samples.

5. Use CURSOR [] [] [] [] to select the “Source” (original sample) and “To” (destination) pad bank number and pad number, and specify the sample for each.

Specify the pad bank number by turning the TIME/VALUE dial. Specify the pad number by pressing a pad or by turning the TIME/VALUE dial.

6. Press [YES/ENTER].

The sample are divided.

* If the destination pad already contains a sample, the “Overwrite?” message appears. If it is OK to overwrite the existing sample, press [YES/ENTER]. If you do not wish to overwrite the existing sample, press [NO/EXIT].

7. Press [DISPLAY] to return to the Basic screen.

Dividing destinations when “AUTO” is used

- The divided samples are assigned successively, starting with the pad you specified for “TO.” Pads that already contain a sample are skipped.
- If there are not enough vacant pads for all of the divided samples, a message of “PADs are Full. Use Next Bank?” appears. If you press [YES/ENTER], the process of division continues with the next pad bank. If you press [NO/EXIT], all of the remaining samples are written to the last pad as a single sample.



If you turn “Trim” on, the beginning of the next sample are set to the point at which the volume first rises from silence to exceed the “Threshold.” By setting “Threshold” to the desired level, you can cause the sample to be divided automatically, according to the level you specify.



If you want only the results of the division to be neatly arranged in the pad bank, select pad [1] of the pad bank as the destination.

Dividing a sample at the timing that you press a button

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.

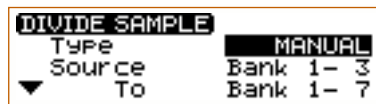






2. Press CURSOR [] to select the Divide icon.



3. Press [YES/ENTER].

The Divide Sample screen appears.



4. Make sure that the cursor is located at the “Type” line, and turn the TIME/VALUE dial to set it to “MANUAL.”
5. Use CURSOR [] [] [] [] to select the “Source” (original sample) and “To” (destination) pad bank number and pad number, and specify the sample for each.

Specify the pad bank number by turning the TIME/VALUE dial. Specify the pad number by pressing a pad or by turning the TIME/VALUE dial.

6. Press [YES/ENTER], and the original sample begins playing.
7. At the point where you wish to divide the sample, press [YES/ENTER] once again.

The sample are divided at that point.

* If the destination pad already contains a sample, the “Overwrite?” message appears. If it is OK to overwrite the existing sample, press [YES/ENTER]. If you do not wish to overwrite the existing sample, press [NO/EXIT].

8. Press [DISPLAY] to return to the Basic screen.

Creating a “reverse tape” style sample—Create Reversal

By using this function you can create a sample that sounds as though a tape recorder were being played backward.

1. Press **PAD RECORDING [TEMPO MATCH]** twice.

Alternatively, you can press [TEMPO MATCH] and then press **CURSOR []**.

The Pad Edit menu are displayed as icons.



2. Press **CURSOR []** to select the Create Reversal icon.



3. Press **[YES/ENTER]**.

The Create Reversal Settings screen appears.



4. Use **CURSOR [] [] [] [] []** to select the “Source” (source sample) and “To” (destination) pad bank number and pad number, and specify the sample for each.

Specify the pad bank number by turning the TIME/VALUE dial. Specify the pad number by pressing a pad or by turning the TIME/VALUE dial.

5. Press **[YES/ENTER]**.

The Create Reversal operation is executed.

* If the destination pad already contains a sample, the “Overwrite?” message appears. If it is OK to overwrite the existing sample, press **[YES/ENTER]**. If you do not wish to overwrite the existing sample, press **[NO/EXIT]**.

6. Press **[DISPLAY]** to return to the Basic screen.

NOTE

The Pad Play and Loop settings will be the same as the original sample. However, the Loop point setting is ignored.

Boosting the sample level as high as possible—Normalize

Normalize is a function that raises the level of the entire sample as high as possible without exceeding the maximum level.

1. Press **PAD RECORDING [TEMPO MATCH]** twice.

Alternatively, press **[TEMPO MATCH]** and then press **CURSOR []**.

The Pad Edit menu are displayed as icons.

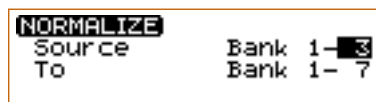


2. Press **CURSOR []** to select the **Normalize** icon.



3. Press **[YES/ENTER]**.

The Normalize Settings screen appears.



4. Use **CURSOR [] [] [] [] [] []** to select the “Source” (source sample) and “To” (destination) pad bank number and pad number, and specify the sample for each.

Specify the pad bank number by turning the TIME/VALUE dial. Specify the pad number by pressing a pad or by turning the TIME/VALUE dial.

5. Press **[YES/ENTER]**.

The Normalize operation is executed.

* If the destination pad already contains a sample, the “Overwrite?” message appears. If it is OK to overwrite the existing sample, press **[YES/ENTER]**. If you do not wish to overwrite the existing sample, press **[NO/EXIT]**.

6. Press **[DISPLAY]** to return to the Basic screen.

Arranging audio samples to create a song—Sequence

What is a sequence?

You can create a song by consecutively playing pad samples. The CDX-1 is able to record **pad operations**; i.e., “which pad was pressed,” “in what order,” and “how long.” Data for pad operations that have been recorded in this way is called a **sequence**.

The CDX-1 provides two ways of recording a sequence: Realtime recording and **step recording**.

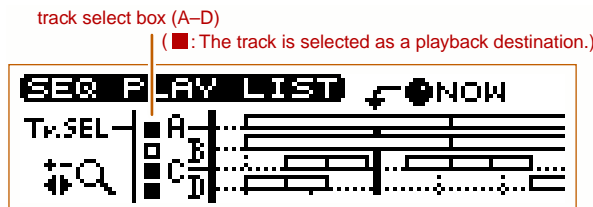
NOTE




When creating a sequence by arranging samples that are recorded to the pads, the sounds comprising the sequence and the original samples do not effect each other directly. For example, if the sounds on the pad samples used as source material for a sequence are deleted, those sounds, once saved as a sequence, are not lost.

About the sequence tracks

The CDX-1 has four tracks (A–D) for recording sequences. When you access the Sequence Play List screen, the arrangement of samples in a sequence track will be shown by the location and length of the boxes (rectangles). The vertical dotted lines in the screen indicate measure divisions.

The Sequence Play List screen will be displayed when you press [DISPLAY] to switch screens. It will also be displayed when you press PAD SEQUENCING [SEQ PLAY] to turn the sequence on.



When the graphic of “” appears in the display, the area indicated on the screen can be widened by pressing CURSOR [] and narrowed by pressing CURSOR [].

About the tempo of the sequence

Setting the tempo of the sequence

The CDX-1 uses the measure (MEAS), beat (BEAT), and tick (TICK) * as the units of its basic system for measuring the current location in a sequence.

Thus, sequences on the CDX-1 are based on the concept of tempo, and in changing the tempos of sequences containing multiple phrases, the intervals between the beginning of one phrase and the beginning of the next are lengthened and shortened.

The overall tempo a sequence is changed in the Rhythm Guide setting screen. If you want the tempo to change midway through the sequence, set the tempo map to specify the tempo.

For details on setting the tempo, refer to “Changing the tempo” (p. 117).

For details on setting the tempo map, refer to “Setting the tempo and rhythm pattern of the song—Tempo Map” (p. 117).

* the tick, *1/96 of a beat*, is the smallest unit in a sequence on the CDX-1.

MEMO

During sequence recording/Playing, indicates the current time location of the song in “Measure/Beat/Tick.” In the Big Time Screen, the units indicated can be switched “Measure/Beat/Tick” or “Hour /Minute/Second.”
→ Column “Switching the Big Time display” (p. 38)

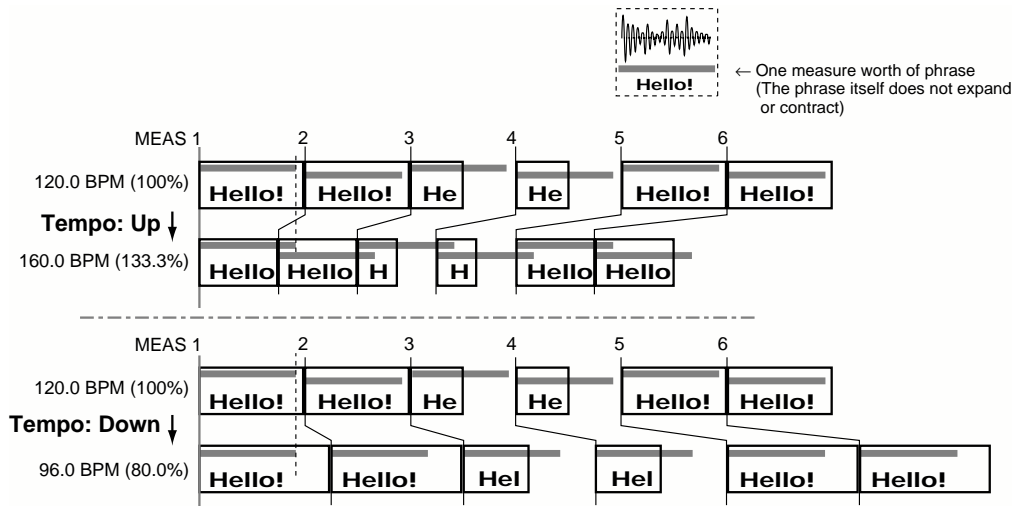
The Relationship Between Sequences and Phrases

The sequence tempo can be changed in the Rhythm Guide setting screen or Tempo Map screen. When the tempo is slowed down, the interval during which the phrase sounds is lengthened. Conversely, increasing the tempo makes the interval shorter. However, in either case, you cannot change the performance tempo of the phrases (the tempo when the phrase is audio-recorded) themselves.

NOTE

In order to use the tempo map to specify the tempo, you must change the way in which the rhythm guide is sounded.

→ “Playing the rhythm guide according to the tempo map” (p. 118)



How recording works

Phrases on Sequence are recorded as described below.

Play the sample selected for recording:

1. From which measure, beat, and tick where the change to begin;
2. Start from the position **** units from the beginning of the sample; and....
3. For * beats and * ticks then mute the sample.

The data in 1-3 sets the phrase represented by the outlined rectangle displayed in the Play List screen.

Depending on the process at the recording, the data of item 1 and 3 are set.

In the case of recording the phrases on the song by pressing the pad, the sample's start point (p. 78) is reflected to the data number which skip play the sample songs from the beginning in 2. This value can be changed with the Adjust Timing function (p. 104).

NOTE

Depending on the actual sampling time or other factors, the length of time of a sample on the PAD is determined. In case the loop mode (p. 73) of sample is turned off the stops upon recording the edit point, before the end point determined in 3 even if the apparent play length of 3 above is expanded with tempo down. Thus, the sound may stop even when the apparent phrase (the outlined rectangle) is indicated in the Sequence Play List screen.

Recording pad operations as you play pads—Realtime Recording

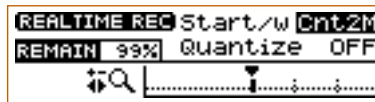
Realtime recording of pad operations is when the timing at which pads are pressed and released is recorded in the sequence track. Since the actual sounds that you are hearing are not being recorded anew in the sequence track, this does not reduce the remaining time available for recording. Nor is it necessary to set the recording level. However, it is not possible to apply effects while you record pad operations, or to layer the sounds of multiple pads in the same sequence track. If you play two or more pads simultaneously, only the last-played pad operation will be recorded.

Realtime recording

1. Press **PAD SEQUENCING [CREATE]**.
[CREATE] blinks, and a screen appears in which you can select the recording method and the recording-destination sequence track.
2. Press **CURSOR [◀]** to select “Realtime” (realtime recording).
3. Use the **TIME/VALUE** dial to select the sequence track A–D that you wish to record.
* If you re-record over a previously recorded sequence track, the pad operation data will be overwritten and the previous data will be lost.
4. After you have specified the recording method and the sequence track to be recorded, press **[YES/ENTER]**.



The realtime recording setting screen appears.



5. Press **ZERO [◀◀]** to make sure that the **SONG POSITION** in the screen indicates “0001-01-000” (beginning).
Alternatively, you can move to a desired location so that recording will start from that point.
6. Make sure that the cursor is located at the “Start/w” line. Turn the **TIME/VALUE** dial to specify how recording will begin.
 - **Start/w (Start with):**
 - Norm:** Recording will start at the moment you press [CREATE].
 - Cnt1M:** Recording will start after a one-measure count is heard.
 - Cnt2M:** Recording will start after a two-measure count is heard.
 - [PAD]:** Recording will start at the moment you press a pad.
7. Press **CURSOR [▶]** to move the cursor to “Quantize.” Turn the **TIME/VALUE** dial to select “OFF.”
8. Press **PAD SEQUENCING [CREATE]**.
[CREATE] will light, and recording will begin as you specified in step 6. Press pads to record them.
9. When you are finish recording, press **PAD SEQUENCING [CREATE]**.
[CREATE] goes out (extinguished), and the display returns to the Basic screen.
10. Return to the location at which you began recording, and press **PLAY [▶]** to play back your performance and listen to the result.



It is convenient to use the built-in rhythm guide when recording. If you record along with the rhythm guide, you will be able to edit the track in units of measures, and will also be able to synchronize the performance with an external device. For details on the rhythm guide, refer to “Using the rhythm guide” (p. 116).



If [SEQ PLAY] is off, press [CREATE], and it will be turned on (lit) automatically. Also, the [STATUS] of all audio tracks will go dark.



For details on the “Quantize” setting, refer to “Correcting timing inaccuracies while you record” (p. 92).



- In step 9, if you press **STOP [■]**, [CREATE] will blink (recording-standby mode). Then press [CREATE] once again, recording will begin.
- After recording, you can press **[UNDO/REDO]** (p. 138) to return to the previous conditions.

Recording while you listen to the playback of another sequence track

You can select a sequence track for playback, and then perform realtime recording while you listen to the playback of the selected sequence track.

1. As described in steps 1–3 of “Playing a sequence track” (p. 96), select the sequence track that you wish to play.
2. Follow the procedure described of “Realtime recording,” above.

Recording will begin, and at the same time the sequence track you selected in step 1 will play back. Press pads to record them.

Recording while you listen to the playback of the audio tracks

When sequence is turned on ([SEQ PLAY] is turned on), all the lighting [STATUS] of audio tracks will go dark (muted). At this time, you can select a audio track for playback, and then perform realtime recording while you listen to the playback of the selected audio track.

1. Follow steps 1–7 of “Realtime recording,” above.
2. For the audio track(s) that you wish to play, press [STATUS] to get it to light in green.

* *It is not possible for the sequence track selected as the recording destination to play simultaneously with the corresponding audio track. And an audio track cannot be played back simultaneously with the corresponding sequence track selected as the playing back destination. For details refer to “Playing sequence tracks and audio tracks simultaneously” (p. 97).*

3. Press [CREATE].

Recording will begin, and at the same time the audio track(s) you selected in step 2 will play. Press pads to record them.

4. When you are finished recording, press PAD SEQUENCING [CREATE].

[CREATE] goes out (extinguished), and the display returns to the Basic screen.

5. Return to the location where you begin recording, and press PLAY [▶] to play back your performance and listen to the result.

MEMO

In step 4, if you press STOP [■], [CREATE] will blink (recording-standby mode). Then press [CREATE] once again, recording will begin.

MEMO

After recording, you can press [UNDO/REDO] (p. 138) to return to the previous conditions.

Correcting timing inaccuracies while you record —Quantize

Pad operations are recorded on the track with a timing precision of 1/96th of a beat. This means that it is rather difficult to record pad operations exactly at precise measure beginnings, quarter notes, or eighth notes when you are using realtime recording. This is why the CDX-1 provides a Quantize function that can correct the timing of your pad operations while you record.



Quantize is not applied to the timing at which you release a pad.

1. In step 7 of “Realtime recording” (p. 90), change the “Quantize” setting.

Sets the timing resolution in terms of notes. The timing at which the sound begins will be adjusted to the beginning of measures or beats.

“MEAS”: Beginning of the measure

“ ♪ ”: 192 tick intervals

“ ♪ ”: 96 tick intervals

“ ♪₃ ”: 64 tick intervals

“ ♪ ”: 48 tick intervals

“ ♪₃ ”: 32 tick intervals

“ ♪ ”: 24 tick intervals

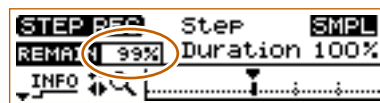
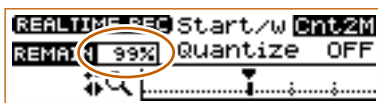
“ ♪₃ ”: 16 tick intervals

“OFF”: The timing at which you press a pad will not be adjusted.

* When you use the Quantize function, pad operations on the same sequence track may overlap. If this occurs, only the last pad operation will be valid, and only that phrase will be recorded.

About remaining recordable events of Sequence

Remaining recordable events * of sequence is displayed as “REMAIN XX%” on REALTIME REC screen and STEP REC screen. XX% shows remaining number of events in percent.



* An event is an operation of pressing/releasing a pad.

Recording pad operations at the specified interval—Step Recording

The CDX-1 allows you to record pad operations on a sequence track while the playback remains stopped. This is analogous to pasting the pad samples at previously specified intervals (steps). This is called **step recording**.

Button functions during step recording

During step recording, the buttons have the following functions.

Pads [1]–[8]: Record the sample of that pad, and advance the current location by one step.

PLAY [▶]: Extend (tie) the phrase of the preceding step by an additional step.

FF [▶▶]: Record a rest for a length of one step, and advance the current location by one step.

REW [◀◀]: Return to the previous step.

If You Become Confused About Button Function During Recording

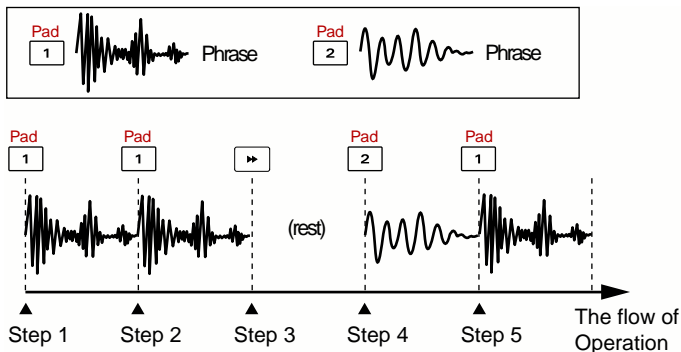
In the following the Step Recording screen, press CURSOR [⏏] once or twice so that the display switches to “STEP REC USAGE INFORMATION.”



Recording continues even when you switch to this screen. Press CURSOR [⏏] to return the previous screen.

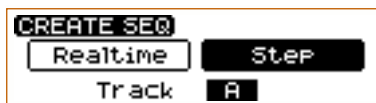
Step recording

In the explanation that follows, we will assume that pads [1] and [2] contain samples, and that you wish to record on the sequence track as shown in the diagram.



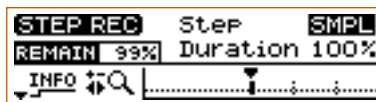
1. Use the REW [◀◀] / FF [▶▶] or TIME/VALUE dial to move to the location at which you wish to begin recording, such as the beginning of the desired measure.
2. Press PAD SEQUENCING [CREATE].
[CREATE] blinks, and a screen appears in which you select the recording method and recording-destination sequence track.

3. Press CURSOR [▶] to select “Step” (step recording).



4. Turn the TIME/VALUE dial to select the sequence track A–D that you wish to record.
5. When you have specified the recording method and the sequence track to be recorded, press [YES/ENTER].

The step recording setting screen appears.
[CREATE] will light.



6. Make sure that the cursor is located at the “Step” line. Turn the TIME/VALUE dial to specify the step (input interval) in terms of a note value.
7. Make sure that “Duration” is set to “100%.”
8. When you press pad [1] recording begins simultaneously, and [1] of STEP 1 in the figure is recorded. When [1] is pressed again, it is also recorded STEP 2.
9. Press [▶▶], and a rest (silence) is recorded in step 3.
10. Press pad [2], and the sound of pad [2] is recorded in step 4.
11. Press pad [1], and the sound of pad [1] is recorded in step 5. Then press PLAY [▶] and the phrase of step 5 is extended (tied) by one step, doubling the recorded length.
12. When you finish recording, press PAD SEQUENCING [CREATE].
[CREATE] is turned off, and the Sequence Play List screen appears.
13. Return to the location where you began recording, and press PLAY [▶] to play back the performance and hear the results.

MEMO

If [SEQ PLAY] is off, press [CREATE], and it will be turned on (lit) automatically. Also, the [STATUS] of all audio tracks will go dark.



For details on the “Step” and the “Duration” parameter, refer to the column “Parameter settings for step recording” (p. 95).

NOTE

Even if you repeatedly press [▶] (Tie) to record what appears to be a long phrase in the track, the playback will not exceed the length of the sample itself. However, in the case of a pad for which Loop playback (p. 73) is specified, the result of step recording will also be looped, and a single long phrase will be recorded on the track.

MEMO

If you want to over record this, press [UNDO/REDO] (p. 138). Return to the previous conditions.

Parameter settings for step recording

● Step:

“SMPL” (sample): Advance by a number of ticks (of the current tempo) corresponding to the length of the pad sample.

“MEAS” (measure): Advance to the beginning of the next measure.

“ ♪ ”: Advance 192 ticks.

“ ♪ ”: Advance 96 ticks.

“ ♪₃ ”: Advance 64 ticks.

“ ♪ ”: Advance 48 ticks.

“ ♪₃ ”: Advance 32 ticks.

“ ♪ ”: Advance 24 ticks.

“ ♪₃ ”: Advance 16 ticks.

“ ♪ ”: Advance 12 ticks.

- * If “MEAS (Measure)” is selected, the input location where recording will first begin is usually the beginning of the next measure. However, recording will begin from the current location if it is the beginning of a measure.
- * If you select “SMPL” (Sample), the length of a step will depend on the pad you press. This is convenient when you wish to pack the pad samples exactly together without being concerned with the performance tempo or the bar lines.

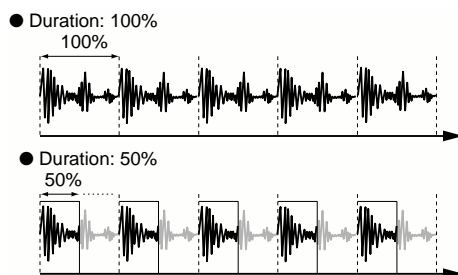
In this case, even if the length of the sample is numerically the same as the measure length for playback, a difference may accumulate gradually due to inaccuracies in calculation. Also, pressing [►►] (Rest) will produce a rest of the same length of the preceding sample. (If you press [►►] before pressing the first pad, it will be ignored.)

● Duration

Duration determines the length that the phrase will be held relative to the step (input interval). Use the TIME/VALUE dial to set the value in the range of 1%–100%. Normally you will set this to 100%.

For example, suppose that you set Step to “MEAS” (1 measure), and step-record by repeatedly pressing a pad that contains a one-measure phrase. In this case if you set Duration to “50%,” the phrase will be recorded from the beginning of each measure, but will play back only for the first half of each measure.

< An example of step-recording by repeatedly pressing the same pad >



Adding dynamics while you step-record

The volume level of step-recorded phrases will be the same as the volume level of the samples you use (p. 76).

On the CDX-1, samples will sound at a fixed volume regardless of the strength with which you press the pad. If you wish to add dynamics to each step during step-recording, it is best to prepare several pads containing the same sample but different volume levels, and use these pads appropriately.

To assign the same sample to multiple pads, you can use clipboard.

→ “Copying a sample to another pad—clipboard” (p. 82)

The sample volume setting can be set independently for each pad.

→ “Adjusting the volume of a sample—Sample level” (p. 76)

Playing a sequence track

The number of sounds that can be played simultaneously is a **total of four stereo sounds for audio track playback, pad playback, and sequence track playback**. When the sequence is on, the playback priority will be in the order of sequence tracks → audio tracks → pads.

1. Press **PAD SEQUENCING [SEQ PLAY]**.

[SEQ PLAY] lights, and the Sequence Play List screen appears.

At this time, the [STATUS] of all audio tracks will go dark (muted).



2. Press **CURSOR []**.

A cursor appears on box A of “Tr.SEL” (track select).



3. Press **CURSOR [] []** to move the cursor to the “Tr.SEL” (track select) box for the sequence track (A–D) that you wish to play back.

4. Press **CURSOR []**.

The “Tr.SEL” (track select) box will be highlighted in black, indicating that it will play back.



To cancel your selection, press **CURSOR []**.

5. If there are other sequence tracks that you wish to play back, repeat steps 3–4.
6. Press **ZERO []** to return to the beginning of the performance.
7. Press **PLAY []**.

The sequence track(s) will play back.

8. When you are finished playing back the sequence track(s), press **PAD SEQUENCING [SEQ PLAY]**.

[SEQ PLAY] goes out, and sequence is turned off.

Playing sequence tracks and audio tracks simultaneously

When sequence is turned on, the [STATUS] of all audio tracks will go dark. If you wish to play back audio tracks at the same time, press [STATUS] of an audio track enough times to get it to light in green.

However, **an audio track cannot be played back simultaneously with the corresponding sequence track selected as the playing back destination.**

Sequence tracks and audio tracks correspond as follows.

● Sequence tracks		● Audio tracks
track A	→	track 1-2
track B	→	track 3-4
track C	→	track 5-6
track D	→	track 7-8

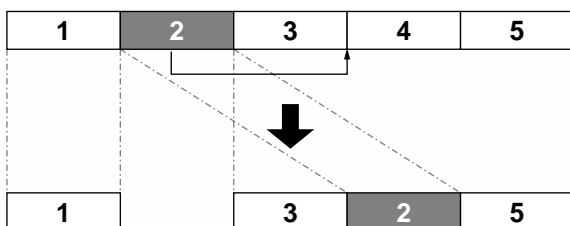
For example, if sequence track A has been selected as a playback track, it will not be possible to select audio tracks 1-2 as playback tracks. Audio tracks 3-4, 5-6, or 7-8 can be played back simultaneously.

Editing a sequence track

The samples arranged in a sequence track can be edited by moving the location at which they will play, by pasting them in a different location, or by deleting them. This makes it easy to make corrections to entire phrases without re-recording.

Moving a phrase—Move

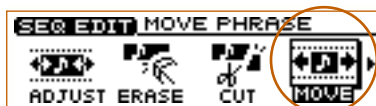
This function moves the specified phrase to another location. The place from which the phrase was moved will be blank (silent), and if there was already a phrase at the move destination, it will be overwritten by the moved phrase.



1. Press PAD SEQUENCING [EDIT].

[EDIT] will light, and the Sequence Edit menu will be displayed as icons.

2. Press CURSOR [] to select the Move icon.



3. Press [YES/ENTER].

The Move Phrase screen appears.



4. Press CURSOR [].

A sequence track select mini-menu appears.



5. Turn the TIME/VALUE dial to select the sequence track (A-D) that you wish to edit, and press [YES/ENTER].

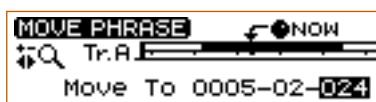
A mini-menu disappears.



6. Use the REW [] /FF [] or the TIME/VALUE dial to select the phrase that you wish to move.

The currently selected phrase will be highlighted in black.

7. After you have specified the move phrase, press [YES/ENTER].

It displays where to move. You can adjust the destination.



8. Use the REW [] /FF [] or the TIME/VALUE dial to set the move destination to "NOW."

9. After you have specified the move destination, press [YES/ENTER].

The specified phrase is moved.

10. When you are finished editing the sequence track, press [DISPLAY].

[EDIT] goes out (extinguished), and the display returns to the Basic screen.

MEMO

If [SEQ PLAY] is off, press [EDIT], and it will be turned on (lit) automatically. Also, the [STATUS] of all audio tracks will go dark.

MEMO

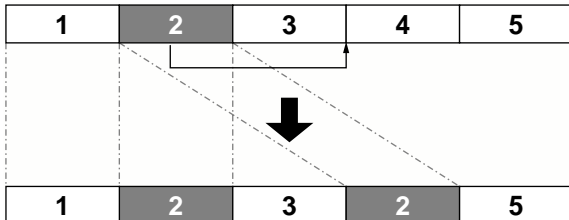
In step 5, also press [NO/EXIT], a mini-menu disappears.

MEMO

To cancel the move, press [UNDO/REDO] (p. 138) after step 9.

Pasting a phrase at a different location—Paste

If something has already been recorded at the paste destination, it will be overwritten by the pasted phrase.



1. Press PAD SEQUENCING [EDIT].

[EDIT] lights, and the Sequence Edit menu are displayed as icons.

2. Press CURSOR [] to select the Paste icon.



3. Press [YES/ENTER].

The Paste Phrase screen appears.



4. Press CURSOR [].

A sequence track select mini-menu appears.



5. Turn the TIME/VALUE dial to select the sequence track (A-D) that you wish to edit, and press [YES/ENTER].

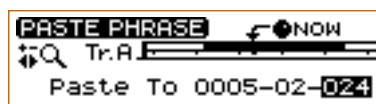
A mini-menu disappears.



6. Use the REW [] /FF [] or the TIME/VALUE dial to select the phrase that you wish to paste.

The currently selected phrase will be highlighted in black.

7. After you have specified the paste phrase, and press [YES/ENTER].

It displays where to paste. You can adjust the destination.



8. Use the REW [] /FF [] or the TIME/VALUE dial to set the move destination to “NOW.”

9. After you have specified the paste destination, press [YES/ENTER]

The specified phrase is pasted.

10. When you are finished editing the sequence track, press [DISPLAY].

[EDIT] goes out (extinguished), and the display returns to the Basic screen.

MEMO

If [SEQ PLAY] is off, press [EDIT], and it will be turned on (lit) automatically. Also, the [STATUS] of all audio tracks will go dark.

MEMO

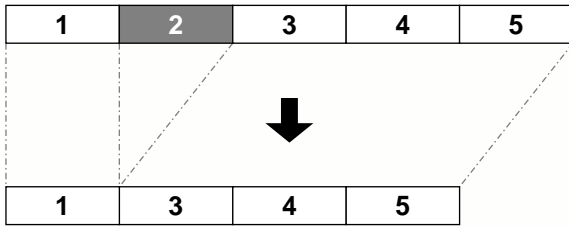
In step 5, also press [NO/EXIT], a mini-menu disappears.

MEMO

To cancel the paste, press [UNDO/REDO] (p. 138) after step 9.

Cutting a phrase—Cut

When you cut a phrase, subsequent phrases will be moved forward.



1. Press PAD SEQUENCING [EDIT].

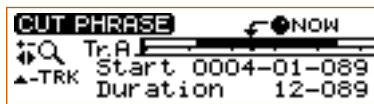
[EDIT] lights, and the Sequence Edit menu are displayed as icons.

2. Press CURSOR [] to select the Cut icon.



3. Press [YES/ENTER].

The Cut Phrase screen appears.



4. Press CURSOR [].

A sequence track select mini-menu appears.



5. Turn the TIME/VALUE dial to select the sequence track (A-D) that you wish to edit, and press [YES/ENTER].

A mini-menu disappears.

6. Use the REW [] /FF [] or the TIME/VALUE dial to select the phrase that you wish to cut.

The currently selected phrase will be highlighted in black.

7. After you have specified the cut phrase, and press [YES/ENTER].

The specified phrase is cut.

8. When you are finished editing the sequence track, press [DISPLAY].

[EDIT] goes out (extinguished), and the display returns to the Basic screen.

MEMO

If [SEQ PLAY] is off, press [EDIT], and it will be turned on (lit) automatically. Also, the [STATUS] of all audio tracks will go dark.

MEMO

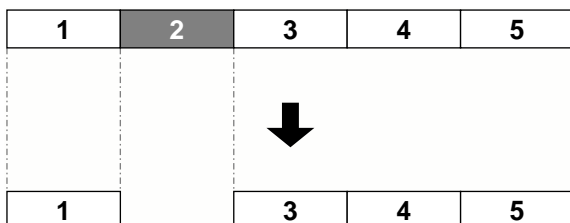
In step 5, also press [NO/EXIT], a mini-menu disappears.

MEMO

To cancel the cut, press [UNDO/REDO] (p. 138) after step 7.

Erasing Phrases—Erase

The phrase that you cut will be silent. Even if there are phrases following it, they will not be moved forward.



1. Press PAD SEQUENCING [EDIT].

[EDIT] lights, and the Sequence Edit menu are displayed as icons.

2. Press CURSOR [] to select the Erase icon.



3. Press [YES/ENTER].

The Erase Phrase screen appears.



4. Press CURSOR [].

A sequence track select mini-menu appears.



5. Turn the TIME/VALUE dial to select the sequence track (A-D) that you wish to edit, and press [YES/ENTER].

A mini-menu disappears.

6. Use the REW [] /FF [] or the TIME/VALUE dial to select the phrase that you wish to erase.

The currently selected phrase will be highlighted in black.

7. After you have specified the erase phrase, press [YES/ENTER].

The specified phrase is erased.

8. When you are finished editing the sequence track, press [DISPLAY].

[EDIT] goes out (extinguished), and the display returns to the Basic screen.

MEMO

If [SEQ PLAY] is off, press [EDIT], and it will be turned on (lit) automatically. Also, the [STATUS] of all audio tracks will go dark.

MEMO

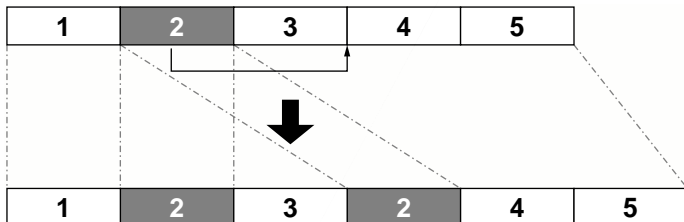
In step 5, also press [NO/EXIT], a mini-menu disappears.

MEMO

To cancel the erase, press [UNDO/REDO] (p. 138) after step 7.

Inserting a phrase in another location—Insert

If something has already been recorded at the insert destination, subsequent phrases will be moved backward by the length of the phrase that is pasted.



1. Press PAD SEQUENCING [EDIT].

[EDIT] will light, and the Sequence Edit menu will be displayed as icons.

2. Press CURSOR [] to select the Insert icon.



MEMO

If [SEQ PLAY] is off, press [EDIT], and it will be turned on (lit) automatically. Also, the [STATUS] of all audio tracks will go dark.

3. Press [] to select the Insert Phrase icon.

4. Press [] to select the track (A-D) that you wish to insert the phrase into.

5. Press [] to select the phrase that you wish to insert.

It displays the insert destination.

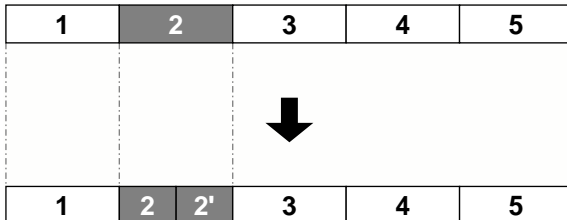
8. Use the REW []/FF [] or the TIME/VALUE dial to set the insert destination to "NOW."

9. After you have specified the insert destination, press [YES/ENTER]. The specified phrase is inserted.

10. When you are finished editing the sequence track, press [DISPLAY]. [EDIT] goes out (extinguished), and the display returns to the Basic screen.

Dividing the phrase at the current location—Split

This function splits the phrase at “NOW” (the current location). By dividing a phrase, you can delete a portion of the phrase or paste it into another location.



1. Press PAD SEQUENCING [EDIT].

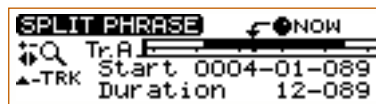
[EDIT] lights, and the Sequence Edit menu are displayed as icons.

2. Press CURSOR [] to select the Split icon.



3. Press [YES/ENTER].

The Split Phrase screen appears.



4. Press CURSOR [].

A sequence track select mini-menu appears.



5. Turn the TIME/VALUE dial to select the sequence track (A-D) that you wish to edit, and press [YES/ENTER].

A mini-menu disappears.

6. Use the REW []/FF [] or the TIME/VALUE dial to set the split destination to “NOW.”

The currently selected phrase will be highlighted in black.

7. After you have specified the split phrase, press [YES/ENTER].

The specified phrase is spitted at “NOW.”

8. When you are finished editing the sequence track, press [DISPLAY].

[EDIT] goes out (extinguished), and the display returns to the Basic screen.

MEMO

If [SEQ PLAY] is off, press [EDIT], and it will be turned on (lit) automatically. Also, the [STATUS] of all audio tracks will go dark.

HINT

If you wish to make precise adjustments to the location at which the phrase will be divided, it is convenient to use Preview. Refer to “Cueing to a precise location—Preview” (p. 139).

MEMO

In step 5, also press [NO/EXIT], a mini-menu disappears.

MEMO

To cancel the split, press [UNDO/REDO] (p. 138) after step 7.

Finely Adjusting the Timing of Each Phrase—Adjust Timing

The positioning of phrases on the sequence tracks is determined with the following formats.

- From which measure, beat, and tick number (Start)
- The length of expression in beats and ticks (Duration)

The **Adjust Timing** function is for changing these values.

Adjust Timing comprises three screens. The first screen is for selecting phrases, and the second and third screen is changing settings.

1. Press **PAD SEQUENCING [EDIT]**.

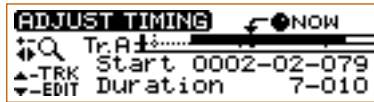
[EDIT] lights, and the Sequence Edit menu are displayed as icons.

2. Make sure that the cursor is located at the **Adjust Timing** icon.



3. Press **[YES/ENTER]**.

The Adjust Timing screen appears.



4. Press **CURSOR []**.

A sequence track select mini-menu appears.



5. Turn the **TIME/VALUE** dial to select the sequence track (A-D) that you wish to edit, and press **[YES/ENTER]**.

A mini-menu disappears.

6. Use the **REW []** / **FF []** or the **TIME/VALUE** dial to select the phrase that you wish to adjust.

The currently selected phrase will be highlighted in black.

7. When the phrase to be adjust is highlighted, press **[YES/ENTER]**.

That phrase is selected, and the Edit screen appears.



8. Press **CURSOR []** / **[]** to select “Start” or “Duration”, and press **CURSOR []** / **[]** and turn **TIME/VALUE** dial to change the setting.

- **Start:** Setting the point where the beginning of the phrase on the sequence track.

Start 0001-03-053 ← measure-beat-tick

- **Duration:** Setting the phrase length.

Duration 2-053 ← number of beats and ticks

9. If required, press **CURSOR []** repeatedly until the third screen is displayed, and turn the **TIME/VALUE** dial to change the value “WaveOffset” or “WaveEnd.”

For details refer to “Offset and End Point”(p. 105), below.

10. When you are finished editing the sequence track, press **[DISPLAY]**.

[EDIT] goes out (extinguished), and the display returns to the Basic screen.

MEMO

If [SEQ PLAY] is off, press [EDIT], and it will be turned on (lit) automatically. Also, the [STATUS] of all audio tracks will go dark.

MEMO

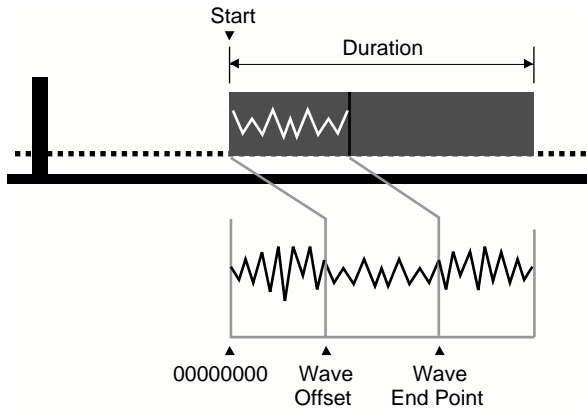
In step 5, also press [NO/EXIT], a mini-menu disappears.

NOTE

The extend to which the “Start” and “Duration” of a phrase can be changed is limited by the phrase before and after it; that is, phrases on the same track cannot be overlapped. In addition, one beat, as indicated here, always means a quarter note (96 ticks). This is not affected by the rhythm in each measure.

Offset and End Point

“WaveOffset” and “WaveEnd,” the parameters selected in Step 9, determine which part of the waveform data is used for to a phrase.



In both Offset and End point are indicated by 8-digits values likewise the sample reading start points (p. 78). (The amount of time indicated by “00000001” is 1/3000 of a second). This does not change with tempo and measure length.



WaveOffset:

This specifies and changes the **starting point for reading** the waveform data of sample. The specified point is placed at the position determined in Adjust Timing “Start” (in the second screen).

WaveEnd:

This specifies and changes the **end point for reading** the waveform data of sample. If this point is before the end of the segment resulting from the “Duration” setting in Adjust Timing (in the second screen), then even though still within the phrase, the sound stops.

If a pad contains a looped sound recorded in Realtime/Step Recording, then the end point of the loop on the track is designated.

Adjusting the volume setting for each phrase

The upper right of the Sequence Track Edit screen shows the volume of each phrase. By highlighting this value and turning the TIME/VALUE dial to change it, you can adjust the volume of the selected phrase (0–100).

The value prior to the change will reflect the volume that was specified for the pad you pressed when recording (p. 90–93). A setting of “100” is the volume at which the sound was sampled.



NOTE

If “LOOP-END” was the sampling mode used during Event Recording, you cannot select a value smaller than that fixed value.

Edit on Sequence Play List screen—Quick Edit

It is convenient to select a phrase to edit seeing whole part of Play List.

1. Press PAD SEQUENCING [SEQ PLAY].

[SEQ PLAY] lights, and the Sequence Play List screen appears.



2. Press CURSOR [] [].

A cursor appears on box A of “Tr.SEL” (track select).



3. Press CURSOR [] [] to move the cursor to the “Tr.SEL” (track select) box of the sequence track (A–D) that you wish to edit.

4. Use the REW [] /FF [] or the TIME/VALUE dial to select the phrase that you wish to edit.

The currently selected phrase will be highlighted in black.

5. Press [YES/ENTER].

A mini-menu appears.



6. Press CURSOR [] [] to select the menu, and press [YES/ENTER].

At this time, press [NO/EXIT], a mini-menu disappears.

Menu displayed on screen and operation of those are as follows.

- “MOVE?” “Moving a phrase—Move“ (p. 98) step 8–9.
- “PASTE?” “Pasting a phrase at a different location—Paste“ (p. 99) step 8–9.
- “CUT?” The specified phrase is cut.
- “ERASE?” The specified phrase is erased.
- “INSERT?” “Inserting a phrase in another location—Insert“ (p. 102) step 8–9.
- “SPRIT?” “Dividing the phrase at the current location—Split“ (p. 103) step 6–7.
- “ADJUST?” “Finely Adjusting the Timing of Each Phrase” (p. 104) step 7–8.

7. When you are finished editing the sequence track, press [DISPLAY].

[EDIT] goes out (extinguished), and the display returns to the Basic screen.

MEMO

At this time, the [STATUS] of all audio tracks will go dark.

Deleting a sequence track

An unwanted sequence track can be deleted as follows.

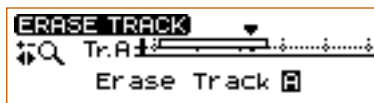
1. Press **PAD SEQUENCING [EDIT]**.
[EDIT] lights, and the Sequence Edit menu are displayed as icons.

2. Press **CURSOR []** to select the Erase Track icon.



3. Press **[YES/ENTER]**.

The erase track setting screen appears.



4. Turn the **TIME/VALUE dial** to specify the track number you wish to delete.
5. Press **[YES/ENTER]**.
The sequence track will be deleted.
6. When you are finished editing the sequence track, press **[DISPLAY]**.
[EDIT] goes out (extinguished), and the display returns to the Basic screen.

MEMO

If [SEQ PLAY] is off, press [EDIT], and it will be turned on (lit) automatically. Also, the [STATUS] of all audio tracks will go dark.

MEMO

To cancel the erase sequence track, press [UNDO/REDO] (p. 138) after step 5.

Recording the sequence playback sound on audio track

When you have created a sequence that you like, you can record the playback sound of the sequence on an audio track. You can even play back all three sequence tracks and combine them into two audio track (stereo).

1. Press PAD SEQUENCING [SEQ PLAY].

[SEQ PLAY] lights, and the Sequence Play List screen appears.

At this time, the [STATUS] of all audio tracks will go dark.



2. Select sequence tracks you wish to play back.

It is possible to select three sequence tracks.

→ “Playing sequence tracks and audio tracks simultaneously” (p. 96).

3. Press PLAY [▶] to play back, and use the PAD/SEQ LEVEL faders to adjust the volume balance of a sequence track.

4. Use the MASTER fader to adjust the recording level.

At this time, raise the volume as high as possible without allowing the sound to distort.

5. When you adjust the volume, press STOP [■].

6. Press [BOUNCE] to get it to light.

7. Press audio track [STATUS] that you wish to use as the recording destination.

The [STATUS] of audio tracks will blink in red, and now the selected audio track is ready for recording.

* It is not possible designated the audio track corresponding to playing sequence track recording destination. For sequence tracks and audio tracks correspond refer to “Playing sequence tracks and audio tracks simultaneously” (p. 97).

8. Press ZERO [◀◀] to return the SONG POSITION to “0001-01-000” (beginning of the song).

Alternatively, you can move to a desired location so that recording will start from that point.

9. Press REC [■].

REC [■] blink (recording-standby mode).

10. Press PLAY [▶], and recording will begin.

11. Press STOP [■] to stop recording.

A message of “Keep take? (NO/YES)” (Do you want wish to save the take on CD-RW disc?) appears.

12. If you wish to save the take, press [YES/ENTER].

When CDX-1 complete to save, [BOUNCE] will go to dark, and the [STATUS] of the selected recording destination tracks will go light in green.

If you press [NO/EXIT], saving to CD-RW discs will be cancelled.

13. Listen to the result of bounce recording.

Press PAD SEQUENCING [SEQ PLAY] to go dark. Press PLAY [▶] to play back audio tracks you selected recording destination.



You can record simultaneously audio tracks and input source.

Creating an audio CD

Prepare for recording—Multitrack recording

What is multitrack recording?

The CDX-1 provides **eight “audio tracks”** that are used to independently record and manage the parts that make up a song. You can record separate parts on each audio track, for example recording the vocal on audio track 1 and the guitar on audio track 2. The process of recording parts on separate audio tracks is called **multitrack recording**.

Preparing a CD-RW disc for use —Format

NOTE You must use high-speed compatible CD-RW discs!



When performing multitrack recording, **you must use high-speed compatible CD-RW discs that bear this logo.**

It is not possible to perform multitrack recording using a CD-R disc or CD-RW disc not compatible with high-speed write. It is not possible to format either.

If you wish to use a new CD-RW disc, you must prepare that CD-RW disc for use by the CDX-1. This process is called **formatting**.

Preparing a new CD-RW disc for use

1. **Insert a new CD-RW disc as described in “Inserting a disc” (p. 35).**
A message of “This is blank disc. Do you want to format?” appears in the screen.

2. **If you wish to format the disc, press [YES/ENTER].**

The CD-RW Format screen appears.

If you press [NO/EXIT], format will be canceled.



3. **Make sure that the cursor is located at the “Format Type” line.**

4. **Turn the TIME/VALUE dial to select the format type.**

● **Format Type:**

FULL: The entire data area of the disc will be physically erased to make it completely blank. This will increase the reliability of a disc that has been previously used by another device. Normally you should select this. Approximately 20 minutes will be required.

STANDARD: The data on the disc will merely be invalidated logically. Normally you should select this. Approximately 10 minutes will be required.

5. **Press CURSOR [] to move the cursor to “Data Type” line.**

6. **Turn the TIME/VALUE dial to select the data type.**

For details on data types, refer to the column “What is the data type?” on this page.



“Recommended CD-R/CD-RW discs” (p. 19)



The CDX-1 uses a sample rate of 44.1 kHz. It is not possible to change the sample rate.



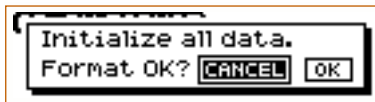
CDX-1 carries out the followings when formatting discs.

- Insert CD-RW disc to improve preciseness of writing.
- Reserve area for recording
- Reserve area to save data of pad/sequence.

Thus, it takes sometime to complete formatting.

7. Press [YES/ENTER].

A message of “Format OK?” appears in the screen.



8. Press CURSOR [] to select “OK”, and press [YES/ENTER].

The format is executed. When formatting is completed, the display will show a message of “Completed.”

If you press [YES/ENTER] to select “CANCEL”, the CD-RW Format screen will reappear.

9. Press [YES/ENTER] to return to the Basic screen.

NOTE

- It is not possible to change the data type while you are working on the song.
- After you execute format, it is not possible to press [UNDO/REDO] (p. 138) to revert to the state before executing format.
- While formatting, do not turn off the power with unplugging the AC adaptor.

What is the data type

The CDX-1 allows you to specify the data type when a CD-RW disc is formatted. This enables you to select the combination of audio quality and recording time that is most suitable for the material you are recording.

The following data types can be selected.

● **STANDARD:**

Of the three types, this provides the highest audio quality. Normally you should select this type.

● **LONG1:**

This type allows longer recording than “STANDARD.” It is suitable for recording live performances.

● **LONG2:**

This allows the longest recording time of the three types.

<Recording time>

The times that can be recorded on one CD-RW disc for each data type are listed below.

Data Type	Recording time
STANDARD	15 minutes
LONG1	19 minutes
LONG2	23 minutes

* The recording times shown above are approximate. Depending on how you edit the song, they will be somewhat shorter.


* On the CDX-1, the approximate recording times shown above will apply regardless of the number of tracks used for recording. For example, even if you use only one track for recording, the amount of time available for recording will be the same as when using all eight tracks.

Erasing the entire contents of a CD-RW disc

Sometimes you may no longer need to keep the data that was saved on a CD-RW disc, and would like to use the same CD-RW disc for a different performance. You would also like to use the a CD-RW disc that was previously used by a computer. In such cases, execute the Disc Format operation.

1. Press [UTILITY].

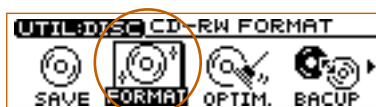
The Menu are displayed as icon.

2. Press CURSOR [] to select the CD-R/RW Disc icon, and press [YES/ENTER].



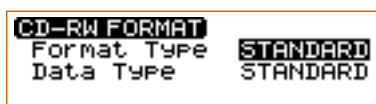
The CD-R/RW Disc Menu are displayed as icon.

3. Press CURSOR [] to select the CD-RW Disc Format icon.



4. Press [YES/ENTER].

The CD-RW Format screen appears.



5. Make sure that the cursor is located at “Format Type” line.

6. Turn the TIME/VALUE dial to select the format type.

● Format Type

FULL: The entire data area of the disc will be physically erased to make it completely blank. This will increase the reliability of a disc that has been previously used by another device. Approximately 20 minutes will be required.

STANDARD: The data on the disc will merely be invalidated logically. Normally you should select this. Approximately 10 minutes will be required.

7. Press CURSOR [] to move the cursor to “Data Type” line.

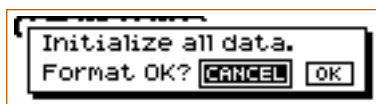
8. Turn the TIME/VALUE dial to select the data type.

For details on the data type, refer to the column “What is the data type?” (p. 111).

* It is not possible to change the data type while you are working on the song.

9. Press [YES/ENTER].

A message of “Format OK?” appears in the screen.



10. Press CURSOR [] to select “OK”, and press [YES/ENTER].

The format is executed. When formatting is completed, the display will show a message of “Completed.” and the Basic screen will reappear.

If you press [YES/ENTER] to select “CANCEL”, the CD-RW Format screen will reappear.

11. Press [YES/ENTER] to return to the Basic screen.

MEMO

- An unused CD-RW disc will be formatted in approximately ten minutes, regardless of the format type setting. **The contents of the CD-RW disc that are erased by the format operation cannot be recovered.**
- After you execute format, it is not possible to press [UNDO/REDO] (p. 138) to revert to the state before executing format.
- While formatting, do not turn off the power with unplugging the AC adaptor.

MEMO

- CDX-1 carries out the followings when formatting discs.
- Insert CD-RW disc to improve preciseness of writing.
 - Reserve area for recording
 - Reserve area to save data of pad/sequence.
- Thus, it take sometime to complete formatting.

Monitoring the sound of a connected instrument

Selecting the input source

Press the INPUT SELECT button(s) for the instrument you will record. The indicator of the selected button(s) will light.

Adjusting the input sensitivity

1. Turn the INPUT SENS knob to adjust the input sensitivity.
Adjust the INPUT SENS knob as high as possible without causing the peak indicator to light when the sound is input.
2. Press [DISPLAY] a number of times to access the Post-fader screen. Turn the INPUT REC LEVEL knob to adjust the level so that “IN” level meter moves as far as possible without exceeding the dotted line in the upper portion.

* If you use the INPUT REC LEVEL knob to turn down the volume of the input source, the sound will be recorded in the audio track at a low volume, so that noise will be more apparent when you raise the volume of the audio track for playback.

The meter moves high level as possible without exceeding the limit shown as dotted line.



* If INPUT REC LEVEL knob is set at  in case of Digital In, input level will be “0 dB.”


Monitoring the sound

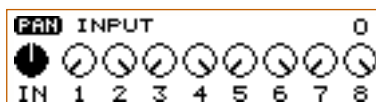
Use the MASTER fader to adjust the volume of the instrument or mic that you are monitoring.

If you are monitoring through headphones, adjust the MASTER fader and the PHONES knob to set a comfortable volume.

Setting the left/right position (pan) of the input sound

If you adjust the pan (left/right position) of the instrument you are playing to a location where it can be heard easily, the sound of your instrument will not be lost in the other sounds during overdubbing (p. 124), and you will find it easier to work.

1. Press TRACK EDIT [PAN].
The Pan settings screen appears.
2. Press CURSOR [] to select the INPUT knob display.



3. Turn the TIME/VALUE dial to set the pan.
4. Press [DISPLAY] to return to the Basic screen.



For details on the jack to use for connections and on the INPUT SELECT button, refer to “Panel Descriptions: Rear panel” (p. 30) and “Panel Descriptions: INPUT section” (p. 21).

MEMO

For details on adjusting the volume of the device connected to the OUTPUT jack, refer to the operating manual for that device.

MEMO

The pan you set here is automatically reflected in the pan of the recording-destination audio track. When you play back, you will hear the same pan setting as when you recorded. After recording, you are free to adjust the pan setting of each audio track. (“Setting the left/right position (pan) of each audio track”; p. 132)

NOTE

When recording in stereo using SIMUL, set the input pan to “L100” (the far left) before you record. If you set the input pan except for “L100,” the two input sources will be mixed and recorded.

Tuning an instrument—Tuner

The CDX-1 has a built-in chromatic tuner function that allows you to tune your instrument quickly. The built-in tuner supports both guitar and bass guitar.

As an example here, we will explain how to use the tuner to tune your guitar.

Adjusting the Tuning

Check the following points before you begin.

- Your guitar is connected to the GUITAR/BASS jack.
- [MIC2] is lit. If [MIC2] is extinguished, press [MIC2] to make the button light.

1. Press [UTILITY].

The Menu are displayed as icon.

2. Press CURSOR [] to select the Tuner icon.



3. Press [YES/ENTER].

The Tuner screen appears.

For details on the screen, refer to the column “About the tuner display” (p. 115).



4. Play a single open (unfretted) note on the string that you wish to tune.

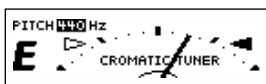
The screen will indicate the note name that is closest to the pitch of the string you played. Tune the string so that the desired note name appears in the screen (refer to the table below).

◆ Standard tuning ◆

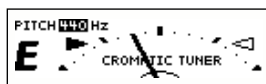
	6th string	5th string	4th string	3rd string	2nd string	1st string
Guitar	E	A	D	G	B	E
Bass			E	A	D	G

5. While you watch the tuning guide, make fine adjustments to the pitch so that the left and right guides are both highlighted in black.

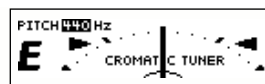
If the pitch of the string is within +/-50 cents of the correct pitch, the tuning guide will indicate the discrepancy between the actual and the correct pitches.



If the guide at the right is highlighted in black, the string is higher (sharper) than the displayed note.



If the guide at the left is highlighted in black, the string is lower (flatter) than the displayed note.



When the left and right guides are both highlighted in black, the string and the displayed pitch are the same.

6. Repeat steps 3–4 to tune each of the strings.

7. When you are finished using the tuner, press [DISPLAY] to return to the Basic screen.



For details on connecting a musical instrument, refer to “Connecting peripheral equipment” (p. 32). For details on selecting the input source, refer to “Selecting the input source” (p. 113).



It is not possible to play back or record while using the tuner.



Cleanly play a single note only on the string you wish to tune.

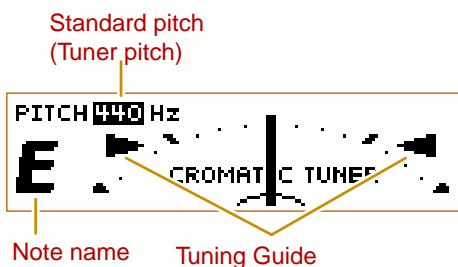


If you are tuning a guitar that has a vibrato arm, tuning one string may cause other strings to drift. In this case, you should first tune the strings approximately so that the correct note name is displayed, and then re-tune each string.

About the tuner display

● **Screen display**

The built-in tuner of the CDX-1 displays the reference pitch, note name, and a tuning guide (see the illustration).



● **Tuning guide display**

If the difference between the input pitch and the correct pitch is less than +/-50 cents, the tuning guide will indicate the discrepancy between the actual and the correct pitches (refer to step 5 of previous page). While you watch the tuning guide, tune your instrument so that the left and right guides are both highlighted in black.

Setting the reference pitch of the tuner

The frequency of the A4 note on the instrument used as the reference for tuning is called the **reference pitch**. (For example, the middle A note on a piano.) On the CDX-1, the reference pitch can be set in the range of 435–445 Hz.

At the factory settings, this is set to 440 Hz.

1. Press [UTILITY].

The Menu are displayed as icon.

2. Press CURSOR [] to select the Tuner icon.



3. Press [YES/ENTER].

The Tuner Menu screen appears.



4. Turn the TIME/VALUE dial to set the standard pitch.
5. When you are finished using the tuner, press [DISPLAY] to return to the Basic screen.

Using the rhythm guide

When you record, it is convenient to use the built-in rhythm guide. If you record along with the rhythm guide, you will be able to use various convenient functions such as track editing in units of measures, or synchronizing the performance with external devices.

When the rhythm guide is used in conjunction with the tempo map, you can change the tempo or rhythm pattern during the song. The rhythm guide can also be used as a metronome when you are not recording.

Playing/stopping the rhythm guide

Each time you press [RHYTHM GUIDE [ON/OFF]], the setting will cycle in the order of auto (blinking) → on (lit) → off (extinguished).

Blinking: The rhythm will sound according to whether the song is playing or stopped.

Lit: The rhythm will sound regardless of whether the song is playing.

Dark: The rhythm will be stopped.

Adjusting the Volume of the Rhythm Guide

1. Press RHYTHM GUIDE [PATTERN/TEMPO].

The Rhythm Guide Setting screen appears.

2. Make sure that the cursor is located at the "Level" line.

RHYTHM GUIDE	Level	100
Beat		4/4
Pattern	Rock	1
TEMPO		♩=120.00

3. Turn the TIME/VALUE dial to adjust the volume.
4. Press [DISPLAY] to return to the Basic screen.

Changing the time signature

1. Press RHYTHM GUIDE [PATTERN/TEMPO].

The Rhythm Guide Setting screen appears.

2. Press CURSOR [] to move the cursor to "Beat" line.

RHYTHM GUIDE	Level	100
Beat		4/4
Pattern	Rock	1
TEMPO		♩=120.00

3. Turn the TIME/VALUE dial to select the desired time signature.
4. Press [DISPLAY] to return to the Basic screen.



"Setting the tempo and rhythm pattern of the song – Tempo Map" (p. 117)



The rhythm guide can also be used when you record pad operations on a sequence track. → Refer to "Recording pad operations while you play the pads—Realtime Recording" (p. 90)

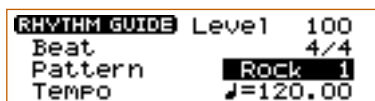


Effects can be applied to the sound of the rhythm guide. This is convenient when you are applying a loop effect to the audio tracks, since it lets you apply the same character to the sound of the rhythm guide. → Refer to "Using the loop effects" (p. 93)

Changing the rhythm pattern

1. Press RHYTHM GUIDE [PATTERN/TEMPO].
The Rhythm Guide Setting screen appears.

2. Press CURSOR [] to move the cursor to "Pattern" line.

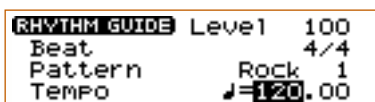


3. Turn the TIME/VALUE dial to select the desired rhythm pattern.
4. Press [DISPLAY] to return to the Basic screen.

Changing the tempo

1. Press RHYTHM GUIDE [PATTERN/TEMPO].
The Rhythm Guide Setting screen appears.

2. Press CURSOR [] to move the cursor to "Tempo" line.

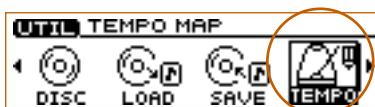


3. Turn the TIME/VALUE dial to select the desired tempo.
4. Press [DISPLAY] to return to the Basic screen.

Setting the tempo and rhythm pattern of the song —Tempo Map

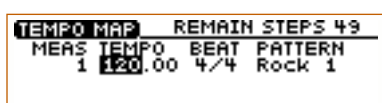
The **tempo map** specifies tempo changes in units of a measure. It contains data indicating the time signature and tempo that are to be applied at a specified measure. The tempo map can be used to switch not only the tempo of the rhythm guide, but also the rhythm pattern.

1. Press [UTILITY].
The Menu are displayed as icon.
2. Press CURSOR [] to select the Tempo Map icon.



3. Press [YES/ENTER].
The Tempo Map Setting screen appears.

The display shown below indicates that the tempo map begins at measure 1, and a tempo of quarter note =120, specifies a 4/4 time signature, and rhythm pattern number 01 (Rock1).



The rhythm guide contains a wide variety of rhythm patterns, including a metronome. For details refer to "Rhythm Pattern List" (p. 172).



The tempo you specify here is the tempo for the entire system. The sequence and MIDI OUT will use this same tempo.





In order to use the tempo map, you must create a tempo map and also change the way in which the rhythm guide is sounded. For details refer to the section below, "Playing the rhythm guide according to the tempo map."



If you specify that a tempo map is to be used, the tempo of the entire system will also follow the tempo map. The sequence and MIDI OUT will also use the tempo of the tempo map

Prepare for recording—Multitrack recording

- Use CURSOR [] [] to move the cursor to the item you wish to edit, and turn the TIME/VALUE dial to edit the value.

MEAS (measure): Specify the starting measure (1–9999) of the tempo map. The measures and beats shown in the display, the rhythm guide sound, and the MIDI clock data transmitted from the CDX-1 will follow the settings of this measure.

TEMPO: Specify the tempo (20.00–250.00) of the tempo map. The measures and beats shown in the display, the tempo of the rhythm guide, the temp of the sequence and the MIDI clock data transmitted from the CDX-1 will follow this tempo setting.

BEAT: Specify the time signature of the tempo map (1/1–8/1, 1/2–8/2, 1/4–8/4, 1/8–8/8). The measures and beats shown in the display, the rhythm guide sound, and the MIDI clock data transmitted from the CDX-1 will follow this time signature setting.

PATTERN: Specify the rhythm pattern of the rhythm guide.

- If you wish to change the tempo from a measure in the middle of the song, press [YES/ENTER].

A mini-menu appears.

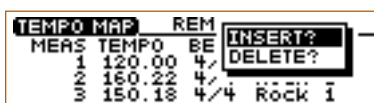



- Press [YES/ENTER].
The settings of the preceding tempo map will be applied.
- Repeat steps 4–5 as necessary.
- Press [DISPLAY] to return to the Basic screen.

Deleting a tempo map


- Access the Tempo Map setting screen as described in steps 1–2 of the preceding section.
- Move the cursor to the line of the tempo map that you wish to delete, and press [YES/ENTER].

A mini-menu appears.



- Press CURSOR [] to select “DELETE?.”
- Press [YES/ENTER].
The tempo map of the selected line will be deleted.
- Press [DISPLAY] to return to the Basic screen.

Playing the rhythm guide according to the tempo map

- Press RHYTHM GUIDE [PATTERN/TEMPO].
The Rhythm Guide Setting screen appears.
- Press CURSOR [] to move the cursor to “Beat.”
- Turn the TIME/VALUE dial to select “TEMPO MAP.”
The rhythm guide will play according to the tempo map.
- Press [DISPLAY] to return to the Basic screen.

NOTE

It is not possible to change the “MEAS” value “1” of the tempo map 1.



Rhythm Pattern List (p. 172)

MEMO

Up to fifty tempo maps can be created.

NOTE

Tempo map 1 cannot be deleted.

Recording/playing back a performance

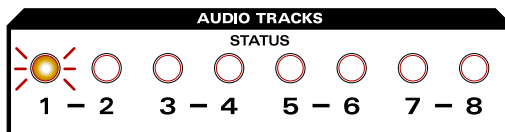
Recording a Performance

Here's how a performance on a connected instrument can be recorded on an audio track. The input source selected by the INPUT SELECT button can be recorded in mono or stereo.

Select the audio track for recording

1. Press [STATUS] for the audio track on which you wish to record, so that it blinks in red.

Now the selected audio track is ready for recording.

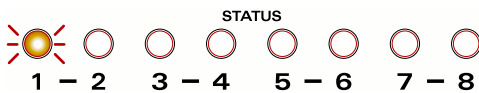


The state of each audio track is shown by the color of its [STATUS] button.

- **Dark:** An audio track that has been muted (silenced)
- **Lit in green:** An audio track is ready for playback.
- **Lit in red:** An audio track being recorded.
- **Blinking in red:** An audio track selected as the recording destination.

● Record in mono

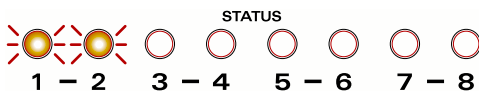
When the input is mono, you will normally use one audio track to record the sound in mono. Press a [STATUS] to select one of the audio tracks 1-8.



● Record in stereo

When the input is stereo, you will normally use two audio tracks to record the sound in stereo. Press two [STATUS] in a combination of 1-2, 3-4, 5-6, or 7-8.

A sound that is input in mono will become stereo if an insert effect is applied to it. If you wish to record in stereo while applying an insert effect, select two audio tracks with same procedure as above.



For details on the jack to use for connections and on the INPUT SELECT button, refer to "Panel Description: Rear panel" (p. 30) and "Panel Description: INPUT section" (p. 21).



If the eight audio tracks are insufficient for you to record all of the necessary performances, you can combine the performances of multiple audio tracks into a single track, freeing up additional audio tracks for more recording. →
"Combining the performances of multiple audio tracks—Bounce Recording" (p. 125)



For details on insert effects, refer to "Using the insert effects" (p. 141).



When recording in stereo using SIMUL, set the input pan to "L100" (the far left) before you record. If you set the input pan except for "L100," the two input sources will be mixed and recorded.



HINT Doubling technique

One technique for spreading the backing guitar between left and right is to record the same backing performance twice (on separate audio tracks), and then pan the two tracks to left and right. This is known as **doubling**.

The CDX-1 provides a “DOUBL’N (doubling)” (p. 202) insert effect that lets you produce a doubling effect without having to record the same performance twice. Select two audio tracks and choose stereo recording, and use the “DOUBL’N (doubling)” effect as you play the backing. This will produce a spacious doubling effect.

“DOUBL’N (doubling)” is also provided as a loop effect. By using the “DOUBL’N” (p. 174) loop effect, you can produce a doubling effect even from a single-track (mono) recording, allowing you to make more efficient use of the audio tracks.



“Using the insert effects”
(p. 141)




“Using the loop effects”
(p. 145)

Record

1. Press **REC** [].

REC [] blink (recording-standby mode).

2. Press **PLAY** [].

REC [] and the [STATUS] of the audio track selected as the recording destination will change from a blinking red light to a steady red light, and recording will begin.

3. Press **STOP** [] to stop recording.

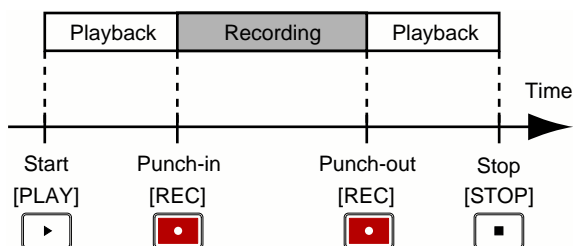
A message of “Keep take? (NO/YES)” (Do you wish to save the take on CD-RW disc?) appears.

If you wish to save the take, press [YES/ENTER].

If you press [NO/EXIT], saving to CD-RW discs will be cancelled.

Re-recording only a mistake —Punch-in/out

You may occasionally make a mistake while recording, or the performance may not turn out as you expect. In such cases, it is convenient to re-record only the portion where the mistake occurred. The action of switching to record mode while an audio track plays is called Punch-in. Switching from recording mode back to playback while the track plays is called Punch-out.




Using the Record button to punch-in/out

Here's how to use the REC [] to punch-in/out.

1. **For the audio track that you wish to re-record, press [STATUS] to get it to blink in red.**


The selected audio track will be in recording-standby mode.

2. **Set the fader of the selected audio track to the 0 dB position.**
3. **Listen to compare the input source volume with the volume of the audio track that you wish to re-record, and adjust the INPUT REC LEVEL knob to adjust the input sensitivity so that there is no difference in volume between the two.**
4. **After you have adjusted the input sensitivity, turn the TIME/VALUE dial to move to a location immediately before the area you wish to re-record.**
5. **Press PLAY [] to play back the audio track.**

6. **At the moment you wish to begin recording, press REC [].**

Punch-in will occur, and recording will begin.

During recording, you can press REC [] to alternately punch-in and punch-out. If there are other locations that you wish to re-record, repeat this procedure.

7. **When you are finished recording, press STOP [] to stop the playback.**

A message of "Keep take? (NO/YES)" (Do you wish to save the take on CD-RW disc?) appears.

If you wish to save the take, press [YES/ENTER].

If you press [NO/EXIT], saving to CD-RW discs will be cancelled.

8. **Listen to the re-recorded results.**

Return to a location immediately before the re-recorded area, and play back.

MEMO

The data prior to punch-in/out will remain on the CD-RW disc without being erased. If you no longer need this data, you can erase it from the CD-RW disc to make better use of the storage space on the CD-RW disc. → "Increasing the free space on a CD-RW disc—Optimize Disc" (p. 126)





For details on adjusting the input sensitivity of an input source, refer to "Adjusting the input sensitivity" (p. 113).

MEMO

You can use the Undo function (p. 138) to revert to the condition before re-recording.

Using a foot switch to punch-in/out

If you are playing an instrument at the same time that you operate the controls of the recorder, it will be difficult for you to perform punch-in/out operations using the REC [] button. In such cases, it is more convenient to press a separately sold **foot switch** (such as the DP-2 or BOSS FS-5U) instead of pressing the REC [] button.

1. **Connect an optional foot switch (DP-2, BOSS FS-5U, etc.) to the FOOT SWITCH jack.**

2. **Press [UTILITY].**

The Menu are displayed as icon.

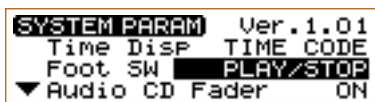
3. **Press CURSOR [] to select the System icon.**



4. **Press [YES/ENTER].**

The System settings screen appears.



5. **Press CURSOR [] to move the cursor to "Foot SW."**




6. **Turn the VALUE dial to select "PUNCH I/O."**

● **FSW Func (Foot Switch):**

PLAY/STOP:

Each time you press the foot switch, the song will alternately play back ([]) and stop ([]).


PUNCH I/O:

It will perform the same function as REC []. Use this to switch between punch-in recording and playback.

SAMPLER TRIG:

The samples specified for each pad bank will play. (→ "Playing a sample from a connected foot switch" p. 75)

7. **Press [DISPLAY] to return to the Basic screen.**

This changes the settings so that the foot switch will perform punch-in/out operations. Perform punch-in/out as described in "Using the Record button to punch-in/out" (p. 121). At this time, press the foot switch instead of pressing REC [].

Automatically punching-in/out at a specified location —Auto Punch-in/out

Auto punch-in/out is a function that automatically performs punch-in/out at the time locations that you specify beforehand. This is convenient when you wish to punch-in/out at precise times.

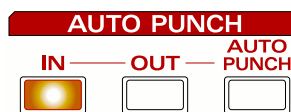
Specifying the area for recording

Before you begin recording, you must register the locations at which punch-in and punch-out will occur automatically.

1. **Move to the desired punch-in location.**

2. Press AUTO PUNCH [IN].

The current location will be registered as the punch-in location, and the button will light.



If you wish to re-do the setting, move to the punch-in location you registered, and press AUTO PUNCH [IN]. The registration will be cancelled, and AUTO PUNCH [IN] will go out.

3. Move to the desired punch-out location.

4. Press AUTO PUNCH [OUT].

The current location will be registered as the punch-out location, and the button will light.



If you wish to re-do the setting, move to the punch-out location you registered, and press AUTO PUNCH [OUT]. The registration will be cancelled, and AUTO PUNCH [OUT] will go out.

How to Record

1. For the audio track that you wish to re-record, press [STATUS] to get it to blink in red.

The selected audio track will be ready to record.

2. Move the fader of the selected audio track to the 0 dB position.

3. Listen to compare the input source volume with the volume of the audio track that you wish to re-record, and adjust the INPUT REC LEVEL knob to adjust the input sensitivity so that there is no difference in volume between the two.

4. After you have adjusted the input sensitivity, move to a location immediately before the area you wish to re-record.

5. Press [AUTO PUNCH].

The button will light, and auto punch-in/out will be on.



6. Press REC [] to enter record-ready mode.

7. Press PLAY [] to play it back.

At the point you specified for re-recording, punch-in will occur automatically. Play your instrument to re-record the performance.

At the point you specified for punch-out, the track will automatically change back to play mode.

8. Press STOP [] to stop playback.

A message of “Keep take? (NO/YES)” (Do you wish to save the take on CD-RW disc?) appears.

If you wish to save the take, press [YES/ENTER].

If you press [NO/EXIT], saving to CD-RW discs will be cancelled.

9. Listen to the result of the re-recording.

Return the song to a point earlier than you re-recorded, and play it back.

10. Press [AUTO PUNCH].

[AUTO PUNCH] will go out, and auto punch-in/out will be turned off.



There must be at least one second between the punch-in and punch-out points. It is not possible to set the punch-out point less than one second after the punch-in point.



If you wish to punch-in/out at the location of a marker, move to the marker location in steps 1 and 3 before you register the punch-in/out locations.

➔ “Moving to the location of a marker” (p. 129)



Once you have registered the punch-out location, you can press AUTO PUNCH [IN]/[OUT] to move to the registration locations.



For details on adjusting the input sensitivity of an input source, refer to “Adjusting the input sensitivity” (p. 113).



Even after auto punch-in/out has been turned off, you can press AUTO PUNCH [IN] or [OUT] to move instantly to those specified locations.

Recording an additional performance while listening to an existing performance —Overdubbing

The process of listening to a previously recorded performance while you record additional material on another audio track is called **overdubbing**. If you record drums, bass guitar, keyboard, guitar, and vocal parts on separate audio tracks, you can then adjust the volume balance between instruments and set the left/right position (pan).

Select the audio track to record

1. For the audio track that you wish to record, press [STATUS] to get it to blink in red.

With these settings, you are ready to record while listening to the performances of the audio tracks you selected for playback.

Recording while you listen to the playback

Record using the same procedure as in “Recording a performance” (p. 119).

If you wish to adjust the volume of the audio tracks that are playing, adjust the appropriate AUDIO TRACK fader.

At this time, the audio track selected as the recording destination will record only the sounds you are playing, and will not record the sound of the audio tracks that are playing back.



Overdubbing tip

When you record new material while listening to a recorded performance, your playing may tend to be buried in the existing performances, making it difficult for you to play. In such cases, you can slightly lower the faders of the audio tracks that are playing, or pan the playback tracks to the left (or right) and your own new performance to the right (or left), to make it easier to distinguish your own playing.



If at this time you select an audio track that has already been recorded, the new performance will be overwritten onto the previously recorded performance, replacing it.² For the audio tracks that you wish to play back, press [STATUS] to get them to light in green.



“Setting the left/right position (pan) of each audio track” (p. 132), “Setting the left/right position (pan) of the input sound” (p. 113)

Combining the performances of multiple audio tracks—Bounce Recording

Depending on the number of instruments that you wish to record, eight audio tracks may not be sufficient. In such cases, you can combine performances that were recorded on multiple audio tracks, and re-record them onto another track. This process is called **bounce recording**. By combining multiple performances in this way, you can free up other audio tracks in order to record additional performances.

Playback/recording audio tracks for bounce recording

Each track can either play back or record. For example if you are bouncing to two tracks in stereo, you will be able to play back the tracks that are not recording destinations; i.e., you will be able to play back six tracks simultaneously during bounce recording.

Bounce recording procedure

Here we will explain an example of how mono performances recorded on audio tracks 1 and 2 can be mixed with the stereo performance recorded on audio tracks 3-4, and bounce-recorded on audio tracks 7-8.

1. For audio tracks 1, 2, 3, and 4 that you wish to combine, press [STATUS] to get it to light in green.
2. Adjust the pan (left/right position) of the audio tracks for playback.
3. Press PLAY [▶] to play back, and use the AUDIO TRACK faders to adjust the volume balance.
4. Use the MASTER fader to adjust the overall volume (recording level).

At this time, raise the volume as high as possible without allowing the sound to distort. For the audio tracks that you do not want to mix (tracks 5-6), make their [STATUS] go dark to mute them.

5. When you adjust the volume, press STOP [■].
6. Press [BOUNCE] to get it to light.
7. Press the audio track 7 or 8 [STATUS].
The [STATUS] of audio tracks 7-8 will blink in red (recording-standby mode).
8. Press ZERO [0] to return the SONG POSITION to “00:00:00-00”.
9. Press REC [R].
REC [R] blink (recording-standby mode).
10. Press PLAY [▶], and recording will begin.
11. Press STOP [■] to stop recording.

A message of “Keep take? (NO/YES)” appears.

12. If you wish to save the take, press [YES/ENTER].

When CDX-1 complete to save, [BOUNCE] will go to dark, and the [STATUS] of the selected recording destination tracks will go light in green.

If you press [NO/EXIT], saving to CD-RW discs will be cancelled.

13. Listen to the result of bounce recording.

Press audio tracks 1-4 [STATUS] to go dark (mute). Return to the location at which you began recording, and press PLAY [▶] to play back audio tracks 7-8.



NOTE

Once performances have been bounce-recorded to an audio track, it will no longer be possible to adjust the volume, pan, or equalization of a specific instrument or vocal. If you need to keep the option of individually adjusting pan, equalization, etc., of an audio track, you should not combine it with other tracks by bounce-recording.



“Adjusting the left/right position (pan) of each audio track” (p. 132)



Playing back and stopping a recorded performance

Playing back/stopping

1. For the audio tracks that you wish to play, press [STATUS] to get the button to light in green.
2. Press ZERO [◀◀] to return the SONG POSITION to “00:00:00-00” (beginning of the song).
3. Press PLAY [▶] to start playback.
4. Press STOP [■].
The song stops.

Adjusting the volume of each track

Use the AUDIO TRACK faders to adjust the playback volume of each audio track.

Silencing a specific audio track—Mute

1. Press [STATUS] to extinguish the light.
The sound of that track will be silenced (muted).
To hear the sound once again, press [STATUS] to get it to light in green.

Saving Song settings on a CD-RW disc

The following parameters can be saved on a CD-RW disc.

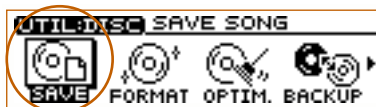
- Mixer parameter
- Rhythm Guide parameter
- Sequence parameter
- Song parameter
- Maker parameter
- Tempo Map parameter
- Effects Location parameter
- Master parameter

Saving Song settings

1. Press [UTILITY].
The Menu are displayed as icon.
2. Press CURSOR [▶] to select the CD-R/RW Disc icon.
3. Press [YES/ENTER].
The CD-R/RW Disc Menu are displayed as icon.



4. Make sure that the cursor is located at the Save Song icon.



5. Press [YES/ENTER].
The display will indicate “Processing...,” and the data will be saved. When saving is completed, the display will show a message of “Completed.”
6. Press [DISPLAY] to return to the Basic screen.

NOTE

When BUSY indicator is lit, CDX-1 is preparing for playback. Thus, the playback do not immediately start when it is lit. In this case, PLAY [▶] blinks.

NOTE

It is not possible to change the [STATUS] during the song is playing.



For details on each parameter, refer to “Parameter List” (p. 208).

NOTE

This operation does not save the Pad/Sequence to CD-RW. In order to save the Pad/Sequence, you must perform the operation “Saving Pad/Sequence” (p. 67).

MEMO

Song settings can be saved on a CD-RW disc, when the power is turned off (p. 34), when a CD-RW disc is removed (p. 36), or when you mixdown (p. 133).

Increasing the free space on a CD-RW disc —Optimize Disc

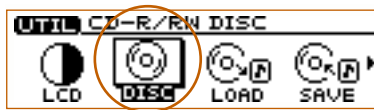
When you perform overdubbing (p. 124) or punch-in/out (p. 121), the data that you rewrite (replace) actually remains on the CD-RW disc. In some cases, this unwanted data may occupy a significant amount of space on the CD-RW disc. This will cause the time available for recording to be less than it should be.

By executing **Optimize** you can erase the unwanted data from the CD-RW disc, increasing the amount of available space on the CD-RW disc.

1. Press [UTILITY].

The Menu are displayed as icon.

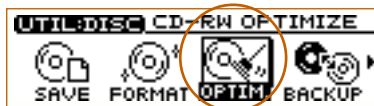
2. Press CURSOR [] to select the CD-R/RW Disc icon.



3. Press [YES/ENTER].

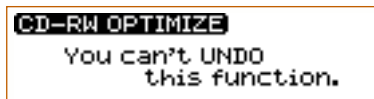
The CD-R/RW Disc Menu are displayed as icon.

4. Press CURSOR [] to select the Optimize Disc icon.



5. Press [YES/ENTER].

A message of "You can't UNDO this function." appears.



6. If you press [YES/ENTER], Optimize will be executed.

The display will show a message of "Completed." and the Basic screen will reappear.

If you press [NO/EXIT], the display of step 3 reappears without executing Optimize.

NOTE

After you execute Optimize, it is not possible to press [UNDO/REDO] (p. 138) to revert to the state before executing Optimize.

NOTE

Depending on the situation, an appreciable length of time may be required for Optimize to be completed. This is not a malfunction. While the processing bar appears, do not turn off the power with unplugging the AC adaptor.

Now Processing...

If you turn off the power during the Optimize operation, the CD-RW disc may become unusable, or the drive may be damaged.

Repeatedly playing a specified region —the Repeat function

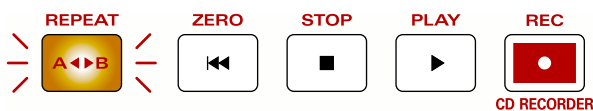
By using the Repeat function you can repeatedly play back a specified region. This is convenient when you wish to check the mix balance over and over.

Registering the repeat region

1. Turn the TIME/VALUE dial or press REW [◀◀] /FF [▶▶] to move to the location where you wish to begin repeating.

2. Press REPEAT [A ◀▶ B].

REPEAT [A ◀▶ B] will blink, indicating that the current location has been registered as the repeat start point (A).

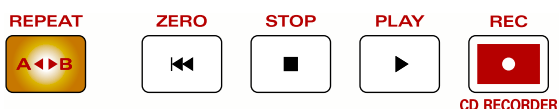


If you wish to re-do the registration, press REPEAT [A ◀▶ B] if the current location is the same as the repeat start point (A), and the registration will be cancelled. If the current location is past the repeat start point (A), press REPEAT [A ◀▶ B] twice to cancel the registration.

3. Turn the TIME/VALUE dial or press REW [◀◀] /FF [▶▶] to move to the location where you wish to stop repeating.

4. Press REPEAT [A ◀▶ B].

REPEAT [A ◀▶ B] will light, indicating that the current location has been registered as the repeat end point (B).



If you wish to re-do the registration, press REPEAT [A ◀▶ B] to cancel the registration, and then re-register, starting with the repeat start point (A).

5. When you press PLAY [▶], the region between the (A) and (B) points you registered will play repeatedly.

Canceling the registration

1. When REPEAT [A ◀▶ B] is lit, press REPEAT [A ◀▶ B] once again.

REPEAT [A ◀▶ B] will go out. The Repeat function will be cancelled, and the repeat start point (A) and end point (B) registrations will also be erased.

NOTE

The Repeat function and Punch-in/out recording cannot be used together.

MEMO

If you want to repeat at the location of a marker, move to the location of that marker in steps 1 and 3 before you register the repeat start/end points. → “Moving to a location of a marker” (p. 129)

NOTE

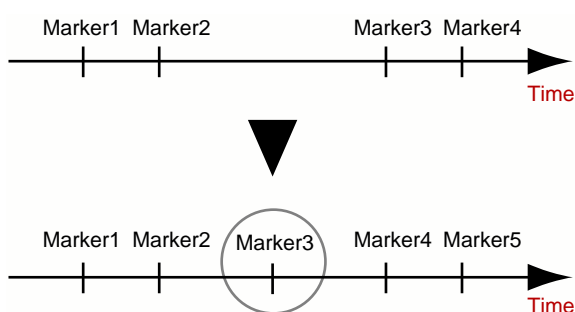
There must be at least one second between the repeat start (A) and end (B) points. Is not possible to set the end point less than one second away from the start point.

Assigning markers within a song—Marker

The Marker function lets you assign a marker at desired locations in the song. When this function is used, you can move instantly to the location of a marker that you registered, simply by specifying the appropriate marker number. This is also a great convenience for editing.

Markers are assigned a number in the range of 001–100, starting at the beginning of the song, and you can assign up to 100 markers. This means that if you register a new marker between existing markers, subsequent markers will be renumbered upward by one.

For example, if you add the following marker after marker number 2, the numbers will change as shown below.



Assigning a marker

Press [MARK]. A marker is assigned at the location where you pressed the button. Markers can be registered regardless of whether you are recording, playing, or stopped.

Moving to the location of a marker

To move to a marker earlier than the playback location, press SEARCH [<<<]. Each time you press SEARCH [<<<], you will move to the previous marker.

To move to a marker later than the playback location, press SEARCH [>>>].

Deleting a marker

Markers will make searching more convenient, but an excessive number of markers can actually make searching more difficult. It is a good idea to delete markers as they become no longer needed.

1. Press SEARCH [<<<] [<<<] to move to the marker that you wish to delete.
2. Press [MARK], and the marker will be deleted.

If markers exist after the deleted marker, they will be renumbered downward by one.



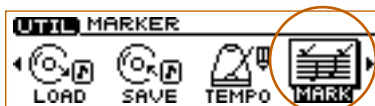
There must be at least one second between markers. It is not possible to assign a marker within 1 seconds of an existing marker.

Changing the location of a marker

1. Press [UTILITY].

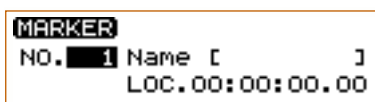
The Menu are displayed as icon.

2. Press CURSOR [←] to select the Marker Edit icon.



3. Press [YES/ENTER].

The Marker Edit screen appears.



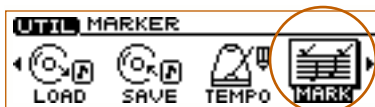
4. Make sure that the cursor is located at the “NO.”
5. Turn the TIME/VALUE dial to specify the number of the marker that you wish to edit.
6. Press CURSOR [→] to move the cursor to “LOC.”
7. Turn the TIME/VALUE dial to specify the desired location for the marker.
8. Press [DISPLAY] to return to the Basic screen.

Naming a marker

1. Press [UTILITY].

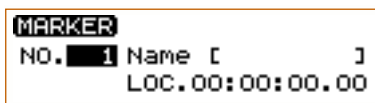
The Menu are displayed as icon.

2. Press CURSOR [→] to select the Marker Edit icon.



3. Press [YES/ENTER].

The Marker Edit screen appears.



4. Make sure that the cursor is located at the “NO.” line.
5. Turn the TIME/VALUE dial to specify the number of the marker that you wish to edit.
6. Press CURSOR [→] to move the cursor to “NAME.”
7. Use CURSOR [←] [→] to move the character location, and turn the TIME/VALUE dial to input the desired character.
8. When you have finished determining the name, press [DISPLAY].

The display returns to the Basic screen.

MEMO

A marker can be assigned a name of up to 8 characters.

Stopping the song automatically— Marker Stop

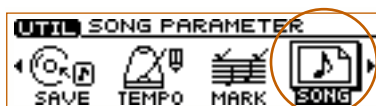
You can make playback stop at marker locations (**Marker Stop**).

When you play back after stopping, the song will play back to the next marker, and will then automatically stop again.

1. Press [UTILITY].

The Menu are displayed as icon.

2. Press CURSOR [] to select the Song Parameter icon.



3. Press [YES/ENTER].

The Song Parameter screen appears.



4. Press CURSOR [] to move the cursor to “Marker Stop.”

5. Turn the TIME/VALUE dial to select “ON.”

● **Marker Stop:**

If this is turned “ON,” playback will stop automatically at locations where a marker has been assigned.

6. Press [DISPLAY] to return to the Basic screen.



For details on assigning a marker, refer to “Assigning a marker” (p. 129).

Editing a recorded performance to create an audio CD

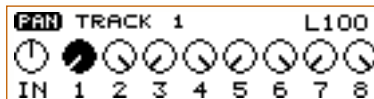
Preparing to write a CD-R disc—Mixdown

The process of combining the performances recorded on multiple audio tracks into two-channel stereo is called **mixdown**. Before you mixdown, you will complete the song by adjusting the tone (equalizer), left/right position (pan), loop effects, and volume balance settings of each track.

Setting the left/right position (pan) of each audio track

1. Press **TRACK EDIT [PAN]**.

The pan setting screen for the audio tracks appears.



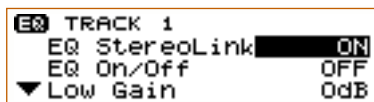
2. Press **CURSOR [◀] [▶]** to select the audio track that you wish to adjust.
3. Turn the **TIME/VALUE** dial to set the pan.
4. Press **[DISPLAY]** to return to the **Basic** screen.

Adjusting the tone of each audio track—Equalizer

The mixer section of the CDX-1 provides a two-band equalizer (EQ) for each audio track, allowing you to independently adjust the tone of the low-frequency and high-frequency ranges.

1. Press **TRACK EDIT [EQ]**.

The equalizer setting screen appears.



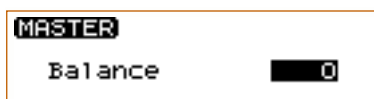
2. Press **CURSOR [◀] [▶]** to select the audio track that you wish to adjust.
3. Use **CURSOR [▲] [▼]** to move the cursor to the line of the parameter you wish to set.
4. Turn the **TIME/VALUE** dial to change the value.
→ For details on the parameters, refer to "Mixer effect parameter functions" (p. 174).
5. Press **[DISPLAY]** to return to the **Basic** screen.

Adjusting the overall volume balance—Master Balance

Here's how to adjust the overall volume balance.

1. Press **MASTER TRK [EDIT]**.

The Master Balance Setting screen appears.



2. Turn the **TIME/VALUE** dial to adjust the overall balance.
3. Press **[DISPLAY]** to return to the **Basic** screen.



For details on the loop effect, refer to "Using the loop effects" (p. 145).



Pan settings can also be changed while the song is being recorded. If you change the pan setting during recording, the changes will be recorded just as you make them.

Mixing down

After listening to repeated playbacks and adjusting the pan, equalizer, loop effects, and volume balance settings of each audio track to the desired settings, you are ready to mixdown.

1. Press AUDIO TRACK RECORD [MIX DOWN].

[MIX DOWN] will light, and you will be in mixdown-ready mode.

- * If the pad/sequence contained in the CDX-1's internal memory, a message of "Save PAD/SEQ Data?" appears, [MIX DOWN] will blink.

If you wish to save the pad/sequence on a CD-RW disc, press [YES/ENTER]. [MIX DOWN] will light.

If you press [NO/EXIT], a message of "You'll lose PAD/SEQ data. Go to MIXDOWN MODE?" appears. If you wish to go mixdown mode, press [YES/ENTER]. If you wish to cancel, press [NO/EXIT].

2. For audio tracks that you wish to include in the mixdown, press [STATUS] to make the button light in green.

- * Make sure that master track [STATUS] light in red.

3. Press ZERO [0] to return the SONG POSITION to "00:00:00-00" (beginning of the song).

Alternatively, you can move to a desired location so that recording will start from that point.

4. Press PLAY [▶].

Mixdown will begin.

5. When mixdown is finished, press STOP [■].

The screen will ask "Do you want to burn a CD? "

If you wish to create an audio CD, press [YES/ENTER] and continue with the procedure "Writing to a CD-R disc" (p. 135).

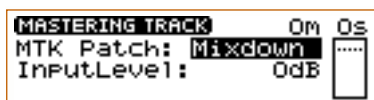
If you wish to make sure that the result of mixdown, press [NO/EXIT]. For detail refer to "Listen to the result of Mixing down", below.

Listen to the result of Mixing down

1. When the "BURNING CD?" message appears in step 5 of the above procedure, press [NO/EXIT].

2. Press master track [STATUS] to make the button light in green.

The mastering track screen appears.



3. Press PLAY [▶] to the beginning of the mastering track.

The song will play back. Adjust the settings of the mastering tools as necessary.

(→ "Adjusting the mastering tools"; p. 134)

4. When you are finished with test-listening, press STOP [■].

5. If you wish to write to the CD-R disc, press [CD BURNING] and continue with the procedure "Writing to a CD-R disc" (p. 135).



Once you carry out mixdown, pad/sequence held in internal memory of CDX-1 will be lost.



If you wish to cancel MIXDOWN MODE ([MIX DONW] is lit), press [MIX DONW] once again.



You cannot listen the song in CD burning mode.



If you press PLAY [▶] to play back the master track form top each time.



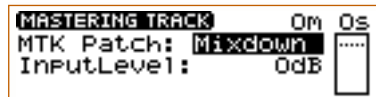
If you wish to redo mixing down, press master track [STATUS] to make the button blink in red. Return to step 2 of "Mixing down," above.



Adjusting the mastering tools

The mastering tools are a convenient set of tools that divide the sound into high-frequency, mid-frequency, and low-frequency ranges, and make the volume consistent so that the audio CD can be created with the optimal levels. There are 19 mastering tool patches, so you can select the patch that is most appropriate for your situation.

If [MASTERING TOOLS] will turn on, the data being written to the CD-R disc will use the mastering tools.

1. In step 2 of “Listen to the result of Mixing down,” above, the Mastering track screen appears.



2. Use CURSOR [] [] to move the cursor to the line of the parameter that you wish to adjust. Turn the TIME/VALUE dial to adjust the value.

● MTK Patch (mastering tools patch)

Mixdown:	Tools for audio CD production
PreMastr:	Tools for video pre-mastering
LiveMix:	Tools for final mix of a live recording
PopMix:	Tools for pop music
DanceMix:	Tools for dance music
JinglMix:	Tools for FM broadcast jingles
HardComp:	Heavy compressor
SoftComp:	Light compressor
ClnComp:	Cut background noise to clean up the overall sound
DnceComp:	Compressor for dance music
OrchComp:	Compressor for orchestra
VocalCmp:	Compressor for vocals
Acoustic:	Tools for acoustic guitar
RockBand:	Tools for rock band.
Orchestr:	Tools for orchestra.
LoBoost:	Tools to emphasize the low frequency
Brighten:	Tools to emphasize the high frequency
DJsVoice:	Tools for a DJ voice
PhoneVox:	Tools to model a telephone voice
Cassette:	Suitable for cassette Tapes.
Phono:	Suitable for analog record disks.

● Input Level

Adjust the volume level (-24–12 dB) that is sent to the mastering tools. The default setting is “0 dB.”



If you are in CD BURNING mode, [MASTERING TOOLS] will be turned on (lit) automatically.



You can select the mastering tools patch and adjust the input level in CD burning screen. However, you can not test-listening.

Completing your original CD—CD Burning

Here's how to write the mixed-down song to a CD-R disc to complete your own original CD.

When you create an original CD on the CDX-1, you will use the “**mastering tools**” to adjust the overall volume to the optimal level.

- * The CDX-1 uses **Track At Once** to write song data to a CD-R disc. A CD-R disc that was written using Track At Once allows additional song data to be written as long as you have not yet **finalized** the disc. However, the disc cannot be played in a conventional CD player until it has been finalized. Once a CD-R disc has been finalized, no further data can be written to it.

Writing to a CD-R disc

1. When the “Do you want to burn a CD?” message appears in step 5 of “Mixing down” (p. 133) or step 5 “Listen to the result of Mixing down”(p. 133), press [YES/ENTER].

A message of “Save SONG before eject?” appears.

If you wish to save, press [YES/ENTER].

A message of “Processing...” appears and CDX-1 saves setting of SONG (Parameter of Mixer, effects etc.) in CD-RW disc. When saving is completed, the disc tray will open, the screen indicates “Insert CD-R disc.”

If you press [NO/EXIT], CDX-1 will not save setting of SONG (Parameter of Mixer, effects etc.) in CD-RW disc. The disc tray will open, the screen indicates “Insert CD-R disc.”

2. Remove the CD-RW disc and insert a CD-R disc.

The CD burning screen appears.

CD RECORDER [] will blink (writing-ready mode).



- * You can select the mastering tools patch and adjust the input level in CD burning screen before writing to the CD-R disc. However, you can not test-listening.

3. Press **PLAY** [].

Writing to the CD-R disc will begin.

When writing is completed correctly, the screen will ask “Do you want to finalize a CD?”

4. If you wish to **finalize the disc**, press [YES/ENTER].

The screen will indicate “Now Processing...” and the disc will be finalized. When finalization is completed, the disc tray will open.

If you wish to add another song, press [NO/EXIT]. Finalize will not be executed, and the disc tray will open.

Finishing the CD Burning

1. Press [CD BURNING] or [NO/EXIT].

A message of “You'll lose MASTER TR. Are you sure?” appears.

2. Press [YES/ENTER], CD burning mode will finish.

[CD BURNING] will go dark.

Press [NO/EXIT], stay on CD burning mode.



For details on the mastering tools, refer to “Adjusting the mastering tools” (p. 134)



Track At Once (p. 18),
Finalize (p. 204)



For details of saved Song settings, refer to “Saving Song settings on a CD-RW disc” (p. 126).



Data is written to the CD-R disc at 1x speed.



If you wish to add other songs to the CD-R disc and execute Finalize later, refer to “Finalizing a CD-R disc” (p. 136).



Finalization will require approximately 1 minutes.

Finalizing a CD-R disc

Here's how to **finalize** an original CD that you created, so that it can be played on a conventional CD player.

1. **Insert the CD-R disc that you wish to finalize.**

2. **Press [UTILITY].**

The Menu are displayed as icon.

3. **Press CURSOR [] to select the CD-R/RW Disc icon.**



4. **Press [YES/ENTER].**

The CD-R/RW Disc Menu are displayed as icon.

5. **Press CURSOR [] to select the CD-R Finalize icon.**



6. **Press [YES/ENTER].**

The display will ask "CD-R finalize OK?"

7. **Press [YES/ENTER] once again.**

The display will indicate "Now Processing...", and finalization will be executed. When finalization is completed, the CD Player screen appears.

If you press [NO/EXIT], finalization will not be executed, and you're returned to step 5.

NOTE

Once a CD-R disc has been finalized, no further data can be recorded to it.

?

Finalize (p. 204)

MEMO

Finalization will require approximately 1 minutes.

Taking full advantage of the CDX-1

More functions for the CDX-1

Undoing a recording/editing operation

When you record or sample a performance, the recorded (or sampled) results may not always be as you expect. Or, you may make a mistake in editing. In such cases, you can use the **Undo function** to cancel the result of the preceding operation and return the data to its original state. Conversely, you can use the **Redo function** to cancel the last-performed Undo operation and go back to the recorded or edited data.

Undoing a recording or editing operation—Undo

When Undo is available, [UNDO/REDO] will light.

1. Press [UNDO/REDO].

[UNDO/REDO] will go out, and the previous recording or editing operation will be undone.

Canceling the Undo—Redo

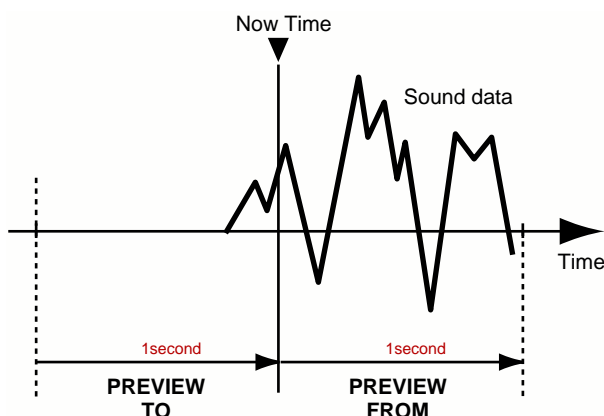
1. Press [UNDO/REDO].

[UNDO/REDO] will light, and the previous undo operation will be undone.

Cueing to a precise location—Preview

When you are editing the performance of an audio track or sequence track, there are times when you need to determine a precise editing location, such as the beginning of a specific sound or the point where a break begins. By using the **Preview function** you can search for the desired point while listening to the sound, and adjust the location with great precision.

Adjusting the current location while listening to the preceding and/or following sound



1. For the audio track whose sound you wish to check, press [STATUS] to make it light in green.
To play back a sequence track, turn [SEQ PLAY] on. Then in the Sequence Play List screen, select the sequence track (A–D) that you wish to play. (→ “Playing a sequence track”; p. 96)
2. With playback stopped, press **PREVIEW [TO]** or **[FROM]** to play back the sound as described below.
Press [TO]:
Playback once from one second before the current location to the current location.
Press [FROM]:
Playback once from the current location to one second after the current location.
3. While listening to the sound, turn the **TIME/VALUE dial** to make fine adjustments to the current location.

MEMO

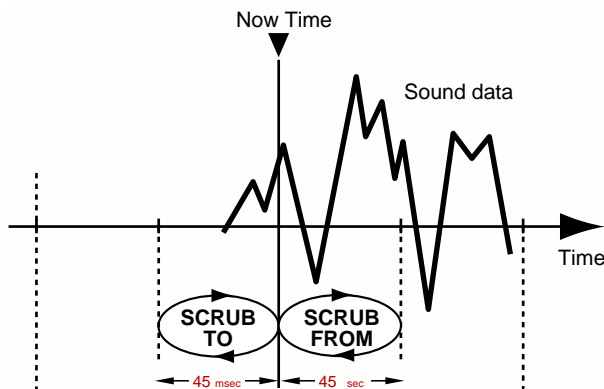
[TO] is convenient when you wish to set the current location to the beginning of a sound, and [FROM] is convenient when you wish to set the current location to the end of a sound.

MEMO

For an audio track, you can press [MARK] to mark the current location so that it can be easily found later. → “Assigning a marker” (p. 129)

Using Scrub to make fine adjustments in the cue location—Scrub Preview

An extremely short region (45 milliseconds) either before or after the current location will play back repeatedly. This is called the **Scrub** function.



NOTE

The Scrub Preview function will play back only **audio tracks**.

1. For the audio track that you wish to play, press the [STATUS] to make it light in green.
2. Press [SCRUB].
Scrub playback will begin.
3. While you listen to the sound and current time, turn the TIME/VALUE dial to move the current location in small steps, and find the moment at which the sound begins.
4. As necessary, press [TO] or [FROM] to switch the region that will be played back repeatedly.

[TO] is convenient when you wish to set the current location to the beginning of a sound, and [FROM] is convenient when you wish to set the current location to the end of a sound.

[TO]: Repeatedly play from a point 45 milliseconds before the current location, up to the current location.

[FROM]: Repeatedly play from the current location, up to a point 45 milliseconds after the current location.

5. When you have found the precise location at which the sound begins, press [SCRUB] once again.

[SCRUB] will go out, and Scrub Preview will be turned off.

MEMO

For an audio track, you can press [MARK] to assign a marker at the current location so that it will be easy to find again. → "Assigning a marker" (p. 129)

Using the insert effects

The CDX-1 comes with two onboard effects processors: an **insert effect** and **loop effects**. These two types can be used simultaneously, and you can make settings for each effect as desired.

What is an insert effect?

An **insert effect** is an effect that is applied directly to a specific signal line (in the case of the CDX-1, an input instrument or an audio track being played back). (The effect pedals that a guitarist connects between his guitar and amp are a type of insert effect.) For example, by applying an insert effect to an electric guitar connected to the CDX-1, you can distort the sound or transform the sound into the tone of an acoustic guitar. You can also modify the settings of an insert effect to create your own original sounds.

What is a patch?

The CDX-1 provides numerous effects for vocals, guitar, etc., and two or more of these effects can be used simultaneously. Such a combination of effects (i.e., the types of the effects used and the order in which they are connected) is called an **algorithm**. In addition, each effect has a variety of settings (parameters) that can be adjusted in order to change the sound. By editing the values of these parameters you can create a wide range of tonal characteristics. The settings for the overall state of the effects including the effect parameter values are stored as a unit called a **patch**. The effects used for the insertion effect together with the parameters of each effect can be changed by recalling a patch.

How the patches are organized

The CDX-1 provides a variety of **patches** suitable for vocals or various instruments (preset patches). The preset patches are organized into four groups. In addition to the preset patches, there are 100 user patches and 100 song patches in which you can store your own patches that you create.

● Preset patches (A001–A100, B001–B100)

The preset patches already contain patch data. The settings can be modified, but cannot be rewritten.

- LINE (line group): A001–A050
- SIMUL (simul group): A051–A100
- GUITAR/BASS (guitar/bass group): B001–B050
- MIC (mic group): B051–B100

● User patches (U001–U100)

User patches can be rewritten, and are stored in internal memory. If you have created a patch that you would like to use for other songs as well, it is convenient to store it as a user patch.

● Song patches (S001–S100)

Song patches can be rewritten, but are stored on the CD-RW disc together with the song data. This is convenient when you have created a patch for a specific recorded performance, and would like to store that patch together with the song.



“Using the loop effects”
(p. 145)



“What is a loop effect?”
(p. 145)



“Insert effect algorithm list”
(p. 175)



NOTE
Song patches (S001–S100)
cannot be selected unless a
CD-RW disc is inserted.

Using an insert effect

1. Press **INSERT EFFECTS [ON/OFF]**.
[ON/OFF] will light, and the sound processed by the effect will be output.
2. Press **INSERT EFFECTS [PATCH]**.

The patch select screen appears.

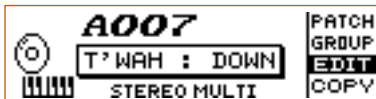


3. Turn the **TIME/VALUE** dial to select a patch.
When you switch patches, the effect sound will also change. While you listen to the effect sound, select the desired effect patch.
4. If you do not wish to use an insert effect, press **INSERT EFFECTS [ON/OFF]** once again.
[ON/OFF] will go out, and the insert effect will be off.

Editing the insert effect settings

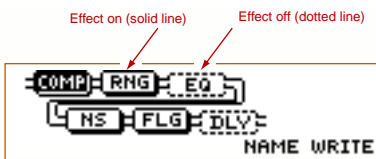
If you wish to create a new effect sound, you should first select an existing patch that is closest to the sound you want, and then edit its settings. If you wish to save the effect settings that you edited, save them as a user patch or song patch.

1. Press **INSERT EFFECTS [PATCH]**.
The patch select screen appears.
2. Turn the **TIME/VALUE** dial to select a patch that is close to what you intend to create.
3. Press **CURSOR []** to select "EDIT."
4. Press **[YES/ENTER]**.



The effect block diagram is displayed graphically.

5. Use **CURSOR [] [] [] []** to select an effect, and turn the **TIME/VALUE** dial to turn the effect on/off.



6. Use **CURSOR [] [] [] []** to select the effect whose parameters you wish to edit, and press **[YES/ENTER]**.
The parameter setting screen for the selected effect will appear.
7. Use **CURSOR [] []** to select a parameter, and turn the **TIME/VALUE** dial to edit the value.
8. If you would like to edit another effect, press **[NO/EXIT]** to return to the previous screen, and repeat steps 5–6.

* Edited effect settings are temporary. If you go back one screen without saving the edited patch, the patch number will be displayed as "TMP." While "TMP." is displayed, newly selecting a different patch will cause the edited patch to revert to its previous state, and your edits will be lost.



HINT

Insert effects can be used on a specific audio track during playback, or during mixdown (p. 133). → Refer to "Changing the insert effect connections" (p. 144).

MEMO

If you use **CURSOR []** to select "GROUP," then turn the **TIME/VALUE** dial, patches can be changed by groups.

MEMO


For further descriptions of each algorithm's function, please refer to p. 175–203.

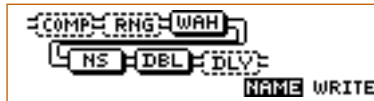
MEMO

If you wish to save the current effect settings, perform the procedure described in "Saving insert effect settings," below.

Saving insert effect settings



You can assign a name (patch name) to the edited effect settings, and save them. Continue with this procedure after the preceding section, "Editing insert effect settings."

1. In the screen that displays the effect block diagram, press CURSOR [] a number of times to select "NAME."

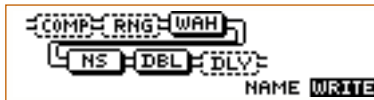


2. Press [YES/ENTER].

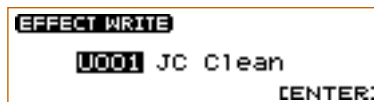
The Patch Name input screen will appear.

3. Use the TIME/VALUE dial and CURSOR [] [] to input the desired patch name.
4. When you are finished inputting the patch name and editing the settings of each effect, press [NO/EXIT] to return to the effect block diagram screen.

5. Press CURSOR [] to select "WRITE," and press [YES/ENTER].



6. Turn the TIME/VALUE dial to select the patch-save destination.



7. After you have specified the patch-save destination, press [YES/ENTER].
When the data has been saved, you're returned to the patch select screen.
8. Press [DISPLAY] to return to the Basic screen.

Copying a patch to create a new patch

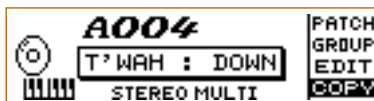
If you wish to create two or more patches with similar effect settings, it is convenient to copy the patch.

1. Press INSERT EFFECTS [PATCH].

The patch select screen appears.

2. Turn the TIME/VALUE dial to select the copy-source patch.

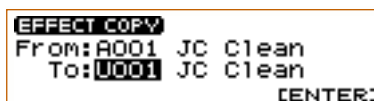
3. Press CURSOR [] to select "COPY."



4. Press [YES/ENTER].

The Copy Effect setting screen will appear.

5. Turn the TIME/VALUE dial to select the patch-copy destination.




6. When you have specified the patch-copy destination, press [YES/ENTER].
When the copy is completed, you're returned to the patch select screen.
7. Press [DISPLAY] to return to the Basic screen.

NOTE

Song patch data is not saved immediately when you write it; rather, it is saved to CD-RW disc when you save the song or when you automatically turn off the power. For this reason, the song patch data will be lost if you turn off the power by disconnecting the AC adaptor instead of using the power switch. Please use caution.

HINT

Press CURSOR [] to move the cursor to "From" line, you can change the copy-source patch.

During resampling

Using the loop effects

What is a loop effect?

The method of sending a signal from a mixer to an effect (the “send”), and then returning the output of the effect back to the mixer (the “return”) is called “**loop effect**.” When a loop effect is used, its output is generally mixed with the original sound.

The mixer section of the CDX-1 provides chorus/delay/doubling and reverb as loop effects. By using these you can add spaciousness to the sound.

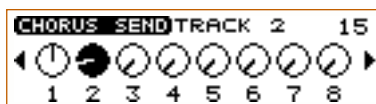
Since the send level is independent for each audio track, you can vary the effect depth for each track. For example, you might apply deep reverb to the vocal and light reverb to the drums.

Editing the loop effect settings

Chorus/delay/doubling

1. Press **LOOP EFFECTS [DELAY]**.

A screen will appear in which you can adjust the volume (send level) that is sent from the pad and each audio track to chorus/delay/doubling.



2. Press **CURSOR [◀] [▶]** to select the audio track for which you wish to make settings.

When you wish to use the loop effect to the PAD, use **CURSOR [▶]** to move the “PAD.”

MEMO

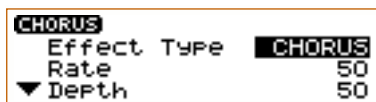
You can continue pressing **CURSOR [◀] [▶]** and adjust the send level of the input source.

When the input source is recorded/sampled adding of the loop effects, the sound with the added effects is recorded/sampled.

You can also continue pressing **CURSOR [▶]** and adjust the send level of the rhythm guide.

3. Turn the **TIME/VALUE** dial to adjust the send level.
4. Press **LOOP EFFECTS [DELAY]** once again.

The chorus/delay/doubling setting screen appears.



5. Make sure that the cursor is located at the “Effect Type” line.
6. Turn the **TIME/VALUE** dial to select the effect.
For details on other parameters, refer to “Mixer effect parameter functions” (p. 174).
7. Press **[DISPLAY]** to return to the Basic screen.

NOTE

Chorus/delay/doubling cannot be used simultaneously. You must select one of them.

Using the loop effect to create doubling

One technique for spreading the backing guitar between left and right is to record the same backing performance twice (on separate audio tracks), and then pan the two tracks to left and right. This is known as **doubling**.

The CDX-1 provides a “DOUBL’N (doubling)” (p. 174) loop effect that lets you produce a doubling effect without having to record the same performance twice.

By using the “DOUBL’N (doubling)” effect, doubling can be applied to the mono recording of a channel after it has already been recorded.

Before you edit the parameters of the “DOUBL’N” (doubling) loop effect, set the pan settings of the audio track to far left or right.



For details on pan settings for an audio track, refer to “Setting the left/right position (pan) of an audio track.”

Reverb

Reverb consists of overlapping sounds reflected from the walls and floor. For example, if you clap your hands in a large room such as a church, the “wash” of sound that lingers is the reverb. The character of the reverb is affected by the size of the space (room, hall, etc.), its shape, and the materials of the wall or other reflecting surface.

1. Press LOOP EFFECTS [REVERB].

A screen will appear in which you can adjust the volume (send level) that is sent from the pad and each audio track to the reverb.



2. Press CURSOR [◀] [▶] to select the audio track for which you wish to make settings.

When you wish to use the loop effect to the PAD, use CURSOR [◀] [▶] to move the “PAD.”

MEMO

You can continue pressing CURSOR [◀] [▶] and adjust the send level of the input source.

When the input source is recorded/sampled adding of the loop effects, the sound with the added effects is recorded/sampled.

You can also continue pressing CURSOR [▶] and adjust the send level of the rhythm guide.

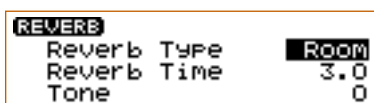
3. Turn the TIME/VALUE dial to adjust the send level.

4. Turn the RTN LEVEL knob to adjust the return level.

5. Press LOOP EFFECTS [REVERB] once again.

A Reverb Setting Screen appears.

For details on the parameters, refer to “Mixer effect parameter functions” (p. 174).



6. Press [DISPLAY] to return to the Basic screen.

Creating a backup CD-RW disc

If you have a CD-RW disc that contains important performance data, it is a good idea to copy it onto another CD-RW disc to create a backup before the data is lost or damaged.

Backing up song data on a CD-RW disc

Before you begin the backup, you must obtain a CD-RW disc that has been formatted on the CDX-1.

→ “Preparing a CD-RW disc for use” (p. 110)

1. Press [UTILITY].

The Menu are displayed as icon.

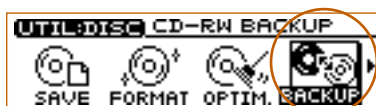
2. Press CURSOR [] to select the CD-R/RW Disc icon.



3. Press [YES/ENTER].

CD-R/RW Disc Menu are displayed as icon.

4. Press CURSOR [] to select the CD-RW Backup icon.



5. Press [YES/ENTER].

A message of “Prepare a formatted destination disc.” appears.

6. Press [YES/ENTER].

A message of “Please insert the source disc.” appears, and the disc tray opens.

* If the pad/sequence contained in the CDX-1's internal memory, a message of “You'll lose PAD/SEQ data. Are you sure?” appears.

If you press [YES/ENTER], all Pad/Sequence will be lost, and you will go to step 7.

Press [NO/EXIT] to return to the display of step 5. If you wish to save Pad/Sequence, follow the procedure described of “Saving Pad/Sequence.” (p. 67).

7. Insert the backup-source CD-RW disc.

The display will indicate “Reading...” and the CDX-1 will begin reading the CD-RW disc.

A message “Please insert the Destination disc.” appears, and the disc tray opens.

8. Insert the backup-destination CD-RW disc.

The display will indicate “Writing...” and the CDX-1 will begin writing the CD-RW disc.

The display of step 6 (“Please insert the source disc.”) reappears, and the disc tray opens.

9. As directed by the instructions that appear in the screen, alternately insert the CD-RW disc.

When the backup has been completed, the display will show a message of “Completed.” Press [YES/ENTER] return to the display of step 5.

10. Press [DISPLAY] return to the Basic screen.

MEMO

Backing up a CD-RW disc requires a considerable amount of time. It can take as long as twenty minutes. The number of times that discs must be exchanged will depend on the amount of performance data saved on the CD-RW disc and on the amount of internal memory.

NOTE

When you backup song data, all data previously on that CD-RW disc will be erased. Be careful not to insert a CD-RW disc that contains data you wish to keep.

Connecting with a digital audio device

The output of a digital audio device such as a CD player, DAT recorder, or MD recorder can be directly recorded in digital form on the CDX-1.

In Order to Make a Digital recording with CD player

At the factory settings, the CDX-1 cannot record the output of a digital audio device via the OPTICAL IN or COAXIAL IN connectors. If you wish to make connections with a digital audio device, you must perform the following procedure.

1. Press [UTILITY].

The Menu are displayed as icon.

2. Press CURSOR [] to select the System icon.



3. Press [YES/ENTER].

The System settings screen appears.

4. Press CURSOR [] to move the cursor to "CD DigitalREC."



5. Turn the TIME/VALUE dial clockwise.

"Obey Copyright? See Owner's Manual" appears in the display.



6. Carefully read the condition for permission that are listed on the back cover of this manual, and if you agree to the condition, press [YES/ENTER].

Parameter of "CD DigitalREC" changes to "ON."

Subsequently you will be able to use digital connections from a digital audio device such as a CD player.

If you do not agree with the terms, press [NO/EXIT]. The setting will remain "OFF," and the System settings screen reappears.

7. Press [DISPLAY] to return to the Basic screen.

To Prevent Digital recording with CD players

1. Press [UTILITY].


The Menu are displayed as icon.

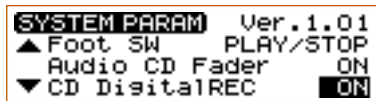
2. Press CURSOR [] to select the System icon.



3. Press [YES/ENTER].

The System settings screen appears.

4. Press CURSOR [] to move the cursor to "CD Digital REC."



5. Turn the TIME/VALUE dial to select "OFF."

Subsequently it will not be possible to use digital connections from a digital audio device such as a CD player.

6. Press [DISPLAY] to return to the Basic screen.

Prohibiting digital copying—Digital Copy Prohibit

When digitally recording from the CDX-1 to an MD recorder or similar device, you can prohibit subsequent digital copying from the recorded MD to another MD recorder.

If digital copying is prohibited, it will be impossible for the MD that was digitally copied from the CDX-1 to be subsequently copied in digital form to another MD.

1. Press [UTILITY].


The Menu are displayed as icon.

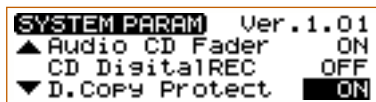
2. Press CURSOR [] to select the System icon.



3. Press [YES/ENTER].

The System settings screen appears.

4. Press CURSOR [] to move the cursor to "D.Copy Protect."



5. Turn the TIME/VALUE dial to select "ON."

Subsequently, it will not be possible for a MD digitally recorded from the CDX-1 to be again copied in digital form to another MD recorder.

● D.Copy Protect (digital copy protect):

Specify whether digital copying of a digitally copied tape will be prohibited.

ON: Digital copying will be prohibited.

THRU: A "Copy Protect Signal" is output with digital signals that are input from DIGITAL IN (COAXIAL IN or OPTICAL IN) with "Copy Protect Signal."

When using the CD player functionality (p. 49) of the CDX-1, a "Copy Protect Signal" is output with digital signals that are playing back track with "Copy Protect Signal."

6. Press [DISPLAY] to return to the Basic screen.

* Some DAT recorders do not support SCMS, or do not allow digital connections to a CD player. If you are using this type of DAT recorder, it will not be possible to record the digital output of the CDX-1 on a DAT recorder if "D.Copy Protect" is turned "ON." In such cases, you will need to turn this setting "THRU."

? What is SCMS?

"SCMS" stands for "Serial Copy Management System." This is a function of consumer digital audio devices such as DAT recorders or MD recorders that protects the copyright of the producer by prohibiting second-generation and subsequent copies from being made digitally. If digital connections are made to a digital recorder that has this function, SCMS flags will be recorded along with the digital audio signals. Digital audio data that contains these flags cannot be recorded again via a digital connection.

Using the CDX-1 with other MIDI devices

MIDI Fundamentals

What is MIDI?

MIDI stands for “Musical Instrument Digital Interface.” This is a worldwide standard that was developed in order to allow music data and sound data to be exchanged among electronic musical instruments and computers. Devices that are MIDI-compatible can exchange music data according to their capabilities, even if they are different types of device or were made by different manufacturers.

MIDI channels

MIDI allows data to be transmitted independently to multiple MIDI devices over a single MIDI cable. This is made possible by the concept of “MIDI channels.”

You can think of MIDI channels as being similar to television channels. Although many broadcast channels are in the air at any one time (many channels of MIDI data are moving through a single cable), a television set receives only the channel to which it is set (the MIDI device receives only the channel to which it is set).

The same is true in the case of MIDI. If a transmitting device is set to MIDI channel “1,” the MIDI messages will be received by receiving devices that are also set MIDI channel “1.”

MIDI Implementation Chart

MIDI allows a wide variety of electronic musical instruments to communicate with each other. However, it is not necessarily the case that every device is able to transmit and receive every type of MIDI message. Only MIDI messages that are supported by both devices can be conveyed.

The operating manual of every MIDI device includes a “MIDI implementation chart.” This chart makes it easy to see the types of MIDI message that can be transmitted and received. When you wish to connect two MIDI devices, you should compare their charts to see which types of MIDI message can be conveyed between them.



For details on the MIDI functionality of the CDX-1, refer to “MIDI Implementation chart” (p. 216).

Switching MIDI OUT/THRU

MIDI messages (the data handled by MIDI) is transferred using the following three types of connector.

MIDI IN: This connector receives MIDI messages from another MIDI device.

MIDI OUT: This connector sends MIDI messages from the CDX-1.

MIDI THRU: MIDI messages received at the MIDI IN connector are re-transmitted without change from this connector.

The CDX-1 provides a single connector that can be used either as MIDI OUT or MIDI THRU. At the factory settings, it functions as MIDI OUT. You can change this setting as necessary.

1. Press [UTILITY].

The Menu are displayed as icon.

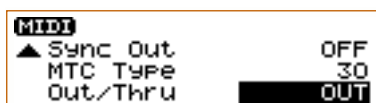
2. Use CURSOR [] to select the MIDI icon.



3. Press [YES/ENTER].

The MIDI settings screen appears.

4. Press CURSOR [] to move the cursor to "Out/Thru" line.



5. Turn the TIME/VALUE dial to select either "OUT" or "THRU."
6. Press [DISPLAY] to return to the Basic screen.

Using MIDI to control the CDX-1 from another device

The CDX-1 can be controlled in the following ways by MIDI messages from another MIDI device.

Play samples

By sending MIDI note messages from a keyboard or drum pad to the CDX-1, you can play the eight samples of the selected pad bank.

To play the samples of the CDX-1, you can choose one MIDI channel from channels 1–16.

1. Press [UTILITY].

The Menu are displayed as icon.

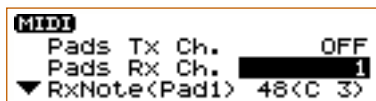
2. Press CURSOR [] to select the MIDI icon.



3. Press [YES/ENTER].

The MIDI settings screen appears.

4. Make sure that the cursor is located at the “Pads Rx Ch.” line.



5. Turn the TIME/VALUE dial to select a channel in the range of “1”–“16.”

If you select “OFF,” samples cannot be played by any MIDI channel.

6. Press [DISPLAY] to return to the Basic screen.

At the factory settings, the pads correspond to MIDI note numbers (numbers that indicate keyboard locations) as follows.

Pad	1	2	3	4	5	6	7	8
MIDI Note	C3	C#3	D3	D#3	E3	F3	F#3	G3
Note	48	49	50	51	52	53	54	55

Changing the correspondence between pads and note numbers

1. Press [UTILITY].

2. Press CURSOR [] to select the MIDI icon, and press [YES/ENTER].

The MIDI settings screen appears.

3. Press CURSOR [] to move the cursor to “Rx Note (Pad1).”

4. Turn the TIME/VALUE dial to specify the note number.

5. Press [DISPLAY] to return to the Basic screen.

Switch the pad bank

The eight samples of the selected pad bank are the only the samples that can be played by MIDI note messages. To switch the pad bank, use **program change messages**.

Of the program numbers sent to the CDX-1, only 1–64 are valid. These select pad banks 1 through 64 respectively. Program numbers 65–128 will be ignored.

MEMO

The “Pads Tx Ch.” parameter specifies the MIDI channel that will be used to control another MIDI device when you press the pads of the CDX-1.

MEMO

Eight consecutive MIDI note numbers are used, according to the pad numbers. You are free to specify which note number will be the first (i.e., pad [1]) (see the following section).

Synchronized playback with the CDX-1 as the master

The CDX-1 can operate in synchronization with a MIDI sequencer. Synchronization can be accomplished using **MTC (MIDI Time Code)**.

Master and slave

When the CDX-1 plays in synchronization with a MIDI sequencer, the device that transmits the time data is called the **master**. The device that receives the time data transmitted by the reference device (master) and follows this data is called the **slave**.

When playing in synchronization with a MIDI sequencer, the CDX-1 can be used as the **master (transmitting) device**, but not as the **slave (receiving) device**. Also, the MIDI sequencer must be set as the slave (receiving) device.



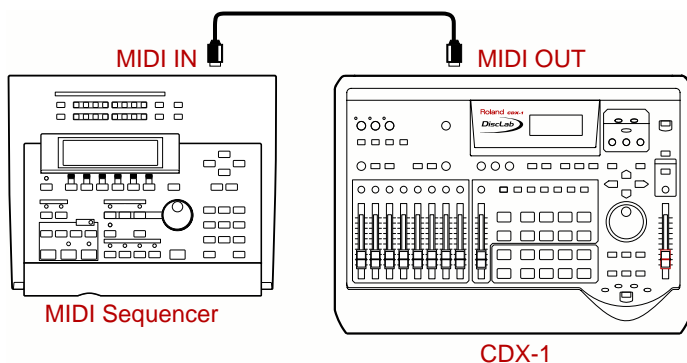
MTC (p. 205)



For details on operation of your MIDI sequencer, refer to the operating manual for your device.

Using MTC (master)

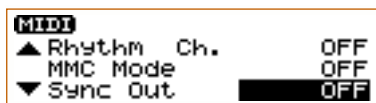
1. Use a MIDI cable to connect the CDX-1 and your MIDI sequencer as shown in the diagram.



2. Press [UTILITY].
The Menu are displayed as icon.
3. Press CURSOR [] to select the MIDI Parameter icon.



4. Press [YES/ENTER].
The MIDI settings screen appears.
5. Press CURSOR [] to move the cursor to "Sync Out" line.



6. Turn the TIME/VALUE dial to select “MTC.”

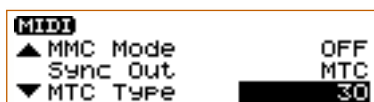
● **Sync Out:**

Select whether or not the synchronization signals that will be transmitted from the MIDI OUT/THRU connector.

Off: Synchronization signals will not be output.

MTC: MIDI Time Code will be transmitted.

7. Press CURSOR [] to move the cursor to “MTC Type” line.



8. Turn the TIME/VALUE dial to select the MTC type (30, 29N, 29D, 25, or 24).

● **Sync MTC Type (MTC Type):**

Check the specifications of the MIDI sequencer you are using, and match the MTC setting of the CDX-1 and your MIDI sequencer.

30: 30 frames per second, non-drop. This format is used for audio devices such as tape recorders, and for NTSC-format black and white video.

29N: 29.97 frames per second, non-drop. This format is used for NTSC-format color video.

29D: 29.97 frames per seconds, drop-frame. This format is used for NTSC-format broadcast color video.

25: 25 frames per second. This format is used for SECAM/PAL-format video and audio devices, and film.

24: 24 frames per second. This format is used in the United States for video and audio devices for and film.

9. Press [DISPLAY] to return to the Basic screen.

10. Make settings on your MIDI sequencer so that it can receive MTC from an external device, and prepare it to play back MIDI song data.

When the CDX-1 begins playing, the MIDI sequencer will also begin playing in sync with it.



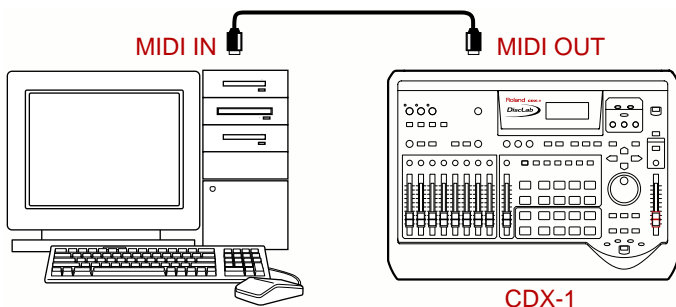
Frames (p. 205),
NTSC-format (p. 206),
SECAM/PAL-format
(p. 206)

Using MMC

This section explains how to make settings for synchronizing the playback with a computer-based MIDI sequence program that supports MMC and MTC.

Using the CDX-1 as the MMC master

1. Make connections as follows.



The CDX-1 will be the master for MMC and MTC.

2. Press [UTILITY].

The Menu are displayed as icon.

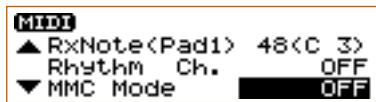
3. Press CURSOR [] to select the MIDI icon.



4. Press [YES/ENTER].

The MIDI settings screen appears.

5. Press CURSOR [] to move the cursor to "MMC Mode" line.



6. Turn the TIME/VALUE dial to select "MASTER."

● **MMC Mode:** Specify how the CDX-1 will use MMC.

Off: MMC will not be transmitted.

MASTER: MMC will be transmitted. The CDX-1 will be the master for external MIDI devices.

SLAVE: MMC will be received. The CDX-1 operates as the slave of an external MIDI device.

7. Make settings to allow MTC synchronization.

Use the procedure of step 5 and following in "Using MTC (master)" (p. 154).

8. Make settings on your sequence software.

Make the following settings on your sequencer software. For details on making these settings, refer to the manual for your sequencer software.

- MTC: receive
- MTC type: same setting as the MTC Type selected on the CDX-1
- MMC: receive

9. Press [DISPLAY] to return to the Basic screen.




MMC (p. 205)



Some MIDI devices do not support the CDX-1's MMC functionality. If so, it will not be possible to operate them from the CDX-1 using the methods described here. For details on the MMC functionality supported by the CDX-1, read "MIDI Implementation" (p. 212).



For details on the supported MMC functions, refer to "MIDI Implementation" (p. 212).



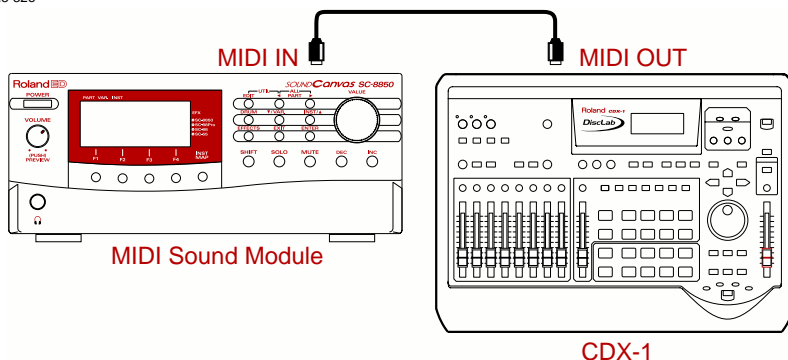
For details on the MMC
functionality that is supported,
refer to "MIDI
Implementation" (p. 212).

Using an external MIDI sound module to play the rhythm guide

The rhythm guide can be played using your favorite sounds on another MIDI device.

1. Use a MIDI cable to connect the CDX-1 and your MIDI sound module as shown in the diagram.

fig.5-32e



2. Press [UTILITY].


The Menu are displayed as icon.

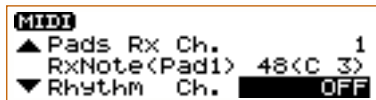
3. Press CURSOR [] to select the MIDI icon.



4. Press [YES/ENTER].

The MIDI settings screen appears.

5. Press CURSOR [] to move the cursor to "Rhythm ch" line.



6. Turn the TIME/VALUE dial to set the MIDI channel (1-16).

If you select "OFF," note messages of the rhythm guide will not be transmitted.

7. Press [DISPLAY] to return to the Basic screen.

How the rhythm guide sounds correspond to note numbers

Rhythm guide sound	Note number
Metronome (click: low tone)	A 1 (33)
Metronome (click: high tone)	A#1 (34)
Kick	C 2 (36)
Stick	C#2 (37)
Snare	D 2 (38)
Hand Clap	D#2 (39)
Closed hi-hat	F#2 (42)
Half open hi-hat	G#2 (44)
Open hi-hat	A#2 (46)

If your external MIDI sound module is GS- or GM-compatible, you can use it without further settings. If it is not compatible with either of these, you will need to make settings on your external MIDI sound module to change the sounds that correspond to each note number. For details on making these settings, refer to the manual of your MIDI sound module.



"Using the rhythm guide"
(p. 116)

MEMO



If you are using an external MIDI sound module to play the rhythm guide, use the controls of the external MIDI sound module to adjust the volume level.

CD direct recording

Recording to a CD-R disc—CD Recorder

The CDX-1 can record an external audio source directly to a CD-R without using the audio tracks.

NOTE

-   You must use CD-R discs that carry these logos.
- The CDX-1 writes song data to a CD-R using **Track At Once**. As long as the disc has not yet been **finalized**, additional song data can be added to a music CD-R that has been written using Track At Once. However, the disc cannot be played in a conventional CD player until it has been finalized. (→ “Finalizing a CD-R disc”; p. 136)
No further data can be added to a CD-R that has been finalized.
- Do not use this unit for purposes that could infringe on a copyright held by a third party. Roland assumes no responsibility whatsoever with regard to any infringements of third-party copyrights arising through your use of this unit.
- The CDX-1 and its CD-R capability are designed to allow you to reproduce material to which you have copyright, or material which the copyright owner has granted you permission to copy. Accordingly, reproduction of Music CD or other copyrighted material without permission of the copyright owner avoiding technical prohibiting features of second-generation and later copying like SCMS or others constitutes copyright infringement and may incur penalties even in case such reproduction is for your own personal use and enjoyment (private use). Consult a copyright specialist or special publications for more detailed information on obtaining such permission from copyright holders.



Track at once (p. 18),
Finalize (p. 204)

HINT

Using the mastering tools

You can use the mastering tools while recording an external input source. For details refer to “Adjusting the mastering tools” (p. 134).

If you wish to use the mastering tools, press [MASTERING TOOLS] to turn it on (lit). In this case, Pad/Sequence is held in internal memory will not be playable. (Pad may be extinguished and/or [SEQ PLAY] turn off.)



It is possible to set mastering tools for each in CD recorder screen. Press CURSOR [←] [→] to select “MTK” (mastering tool patch) and “IN” (input level), turn the TIME/VALUE dial to adjust value. For details on the mastering tools, refer to “Adjusting the mastering tools” (p. 134).

Recording an external audio source to a CD-R disc

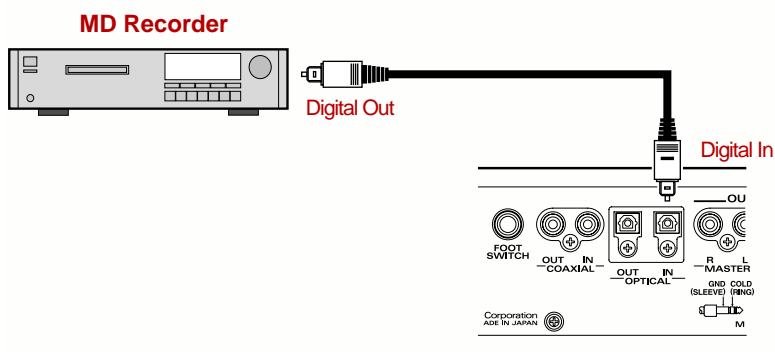
Here we will explain an example using digital connections with an external MD recorder.

The CDX-1 has two types of DIGITAL IN connector: coaxial and optical. This allows the output of a external digital audio device such as a CD player, DAT recorder, or MD recorder to be recorded onto a CD-R in digital form.

- * In order to record a digital audio signal into the CDX-1, it is not enough to simply connect the digital audio device to the OPTICAL IN or COAXIAL IN connectors. To allow digital audio signals to be recorded, you must make the setting described in “Connecting with a digital audio device” (p. 148).

1. Connect the digital in jack of the CDX-1 to the digital out jack of your external MD recorder. Make sure that the type of jack is correct.

e.g., Optical Connection



2. Insert an unused CD-R disc or a CD-R disc that has been written by the CDX-1.

- * When insert an CD-R disc written audio data, CD player screen appears.
- * When insert an unused CD-R disc, CD recording screen (step 3) appears.
- * You cannot record on a CD-R disc that has been finalized.

3. Press CD RECORDER [].

CD recording screen appears.

CD RECORDER [] will blink (recording-standby mode).



4. Press INPUT SELECT [DIGITAL].

5. Turn the INPUT REC LEVEL knob to adjust the level so that level meter moves as far as possible without exceeding the dotted line in the upper portion.

If INPUT REC LEVEL knob is set at in case of Digital In, input level will be “0 dB.”



6. Ready a MD (mini-disk) into your external MD recorder for immediate play.

7. Press PLAY [] to begin recording, and then start playback on your external MD recorder.

8. To stop recording, press STOP [].

If you wish to finalize the CD-R that you recorded, use the procedure described in “Finalizing a CD-R disc” (p. 136).

NOTE

It is not possible to use COAXIAL IN and OPTICAL IN inputs simultaneously. For details refer to “Panel Descriptions: INPUT section: [DIGITAL]” (p. 21).

NOTE

Except for input digital, adjustment of the input is necessary. For details refer to “Adjust the input sensitivity” step1 (p. 113).

MEMO

You can use the mastering tools while recording an external input source. For details refer to the column “Using the mastering tools” (p. 160).

Recording samples played using Pad Crossfade on a CD-R disc

The sound of samples played using Pad Crossfade can be recorded directly on a CD-R.



1. **Insert the CD-RW disc that contains the sample data you wish to record.**
 - “Sampling to a pad” (p. 56)
 - “Loading Pad/Sequenece from a CD-RW disc” (p. 68)
2. **Insert an unused CD-R disc or a CD-R disc that has been written by the CDX-1.**
 - * When insert an CD-R disc written audio data, CD player screen appears.
 - * When insert an unused CD-R disc, CD recording screen (step 3) appears.
 - * You cannot record on a CD-R that has been finalized.

3. **Press CD RECORDER [].**

CD recording screen appears.

CD RECORDER [] will blink (recording-standby mode).



4. **Press a pad, and Use the PAD/SEQ LEVEL fader to adjust the recording level so that level meter moves as far as possible without exceeding the dotted line in the upper portion.**
5. **Press [PAD X FADE].**
[PAD X FADE] will light, and pad crossfade will be turned on.
6. **Press PLAY [] to begin recording, and press a pad to play its sample.**
7. **If you press another pad while the first sample is sounding, the first-played sample will fade-out, and the sample of the subsequently played pad will fade-in as it begins sounding.**
8. **Continue pressing pads as desired.**
9. **To stop recording, press STOP [].**
10. **If you wish to finalize the CD-R disc, follow the procedure described in “Finalizing an CD-R disc” (p. 136).**



“Crossfading the pad sample you play—Pad Crossfade” (p. 71)



The mastering tools (p. 134) cannot be used.



You can connect an instrument and add your instrumental performance to the playback sound of the sequence.

Recording the sequence playback on a CD-R disc

Here's how you can record the playback sound of a sequence directly on a CD-R.

1. Press PAD SEQUENCING [SEQ PLAY].

[SEQ PLAY] lights, and the Sequence Play List screen appears.



2. Press CURSOR [] (down arrow).

A cursor appears on box A of "Tr.SEL" (track select).



3. Press CURSOR [] (right arrow) [] (down arrow) to move the cursor to the "Tr.SEL" (track select) box of the sequence track (A–D) that you wish to play.

4. Press CURSOR [] (right arrow).

The "Tr.SEL" (track select) box will be highlighted in black, indicating that it will play back.



To cancel your selection, press CURSOR [] (left arrow).

5. If you wish to record other sequence tracks as well, repeat steps 3–4.

6. Press PLAY [] (right arrow) to play back sequence track.

7. Use the PAD/SEQ LEVEL fader to adjust the recording level.

At this time, raise the volume as high as possible without allowing the sound to distort.

8. When you adjust the volume, press STOP [] (square).

9. Press ZERO [] (left arrow) to set SONG POSITION to "0001-01-000" (the beginning).

Alternatively, you can move to a desired location so that recording will start from that point.

10. Insert an unused CD-R disc or a CD-R disc that has been written by the CDX-1.

- * When insert a CD-R disc written audio data, CD player screen appears.
- * When insert an unused CD-R disc, CD recording screen (step 11) appears.
- * You cannot record on a CD-R that has been finalized.

11. Press CD RECORDER [] (red square).

CD recording screen appears.

CD RECORDER [] (red square) will blink (recording-standby mode).



12. Press PLAY [] (right arrow).

The sequence will play back, and will begin being written to the CD-R disc.

13. To stop recording, press STOP [] (square).

14. If you wish to finalize the CD-R disc, follow the procedure in "Finalizing a CD-R disc" (p. 136).



The mastering tools (p. 134) cannot be used.



You can connect an instrument and add your instrumental performance to the playback sound of the sequence.



In step 7, set master fader at position of "0 dB" to make the recording level moderate.

Memo...

Memo...

Appendices

Troubleshooting

If you encounter problems with the operation of the CDX-1, first check the following points. If after these steps the problem is still unresolved, consult your nearest Roland service center or authorized Roland distributor.

Problems with the sound

There is no sound whatsoever

- Is the power of the CDX-1 or any connected device turned on?
- Are all of the connections correct? (p. 32)
- Is any of the connection cables broken?
- Is the amp or mixer volume turned up?
- Is the Master fader up?

The volume level of the instrument connected to the INPUT jacks (MIC1, MIC2, GUITAR/BASS, LINE) is too low.

- Could you be using a connection cable that contains a resistor?

Use a connection cable that does not contain a resistor.

The input source cannot be heard

- Did you adjust the SENS knob?
- Has INPUT SELECT been muted?
(The INPUT SELECT indicator will be dark.)
- Has the INPUT REC LEVEL knob been set to "MIN"?

There is no sound from the audio tracks

- Are any audio track [STATUS] illuminated green?
- Are the audio track faders up?
- Are the audio tracks empty or recorded with no signal?

There is no pad (sample) sound

- Is the sample on an assigned pad (one that is illuminated)?
- Was the sound sampled with no signal?
- Are the PAD/SEQ LEVEL faders up?
- Is the volume setting (Volume) for the individual samples turned up?

Adjust the volume of a sample as described in "Adjusting the volume of a sample—Sample Level" (p. 76)

- Including audio tracks and sequence tracks, are there four stereo sounds being played?
- Are samples assigned to the same mute group?
Samples in the same mute group are prevented from being played simultaneously (p. 74).

There is no sound through the headphones

- Is the headphones knob (PHONES) turned up?
- Are the MASTER fader up?

There is no sound from the sequence tracks

- Has the [SEQ PLAY] been turned on?
When playing a sequence track, press PAD SEQUENCING [SEQ PLAY] and [SEQ PLAY] will be turned on. (p. 96)
- Are the PAD/SEQ LEVEL fader up?
- Are the audio tracks empty or recorded with no signal?
- Are the boxes "Tr.SEL" (track select) highlighted in black? (p. 96)

There is no sound from the audio CD

- Has the [SEQ PLAY] been turn off?
When playing a audio CD, the PAD SEQUENCING [SEQ PLAY] turn off. (The [SEQ PLAY] indicator will be dark.)
- Are the AUDIO CD fader (AUDIO TRACK 7-8 fader) up? (p. 52)

Unintended effects are added to the sound

- Are the internal effects turned on?
Press INSERT EFFECTS [ON/OFF] to turn the effects off. (p. 142)

The sound from the pad does not stop

- Is the sample "Pad Play" setting set to "DRUM?"
Because the sound is played up until the end point, it may seem that with long samples the sound indeed does not stop (p. 70).

The rhythm guide dose not sound

- Is the rhythm guide off?
Press RHYTHM GUIDE [ON/OFF] to turn the rhythm guide on. (p. 116)
- Is the rhythm guide level set to 0?
Press RHYTHM GUIDE[PATTERN/TEMPO] to access the Rhythm Guide screen, and raise the "Level" setting. (p. 116)

There is no sound only when the effects are in use

- **Is the output level of the inserted effects patch raised?**
Raise the output level of the patch as described in “Editing insert effect settings” (p. 142).

Sampling does not begin, even when [PAD REC] is pressed

- **Is the appropriate “Start with” setting selected? (p. 61)**

The effects sounds can not be recorded or sampled

- **Is the effect connection set to “INPUT (NORMAL)”?**
When recording or sampling, you must set the effect connection to “INPUT (NORMAL)” in order to record the sound that is processed by the effect. (p. 144)

Cannot record

- **Is a high-speed compatible CD-RW disc insert?**
- **Is the CD-R/RW disc inserted with the correct side facing up?**
Insert the CD-R/RW disc with its label facing upward.
- **Did you insert a CD-R disc that has already been finalized?**
Once a disc has been finalized, no further data can be recorded on it. Please use a new CD-R disc.
- **Does the CD-RW disc have insufficient remaining capacity?**
Please check the remaining available recording time. (p. 39)
- **Is INPUT SELECT button lit for the input source that you wish to record?**
- **Has the Scrub Playback function (p. 140) been turned on?**

The recorded or sampled sound is very distorted or noisy

- **Is the input sensitivity set appropriately?**
If the input sensitivity is too high, the recorded sound will be distorted. If it is too low, the input sound will be buried in noise. Adjust the INPUT SENS knob as high as possible without causing the peak indicator to light.
- **Are the equalizer settings appropriate?**
Some equalizer settings can cause the sound to distort even though the peak indicator does not light. Readjust the equalizer (p. 132).

- **Is the distortion a result of mixing multiple audio tracks?**
When bouncing tracks, distortion can result from excessive levels caused by the addition of the sounds from multiple audio tracks during mixing. Lower the audio track faders.
- **Is a distortion effect being applied to the sound?**
- **Is any INPUT SENS knob not currently in use turned up?**
To avoid additional noise, completely turn down any INPUT SENS knob not in use.

The recording comes out in mono sound

- **Is the sampling “Type” setting set to “MONO” (p. 61)?**
- **Have you selected the [STATUS] of only one audio track for recording?**
In order to record in stereo, you must select two audio tracks for recording. (p. 119)

When sampling, the very beginning of the sound is missing

- **Is the “Start with” setting (p. 61) value “LEV.1-8” set too high?**

The insert effects can not be applied

- **Is INSERT EFFECTS [ON/OFF] turned on (illuminated)? (p. 142)**
- **Is the “Insert Mode” setting (determining the insert effect connections) set appropriately? (p. 144)**

NOTE

It is not possible to apply the insert effect to the sound played by the pads.

The loop effects can not be applied

- **Is the effects send level for the pad and each audio track set to 0?**
Raise the effect send level as described in “Editing the loop effect settings” (p. 145)

Cannot digitally record

- Have you made settings to allow digital recording from your CD player?

At the factory settings, the CDX-1 cannot record the output of a digital audio device via the OPTICAL IN or COAXIAL IN connectors. You must change the settings as described in "In order to make a Digital recording with CD player" (p. 148).

- **Dose the sampling rate of the CDX-1 match that of the digital audio device.**

Set the digital audio device to a sampling rate of 44.1kHz.

- **Dose the digital signal format match.**

YOUR digital audio device may use a non-standard digital signal format. Connect the CDX-1 to a digital audio device that supports S/P DIF.

Problems with the CD-RW disc drive

The disc tray dose not open

- **Is the power turned on?**

If the power is not turned on, pressing the EJECT button will not open the disc tray.

In cases when pressing the EJECT button does not open the disc tray (such as during a power failure), remove the disc as described in "If the disc tray does not open" (p. 36).

Synchronization problems

When using MTC to synchronize the CDX-1 with a MIDI sequencer, the CDX-1 must be the master device.

- **Is the MIDI cable connected correctly?**
- **is the MIDI cable broken?**
- **If you are synchronizing with MTC, has the other device been set to the same MTC type? (p. 154)**
- **Is the "Out/Thru" setting (p. 152) correct?**
- **Has the MIDI sequencer been set correctly?**
- **Is the MIDI sequencer ready to play back?**
- **Dose the other device support the MMC commands of the CDX-1?**

Other problems

The foot switch is connected, but it is not working as intended

- **Have you made the appropriate system "Foot SW" setting?**

Set the "Foot SW" parameter in the System Settings screen. (p. 75, 122)

- **Did you connect or disconnect the foot switch while the power was turned on?**

Turn the power off before connecting or disconnecting the foot switch.

Can't make Pre-Trigger settings

- **Is the "Start with" (p. 62) setting appropriate?**

In order to set Pre-Trigger, the "Start with" setting must be "Lev.1"-"Lev.8."

DIMM checking does not end

DIMM checking takes approximately ten minutes to be completed. You can abort DIMM checking by pressing [NO/EXIT].

Display screen is difficult to read

Adjust the contrast as described in "Adjusting the brightness of the screen display" (p. 38).

The two input sources are mixed and recorded when you record in stereo using SIMUL.

When recording in stereo using SIMUL, set the input pan to "L100" (the far left) before you record.

→ "Setting the left/right position (pan) of the input sound" (p. 113)

Pad/Sequence was not saved to disc

Did you save the pad/sequence to disc before turning off the power?

→ "Saving pads/sequences" (p. 67)

Unable to make Audio CD

- Are you using CD-R disc?

It is impossible to make Audio CDs on CD-RW disc or on unwritable CD-ROM, Audio CD.

- Are you using CD-R disc that has been finalized?

The data on the CD-RW disc is corrupted or damaged

Damaged data may be caused by the following:

- Was the power turned off while the CD-RW disc drive was operating?
- Was a strong physical shock applied to the CD-RW drive?

Damaged or corrupted data cannot be restored.



NOTE
In some cases, by selecting "FULL" for the format type (p. 112), such disks may be used as blank disks. However, since these disks may be damaged or broken, do not store important data on them.

Major Message List

- **Bank is protected.**
The operation cannot be executed since the pad bank is protected.
- **Canceled.**
The operation was canceled.
- **Can't execute.**
Cannot execute this operation.
- **Can't insert to this point.**
Cannot insert to this point.
- **Can't UNDO.**
Undo is not possible.
- **Can't use PAD/SEQ now.**
Pad/Sequence cannot be used.
- **CD-ROM is not ready.**
The CD-ROM from which to load the WAVE file is not ready.
- **Checking disc...**
- **Checking...**
Now checking the disc. Please wait.
- **Coaxial input locked.**
Locked to digital input (coaxial).
- **Coaxial input unlocked.**
Could not lock to digital input (coaxial).
- **Completed.**
The operation has been completed.
- **Convert data. Are you sure?**
Do you want to convert the WAVE file?
- **DIMM error.**
An error occurred while checking the DIMM.
- **Disc is not for audio.**
This disc is not made for audio.
- **Disc full.**
The disc is full.
- **Do you want to burn a CD?**
Do you want to burn the CD?
- **Do you want to finalize a CD?**
Do you want to finalize the CD-R?
- **Do you want to initialize the disc?**
The data will be initialized when you execute the format operation. Do you want to execute?
- **Eject disc? (not saved)**
Do you want to eject the disc without saving the song?
- **Finalize failed.**
Failed to finalized the disc.
- **Format failed.**
Failed to format the disc.
- **Initialize All param. Are you sure?**
OK to initialize all parameters?
- **Initialize Effects param. Are you sure?**
OK to initialize effect parameters?
- **Initialize Global param. Are you sure?**
OK to initialize global parameters?
- **Initialize Mixer param. Are you sure?**
OK to initialize mixer parameters?
- **Insert a Destination disc.**
This disc is the backup source disc.
Please insert the backup destination disc.
- **Insert CD-R disc.**
Insert a CD-R disc.
- **Insert CD-RW disc.**
Insert a CD-RW disc.
- **Keep take?**
Do you wish to save the data on CD-RW disc?
- **Load error.**
An error occurred while loading data.
- **Load PAD/SEQ data?**
Do you want load pad and sequence data?
- **Marker does not exist.**
There are no markers.
- **Master track does not exist.**
There is no master track.
- **Memory full.**
There is not enough memory to execute the operation.
- **Memory low, cannot UNDO. Continue?**
There is not enough memory to undo this operation. Execute anyway?
- **MTR disc not ready.**
The MTR disc is not inserted in the drive.
- **No PAD/SEQ data to save. Save anyway?**
No pad/sequence data was found.
- **Not CD-RW disc.**
This disc is not a CD-RW disc.
- **Not HIGH-SPEED CD-RW.**
This is not a high-speed compatible CD-RW disc.
- **Not supported.**
The specified file is not in a format that can be converted.
- **Not WAVE file.**
The specified file is not a WAVE file.
- **Now playing SCRUB.**
Now scrubbing.
- **Now Processing...**
Now processing. Please wait.
- **Now recording...**
Now recording pads.

- **Obey copyrights? See Manual for details.**
Do you agree to obey copyright law? Please refer to the owner's manual for details.
- **Optical input locked.**
Locked to digital input (optical).
- **Optical input unlocked.**
Unable to lock to digital input (optical).
- **Optimize failed.**
Failed to optimize.
- **Overwrite?**
- **Overwrite OK?**
The specified pad already contains a sample, which will be lost if overwritten. Do you want to overwrite anyway?
- **PAD/SEQ does not exist.**
There is no pad/sequence data.
- **PADS are Full. Use next bank?**
The pads of the bank are full. Do you want to use the next bank?
- **Patch write failed.**
Was not able to write the effect patch.
- **Please insert the Destination disc.**
Insert the backup destination disc.
- **Please insert the Source disc.**
Insert the backup source disc.
- **Press [ENTER].**
Press [YES/ENTER] at the timing you wish to set.
- **Read error.**
An error occurred while reading.
- **Read only disc.**
This disc is a read-only disc.
- **Reading...**
Now reading. Please wait.
- **Reading Disc Information.**
Now reading disc information. Please wait.
- **Recordable CD-R not ready**
A recordable CD-R is not ready.
- **Save error.**
An error occurred while saving.
- **Save PAD/SEQ data?**
Do you want to save the pad/sequence data?
- **Save SONG before eject?**
Do you want to save the song before ejecting?
- **Save SONG before shutdown?**
Do you want to save the song before shutdown?
- **Saving PAD/SEQ.**
Now saving the pad/sequence data.

- **Shutdown?**
Do you want to shutdown?
- **Song end.**
The end of the song has been reached.
- **Stop recorder.**
Please stop the recorder.
- **This is a blank disc. Do you want to format?**
This is a new disc. Do you wish to format it?
- **This is not a MTR disc. Insert a Destination disc.**
This disc is not for MTR.
Please insert the correct backup destination disc.
- **This is not a MTR disc. Insert a Source disc.**
This disc is not an MTR disc.
Please insert the correct backup source disc.
- **This PAD contains data. Cannot overwrite.**
This pad already exists.
- **There is no data on the PADS in this Bank.**
There is no pad in this bank.
- **Unknown disc**
This is an unknown type of disc.
- **Waiting trigger...**
Waiting for input level to trigger recording.
- **Waiting for PAD to start.**
Waiting for pad input to trigger recording.
- **Waiting play...**
Waiting for sequence start to trigger recording.
- **Waiting eject...**
Waiting for the disc to be ejected.
- **Waiting for PAD...**
Waiting for pad input.
- **Write error.**
An error occurred while writing.
- **Writing...**
Now writing. Please wait.
- **You'll lose MASTER TR. Are you sure?**
The master track data will be lost if you execute. OK to execute?
- **You'll lose PAD/SEQ data. Go to MIXDOWN Mode?**
Pad/Sequence data will be lost if you move to Mixdown mode. Is this OK?
- **You'll lose PAD/SEQ data during Shutdown. Sure?**
Pad/Sequence data will be lost if you shutdown. OK to shutdown?
- **You'll lose PAD/SEQ data during Diagnosis. Sure?**
Pad/Sequence data will be lost if you execute DIMM checking. OK to execute?
- **You'll lose PAD/SEQ data. Are you sure?**
Pad/Sequence data will be lost. OK?

Rhythm Pattern List

Beat	No.	Name	Measure
1/1	01	Metronom	1
2/1	01	Metronom	1
3/1	01	Metronom	1
4/1	01	Metronom	1
5/1	01	Metronom	1
6/1	01	Metronom	1
7/1	01	Metronom	1
8/1	01	Metronom	1

Beat	No.	Name	Measure
1/2	01	Metronom	1
2/2	01	Rockbly	2
2/2	02	Metronom	1
3/2	01	Metronom	1
4/2	01	Metronom	1
5/2	01	Metronom	1
6/2	01	Metronom	1
7/2	01	Metronom	1
8/2	01	Metronom	1

Beat	No.	Name	Measure
1/4	01	Metronom	1
2/4	01	Bossa 1	4
2/4	02	Bossa 2	2
2/4	03	Bossa 3	4
2/4	04	Metronom	1
3/4	01	Rock 1	2
3/4	02	Rock 2	2
3/4	03	Rock 3	4
3/4	04	Jazz	2
3/4	05	Ballad	2
3/4	06	Gospel	2
3/4	07	Metronom	1

Beat	No.	Name	Measure
4/4	01	Rock 1	2
4/4	02	Rock 2	2
4/4	03	Rock 3	2
4/4	04	Rock 4	2
4/4	05	Rock 5	2
4/4	06	Rock 6	2
4/4	07	Rock 7	2
4/4	08	Rock 8	2
4/4	09	Rock 9	4
4/4	10	Rock 10	2
4/4	11	Rock 11	2
4/4	12	Rock 12	1
4/4	13	Rock 13	2
4/4	14	Rock 14	2
4/4	15	Rock 15	2
4/4	16	Heavy 1	2
4/4	17	Heavy 2	2
4/4	18	Heavy 3	1
4/4	19	Ballad 1	1
4/4	20	Ballad 2	2
4/4	21	Blues 1	2
4/4	22	Blues 2	2
4/4	23	Blues 3	2
4/4	24	Shuffle	1
4/4	25	LtnRock 1	1
4/4	26	LtnRock 2	1
4/4	27	Bluegras	1
4/4	28	Country	2
4/4	29	Fusion	2
4/4	30	Jazz 1	2
4/4	31	Jazz 2	2
4/4	32	Gospel	2
4/4	33	Soul 1	1
4/4	34	Soul 2	1
4/4	35	Soul 3	2
4/4	36	Soul 4	2
4/4	37	Soul 5	2
4/4	38	Soul 6	1
4/4	39	Soul 7	1
4/4	40	Soul 8	1

Rhythm Pattern List

Beat	No.	Name	Measure
4/4	41	Funk 1	2
4/4	42	Funk 2	2
4/4	43	Funk 3	2
4/4	44	Funk 4	2
4/4	45	Funk 5	2
4/4	46	Funk 6	2
4/4	47	Funk 7	2
4/4	48	Funk 8	1
4/4	49	Funk 9	2
4/4	50	Funk 10	2
4/4	51	Reggae	2
4/4	52	Samba 1	2
4/4	53	Samba 2	4
4/4	54	EleRock 1	2
4/4	55	EleRock 2	2
4/4	56	Techno 1	2
4/4	57	Techno 2	2
4/4	58	Techno 3	1
4/4	59	House 1	1
4/4	60	House 2	2
4/4	61	House 3	2
4/4	62	Eurobt 1	1
4/4	63	Eurobt 2	1
4/4	64	Eurobt 3	2
4/4	65	Eurobt 4	2
4/4	66	Metronom	1
5/4	01	Rock	2
5/4	02	Jazz	1
5/4	03	Metronom	1
6/4	01	Rock	1
6/4	02	Metronom	1
7/4	01	Rock 1	2
7/4	02	Rock 2	1
7/4	03	Metronom	1
8/4	01	Metronom	1

Beat	No.	Name	Measure
1/8	01	Metronom	1
2/8	01	Metronom	1
3/8	01	Metronom	1
4/8	01	Metronom	1
5/8	01	Rock	4
5/8	02	Metronom	1
6/8	01	Rock 1	2
6/8	02	Rock 2	2
6/8	03	Blues	4
6/8	04	Metronom	1
7/8	01	Rock 1	4
7/8	02	Rock 2	2
7/8	03	Metronom	1
8/8	01	Metronom	1

Mixer effect parameter functions

EQ (Equalizer): This is a two-band equalizer that is independent for each track.

Parameter (full name)	Setting	Function
EQ StereoLink (EQ Stereo Link)	OFF, ON	When EQ Stereo Link is ON, you can have the setting for a pair of audio tracks, linked so that they adjust in the same way.
EQ On/Off (EQ On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Low Gain (Low Gain)	-12→+12 dB	This sets the gain (-12 to +12 dB) for the low-range equalizer (shelving type).
Low Freq (Low Frequency)	40 Hz–1.5 kHz	This sets the center frequency (40Hz to 1.5 kHz) for the low-range equalizer (shelving type).
High Gain (High Gain)	-12→+12 dB	This sets the gain (-12 to +12 dB) for the high-range equalizer (shelving type).
High Freq (High Frequency)	500–18 kHz	This sets the center frequency (500 Hz to 18 kHz) for the high-range equalizer (shelving type).

Loop Effect

CHORUS/DELAY/DOUBL'N (Chorus / Delay / Doubling)

Parameter (full name)	Setting	Function
Effect Type	CHORUS	A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.
	DELAY	This creates a thicker sound by applying a delayed sound to the direct sound.
	DOUBL'N	By adding a slightly time-delayed sound to the direct sound, this produces the impression that multiple sources are sounding together (a “doubling” effect). The delayed sound will be output from the side opposite to which the playback track has been panned.
■ When “CHORUS” is selected		
Rate	0–100	Adjusts the rate of the Chorus effect.
Depth	0–100	Adjusts the depth of the Chorus effect.
Pre Delay	0.5–50 mS	Adjusts the time needed for the effect sound to be output after the direct sound has been output.
Effect Level	0–100	Adjusts the volume of the effect sound.
■ When “DELAY” is selected		
Delay Time	10–1000 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
Feedback	0–100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level	0–100	This adjusts the volume of the delay sound.
Reverb Send	0–100	Adjust the volume of the reverb that is applied to the delayed sound. For details on reverb, refer to “Reverb” (p. 146).
■ When “DOUBL'N” is selected		
Delay Time	0.5–50 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
Effect Level	0–100	This adjusts the volume of the delay sound.

REVERB (Reberb): This feature adds reverberation to the sound to model the size of space such as a hall and a room.

Parameter (full name)	Setting	Function
Reverb Type	ROOM	Models the reverberation in a small room.
	HALL	Models the reverberation in a concert hall.
Reverb Time	0.1–10	This parameter adjusts the duration (time) of the reverb.
Reverb Tone	-12→+12	Adjusts the tone.

Insert effect algorithm list

Here we will explain the effects used by each algorithm and the order in which they are connected. The effect groups and the algorithms in each group are shown below.

To select the desired algorithm, refer to the separate “Effect patch list” and switch to a patch that uses the desired algorithm.

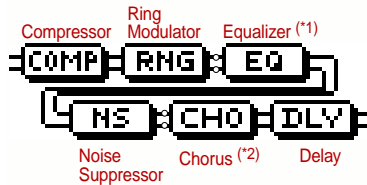
For details on how to switch patches, refer to “Using the insert effects” (p. 141).

Effect group	Algorithm
LINE	1. STEREO MULTI (p. 176)
	2. LO-FI BOX (p. 178)
SIMUL	3. VO+GT.AMP (Vocal+Guitar Amp) (p. 180)
	4. VO+AC.MDL (Vocal+Acoustic Modeling) (p. 182)
	5. VO+ACOUSTIC (Vocal+Acoustic) (p. 184)
GUITAR/BASS	6. COSM GUITAR AMP (p. 185)
	7. ACOUSTIC MDL (Acoustic Guitar Modeling) (p. 188)
	8. BASS MDL (Bass Guitar Modeling) (p. 190)
	9. ACOUSTIC GUITAR (p. 192)
	10. BASS MULTI (Bass Guitar Multi) (p. 194)
	11. COSM BASS AMP (COSM Bass Guitar Amp) (p. 196)
MIC	12. VOCAL MULTI (p. 199)
	13. VOICE TRANCEFORMER (p. 201)

Insert effect algorithm list

1. STEREO MULTI

This algorithm connects seven types of effect, all in full stereo.



*1 Equaliser can be replaced with Wad.



Wah

*2 Chorus can be replaced one of the following effects.



Flanger



Phaser



Pitch Shifter



Doubling



Tremolo/Pan

Parameter (full name)	Setting	Function
<ul style="list-style-type: none"> ● COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0–100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0–100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0–100	Adjusts the volume.
<ul style="list-style-type: none"> ● RNG (Ring Modulator): This creates a bell-like sound. The sound will be unmusical and lack distinctive pitches. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the ring modulator effect on/off.
Frequency (Frequency)	0–100	This adjusts the frequency of the internal oscillator.
Effect Level (Effect Level)	0–100	This adjusts the volume of the effect sound.
Direct Level (Direct Level)	0–100	This adjusts the volume of the direct sound.
<ul style="list-style-type: none"> ● EQ (Equalizer): A 4-band equalizer. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Low Gain (Low Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the bass equalizer.
Low-Mid Gain (Low-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the low-midrange equalizer.
Low-Mid Freq (Low-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the low-midrange equalizer.
Low-Mid Q (Low-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “Low-Mid Freq.” A larger value results in a narrower range of change.
High-Mid Gain (High-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the high-midrange equalizer.
High-Mid Freq (High-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the high-midrange equalizer.
High-Mid Q (High-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “High-Mid Freq.” A larger value results in a narrower range of change.
High Gain (High Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the treble equalizer.
Level (Output Level)	-20→+20 dB	This parameter adjusts the volume after the equalizer stage.

● **WAH (Wah): The wah effect creates a unique tone by changing the frequency response characteristics of a filter.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the wah effect on/off.
Polarity (Polarity)	UP	The frequency of the filter will rise.
	DOWN	The frequency of the filter will fall.
Sensitivity (Sens)	0–100	This adjusts the sensitivity at which the filter will change in the direction determined by the polarity setting. Higher values will result in a stronger response. With a setting of “0,” the strength of picking will have no effect.
Frequency (Frequency)	0–100	This adjusts the center frequency of the Wah effect.
Peak (Peak)	0–100	Adjusts the way in which the wah effect applies to the area around the center frequency. Lower values will produce a wah effect over a wide area around the center frequency. Higher values will produce a wah effect in a narrow area around the center frequency. With a value of “50” a standard wah sound will be produced.
Level (Level)	0–100	Adjusts the volume.

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”

NOTE

* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

● **Modulation effect type**

The Modulation effect type can be selected from the following effects. For details on each effect, refer to “Available types of modulation and their effect” (p. 202).

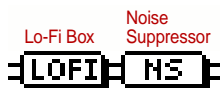
- **FLANGER (Flanger)** : The flanger effect gives a twisting, jet-airplane-like character to the sound.
- **CHORUS (Chorus)** : A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.
- **PHASER (Phaser)** : By adding varied-phase portions, the phaser effect gives a whooshing, swirling character to the sound.
- **P.SHIFT (Pitch Shifter)** : This effect changes the pitch of the original sound (up or down) within a range of two octaves.
- **DOUBL'N (Doubling)** : An effect of multiple sounds heard together (a doubling effect) is produced.
- **TRM/PAN (Tremolo/Pan)** : Tremolo is an effect that creates a cyclic change in volume.
Pan cyclically moves the stereo position between left and right (when stereo output is used).

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the delay effect on/off.
Effect Type (Type)	SINGLE	This is a simple delay.
	TAP	The delayed sound is panned across the left and right channels. This will be effective when stereo output is used.
Delay Time (Delay Time)	SINGLE: 1–1400 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
	TAP: 1–700 mS	
Feedback (Feedback)	0–100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level (Effect Level)	0–120	This adjusts the volume of the delay sound.

2. LO-FI BOX

This allows you to model sounds that appear to be playing on an AM radio, the sounds of old records played on an old-fashioned gramophone, and even extreme deformations of the sound produced by a Lo-Fi Digital.



Parameter (full name)	Setting	Function
● LOFI (Lo-Fi Box): Produces a lo-fi sound.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the lo-fi box effect on/off.
Type (Type)	RADIO	The sound will appear to be heard from an AM radio. By adjusting "Tuning," you can model the sounds that occur when you adjust the tuning frequency of the radio.
	PLAYER	The sound will appear to be heard from a gramophone. The noise caused by scratches and dust on the record are modeled.
	DIGITAL	This allows you to create a "lo-fi" sound by lowering the sample rate and/or decreasing the number of bits. Realtime modify filters connected in series allow you to reshape the sound freely.
■ When "RADIO" or "PLAYER" is selected		
Tuning (Tuning)	0–100	This is a parameter for "RADIO." It models the sounds that occur when you adjust the tuning frequency of an AM radio.
Wow Flutter (Wow Flutter)	0–100	This is a parameter for "PLAYER." It models the wow and flutter which occur when the speed of the turntable is not constant.
Noise (Noise)	0–100	This models noise.
Filter (Filter)	0–100	Adjusts the filter.
D:E Balance (Effect Balance)	100:0–0:100	This adjusts the volume balance of the direct and effect sounds.
■ When "DIGITAL" is selected		
Pre Filter (Pre Filter)	OFF, ON	This filter decreases digital distortion. By turning this off, you can create an extremely lo-fi sound that includes aliasing.
Sample Rate (Sample Rate)	OFF, 1/2–1/32	Modify the sample rate. If this is turned off, the sample rate will be the same as the sample rate of the currently selected song.
Bit (Bit) *	OFF, 15–1	Modify the number of data bits. If this is turned off, the number of data bits will be unchanged.
Post Filter (Post Filter)	OFF, ON	This filter decreases the digital distortion produced by lo-fi. By turning this off, you can create an extremely lo-fi sound.
Effect Level (Effect Level)	0–100	Adjust the volume of the lo-fi sound.
Direct Level (Direct Level)	0–100	Adjust the volume of the direct sound.
Modify Filter (Modify Filter)		The sound is passed through a filter to remove unwanted sound according to the frequency specified by Cutoff Freq (cutoff frequency).
	OFF	The Modify Filter will not be used.
	LPF	A Low Pass Filter will be applied to pass the sound that is below the specified frequency.
	BPF	A Band Pass Filter will be applied to pass the sound that is in the region of the specified frequency.
	HPF	A High Pass Filter will be applied to pass the sound that is above the specified frequency.
Cutoff Freq (Cutoff Freq)	0–100	Adjust the cutoff frequency.
Resonance (Resonance)	0–100	Adjust the resonance.
Gain (Gain)	0–24 dB	Adjust the volume level of the sound that has passed through the modify filter.



* If an extremely low number of bits is selected, loud noise may appear even when there is no sound, depending on the input source. In such cases, raise the threshold of the noise suppressor.

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”



* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

■ **Creating lo-fi sounds**

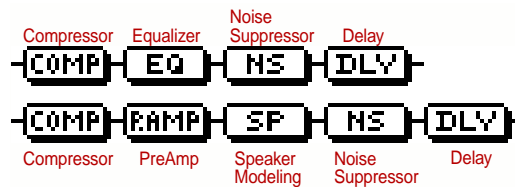
Follow the steps below to create lo-fi sounds essential to dance music including hip-hop and DJ music.

Lo-Fi Box

- Turn Pre Filter and Post Filter off.
- Set Sample Rate and Bit to relatively low values. Note, however, an excessively low value for Bit may cause big noise even in the silent mode. In that case, increase Threshold (Thresh) of Noise Suppressor.

3. VO+GT.AMP (Vocal+Guitar Amp)

This algorithm is for use when simultaneously recording a vocal and electric guitar. For the guitar, you can produce an amp sound using a preamp and speaker modeling.



■ MIC

Parameter (full name)	Setting	Function
<ul style="list-style-type: none"> ● COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0–100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0–100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0–100	Adjusts the volume.
<ul style="list-style-type: none"> ● EQ (Equalizer): A 4-band equalizer. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Low Gain (Low Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the bass equalizer.
Low-Mid Gain (Low-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the low-midrange equalizer.
Low-Mid Freq (Low-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the low-midrange equalizer.
Low-Mid Q (Low-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “Low-Mid Freq.” A larger value results in a narrower range of change.
High-Mid Gain (High-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the high-midrange equalizer.
High-Mid Freq (High-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the high-midrange equalizer.
High-Mid Q (High-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “High-Mid Freq.” A larger value results in a narrower range of change.
High Gain (High Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the treble equalizer.
Level (Output Level)	-20→+20 dB	This parameter adjusts the volume after the equalizer stage.
<ul style="list-style-type: none"> ● NS (Noise Suppressor): This effect reduces the noise and hum. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”



* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the delay effect on/off.
Delay Time (Delay Time)	SINGLE: 1–1400 mS TAP: 1–700 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
Feedback (Feedback)	0–100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level (Effect Level)	0–120	This adjusts the volume of the delay sound.

■ **GUITAR**

Parameter (full name)	Setting	Function
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● **COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value.**

For details on the parameters, refer to "COMP" on the preceding page.

● **P.AMP (Preamp): Adjust the distortion and tone of the guitar sound.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the preamp effect on/off.
Amp Type (Amp Type) *1	Refer to the column on page 187.	Selects the type of the guitar amplifier that will be modeled.
Volume (Volume)	0–100	Adjusts the volume and distortion of the amp.
Bass (Bass)	0–100	Adjusts the tone for the low frequency range.
Middle (Middle) *2	0–100	Adjusts the tone for the middle frequency range.
Treble (Treble)	0–100	Adjusts the tone for the high frequency range.
Presence (Presence) *3	0–100	Adjusts the tone for the ultra high frequency range.
Master (Master)	0–100	Adjusts the volume of the entire preamp.
Bright (Bright) *4	OFF, ON	Turns the bright setting on/off. Bright is switched on to create a lighter and crisper tone.
Gain (Gain) *5	LOW, MIDDLE, HIGH	Adjusts the distortion of the amp. Distortion will successively increase for settings of "LOW," "MIDDLE" and "HIGH."



*1 When all Bass, Middle and Treble are set to "0," no sound may be produced depending on the "Amp Type" setting.

*2 If you have selected "MATCH" as the type, the middle control will have no effect.

*3 If you have selected "MATCH" or "VO DRV" as the type, raising presence will cut the high range (the value will change from "0" to "–100").

*4 Depending on the "Amp Type" setting, this may not be displayed.

*5 successively increase for settings of "LOW," "MIDDLE" and set to "MIDDLE." So, normally set it to "MIDDLE."

● **SP (Speaker modeling): This models the characteristics of various types of speakers.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the speaker modeling effect on/off.
Speaker Type (Speaker Type)	Refer to the column on page 187.	Selects the type of speaker that will be modeled.
Mic Setting (Mic Setting)	CENTER, 1–10 cm	This models the microphone position. "CENTER" models the condition that the microphone is set in the middle of the speaker cone. "1–10 cm" means that the microphone is moved away from the center of the speaker cone.
Mic Level (Mic Level)	0–100	Adjusts the volume of the microphone.
Direct Level (Direct Level)	0–100	Adjusts the volume of the direct sound.

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

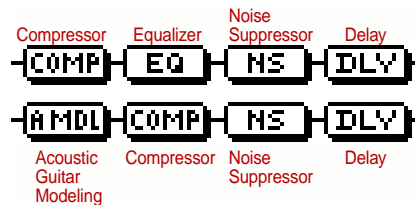
For details on the parameters, refer to "NS" on the preceding page.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

For details on the parameters, refer to "DLY," above.

4. VO+AC.MDL (Vocal+Acoustic Guitar Modeling)

This algorithm is for use when simultaneously recording a vocal and electric guitar. For the guitar, you can make the electric guitar sound like an acoustic guitar.



■ MIC

Parameter (full name)	Setting	Function
<ul style="list-style-type: none"> COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0–100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0–100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0–100	Adjusts the volume.
<ul style="list-style-type: none"> EQ (Equalizer): A 4-band equalizer. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Low Gain (Low Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the bass equalizer.
Low-Mid Gain (Low-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the low-midrange equalizer.
Low-Mid Freq (Low-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the low-midrange equalizer.
Low-Mid Q (Low-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “Low-Mid Freq.” A larger value results in a narrower range of change.
High-Mid Gain (High-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the high-midrange equalizer.
High-Mid Freq (High-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the high-midrange equalizer.
High-Mid Q (High-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “High-Mid Freq.” A larger value results in a narrower range of change.
High Gain (High Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the treble equalizer.
Level (Output Level)	-20→+20 dB	This parameter adjusts the volume after the equalizer stage.
<ul style="list-style-type: none"> NS (Noise Suppressor): This effect reduces the noise and hum. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”



* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the delay effect on/off.
Delay Time (Delay Time)	SINGLE: 1–1400 mS TAP: 1–700 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
Feedback (Feedback)	0–100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level (Effect Level)	0–120	This adjusts the volume of the delay sound.

■ **GUITAR**

Parameter (full name)	Setting	Function
● A.MDL (Acoustic Guitar Modeling): This models the sound of an acoustic guitar.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the acoustic guitar modeling effect on/off.
Pick Up Type (Pick Up Type)	SINGLE, HUMBUCK	Set this to the type of pickup on the connected guitar.
Character (Character)	STD JUMBO ENHANCE PIEZO	This is a normal acoustic guitar. This is an acoustic guitar with a body that is bigger than STANDARD. The bass sound is powerful. This is an acoustic guitar that with a more responsive attack, so the guitar will retain more of its prominence in almost any situation. This models the sound you would get from a pickup installed on an electric-acoustic guitar. During the attack, a certain amount of compression will be applied.
Top-Hi (Top-Hi)	-100+100 *	Adjust the level of the direct sound from the strings. That is, it adjusts the harmonic contents.
Top-Mid (Top-Mid)	-100+100 *	This adjusts the interference to the strings made by the top plate. That is, it adjusts the attack sense.
Body (Body)	-100+100 *	This adjusts the resonance of the sound caused by the body. That is, it adjusts the softness and fatness of the sound which is the typical characteristics of acoustic guitars.
Level (Level)	0–100	This adjusts the volume of the acoustic guitar modeling.

NOTE

* If Top-Hi, Top-Mid, and Body are all set to “-100”, there will be no sound.

MEMO

If you set the pickup selector of your guitar to the front position, the desired effect will be easier to achieve.

● **COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value.**

For details on the parameters, refer to “COMP” on the preceding page.

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

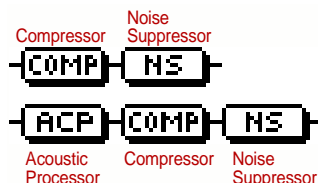
For details on the parameters, refer to “NS” on the preceding page.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

For details on the parameters, refer to “DLY,” above.

5. VO+ACOUSTIC (Vocal+Acoustic Guitar)

This algorithm is for use when simultaneously recording a vocal and acoustic guitar. For the guitar, you can produce a warm sound as though a mic were being used, even when an electric-acoustic is connected by a direct line.



■ MIC

Parameter (full name)	Setting	Function
● COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0–100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0–100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0–100	Adjusts the volume.
● NS (Noise Suppressor): This effect reduces the noise and hum.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches "0."

NOTE

* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

■ GUITAR

Parameter (full name)	Setting	Function
● ACP (Acoustic Processor): With this feature, you can change the sound from a pickup on an electric-acoustic guitar into a richer sound.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the acoustic processor effect on/off.
Body (Body)	-100–+100	This adjusts the resonance of the sound caused by the body. That is, it adjusts the softness and fatness of the sound which is the typical characteristics of acoustic guitars.
Mic Distance (Mic Distance)	-100–+100	This models the distance between the microphone capturing the sound of an acoustic guitar and the guitar itself.
Level (Level)	-100–+100	This adjusts the volume of the acoustic processor.

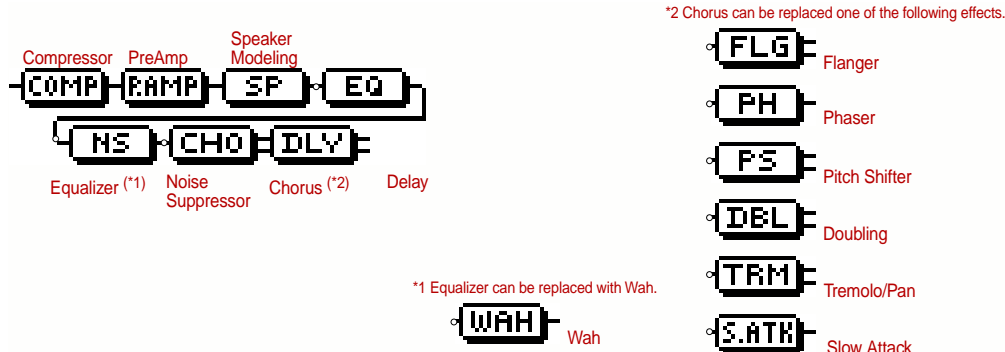
MEMO

Best results will be achieved when stereo output is used.

- **COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value.**
For details on the parameters, refer to "COMP," above.
- **NS (Noise Suppressor): This effect reduces the noise and hum.**
For details on the parameters, refer to "NS," above.

6. COSM GUITAR AMP

This is a multi-effect designed for electric guitar. This provides an amp sound using a preamp and speaker modeling.



Parameter (full name)	Setting	Function
● COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value. Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0–100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0–100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0–100	Adjusts the volume.
● P.AMP (Preamp): Adjust the distortion and tone of the guitar sound. Effect On/Off (Effect On/Off)	OFF, ON	Turns the preamp effect on/off.
Amp Type (Amp Type) *1	Refer to the column on page 187.	Selects the type of the guitar amplifier that will be modeled.
Volume (Volume)	0–100	Adjusts the volume and distortion of the amp.
Bass (Bass)	0–100	Adjusts the tone for the low frequency range.
Middle (Middle) *2	0–100	Adjusts the tone for the middle frequency range.
Treble (Treble)	0–100	Adjusts the tone for the high frequency range.
Presence (Presence) *3	0–100	Adjusts the tone for the ultra high frequency range.
Master (Master)	0–100	Adjusts the volume of the entire preamp.
Bright (Bright) *4	OFF, ON	Turns the bright setting on/off. Bright is switched on to create a lighter and crisper tone.
Gain (Gain) *5	LOW, MIDDLE, HIGH	Adjusts the distortion of the amp. Distortion will successively increase for settings of "LOW," "MIDDLE" and "HIGH."



*1 When all Bass, Middle and Treble are set to "0," no sound may be produced depending on the "Amp Type" setting.

*2 If you have selected "MATCH" as the type, the middle control will have no effect.

*3 If you have selected "MATCH" or "VO DRV" as the type, raising presence will cut the high range (the value will change from "0" to "-100").

*4 Depending on the "Amp Type" setting, this may not be displayed.

*5 successively increase for settings of "LOW," "MIDDLE" and set to "MIDDLE." So, normally set it to "MIDDLE."

● SP (Speaker Modeling): This models the characteristics of various types of speakers. Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the speaker modeling effect on/off.
Speaker Type (Speaker Type)	Refer to the column on page 187.	Selects the type of speaker that will be modeled.
Mic Setting (Mic Setting)	CENTER, 1–10 cm	This models the microphone position. "CENTER" models the condition that the microphone is set in the middle of the speaker cone. "1–10 cm" means that the microphone is moved away from the center of the speaker cone.
Mic Level (Mic Level)	0–100	Adjusts the volume of the microphone.
Direct Level (Direct Level)	0–100	Adjusts the volume of the direct sound.

Insert effect algorithm list

● EQ (Equalizer): A 4-band equalizer.

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Low Gain (Low Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the bass equalizer.
Low-Mid Gain (Low-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the low-midrange equalizer.
Low-Mid Freq (Low-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the low-midrange equalizer.
Low-Mid Q (Low-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “Low-Mid Freq.” A larger value results in a narrower range of change.
High-Mid Gain (High-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the high-midrange equalizer.
High-Mid Freq (High-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the high-midrange equalizer.
High-Mid Q (High-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “High-Mid Freq.” A larger value results in a narrower range of change.
High Gain (High Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the treble equalizer.
Level (Output Level)	-20→+20 dB	This parameter adjusts the volume after the equalizer stage.

● WAH (Wah): The wah effect creates a unique tone by changing the frequency response characteristics of a filter.

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the wah effect on/off.
Polarity (Polarity)	UP DOWN	The frequency of the filter will rise. The frequency of the filter will fall.
Sensitivity (Sens)	0–100	This adjusts the sensitivity at which the filter will change in the direction determined by the polarity setting. Higher values will result in a stronger response. With a setting of “0,” the strength of picking will have no effect.
Frequency (Frequency)	0–100	This adjusts the center frequency of the Wah effect.
Peak (Peak)	0–100	Adjusts the way in which the wah effect applies to the area around the center frequency. Lower values will produce a wah effect over a wide area around the center frequency. Higher values will produce a wah effect in a narrow area around the center frequency. With a value of “50” a standard wah sound will be produced.
Level (Level)	0–100	Adjusts the volume.

● NS (Noise Suppressor): This effect reduces the noise and hum.

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”

NOTE

* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

● Modulation effect type

The Modulation effect type can be selected from the following effects. For details on each effect, refer to “Available types of modulation and their effect” (p. 202).

- **FLANGER** (Flanger) : The flanger effect gives a twisting, jet-airplane-like character to the sound.
- **CHORUS** (Chorus) : A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.
- **PHASER** (Phaser) * : By adding varied-phase portions, the phaser effect gives a whooshing, swirling character to the sound.
- **P.SHIFT** (Pitch Shifter) : This effect changes the pitch of the original sound (up or down) within a range of two octaves.
- **DOUBL'N** (Doubling) : An effect of multiple sounds heard together (a doubling effect) is produced.
- **TRM/PAN** (Tremolo/Pan) : Tremolo is an effect that creates a cyclic change in volume.
Pan cyclically moves the stereo position between left and right (when stereo output is used).
- **SLO ATK** (Slow Attack) * : This produces a volume-swell effect (“violin-like” sound).

* In case of “Phase” and “Slow Attack”, output will become monaural.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the delay effect on/off.
Effect Type (Type)	SINGLE	This is a simple delay.
	TAP	The delayed sound is panned across the left and right channels. This will be effective when stereo output is used.
Delay Time (Delay Time)	SINGLE: 1–1400 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
	TAP: 1–700 mS	
Feedback (Feedback)	0–100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level (Effect Level)	0–120	This adjusts the volume of the delay sound.

■ **Preamp**

Models the preamp section of a guitar amp. Set the desired type for Amp Type.

- JC-120 : The sound of the Roland "JC-120" (Jazz Chorus 120), a favorite of pro musicians around the world.
- CLEAN : The sound of a conventional built-in tube amp.
- CRUNCH : Allows you to obtain a crunch effect that creates a natural distortion.
- MATCH : A modeling of the latest tube amp widely used in styles from blues and rock.
- VO DRV : Allows you to obtain the Liverpool sound of the 60's.
- BLUES : A lead sound with a rich middle ideal for Blues.
- BG LEAD : The sound of a tube amp typical of the late '70s to '80s, characterized by a distinctive mid-range.
- MS(1, 2, 1+2) : The sound of a large tube amp stack that was indispensable to the British hard rock of the 70's, and is used to this day by many hard rock guitarists.
- MS(1) : A trebly sound created by using input I of the guitar amp.
- MS(2) : A mild sound created by using input II of the guitar amp.
- MS(1+2) : The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.
- SLDN : A tube amp sound with versatile distortion, usable in a wide range of styles.
- METAL : The sound of a large tube amp, suitable for heavy metal.
- METAL D : A high gain and powerful metal sound.

■ **Speaker modeling**

The characters of the following types of speakers can be modeled. Set the desired type for Speaker Type.

Speaker Type	Cabinet	Speaker Unit	Microphone Setting ^{*1}	Well-matched preamp type
SMALL	Small open-back enclosure	10 inch	On Mic	
MIDDLE	Open-back enclosure	12 inch	On Mic	Clean, Crunch, Blues
JC-120 ^{*2}	Open-back enclosure	12 inch (two units)	On Mic	JC-120
TWIN	Open-back enclosure	12 inch (two units)	On Mic	Clean, Crunch
twin	Open-back enclosure	12 inch (two units)	Off Mic	Clean, Crunch
MATCH	Open-back enclosure	12 inch (two units)	On Mic	Match, Blues
match	Open-back enclosure	12 inch (two units)	Off Mic	Match, Blues, BG Lead
VO DRV	Open-back enclosure	12 inch (two units)	On Mic	Vo drv
vo drv	Open-back enclosure	12 inch (two units)	Off Mic	Vo drv
BG STK	Large Sealed enclosure	12 inch (two units)	On Mic	BG Lead
bg stk	Large Sealed enclosure	12 inch (two units)	Off Mic	BG Lead
MS STK	Large Sealed enclosure	12 inch (four units)	On Mic	MS(1), MS(2), MS(1+2), Sldn, Metal, Meal D
ms stk	Large Sealed enclosure	12 inch (four units)	Off Mic	MS(1), MS(2), MS(1+2), Sldn, Metal, Meal D
METAL	Large dual stack	12 inch (four units)	Off Mic	MS(1), MS(2), MS(1+2), Sldn, Metal, Meal D

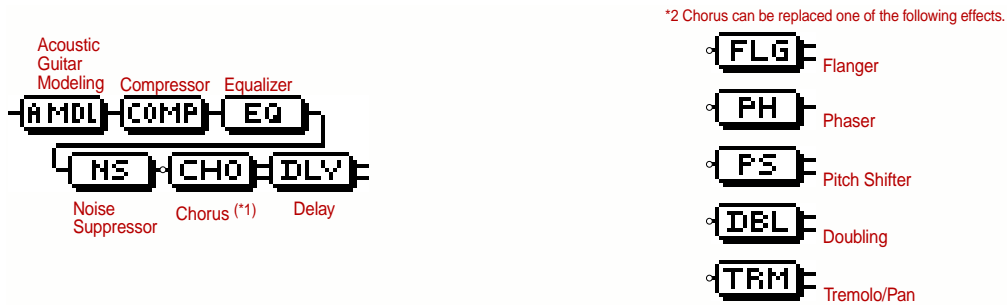
*1 "On Mic" models sound when a dynamic microphone is used.

"Off Mic" models sound when a condenser microphone is used.

*2 Roland JC-120 Modeling

7. ACOUSTIC MDL (Acoustic Guitar Modeling)

This is a multi-effect designed for electric guitar. It allows you to use an electric guitar to produce sounds similar to those of an acoustic guitar.



Parameter (full name)	Setting	Function
● A.MDL (Acoustic Guitar Modeling): This models the sound of an acoustic guitar.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the acoustic guitar modeling effect on/off.
Pick Up Type (Pick Up Type)	SINGLE, HUMBUCK	Set this to the type of pickup on the connected guitar.
Character (Character)	STD JUMBO ENHANCE PIEZO	This is a normal acoustic guitar. This is an acoustic guitar with a body that is bigger than STANDARD. The bass sound is powerful. This is an acoustic guitar that with a more responsive attack, so the guitar will retain more of its prominence in almost any situation. This models the sound you would get from a pickup installed on an electric-acoustic guitar. During the attack, a certain amount of compression will be applied.
Top-Hi (Top-Hi)	-100+100 *	Adjust the level of the direct sound from the strings. That is, it adjusts the harmonic contents.
Top-Mid (Top-Mid)	-100+100 *	This adjusts the interference to the strings made by the top plate. That is, it adjusts the attack sense.
Body (Body)	-100+100 *	This adjusts the resonance of the sound caused by the body. That is, it adjusts the softness and fatness of the sound which is the typical characteristics of acoustic guitars.
Level (Level)	0-100	This adjusts the volume of the acoustic guitar modeling.

NOTE

* If Top-Hi, Top-Mid, and Body are all set to "-100", there will be no sound.

MEMO

If you set the pickup selector of your guitar to the front position, the desired effect will be easier to achieve.

● COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0-100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0-100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0-100	Adjusts the volume.

● **EQ (Equalizer): A 4-band equalizer.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Low Gain (Low Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the bass equalizer.
Low-Mid Gain (Low-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the low-midrange equalizer.
Low-Mid Freq (Low-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the low-midrange equalizer.
Low-Mid Q (Low-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “Low-Mid Freq.” A larger value results in a narrower range of change.
High-Mid Gain (High-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the high-midrange equalizer.
High-Mid Freq (High-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the high-midrange equalizer.
High-Mid Q (High-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “High-Mid Freq.” A larger value results in a narrower range of change.
High Gain (High Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the treble equalizer.
Level (Output Level)	-20→+20 dB	This parameter adjusts the volume after the equalizer stage.

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”



* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

● **Modulation effect type**

The Modulation effect type can be selected from the following effects. For details on each effect, refer to “Available types of modulation and their effect” (p. 202).

- **FLANGER** (Flanger) : The flanger effect gives a twisting, jet-airplane-like character to the sound.
- **CHORUS** (Chorus) : A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.
- **PHASER** (Phaser) * : By adding varied-phase portions, the phaser effect gives a whooshing, swirling character to the sound.
- **P.SHIFT** (Pitch Shifter) : This effect changes the pitch of the original sound (up or down) within a range of two octaves.
- **DOUBL'N** (Doubling) : An effect of multiple sounds heard together (a doubling effect) is produced.
- **TRM/PAN** (Tremolo/Pan) : Tremolo is an effect that creates a cyclic change in volume.
Pan cyclically moves the stereo position between left and right (when stereo output is used).

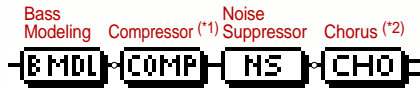
* In case of “Phase”, output will become monaural.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the delay effect on/off.
Effect Type (Type)	SINGLE TAP	This is a simple delay. The delayed sound is panned across the left and right channels. This will be effective when stereo output is used.
Delay Time (Delay Time)	SINGLE: 1–1400 mS TAP: 1–700 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
Feedback (Feedback)	0–100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level (Effect Level)	0–120	This adjusts the volume of the delay sound.

8. BASS MDL (Bass Guitar Modeling)

Models the sound of a bass guitar. Obtain the sound of a bass guitar while playing an electric guitar.



*1 Compressor can be replaced with Defretter.



*2 Chorus can be replaced one of the following effects.



Parameter (full name)	Setting	Function
B.MDL (Bass Modeling): Models the sound of a bass guitar. Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the bass modeling effect on/off.
Character (Character)	LOOSE, TIGHT	Bass tone characteristic is set. When "LOOSE" is selected, as if the string gauge was getting thicker.
Level (Level)	0-100	This adjusts the volume of the bass modeling.

MEMO

You should avoid playing chords when using the Bass modeling.

COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value. Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0-100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0-100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0-100	Adjusts the volume.
DEFRET (Defretter): This models a fretless bass. Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the defretter effect on/off.
Sensitivity (Sens)	0-100	This controls the input sensitivity of the Defretter. It should be adjusted for the bass guitar you have until you get the harmonic changes to sound natural.
Attack (Attack)	0-100	This controls the attack of the Defretter. Increasing the value will cause the harmonics to change more slowly, thus producing a relatively attack-less sound, similar to a fretless bass.
Depth (Depth)	0-100	This controls the rate of the harmonics. Increasing the value will increase the harmonic content and therefore will create a more unusual sound.
Level (Level)	0-100	Adjusts the volume of the defretter sound.

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”



* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

● **Modulation effect type**

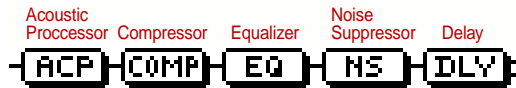
The Modulation effect type can be selected from the following effects. For details on each effect, refer to “Available types of modulation and their effect” (p. 202).

- **FLANGER** (Flanger) : The flanger effect gives a twisting, jet-airplane-like character to the sound.
- **CHORUS** (Chorus) : A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.
- **PHASER** (Phaser) * : By adding varied-phase portions, the phaser effect gives a whooshing, swirling character to the sound.
- **P.SHIFT** (Pitch Shifter) : This effect changes the pitch of the original sound (up or down) within a range of two octaves.
- **DOUBL'N** (Doubling) : An effect of multiple sounds heard together (a doubling effect) is produced.
- **TRM/PAN** (Tremolo/Pan) : Tremolo is an effect that creates a cyclic change in volume.
Pan cyclically moves the stereo position between left and right (when stereo output is used).

* In case of “Phase”, output will become monaural.

9. ACOUSTIC GUITAR

This is a multi-effect designed for acoustic guitar. Even when an electric-acoustic is connected at line level, this provides a warm sound similar to what is obtained through a microphone.



Parameter (full name)	Setting	Function
● ACP (Acoustic Processor): With this feature, you can change the sound from a pickup on an electric-acoustic guitar into a richer sound.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the acoustic processor effect on/off.
Body (Body)	-100→+100	This adjusts the resonance of the sound caused by the body. That is, it adjusts the softness and fatness of the sound which is the typical characteristics of acoustic guitars.
Mic Distance (Mic Distance)	-100→+100	This models the distance between the microphone capturing the sound of an acoustic guitar and the guitar itself.
Level (Level)	-100→+100	This adjusts the volume of the acoustic processor.

MEMO

Best results will be achieved when stereo output is used.

● COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0–100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0–100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0–100	Adjusts the volume.
● EQ (Equalizer): A 4-band equalizer.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Low Gain (Low Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the bass equalizer.
Low-Mid Gain (Low-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the low-midrange equalizer.
Low-Mid Freq (Low-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the low-midrange equalizer.
Low-Mid Q (Low-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by "Low-Mid Freq." A larger value results in a narrower range of change.
High-Mid Gain (High-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the high-midrange equalizer.
High-Mid Freq (High-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the high-midrange equalizer.
High-Mid Q (High-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by "High-Mid Freq." A larger value results in a narrower range of change.
High Gain (High Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the treble equalizer.
Level (Output Level)	-20→+20 dB	This parameter adjusts the volume after the equalizer stage.

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”



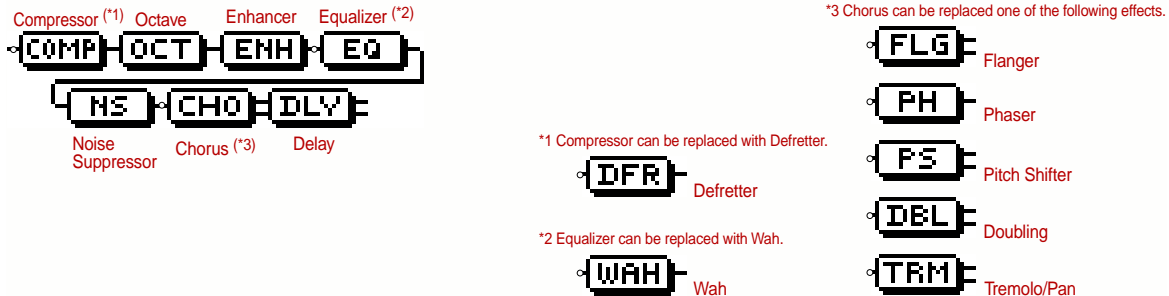
* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the delay effect on/off.
Effect Type (Type)	SINGLE TAP	This is a simple delay. The delayed sound is panned across the left and right channels. This will be effective when stereo output is used.
Delay Time (Delay Time)	SINGLE: 1–1400 mS TAP: 1–700 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
Feedback (Feedback)	0–100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level (Effect Level)	0–120	This adjusts the volume of the delay sound.

10. BASS MULTI (Bass Guitar Multi)

This is a multi-effect designed for bass guitar. Appropriate for creating standard bass sound.



Parameter (full name)	Setting	Function
<ul style="list-style-type: none"> COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0–100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0–100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0–100	Adjusts the volume.
<ul style="list-style-type: none"> DEFRET (Defretter): This models a fretless bass. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the defretter effect on/off.
Sensitivity (Sens)	0–100	This controls the input sensitivity of the Defretter. It should be adjusted for the bass guitar you have until you get the harmonic changes to sound natural.
Attack (Attack)	0–100	This controls the attack of the Defretter. Increasing the value will cause the harmonics to change more slowly, thus producing a relatively attack-less sound, similar to a fretless bass.
Depth (Depth)	0–100	This controls the rate of the harmonics. Increasing the value will increase the harmonic content and therefore will create a more unusual sound.
Level (Level)	0–100	Adjusts the volume of the defretter sound.
<ul style="list-style-type: none"> OCT (Octave): This adds a note one octave lower, creating a richer sound. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the octave effect on/off.
Octave Level (Octave Level)	0–100	This adjust the volume of the sound one octave below.
Direct Level (Direct Level)	0–100	This adjust the volume of the direct sound.
<ul style="list-style-type: none"> ENH (Enhancer): This effect enhances the definition of the sound, and pushes it to the forefront. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the enhancer effect on/off.
Sensitivity (Sens)	0–100	Adjusts the manner in which the enhancer will be applied relative to the input signals.
Frequency (Frequency)	1.0 –10.0 kHz	Adjusts the frequency at which the enhancer effect will begin to be applied. The effect will be made apparent in the frequencies above the frequency set here.
Mix Level (Mix Level)	0–100	Adjusts the amount of phase-shifted sound of the range set by "Frequency" that is to be mixed with the input.
Low Mix Level (Low Mix Level)	0–100	Adjusts the amount of phase-shifted sound of the lower range that is to be mixed with the input.
Level (Level)	0–100	Adjusts the volume of the enhanced sound.
<ul style="list-style-type: none"> EQ (Equalizer): A 4-band equalizer. 		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Low Gain (Low Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the bass equalizer.
Low-Mid Gain (Low-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the low-midrange equalizer.
Low-Mid Freq (Low-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the low-midrange equalizer.
Low-Mid Q (Low-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by "Low-Mid Freq." A larger value results in a narrower range of change.

High-Mid Gain (High-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the high-midrange equalizer.
High-Mid Freq (High-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the high-midrange equalizer.
High-Mid Q (High-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “High-Mid Freq.” A larger value results in a narrower range of change.
High Gain (High Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the treble equalizer.
Level (Output Level)	-20→+20 dB	This parameter adjusts the volume after the equalizer stage.

● **WAH (Wah): The wah effect creates a unique tone by changing the frequency response characteristics of a filter.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the wah effect on/off.
Polarity (Polarity)	UP	The frequency of the filter will rise.
	DOWN	The frequency of the filter will fall.
Sensitivity (Sens)	0–100	This adjusts the sensitivity at which the filter will change in the direction determined by the polarity setting. Higher values will result in a stronger response. With a setting of “0,” the strength of picking will have no effect.
Frequency (Frequency)	0–100	This adjusts the center frequency of the Wah effect.
Peak (Peak)	0–100	Adjusts the way in which the wah effect applies to the area around the center frequency. Lower values will produce a wah effect over a wide area around the center frequency. Higher values will produce a wah effect in a narrow area around the center frequency. With a value of “50” a standard wah sound will be produced.
Level (Level)	0–100	Adjusts the volume.

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”



* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

● **Modulation effect type**

The Modulation effect type can be selected from the following effects. For details on each effect, refer to “Available types of modulation and their effect” (p. 202).

- **FLANGER** (Flanger) : The flanger effect gives a twisting, jet-airplane-like character to the sound.
- **CHORUS** (Chorus) : A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.
- **PHASER** (Phaser) * : By adding varied-phase portions, the phaser effect gives a whooshing, swirling character to the sound.
- **P.SHIFT** (Pitch Shifter) : This effect changes the pitch of the original sound (up or down) within a range of two octaves.
- **DOUBL'N** (Doubling) : An effect of multiple sounds heard together (a doubling effect) is produced.
- **TRM/PAN** (Tremolo/Pan) : Tremolo is an effect that creates a cyclic change in volume.
Pan cyclically moves the stereo position between left and right (when stereo output is used).

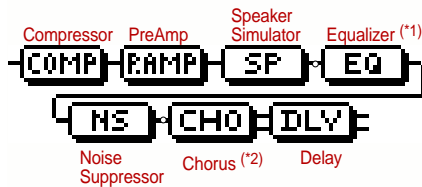
* In case of “Phase”, output will become monaural.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the delay effect on/off.
Effect Type (Type)	SINGLE	This is a simple delay.
	TAP	The delayed sound is panned across the left and right channels. This will be effective when stereo output is used.
Delay Time (Delay Time)	SINGLE: 1–1400 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
	TAP: 1–700 mS	
Feedback (Feedback)	0–100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level (Effect Level)	0–120	This adjusts the volume of the delay sound.

11. COSM BASS AMP (COSM Bass Guitar Amp)

This is a multi-effect designed for bass guitar. This features an amp sound that uses a preamp and speaker modeling.



*1 Equalizer can be replaced with Wah.



*2 Chorus can be replaced one of the following effects.



Parameter (full name)	Setting	Function
<p>● COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value.</p>		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0–100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0–100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0–100	Adjusts the volume.
<p>● P.AMP (Preamp): Adjust the distortion and tone of the guitar sound.</p>		
Effect On/Off (Effect On/Off)	OFF, ON	Turns the preamp effect on/off.
Amp Type (Amp Type) *1	AC AMG	It produces the vintage sound of an early transistor amp. It produces the sound of a large double-stack vacuum tube amp with ultra-lows and a crisp edge.
Volume (Volume)	0–100	Adjusts the volume and distortion of the amp.
Bass (Bass)	-100–+100	Adjusts the tone for the low frequency range.
Middle (Middle)	-100–+100	Adjusts the tone for the middle frequency range.
Treble (Treble)	-100–+100	Adjusts the tone for the high frequency range.
Master (Master)	0–100	Adjusts the volume of the entire preamp.
Bright (Bright) *2	OFF, ON	Turns the bright setting on/off. Bright is switched on to create a lighter and crisper tone.
Gain (Gain) *3	LOW, MIDDLE, HIGH	Adjusts the distortion of the amp. Distortion will successively increase for settings of "LOW," "MIDDLE" and "HIGH."

NOTE

*1 When all Bass, Middle and Treble are set to "0," no sound may be produced depending on the "Amp Type" setting.

*2 Depending on the "Amp Type" setting, this may not be displayed.

*3 successively increase for settings of "LOW," "MIDDLE" and set to "MIDDLE." So, normally set it to "MIDDLE."

■ Speaker modeling

The characters of the following types of speakers can be modeled. Set the desired type for Speaker Type.

Speaker Type	Cabinet	Speaker Unit	Microphone Setting *	Well-matched preamp type
AC	Large Sealed enclosure	15 inch (two units)	On Mic	AC
ac	Open-back enclosure	15 inch (two units)	Off Mic	AC
AMG	Open-back enclosure	10 inch (eight units)	On Mic	AMG
amg	Open-back enclosure	10 inch (eight units)	Off Mic	AMG

* "On Mic" models sound when a dynamic microphone is used.
 "Off Mic" models sound when a condenser microphone is used.

● SP (Speaker Modeling): This models the characteristics of various types of speakers.

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the speaker modeling effect on/off.
Speaker Type (Speaker Type)	See the column on this page.	Selects the type of speaker that will be modeled.
Mic Setting (Mic Setting)	CENTER, 1–10 cm	This models the microphone position. "CENTER" models the condition that the microphone is set in the middle of the speaker cone. "1–10 cm" means that the microphone is moved away from the center of the speaker cone.
Mic Level (Mic Level)	0–100	Adjusts the volume of the microphone.
Direct Level (Direct Level)	0–100	Adjusts the volume of the direct sound.

● EQ (Equalizer): A 4-band equalizer.

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Low Gain (Low Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the bass equalizer.
Low-Mid Gain (Low-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the low-midrange equalizer.
Low-Mid Freq (Low-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the low-midrange equalizer.
Low-Mid Q (Low-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by "Low-Mid Freq." A larger value results in a narrower range of change.
High-Mid Gain (High-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the high-midrange equalizer.
High-Mid Freq (High-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the high-midrange equalizer.
High-Mid Q (High-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by "High-Mid Freq." A larger value results in a narrower range of change.
High Gain (High Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the treble equalizer.
Level (Output Level)	-20→+20 dB	This parameter adjusts the volume after the equalizer stage.

● WAH (Wah): The wah effect creates a unique tone by changing the frequency response characteristics of a filter.

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the wah effect on/off.
Polarity (Polarity)	UP DOWN	The frequency of the filter will rise. The frequency of the filter will fall.
Sensitivity (Sens)	0–100	This adjusts the sensitivity at which the filter will change in the direction determined by the polarity setting. Higher values will result in a stronger response. With a setting of "0," the strength of picking will have no effect.
Frequency (Frequency)	0–100	This adjusts the center frequency of the Wah effect.
Peak (Peak)	0–100	Adjusts the way in which the wah effect applies to the area around the center frequency. Lower values will produce a wah effect over a wide area around the center frequency. Higher values will produce a wah effect in a narrow area around the center frequency. With a value of "50" a standard wah sound will be produced.
Level (Level)	0–100	Adjusts the volume.

Insert effect algorithm list

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”



* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

● **Modulation effect type**

The Modulation effect type can be selected from the following effects. For details on each effect, refer to “Available types of modulation and their effect” (p. 202).

- **FLANGER** (Flanger) : The flanger effect gives a twisting, jet-airplane-like character to the sound.
- **CHORUS** (Chorus) : A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.
- **PHASER** (Phaser) * : By adding varied-phase portions, the phaser effect gives a whooshing, swirling character to the sound.
- **P.SHIFT** (Pitch Shifter) : This effect changes the pitch of the original sound (up or down) within a range of two octaves.
- **DOUBL'N** (Doubling) : An effect of multiple sounds heard together (a doubling effect) is produced.
- **TRM/PAN** (Tremolo/Pan) : Tremolo is an effect that creates a cyclic change in volume.
Pan cyclically moves the stereo position between left and right (when stereo output is used).

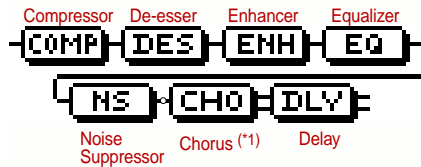
* In case of “Phase”, output will become monaural.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

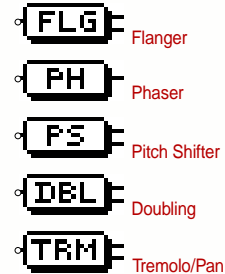
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the delay effect on/off.
Effect Type (Type)	SINGLE	This is a simple delay.
	TAP	The delayed sound is panned across the left and right channels. This will be effective when stereo output is used.
Delay Time (Delay Time)	SINGLE: 1–1400 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
	TAP: 1–700 mS	
Feedback (Feedback)	0–100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level (Effect Level)	0–120	This adjusts the volume of the delay sound.

12. VOCAL MULTI

This is a multi-effect designed for vocals. It provides the basic effects needed for vocals.



*1 Chorus can be replaced one of the following effects.



Parameter (full name)	Setting	Function
● COMP (Compressor): Compressor the entire output signals when the input volume exceeds a specified value.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Sustain (Sustain)	0–100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
Attack (Attack)	0–100	Adjusts the strength of the attack. Larger values will result in a sharper attack, creating a more clearly defined sound.
Level (Output Level)	0–100	Adjusts the volume.
● DES (De-esser): Useful for reducing ‘sibilant’ or ‘S’ sounds produced by a vocalist.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the de-esser effect on/off.
Sibilant Level (Sibilant Level)	0–100	Adjusts the sensitivity relative to the input volume, which controls how the effect is applied.
Level (Level)	0–100	Adjusts the volume.
● ENH (Enhancer): This effect enhances the definition of the sound, and pushes it to the forefront.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the enhancer effect on/off.
Sensitivity (Sens)	0–100	Adjusts the manner in which the enhancer will be applied relative to the input signals.
Frequency (Frequency)	1.0 –10.0 kHz	Adjusts the frequency at which the enhancer effect will begin to be applied. The effect will be made apparent in the frequencies above the frequency set here.
Mix Level (Mix Level)	0–100	Adjusts the amount of phase-shifted sound of the range set by “Frequency” that is to be mixed with the input.
Low Mix Level (Low Mix Level)	0–100	Adjusts the amount of phase-shifted sound of the lower range that is to be mixed with the input.
Level (Level)	0–100	Adjusts the volume of the enhanced sound.
● EQ (Equalizer): A 4-band equalizer.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Low Gain (Low Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the bass equalizer.
Low-Mid Gain (Low-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the low-midrange equalizer.
Low-Mid Freq (Low-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the low-midrange equalizer.
Low-Mid Q (Low-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “Low-Mid Freq.” A larger value results in a narrower range of change.
High-Mid Gain (High-Mid Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the high-midrange equalizer.
High-Mid Freq (High-Mid Freq)	100–10.0 kHz	This parameter sets the central frequency for the high-midrange equalizer.
High-Mid Q (High-Mid Q)	0.5–16	This parameter sets the range of change in gain for the frequency set by “High-Mid Freq.” A larger value results in a narrower range of change.
High Gain (High Gain)	-20→+20 dB	This parameter sets the gain (amount of boost or cut) for the treble equalizer.
Level (Output Level)	-20→+20 dB	This parameter adjusts the volume after the equalizer stage.

Insert effect algorithm list

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0–100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0–100	Adjusts the time from when the noise suppressor begins to function until volume reaches “0.”



* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.

● **Modulation effect type**

The Modulation effect type can be selected from the following effects. For details on each effect, refer to “Available types of modulation and their effect” (p. 202).

- **FLANGER** (Flanger) : The flanger effect gives a twisting, jet-airplane-like character to the sound.
- **CHORUS** (Chorus) : A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.
- **PHASER** (Phaser) * : By adding varied-phase portions, the phaser effect gives a whooshing, swirling character to the sound.
- **P.SHIFT** (Pitch Shifter) : This effect changes the pitch of the original sound (up or down) within a range of two octaves.
- **DOUBL'N** (Doubling) : An effect of multiple sounds heard together (a doubling effect) is produced.
- **TRM/PAN** (Tremolo/Pan) : Tremolo is an effect that creates a cyclic change in volume.
Pan cyclically moves the stereo position between left and right (when stereo output is used).

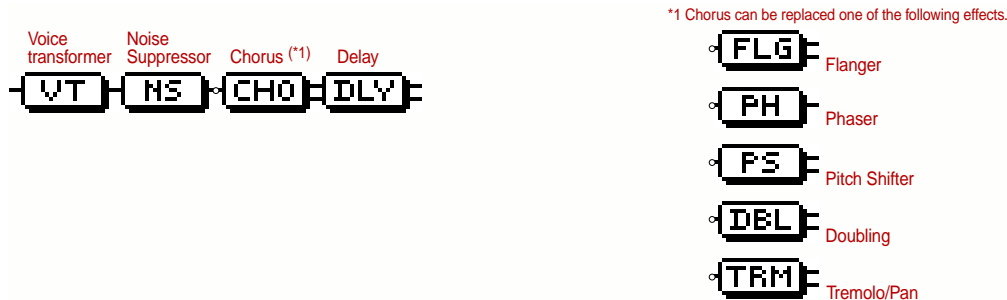
* In case of “Phase”, output will become monaural.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the delay effect on/off.
Effect Type (Type)	SINGLE	This is a simple delay.
	TAP	The delayed sound is panned across the left and right channels. This will be effective when stereo output is used.
Delay Time (Delay Time)	SINGLE: 1–1400 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
	TAP: 1–700 mS	
Feedback (Feedback)	0–100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level (Effect Level)	0–120	This adjusts the volume of the delay sound.

13. VOICE TRANSFORMER

This is a multi-effect designed for vocals. Special effects can also be created using the Voice Transformer.



Parameter (full name)	Setting	Function
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● **VT (Voice Transformer): This controls the formants, allowing a variety of voice characters to be created.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the voice transformer effect on/off.
Formant 1 (Formant 1)	-100+100	Adjust the formant of the voice character 1.
Formant 2 (Formant 2)	-100+100	Adjust the formant of the voice character 2.
Effect Level 1 (Effect Level 1)	0-100	Adjust the volume of the voice character 1.
Effect Level 2 (Effect Level 2)	0-100	Adjust the volume of the voice character 2.
Direct Level (Direct Level)	0-100	Adjust the volume of the direct sound.

Formant (p. 204)

● **NS (Noise Suppressor): This effect reduces the noise and hum.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the noise suppressor effect on/off.
Threshold (Threshold) *	0-100	Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the sound is as natural as possible.
Release (Release)	0-100	Adjusts the time from when the noise suppressor begins to function until volume reaches "0."

* High settings for the Threshold parameter may result in there being no sound when you play with your instruments volume turned down.



● **Modulation effect type**

The Modulation effect type can be selected from the following effects. For details on each effect, refer to "Available types of modulation and their effect" (p. 202).

- **FLANGER** (Flanger) : The flanger effect gives a twisting, jet-airplane-like character to the sound.
- **CHORUS** (Chorus) : A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.
- **PHASER** (Phaser) * : By adding varied-phase portions, the phaser effect gives a whooshing, swirling character to the sound.
- **P.SHIFT** (Pitch Shifter) : This effect changes the pitch of the original sound (up or down) within a range of two octaves.
- **DOUBL'N** (Doubling) : An effect of multiple sounds heard together (a doubling effect) is produced.
- **TRM/PAN** (Tremolo/Pan) : Tremolo is an effect that creates a cyclic change in volume.
Pan cyclically moves the stereo position between left and right (when stereo output is used).

* In case of "Phase", output will become monaural.

● **DLY (Delay): This creates a thicker sound by applying a delayed sound to the direct sound.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the delay effect on/off.
Effect Type (Type)	SINGLE TAP	This is a simple delay. The delayed sound is panned across the left and right channels. This will be effective when stereo output is used.
Delay Time (Delay Time)	SINGLE: 1-1400 mS TAP: 1-700 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
Feedback (Feedback)	0-100	This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.
Effect Level (Effect Level)	0-120	This adjusts the volume of the delay sound.

Available types of modulation and their effect

Parameter (full name)	Setting	Function
● [FLG] FLANGER (Flanger): The flanger effect gives a twisting, jet-airplane-like character to the sound.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the flanger effect on/off.
Rate (Rate)	0–100	Determines the rate of the flanging effect.
Depth (Depth)	0–100	Determines the depth of the flanging effect.
Manual (Manual)	0–100	Adjusts the center frequency at which to apply the effect.
Resonance (Resonance)	0–100	Determines the amount of resonance (feedback). Increasing the value will emphasize the effect, creating a more unusual sound.
Separation (Separation)	0–100	Adjusts the diffusion. The diffusion increases as the value increases. Effective when stereo output is used.
● [CHO] CHORUS (Chorus): A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the chorus effect on/off.
Rate (Rate)	0–100	Adjusts the rate of the Chorus effect.
Depth (Depth)	0–100	Adjusts the depth of the Chorus effect.
Pre Delay (Pre Delay)	0.5–50 mS	Adjusts the time needed for the effect sound to be output after the direct sound has been output.
Effect Level	0–100	Adjusts the volume of the effect sound.

MEMO

Best results will be achieved when stereo output is used.

● [PH] PHASER (Phaser): By adding varied-phase portions, the phaser effect gives a whooshing, swirling character to the sound.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the phaser effect on/off.
Rate (Rate)	0–100	This sets the rate of the Phaser effect.
Depth (Depth)	0–100	Determines the depth of the Phaser effect.
Manual (Manual)	0–100	Adjusts the center frequency of the phaser effect.
Resonance (Resonance)	0–100	Determines the amount of resonance (feedback). Increasing the value will emphasize the effect, creating a more unusual sound. Setting it to a minus value will create resonance having a reversed phase.
● [PS] P.SHIFT (Pitch Shifter): This effect changes the pitch of the original sound (up or down) within a range of two octaves.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the pitch shifter effect on/off.
Pitch (Pitch) *	-24–DETUNE–+24	Adjusts the amount of pitch shift (the amount of pitch change) in semitone steps. By selecting “DETUNE,” you can add a slightly pitch-shifted sound to the input sound, producing a detune effect.
D:E Balance (Effect Balance)	100:0–0:100	This adjusts the volume balance of the direct and effect sounds.
Separation (Separation)	-100–+100	Adjusts the diffusion. The panning of the direct sound and effect sound can be spread to left and right. Effective when stereo output is used.
● [DBL] DOUBL'N (Doubling): An effect of multiple sounds heard together (a doubling effect) is produced.		
Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the doubling effect on/off.
Delay Time (Delay Time)	0.5–50 mS	This parameter adjusts the delay time (i.e., the interval for which sound is delayed).
Separation (Separation)	-100–+100	Adjusts the diffusion. The panning of the direct sound and effect sound can be spread to left and right. Effective when stereo output is used.
Effect Level (Effect Level)	0–120	This adjusts the volume of the delay sound.

MEMO

The best effect is achieved when stereo output is used.

- **[TRM] TRM/PAN (Tremolo/Pan): Tremolo is an effect that creates a cyclic change in volume. Pan cyclically moves the stereo position between left and right (when stereo output is used).**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the tremolo/pan effect on/off.
Mode (Mode)		Selection for tremolo or pan. And selection for the effect will use.
	TRM-TRI	The volume will change cyclically. Smooth change will be produced.
	TRM-SQR	The volume will change cyclically. Abrupt change will be produced.
	PAN-TRI	The sound will be moved cyclically between left and right. Smooth change will be produced.
	PAN-SQR	The sound will be moved cyclically between left and right. Abrupt change will be produced.
Rate (Rate)	0–100	Adjust the rate at which the effect will operate.
Depth (Depth)	0–100	Adjusts the depth of the effect.

- **[S.ATK] SLO ATK (Slow Attack): This produces a volume-swell effect (“violin-like” sound).**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the slow attack effect on/off.
Rise Time (Rise Time)	10–2000 mS	This adjusts the time needed for the volume to reach its maximum from the moment you begin picking.
Level (Level)	0–100	Adjust the volume of the slow attack sound.

Glossary

Balanced connection

A method of transmitting signals using three electrical conductors. This cancels any noise that may have entered the line during transmission, allowing noise-free transmission of low-level signals over long distances. This method is usual on professional and broadcast equipment.

BPM, beats per minute

The number of beats in one minute (usually quarter note).

Coaxial

A digital audio connector to which a coaxial cable can be connected. In contrast, a type of digital audio connector to which an optical cable can be connected are referred to as "optical." The CDX-1's digital audio connector conforms to S/P DIF.

→ S/P DIF

→ Optical

Condenser microphone

A type of microphone that applies the principle of a condenser. It has excellent high-frequency response, and allows more subtle nuances of sound to be captured.

Contrast

A setting that adjusts the difference between the light and dark areas of a display. This controls the apparent brightness of the display.

COSM

An abbreviation for Composite Object Sound Modeling. Proprietary Roland technology for combining sound models of various types to produce sound. Some of the effect algorithms of the CDX-1 are implemented using this technology.

DAT

Short for Digital Audio Tape. This refers both to the system of recording digitized sound to magnetic tape, as well as to the tapes themselves. Besides digital audio signals, all song information is recorded on the tape, including starts and track data, information to allow or prevent copying, etc.

Dynamic microphone

A type of microphone that uses the same principle as an electrical generator. It operates without a power source. The most common types are quite durable, and are widely used as vocal and instrument mics.

Effects

Special processes that modify or enhance the sound in some way, such as causing it to distort, adding reverberation, or delaying it, etc. Also used to refer to the device or processor that produces the effect.

Effect patch

A state or settings that specifies an effect, stored under a number or name. By recalling an effect patch you can reproduce the state of the effect at any time.

Effect processor

A device that adds an acoustical effect such as reverberation, distortion, or modulation. The CDX-1 contains a built-in effect processor. This manual may refer to the "effect processor" simply as "effect."

Error message

A message that appears in the display when an incorrect operation has been performed, or when data could not be processed correctly.

Fade-in

Fade-out

Fade-in means to gradually raise the volume (for example, at the beginning of a song). Fade-out means to gradually lower the volume until silence is reached.

Fader

Faders are the sliders that are arranged on the panel of the console, and used mainly to adjust the volume.

Formant

A fixed frequency region of emphasis that is determined by the size of the vocal cords, and which determines the character of a human voice. When a recorded voice is simply lowered in pitch, the location of the formants is also changed. For example when the pitch is raised, the resulting "duck voice" sounds as though the singer has smaller vocal cords. Lowering the pitch produces a "giant voice" that sounds as though the singer has larger vocal cords.

Format

When used as a verb, "format" refers to the act of re-writing the data storage divisions on a magnetic disk or memory card etc. so that it conforms to the storage methods used by a particular device. On the CDX-1, a newly purchased CD-RW disc or one that has been used by a different device must be formatted by this system before it can be used. When a storage medium is formatted, any data previously existing on that medium will normally be lost.

Finalize

This is the operation that writes the TOC to a prepared audio disc. Whereas additions and changes can be made to discs that have not yet been finalized, such discs are not playable on regular CD players.

Foot switch

A switch that is operated by stepping on it. Various operations can be performed by pressing a pedal instead of operating a button. This permits operation even while both hands are occupied, such as when you are playing an instrument.

Frame

This refers to the individual still images that make up a moving picture on a video recorder etc. In the context of SMPTE time code or MTC, a “frame” is a unit of time. The frame rate selection determines whether a frame corresponds to 1/30th or 1/24th of a second.

- Frame rate
- SMPTE time code
- MIDI time code

Frame rate

The number of frames per second in SMPTE time code etc. Also refers to the type of time code indicated thereby. The frame rate can be 30, 39.97N (non-drop), 29.97D (drop), 25, or 24 per second.

- SMPTE time code
- Frame

Initialize

To restore the parameters of a device to their basic state.

Insert effect

An effect that is used by inserting it directly into the signal path. Examples of insertion effects include distortion, equalizer, compressor, and wah. Normally these are used without mixing in the original dry (direct) sound.

- Loop effect

Impedance

The total resistance of an electrical circuit to an alternating voltage such as audio, expressed in units of an Ohm (Ω). When transmitting a signal, the output impedance of the transmitting device must match the input impedance of the receiving device. If not, problems such as distortion, noise, and lowered signal level can occur.

On the CDX-1, a high-impedance input jack are used for directly connecting guitar and bass.

Loop effect

The path by which signals are sent from a mixer to internal or external effects, and the sound produced by an external device is returned to the mixer, is collectively referred to as “Loop Effect.” When using a loop type effect, the effect sound will be combined with the original sound.

- Insert effect

Master

1. A parameter, knob, or fader that affects all channels in common.
2. When two or more devices (sequencers, drum machines, recorders, video devices etc.) are operated in synchronization, the device that transmits tempo or time data is called the “master.” (The devices that receive this data and follow it are called “slaves.”)

MIDI

An abbreviation for Musical Instrument Digital Interface, a unified standard for exchanging performance data, time data, and various settings etc. between electronic musical instruments, computers, and audio devices etc. The CDX-1 is MIDI-compatible, and has two MIDI connectors; MIDI IN and MIDI OUT (also providing MIDI THRU functionality). When these connectors are connected to other MIDI devices, a variety of applications are possible.

MIDI implementation chart

A table that makes it easy to confirm the types of MIDI messages that can be transmitted and received by a device. Check the MIDI implementation charts of both devices that you intend to connect, and use MIDI messages that are supported by both devices. In this manual, the MIDI implementation chart is on p. 216.

MIDI time code, MTC

A type of MIDI message that is used to accurately synchronize a MIDI device with professional tape recorders, sequencers, or video devices. The master device transmits data indicating the current absolute time (hours/minutes/seconds/frames from the beginning), and the slave device will advance its own time accordingly. In order to use MTC, the other device must also support MTC synchronization, or you can use an MTC to SMPTE converter. Because MTC does not contain tempo information, the displayed measures and beats may not necessarily match.

MTC also allows various frame rates. In order to use MTC for synchronization, the frame rates of both devices must be set to match.

- Master
- Slave
- Frame rate

Mix down

In music production using a multitrack recorder, this is the process of adjusting the mix balance of multiple tracks and combining them into two-channel stereo.

MMC

An Abbreviation for MIDI machine Control. This is a set of MIDI system exclusive messages used to operate multiple devices form a single device. The CDX-1 supports MMC. By using MMC, a MIDI device connect to the CDX-1 can be controlled by the CDX-1 to perform operations such as start, and fast-forward. Since MMC is intended to synchronize operations such as playback, recording, and fast-forward, you must also use MIDI Clock or MTC to achieve time-based synchronization.

- MIDI Clock
- MTC

Glossary

Monitor

The action of auditioning or listening to an audio signal. What a recording engineer does when listening to the sound that is being recorded, or what a performer does when listening to other parts.

Multitrack

Having multiple tracks, such as 4, 8, 16, or 24 etc. "Multitrack recorder."

→ Track

Multitrack recording

The process of using a multitrack recorder to record each part or instrument on a separate track.

Mute

To silence something. On the CDX-1, you can mute individual audio tracks by pressing the relevant [STATUS] button, extinguishing its light.

Note number

A number included in a MIDI note message to specify the note location on a keyboard. A number of 0-127 is assigned to each semitone of the keyboard, with middle C (C4) as number 60.

NTSC format

The color television format used in the United States and Japan. Tapes recorded in NTSC format cannot be played on a SECAM format or PAL format video deck.

→ SECAM format, PAL format

Optical

A type of digital audio connector to which an optical cable can be connected. In contrast, a type of digital audio connector to which a coaxial cable can be connected are referred to as "coaxial." The CDX-1's digital audio connector conforms to S/P DIF.

→ S/P DIF

→ Coaxial

Pad

A surface that is struck, or a button used to play sound on an electronic drum, drum machine, or sampler. The CDX-1 has eight pads.

PAL format

→ SECAM format

Pan

The direction from which a sound is heard when played back in stereo. Also refers to the knob that adjust this.

Parameter

A setting that can be adjusted to modify the sound or operation of an electronic device or electronic musical instrument. An example of use would be; "This effect has three parameters: level, drive, and tone." The setting or level of a parameter is called its "value."

Punch-in, Punch-out

Punch-in/out recording is a procedure by which a specific portion of a track (between two specified times) can be re-recorded. Punch-in means to begin recording (i.e., to Punch-imesoccuuckutoAM ic mltoingks viousltoo the note losn(kut

S/P DIF

S/P DIF stands for Sony/Philips Digital Interface Format. This is a specifications for transmitting and receiving stereo digital audio signals between digital audio devices. The CDX-1 provides coaxial and optical connectors which supports S/P DIF.

TOC

Short for Table of Contents. This is the region on the CD-R disc that handles information such as song times, end times, sequence, and so on. Although the songs on a disc and their playing time can be displayed when an audio CD is placed in a CD player, this is because they can be read automatically from the TOC. The TOC is recorded differently than music data, with its main characteristic being disc access, such as the ability to go to the start of any song instantly.

Track

Multitrack recorders, disk recorders, and sequencers etc. have multiple "tracks" on which the parts that make up a song can be independently recorded and managed. Each track can record and play back audio (or performance data in the case of a MIDI sequencer) along a time axis. The CDX-1 provides multitrack recorder tracks (1-8) and sequence tracks (A-D).

TRS type (Tip-Ring-Sleeve plug)

A special type of quarter-inch phone plug and jack that has three contacts. Widely known from its use as a headphone plug.

→ Balanced connection

Value

The setting of a parameter.

→ Parameter

Redo

After using Undo to cancel a setting or operation, you can use Redo to go back to the settings that were in effect before you used Undo.

Unbalanced connection

A method of transmitting a signal using two electrical conductors. Broadly used on electric instruments and consumer audio devices.

→ Balanced connection

Undo

A function that allows an operation performed in error to be cancelled, returning to the state before that operation was performed. Redo is a function that "cancels the Undo operation."

WAVE file

The WAVE file is the standard form file of the audio data that be able to use it with Microsoft Windows.

The file name has ".WAV".

* Microsoft and Windows are registered trademarks of Microsoft Corporation.

XLR Jack

The collective name for the "XLR" series jacks developed by Cannon Electric Corporation (USA) and compatible jacks manufactured by other companies. Also called "Canon." On the CDX-1, 3-pin XLR jacks are used for the mic inputs (1, 2).

Parameter List

NOTE

- The setting of the Tuner parameter, LCD Contrast parameter, System parameter and MIDI parameter are stored in internal memory.
- When you operate saving the setting of Song, the settings of parameters with ★ symbol are stored on a CD-RW disc.

■ Mixer Parameter (★)

Parameter name	Display	Initial Value	Value
Input Level	-	current panel setting	0-127
Audio Track Fader Level	-	current panel setting	0-127
Pad/Sequence Fader Level	-	current panel setting	0-127
Master Fader Level	-	current panel setting	0-127
Input Select	-	LINE L/R	MIC1, MIC2/GUITAR/BASS, LINE L/R, SIMUL, MUTE
Pan	PAN	0	L100-0-R100
Equalizer Stereo Link	EQ StereoLink	OFF	OFF, ON
Equalizer On/Off	EQ On/Off	OFF	OFF, ON
Equalizer Low Gain	Low Gain	0 dB	-12-+12 dB
Equalizer Low Frequency	Low Freq	300 Hz	40 Hz-1.5 kHz
Equalizer High Gain	High Gain	0 dB	-12-+12 dB
Equalizer High Frequency	High Freq	4.0 kHz	500 Hz-18.0 kHz
Chorus/Delay/Doubling Send Level	CHORUS/DELAY/DOUBL'N: SEND	0	0-100
Reverb Send Level	REVERB: SEND	IN/TR1-8/PAD: 20, RHYTHM: 10	0-100
Reverb Return Level	-	current panel setting	0-100

Chorus/Delay/Doubling

Parameter name	Display	Initial Value	Value
Effect Type	Effect Type	DELAY	CHORUS, DELAY, DOUBL'N
Chorus			
Rate	Rate	10	0-100
Depth	Depth	10	0-100
Pre Delay	Pre Delay	10.0 mS	0.5-50.0 mS
Effect Level	Effect Level	100	0-100
Delay			
Delay Time	Delay Time	370	10-1000 mS
Feedback	Feedback	30	0-100
Effect Level	Effect Level	30	0-100
Reverb Send Level	Reverb Send	50	0-100
Doubling			
Delay Time	Delay Time	20.0 mS	05-50.0 mS
Effect Level	Effect Level	100	0-100

Reverb

Parameter name	Display	Initial Value	Value
Reverb Type	Reverb Type	HALL	ROOM, HALL
Reverb Time	Reverb Time	2.0	0.1-10.0
Tone	Tone	0	-12-0-+12

■ Rhythm Guide Parameter (★)

Parameter name	Display	Initial Value	Value
Rhythm Guide Auto/On/Off	-	OFF	OFF, AUTO, ON
Beat	Beat	4/4	1/1-8/1, 1/2-8/2, 1/4-8/4, 1/8-8/8, TEMPO MAP
Tempo	Tempo	120.00	20.00-250.00
Pattern	Pattern	01	01-** (*)
Rhythm Guide Level	Level	60	0-100

* The settable range for Pattern will change depending on the Beat.

■ Pad Recording Parameter

Parameter name	Display	Initial Value	Value
Data Type	Data Type	STANDARD	HIGH, STANDARD, LONG1, LONG2
Sampling Type	Type	STEREO	STEREO, MONO
Start With	Start with	MANUAL	MANUAL, LEV.1-LEV.8, PAD, [▶]
Pre Trigger	Pre Trigger	OFF	OFF, 20ms, 40ms, 80ms, 160ms, 320ms

■ Edit Pad Parameter

Tempo Match

Parameter name	Display	Initial Value	Value
Base Sample	Base Pad	Bank**-**	Bank No.1-64, Pad No.1-8
Source Sample	Source	Bank**-**	Bank No.1-64, Pad No.1-8
To	To	Bank 1-1	Bank No.1-64, Pad No.1-8

Divide Sample

Parameter name	Display	Initial Value	Value
Divide Type	Type	END POINT	END POINT, AUTO 0.5, AUTO 1.0, AUTO 1.5, AUTO 2.0, MANUAL
Source Sample	Source	Bank**-**	Bank No.1-64, Pad No.1-8
Destination Pad Number	To	Bank 1-1	Bank No.1-64, Pad No.1-8
Threshold	Threshold	***	LEV1-LEV8 (*1)
Trim	Trim	***	OFF, ON (*2)

*1 Valid when "Threshold" is "ON."

*2 Valid when "Type" is "AUTO 0.5," "AUTO 1.0," "AUTO 1.5," or "AUTO 2.0."

Trim Sample

Parameter name	Display	Initial Value	Value
Target Sample	Target	Bank**-**	Bank No.1-64, Pad No.1-8
Threshold	Threshold	LEV1	LEV1-LEV8

Normalize

Parameter name	Display	Initial Value	Value
Source Sample	Source	Bank**-**	Bank No.1-64, Pad No.1-8
Destination Pad Number	To	Bank 1-1	Bank No.1-64, Pad No.1-8

Time Stretch

Parameter name	Display	Initial Value	Value
Source Sample	Source	Bank**-**	Bank No.1-64, Pad No.1-8
Destination Pad Number	To	Bank 1-1	Bank No.1-64, Pad No.1-8
Ratio	Ratio	100.0	50.0-150.0
New BPM	New BPM	***.***	20.00-500.00

Create Reversal

Parameter name	Display	Initial Value	Value
Source Sample	Source	Bank**-**	Bank No.1-64, Pad No.1-8
Destination Pad Number	To	Bank 1-1	Bank No.1-64, Pad No.1-8

■ Pad Parameter

Parameter name	Display	Initial Value	Value
Pad Play	Pad Play	GATE	GATE, TRIGGER, DRUM
Loop Mode	Loop Mode	OFF	OFF, START-END, LOOP-END
Start Point	Start Point	00000000	00000000-99999999
Loop Point	Loop Point	00000000	00000000-99999999
Length	Length(→END)	00000000	00000000-99999999
Sample Level	Level	100	0-100
Mute Group	Mute Group	OFF	OFF, GROUP-1-GROUP-7
BPM Base Note	BPM Base Note	♩	♩, ♪, ♫, ♮, ♯
	X	8	1-255

Parameter List

■ Pad Bank Parameter

Parameter name	Display	Initial Value	Value
Bank Number	Bank	1	1-64
Bank Name	Name	-	10 characters
Foot Switch PAD	Foot Switch PAD	1	1-8

■ Pad Bank Erase Parameter

Parameter name	Display	Initial Value	Value
Erase Bank	Bank	1	1-64

■ Pad Bank Protect Parameter

Parameter name	Display	Initial Value	Value
Bank Number	Bank	1	1-64
Pad Bank Protection	Protect	OFF	OFF, ON

■ Sequence Parameter (★)

Parameter name	Display	Initial Value	Value
Sequence play ON/OFF	-	OFF	OFF, ON
Sequence track status	-	OFF	OFF, ON




■ Pad Sequencing Parameter

Parameter name	Display	Initial Value	Value
Recording Mode Select	RecMode SEL	REAL TIME	REAL TIME, STEP
Sequence Track Select	Tr.SEL	A	A-D

Real Time Recording

Parameter name	Display	Initial Value	Value
Quantize	Quantize	OFF	MEAS,  ,  ,  ,  ,  ,  ,  ,  , OFF
Start With	Start/W	Cont1M	Norm, Cont1M, Cont2M, PAD

Step Recording

Parameter name	Display	Initial Value	Value
Step	Step	SMPL	SMPL, MEAS,  ,  ,  ,  ,  ,  ,  , 
Duration	Duration	100	1-100

■ Song Parameter (★)

Parameter name	Display	Initial Value	Value
Song Name	Name	-	10 characters
Marker Stop	Marker Stop	OFF	OFF, ON

■ Tuner Parameter

Parameter name	Display	Initial Value	Value
Pitch	PITCH	440	435-445

■ LCD Contrast Parameter

Parameter name	Display	Initial Value	Value
LCD Contrast	LCD Contrast	8	0-15

■ System Parameter

Parameter name	Display	Initial Value	Value
Big Time Display	Time Disp	TIME CODE	TIME CODE, MEASURE
Foot Switch	Foot SW	PLAY/STOP	PLAY/STOP, PUNCH I/O, SAMPLER TRIG
Audio CD Fader	Audio CD Fader	ON	OFF, ON
CD Digital REC	CD DigitalREC	OFF	OFF, ON
Digital Copy Protect	D.Copyprotect	ON	THRU, ON
WAVE file preview length	Wave Preview	4sec	1sec-10sec

■ MIDI Parameter

Parameter name	Display	Initial Value	Value
Rhythm MIDI Channel	Rhythm Ch.	OFF	OFF, 1-16
Pads Rx Channel	Pads Rx Ch.	1	OFF, 1-16
Pads Note Number	RxNote(Pad1)	48(C3)	0(C-)-120(C9)
Pads Tx Channel	Pads Tx Ch.	OFF	OFF, 1-16
MMC Mode	MMC Mode	OFF	OFF, MASTER, SLAVE
Sync Out	Sync Out	OFF	OFF, MTC
MTC Type	MTC Type	30	30, 29N, 29D, 25, 24
Out/Thru Select	Out/Thru	OUT	OUT, THRU

■ CD-RW Disc Format Parameter

Parameter name	Display	Initial Value	Value
Data Type	Data Type	STANDARD	STANDARD, LONG1, LONG2
Format Type	Format Type	STANDARD	STANDARD, FULL

■ Marker Parameter (★)

Parameter name	Display	Initial Value	Value
Marker Number	No.	1	1-100
Marker Name	Name	-	8 characters
Marker Location	Loc.	-	00:00:00-00-23:59:59-** (*)

* The settable range for Mark Location will change slightly on the MTC Type (MIDI parameter).

■ Temp Map Parameter (★)

Parameter name	Display	Initial Value	Value
Measure	MEAS	1	1-9999
Tempo	TEMPO	120.00	20.00-250.00
Beat	BEAT	4/4	1/1-8/1, 1/2-8/2, 1/4-8/4, 1/8-8/8
Pattern	PATTERN	Rock 1	Rock 1-** (*), OFF

* The settable range for Pattern will change depending on the Beat.

■ Effects Location Parameter (★)

Parameter name	Display	Initial Value	Value
Insert Mode	Insert Mode	INPUT (NORMAL)	INPUT (NORMAL), INPUT (REC DRY), TRACK1-8, TRACK1&2-7&8, MASTER

■ Mastering Tools Parameter

Parameter name	Display	Initial Value	Value
Mastering Toll Patch	MTK Patch	Mixdown	Mixdown, Premastr, LiveMix, PopMix, DanceMix, KingMix, HardComp, SoftComp, ClnComp, DnceComp, OrchComp, VacalComp, Accoustic, RockBand, Orchestr, LoBoost, Brighten, DJsVoice, PhoneVox, Cassette, Phono
Input Level	Input Level	0 dB	-24-12 dB

■ Master Parameter (★)

Parameter name	Display	Initial Value	Value
Master Balance	Balance	0	L100-0-R100

MIDI Implementation

Model CDX-1 Version 1.01, Apl. 16 2001

1. RECOGNIZED RECEIVE DATA

■ Channel Voice Message

● Note On/Off

Receive the note number which is designated with "RxNote", in the MIDI channel number which is designated with "Pads Rx Ch." in the UTILITY "MIDI."

Status	Second	Third
9nH	mmH	lH

n = MIDI Channel No.: 00H-0FH (ch.1-ch.16)
 mm = Note No.: 00H-7FH (0-127)
 l = Velocity: 01H-7FH (1-127) / 00H = NOTE OFF

● Program Change

Works as bank switch when MIDI channel number is set for playing the sample.

Status	Second
CnH	ppH

n = MIDI Channel No.: 00H-0FH (ch.1-ch.16)
 pp = Program No.: 00H-3FH (0-63)

■ Channel Mode Message

● All Sound Off (Controller Number 120)

Mutes all sounding notes, in the MIDI channel number which is designated with "Pads Rx Ch." in the UTILITY "MIDI."

Status	Second	Third
BnH	78H	00H

n = MIDI Channel No.: 00H-0FH (ch.1-ch.16)

● All Note Off (Controller Number 123)

Mutes all sounding notes, in the MIDI channel number which is designated with "Pads Rx Ch." in the UTILITY "MIDI."

Status	Second	Third
BnH	7BH	00H

n = MIDI Channel No.: 00H-0FH (ch.1-ch.16)

● System Exclusive Message

Status	Data Bytes	Status
F0H	iiH, ddH, ..., eeH	F7H

Byte	Description
F0H	Status of System Exclusive Message
iiH	Manufacturer ID 41H RolandsManufacturerID'
	7EH Universal Non Realtime Message
	7FH Universal Realtime Message
ddH	Data: 00H-7FH (0-127)
eeH	Data
F7H	EOX (End of System Exclusive Message)

● Universal System Exclusive Message

○ INQUIRY MESSAGE

◇ Identity Request

Status	Data Bytes	Status
F0H	7EH, Dev, 06H, 01H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7EH	Universal System Exclusive Message Non Realtime Header
Dev	Device ID (10H or 7FH)
06H	General Information (sub-ID #1)
01H	Identify Request (sub-ID #2)
F7H	EOX (End of System Exclusive Message)

The message is used to request the particular of the CDX-1.

If CDX-1 received the message and the device ID of the message is same as 10H or 7FH, the CDX-1 transmits the prescribed Identity Replay message.

○ MIDI Machine Control Commands

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, aaH, ..., bb	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
aaH	Command
bbH	Command
F7H	EOX (End of System Exclusive Message)

* See "2. MIDI Machine Control" section.

2. MIDI Machine Control

■ MIDI Machine Control Details

● STOP (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 01H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
01H	STOP (MCS)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the CDX-1 stops immediately.

● PLAY (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 02H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
02H	PLAY (MCS)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the CDX-1 goes into the playback condition.

● DEFERRED PLAY (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 03H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
03H	DEFERRED PLAY (MCS)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the CDX-1 goes into the playback condition after the locate operation.

● FAST FORWARD (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 03H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
03H	DEFERRED PLAY (MCS)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the CDX-1 goes into the fast forward condition.

● REWIND (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 05H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
05H	REWIND (MCS)
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the CDX-1 goes into the rewind condition.

● RECORD STROBE

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 06H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
06H	RECORD STROBE
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the CDX-1 goes into the following condition.

1. The CDX-1 is in the playback condition.
Start Recording the tracks that status are the record standby mode.
2. The CDX-1 is in the stop condition.
Start Playing back, and Start Recording the track that status are record standby mode.

● RECORD EXIT

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 07H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
07H	RECORD EXIT
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the CDX-1 exits from the record condition.

● LOCATE (MCP)

○ Format 2-LOCATE [TARGET]

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 44H, 06H, 01H, hrH, mnH, scH, frH, ffH	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID (10H or 7FH)
06H	MMC Command Message
44H	LOCATE (MCP)
06H	Number of Bytes
01H	"TARGET" sub command
hrH, mnH, scH, frH, ffH	Standard Time with Sub Frame
F7H	EOX (End of System Exclusive Message)

If the device ID on the message was as same as that of the receiving 10H or 7FH, the CDX-1 locates the specified time location received from the command.

3. TRANSMITTED DATA

■ Channel Voice Message

● Note On/Off

Transmit the number/velocity which is designated, in the MIDI channel number "1" - "16" which is designated with "Rhythm Ch." in the UTILITY "MIDI."

The MIDI Channel number specified in "Pads Tx Ch." in the UTILITY "MIDI" and the Note number specified in "RxNote(Pad1)" are output.

In this case, Velocity is fixed at 100.

Status	Second	Third
9nH	mmH	llH

n = MIDI Channel No.: 00H-0FH (ch.1-ch.16)

mm = Note No.: 00H-7FH (0-127)

ll = Velocity: 01H-7FH (1-127) / 00H = NOTE OFF

● Program Change

Works as bank switch, in the MIDI channel number which is designated with "Pads Rx Ch." in the UTILITY "MIDI."

Status	Second
CnH	ppH

n = MIDI Channel No.: 00H-0FH (ch.1-ch.16)

pp = Program No.: 00H-3FH (0-63)

■ System Common Messages

● MIDI Time Code Quarter Frame Messages

MIDI Time Code Quarter Frame Messages can be transmitted while the CDX-1 is running (Playing or Recording) if the SONG parameter "Sync Out" is "MTC."

Status	Second
FIH	mmH (= 0nnndddd)

nnn = Message type: 0 = Frame count LS nibble
1 = Frame count MS nibble
2 = Seconds count LS nibble
3 = Seconds count MS nibble
4 = Minutes count LS nibble
5 = Minutes count MS nibble
6 = Hours count LS nibble
7 = Hours count MS nibble

dddd = 4 bit nibble data: 0H-FH (0-15)

If the upper and lower 4 bits of the count are combined, these bit fields are assigned as follows.

Frame Count	xxx	xxxxxyyy
	yyyyy	Reserved (000)
Seconds Count	xx	Frame No. (0-29)
	yyyyyy	xxxxxyyy
Minutes Count	yy	Reserved (00)
	yyyyyy	Seconds Count (0-59)
Hours Count	xx	xxxxxyyy
	yyyyyy	Reserved (00)
	x	Minutes Count (0-59)
	yy	Reserved (0)
	zzzzz	Time Code type
		0 = 24 Frames/Sec
		1 = 25 Frames/Sec
		2 = 30 Frames/Sec (Drop Frame)
		3 = 30 Frames/Sec (Non Drop Frame)
	zzzzz	Hours Count (0-23)

MIDI Implementation

■ System Exclusive Message

Status	Data Bytes	Status
F0H	iiH, ddH, ..., eeH	F7H

Byte	Description
F0H	Status of System Exclusive Message
iiH	Manufacturer ID 41H RolandsManufacturerID' 7EH Universal Non Realtime Message 7FH Universal Realtime Message
ddH	Data: 00H-7FH (0-127)
eeH	Data
F7H	EOX (End of System Exclusive Message)

● Universal System Exclusive Message

○ INQUIRY MESSAGE

◇ Identity Reply

Status	Data Bytes	Status
F0H	7EH, Dev, 06H, 02H, 41H, 3BH, 01H, 00H, 00H, ssH, ssH, ssH, ssH	F7H

Byte	Description
F0H	Status of System Exclusive Message
7EH	Universal System Exclusive Message Non Realtime Header
Dev	Device ID
06H	General Information (sub-ID #1)
02H	Identify Reply (sub-ID #2)
41H	Manufacturer ID (Roland)
3BH, 01H	Device Family Code (CDX-1)
00H, 00H	Device Family No.
ssH, ssH, ssH, ssH	Software Revision Level
F7H	EOX (End of System Exclusive Message)

The CDX-1 transmits as the device ID 10H.

○ MIDI Time Code

Status	Data Bytes	Status
F0H	7FH, Dev, 01H, 01H, hr, mn, sc, fr	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID
01H	MIDI Time Code (sub-ID #1)
01H	Full Message (sub-ID #2)
hr	type/hours (0yyzzzzz) yy Time code type 0 = 24 frame/sec 1 = 25 frame/sec 2 = 30 frame/sec (Drop frame) 3 = 30 frame/sec (Non-drop frame) zzzz Hours (0-23)
mn	Minutes (0-59)
sc	Seconds (0-59)
fr	Frames (0-29)
F7H	EOX (End of Exclusive)

If the time locate is operated effectively, the CDX-1 transmits as the device ID 7FH.

○ MIDI Machine Control Commands

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, aaH, ..., bb	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID
06H	MMC Command Message
aaH	Command
bbH	Command
F7H	EOX (End of System Exclusive Message)

* See "4. MIDI Machine Control" section.

4. MIDI Machine Control

■ MIDI Machine Control Details

● STOP (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 01H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID
06H	MMC Command Message
01H	STOP (MCS)
F7H	EOX (End of System Exclusive Message)

If the transport switch [STOP] was pressed, the CDX-1 transmits as the device ID 7FH.

● DEFERRED PLAY (MCS)

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 03H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID
06H	MMC Command Message
03H	DEFERRED PLAY (MCS)
F7H	EOX (End of System Exclusive Message)

If the transport switch [PLAY] was pressed, the CDX-1 transmits as the device ID 7FH.

● RECORD STROBE

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 06H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID
06H	MMC Command Message
06H	RECORD STROBE
F7H	EOX (End of System Exclusive Message)

If the transport switch [REC] was pressed out of the recording condition, the CDX-1 transmits as the device ID 7FH.

● RECORD EXIT

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 07H	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID
06H	MMC Command Message
07H	RECORD EXIT
F7H	EOX (End of System Exclusive Message)

If the transport switch [REC] was pressed while recording, the CDX-1 transmits as the device ID 7FH.

● LOCATE (MCP)

○ Format 2-LOCATE [TARGET]

Status	Data Bytes	Status
F0H	7FH, Dev, 06H, 44H, 06H, 01H, hrH, mnH, scH, frH, ffH	F7H

Byte	Description
F0H	Status of System Exclusive Message
7FH	Universal System Exclusive Message Realtime Header
Dev	Device ID
06H	MMC Command Message
44H	LOCATE (MCP)
06H	Number of Bytes
01H	"TARGET" sub command
hrH, mnH, scH, frH, ffH	Standard Time with Sub Frame
F7H	EOX (End of System Exclusive Message)

If the time locate is operated effectively, the CDX-1 transmits as the device ID 7FH.

5. Appendices

● Decimal and Hexadecimal table

(Hexadecimal number is shown with H.)

In MIDI documentation, data values and addresses/sizes of system exclusive messages etc. are expressed as hexadecimal values for each 7 bits.

The following table shows how these correspond to decimal numbers.

dec	hex	dec	hex	dec	hex	dec	hex
0	00H	32	20H	64	40H	96	60H
1	01H	33	21H	65	41H	97	61H
2	02H	34	22H	66	42H	98	62H
3	03H	35	23H	67	43H	99	63H
4	04H	36	24H	68	44H	100	64H
5	05H	37	25H	69	45H	101	65H
6	06H	38	26H	70	46H	102	66H
7	07H	39	27H	71	47H	103	67H
8	08H	40	28H	72	48H	104	68H
9	09H	41	29H	73	49H	105	69H
10	0AH	42	2AH	74	4AH	106	6AH
11	0BH	43	2BH	75	4BH	107	6BH
12	0CH	44	2CH	76	4CH	108	6CH
13	0DH	45	2DH	77	4DH	109	6DH
14	0EH	46	2EH	78	4EH	110	6EH
15	0FH	47	2FH	79	4FH	111	6FH
16	10H	48	30H	80	50H	112	70H
17	11H	49	31H	81	51H	113	71H
18	12H	50	32H	82	52H	114	72H
19	13H	51	33H	83	53H	115	73H
20	14H	52	34H	84	54H	116	74H
21	15H	53	35H	85	55H	117	75H
22	16H	54	36H	86	56H	118	76H
23	17H	55	37H	87	57H	119	77H
24	18H	56	38H	88	58H	120	78H
25	19H	57	39H	89	59H	121	79H
26	1AH	58	3AH	90	5AH	122	7AH
27	1BH	59	3BH	91	5BH	123	7BH
28	1CH	60	3CH	92	5CH	124	7CH
29	1DH	61	3DH	93	5DH	125	7DH
30	1EH	62	3EH	94	5EH	126	7EH
31	1FH	63	3FH	95	5FH	127	7FH

* Decimal values such as MIDI channel, bank select, and program change are listed as one (1) greater than the values given in the above table.

* A 7-bit byte can express data in the range of 128 steps. For data where greater precision is required, we must use two or more bytes. For example, two hexadecimal numbers aa bbH expressing two 7-bit bytes would indicate a value of aa x 128 + bb.

* In the case of values which have a ± sign, 00H = -64, 40H = ±0, and 7FH = +63, so that the decimal expression would be 64 less than the value given in the above chart. In the case of two types, 00 00H = -8192, 40 00H = ±0, and 7F 7FH = +8191.

* Data marked "nibbled" is expressed in hexadecimal in 4-bit units. A value expressed as a 2-byte nibble 0a 0bH has the value of a x 16 + b.

<Ex.1> What is 5AH in decimal system?
5AH = 90 according to the above table.

<Ex.2> What in decimal system is 12034H in hexadecimal of every 7 bit?
12H = 18, 34H = 52 according to the above table. So 18 x 128 + 52 = 2356.

<Ex.3> What in decimal system is 0A 03 09 0D in nibble system?
0AH = 10, 03H = 3, 09H = 9, 0DH = 13 according to the table.
So ((10 x 16 + 3) x 16 + 9) x 16 + 13 = 41885.

<Ex. 4> What in nibble system is 1258 in decimal system?

```

16)1258
  78 ... 10
  4 ... 14
  0 ... 4
    
```

0 = 00H, 4 = 04H, 14 = 0EH, 10 = 0AH According to the table.
So it is 00 04 0E 0AH.

MIDI Machine Control (MMC) Command

● Commands Recognized

Command	Action
01H STOP	STOP
02H PLAY	PLAY
03H DEFERRED PLAY	PLAY
04H FAST FORWARD	FF
05H REWIND	REW
06H RECORD STROBE	REC/PUNCH IN
07H RECORD EXIT	PUNCH OUT
44H 01H LOCATE TARGET	LOCATE

● Commands Transmitted

Command	Action
01H STOP	STOP
03H DEFERRED PLAY	PLAY
06H RECORD STROBE	REC/PUNCH IN
07H RECORD EXIT	PUNCH OUT
44H 01H LOCATE TARGET	LOCATE

MIDI Implementation

MULTITRACK CD RECORDER / AUDIO SAMPLE WORKSTATION

Date : Apl. 16, 2001

Model CDX-1

MIDI Implementation Chart

Version : 1.01

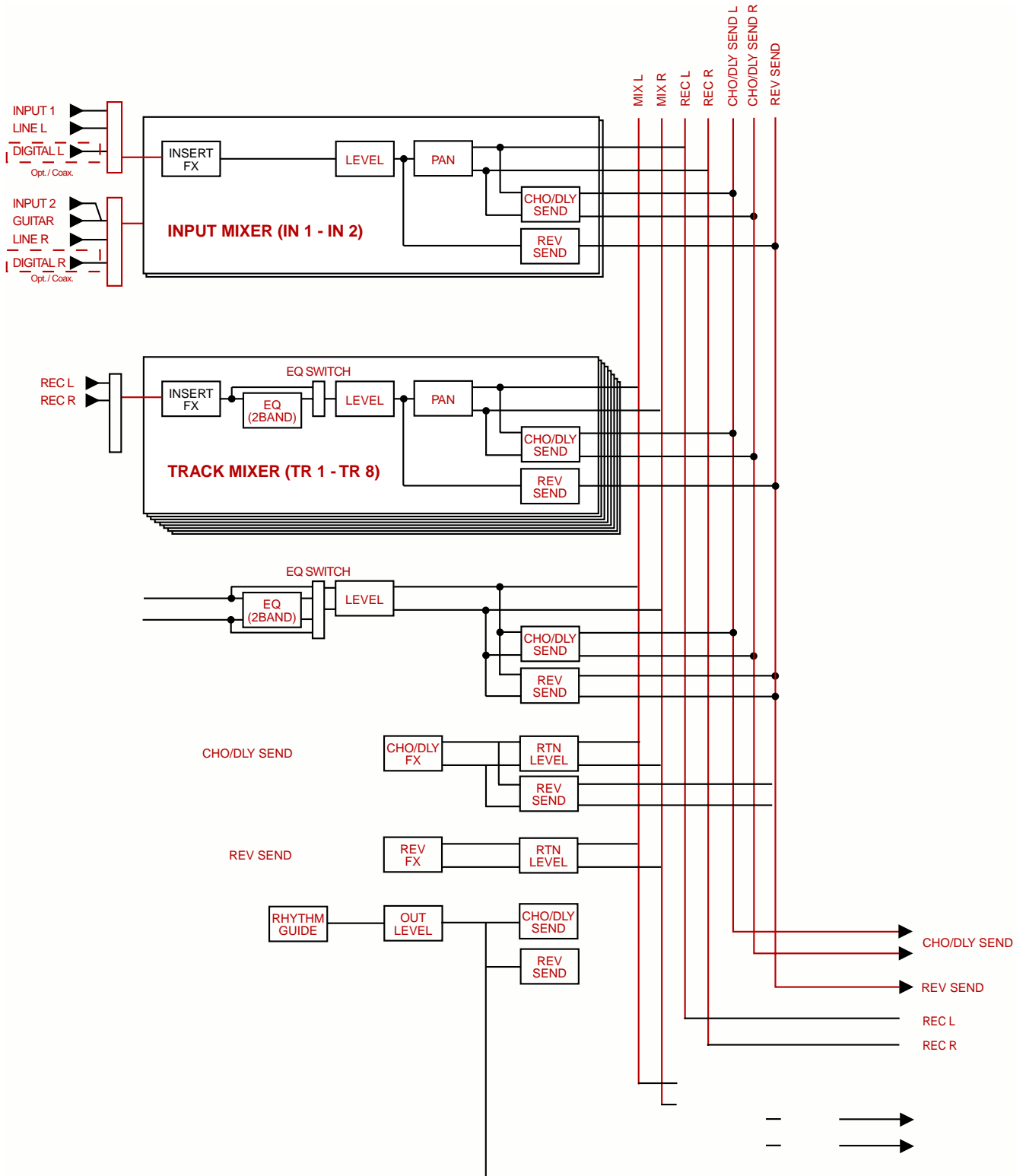
Function...	Transmitted	Recognized	Remarks
Basic Channel Default Changed	1-16 1-16	1-16 1-16	
Mode Default Messages Altered	Mode 3 X *****	Mode 3 X X	
Note Number: True Voice	O 0-127 *****	O 0-127 0-127	
Velocity Note On Note Off	O 1-127 X9n, v = 0	X X	
After Touch Key's Channel's	X X	X X	
Pitch Bend	X	X	
Control Change	X	X	
Program Change :True Number	O *****	O 0-63	Pad Bank1-64
System Exclusive	O	O	
System Common : Quarter Frame : Song Position : Song Select : Tune Request	O X X X	*1 X X X X	
System Real Time : Clock : Commands	X X	X X	
Aux Messages : All Sound Off : Reset All Controllers : Local On/Off : All Notes Off : Active Sensing : System Reset	X X X X X X	O X X O X X	
Notes	* 1 SyncOut=MTC Only		

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

Mixer Block Diagram



MASTER
OUT

DIGITAL
OUT

PHONES

Specifications

CDX-1:

MULTITRACK CD RECORDER / AUDIO SAMPLE WORKSTATION

● Audio Data Format

CDX-1 Original Format (R-DAC)

● Maximum Polyphony

Monaural x 8 (Stereo x 4) (Total)

● Audio Tracks

Number of Tracks:	8								
Maximum Simultaneously Playback Tracks:	8								
Maximum Simultaneously Recording Tracks:	2								
Data Type:	STANDARD LONG 1 LONG 2								
Recording Time:	<table><thead><tr><th>Data Type</th><th>Time</th></tr></thead><tbody><tr><td>STANDARD</td><td>About 15 minutes</td></tr><tr><td>LONG 1</td><td>About 19 minutes</td></tr><tr><td>LONG 2</td><td>About 23 minutes</td></tr></tbody></table>	Data Type	Time	STANDARD	About 15 minutes	LONG 1	About 19 minutes	LONG 2	About 23 minutes
Data Type	Time								
STANDARD	About 15 minutes								
LONG 1	About 19 minutes								
LONG 2	About 23 minutes								

● Audio Sample PAD

Sample PAD: 512 Phrases (8 PAD x 64 Bank)

Maximum Polyphony: 4 (Stereo/Mono)

Memory Capacity: 15 MB (*)

* When expanding the Memory (DIMM: 128 MB): 111 MB

Data Type: HIGH
STANDARD
LONG 1
LONG 2

Sampling Time:	<table><thead><tr><th>Data Type</th><th>Time</th></tr></thead><tbody><tr><td>HIGH</td><td>About 5 minutes</td></tr><tr><td>STANDARD</td><td>About 7 minutes</td></tr><tr><td>LONG 1</td><td>About 9 minutes</td></tr><tr><td>LONG 2</td><td>About 11 minutes</td></tr></tbody></table>	Data Type	Time	HIGH	About 5 minutes	STANDARD	About 7 minutes	LONG 1	About 9 minutes	LONG 2	About 11 minutes
Data Type	Time										
HIGH	About 5 minutes										
STANDARD	About 7 minutes										
LONG 1	About 9 minutes										
LONG 2	About 11 minutes										

* When expanding the Memory (DIMM: 128MB):

Data Type	Time
HIGH	About 43 minutes
STANDARD	About 58 minutes
LONG 1	About 69 minutes
LONG 2	About 87 minutes

● Maximum number of phrases (events) to be memorized

2000 phrases

● Signal Processing

AD Conversion: 24 bits, 64 times oversampling

DA Conversion: 24 bits, 128 times oversampling

● Sample rate

44.1 kHz

● Frequency Response

20 Hz – 20 kHz (+0/-3 dB)

● Nominal Output Level (variable)

Guitar/Bass (Hi-Z): -26 dBu (SENS: MAX)

MIC 1, 2: -56 dBu (SENS: MAX)

LINE: 0 dBu (SENS: MAX)

● Input Impedance

Guitar/Bass (Hi-Z): 1M ohms

MIC 1, 2: 100k ohms

LINE: 30k ohms

● Nominal Output Level

Master Out: 0 dBu

● Output Impedance

Master Out: 1k ohms

Phones: 22 ohms

● Recommended Load Impedance

Master Out: 10 k ohms or greater

Phones: 8–600 ohms

● Residual Noise Level

Master Out: -77 dBu or less

(INPUT:LINE, ASENS: MAX, AIHF-A, typ.)

● Interface

Digital I/O: Coaxial, Optical (conforms to S/P DIF)

● Display

69.0 x 25.0 mm (backlit LCD)

● Connectors

MIC In Jack 1, 2 (1/4 inch TRS phone type)

MIC In Jack 1, 2 (XLR type)

Guitar/Bass (Hi-Z) Jack (1/4 inch phone type)

Line In Jack L/R (RCA phono type)

Digital In Connectors (Coaxial type, Optical type)

Master Out Jack L/R (RCA phono type)

Digital Out Connectors (Coaxial type, Optical type)

Phones Jack (Stereo 1/4 inch phone type)

Foot Switch Jack (1/4 inch phone type)

MIDI Connectors (In, Out/Thru)

- **CD-RW Drive**
x12 (Write), x10 (Rewrite), x32 (Read),
- **Power Supply**
DC 12 V: Supplied AC Adaptor (PSB-2U)
- **Current Draw**
2.8 A
- **Dimensions**
456.0 (W) x 330.0 (D) x 94.0 (H) mm
18 (W) x 13 (D) x 3-3/4 (H) inches
- **Weight**
5.0 kg/11 lbs (excluding AC adaptor)
- **Accessories**
AC Adaptor: PSB-2U
Owner's Manual
Effect Patch List
Demo Disc (Songs, Samples)
CD-RW blank disc
- **Option**
Foot Switch: FS-5U (BOSS)
Pedal Switch: DP-2

(0 dBu = 0.775 Vrms)

* *In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

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Memo...

Memo...

Memo...

Information

When you need repair service, call your nearest Roland Service Center or authorized Roland distributor in your country as shown below.

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Al Fanny Trading Office
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Ste Clotilde Cedex,
REUNION ISLAND
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**That Other Music Shop
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11 Melle St., Braamfontein,
Johannesburg
Republic of SOUTH AFRICA

P.O.Box 32918, Braamfontein 2017
Republic of SOUTH AFRICA
TEL: (011) 403 4105

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17 Werdmuller Centre Claremont
7700
Republic of SOUTH AFRICA

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SOUTH AFRICA, 7735
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Av. Toluca No. 323, Col. Olivar
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MEXICO
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TEL: 51-14-758226

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URUGUAY, CP11200
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Musicaland Digital C.A.
Av. Francisco de Miranda,
Centro Parque de Cristal, Nivel
C2 Local 20 Caracas
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TEL: (02) 285 9218

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**Roland Scandinavia As,
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**Roland Elektronische
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TEL: (040) 52 60090

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**STOLLAS S.A.
Music Sound Light**
155, New National Road
26422 Patras, GREECE
TEL: 061-435400

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Warehouse Area 'DEPO' Pf.83
H-2046 Torokbalint, HUNGARY
TEL: (23) 511011

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Donnybrook, Dublin 4,
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20020 Arese, Milano, ITALY
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**Tecnologias Musica e Audio,
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Cais Das Pedras, 8/9-1 Dto
4050-465 PORTO
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SAUDI ARABIA
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Damascus - SYRIA
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ve ihracat Ltd Sti**
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TEL: (0212) 2499324

U. A. E.

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Instruments Co. L.L.C.**
Zabeel Road, Al Sheroog Bldg.,
No. 14, Grand Floor DUBAI
U.A.E.
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Roland Canada Music Ltd. (Toronto Office)

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M9W 6Y1 CANADA
TEL: (0416) 213 9707

U. S. A.

Roland Corporation U.S.
5100 S. Eastern Avenue
Los Angeles, CA 90040-2938,
U. S. A.
TEL: (323) 890 3700

As of May 15, 2001 (Roland)



For EU Countries

This product complies with the requirements of European Directive 89/336/EEC.

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

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

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Tested To Comply With FCC Standards

FOR HOME OR OFFICE USE

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

NOTICE

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

AVIS

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE: NEUTRAL
BROWN: LIVE

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

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.
Under no circumstances must either of the above wires be connected to the earth terminal of a three pin plug.

DiscLab

Newly Added Functions Ver.1.5

As the result of recent upgrades, the descriptions in the Owner's Manual may not accurately represent the performance of some of the features of the CDX-1. To make sure you are fully aware of the newly added functionality, please read this booklet in conjunction with the Owner's Manual while you use the CDX-1.

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Compressing/expanding a sample according to the tempo at which playback was stopped

While playback is stopped, you can adjust the length of the sample according to the tempo of the location at which playback was stopped.

This function makes it easy to adjust the sample length to match the tempo of a sequence track. This provides an easy way by which the length of a sample recorded in a sequence track can be made to match the length of a measure in that sequence track.

The tempo at the point that playback is stopped will be one of the following.

- The tempo displayed in “Tempo” of the Rhythm Guide screen.
- If the “Beat” parameter in the Rhythm Guide screen is set to “TEMPO MAP,” the tempo of the Tempo Map.

Since this function needs to accurately calculate the tempo in order to perform a high-quality compression or expansion, **you must first perform the procedure of “Displaying the correct tempo of a sample” (Owner’s Manual; p. 77) to specify the number of beats in the original sample.**

In the case of samples for which it is difficult to calculate a tempo, such as a narration, vocal part, or a long sustained sound, set the number of beats to 0.

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [] .

The Pad Edit menu are displayed as icons.

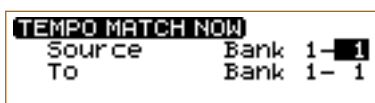


2. Press CURSOR [] [] to select the Tempo Match Now icon.



3. Press [YES/ENTER].

The Tempo Match Now screen appears.



4. Press CURSOR [] [] [] [] to select the pad bank number and pad number for each item, and specify the desired number for each.

To set the pad bank number, turn the TIME/VALUE dial. To set the pad number, either press a pad or turn the TIME/VALUE dial.

Source: Specify the sample whose length you want to adjust.

To: Specify the pad to which the length-adjusted sample will be assigned.

5. Press [YES/ENTER].

After a while, the expand/compress sample is assigned to the destination pad.

* If the destination pad already contains a sample, the “Overwrite?” message appears. If it is OK to overwrite the existing sample, press [YES/ENTER]. If you do not want to overwrite the existing sample, press [NO/EXIT].

6. Press [DISPLAY] to return to the Basic screen.

NOTE

Compression/expansion requires more processing time than other sample editing operations. Also, the audio quality of the stretched sample may be inferior to that of the original sample.

NOTE

In case the expanding/expanding level is in excess of 134% or less than 67%, the sample will not be made correct tempo.

Modifying the pitch of a sample to create a new sample—Pitch Change

You can modify the pitch of a sample to create a new sample.

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [] .

The Pad Edit menu are displayed as icons.



2. Press CURSOR [] [] [] to select the Pitch Change icon.



3. Press [YES/ENTER].

The Pitch Change screen appears.



4. Press CURSOR [] [] [] [] to select the pad bank number and pad number for each item, and specify the desired number for each.

To set the pad bank number, turn the TIME/VALUE dial. To set the pad number, either press a pad or turn the TIME/VALUE dial.

Source: Specify the sample whose pitch you want to adjust.

To: Specify the pad to which the pitch-adjusted sample will be assigned.

5. Press CURSOR [] to move the cursor to “NewPitch” line. Turn to TIME/VALUE dial to set the interval of the pitch changing by semitone unit.
6. Press CURSOR [] to move the cursor to “P.Fine” line. Turn the TIME/VALUE dial to make fine adjustments in one-cent units (1/100th of a semitone) to the amount of change from the original pitch.

7. Press CURSOR [] move the cursor to “Grade” line. Turn to TIME/VALUE dial to select the quality of the sound after the pitch changing process, adjustable in three levels.

“Grade” can be set in three levels (1-3) to specify the quality of the resulting sound. Higher settings will require more processing time.

8. Press [YES/ENTER].

After a while, the changing pitch sample is assigned to the destination pad.

* If the destination pad already contains a sample, the “Overwrite?” message appears. If it is OK to overwrite the existing sample, press [YES/ENTER]. If you do not want to overwrite the existing sample, press [NO/EXIT].

9. Press [DISPLAY] to return to the Basic screen.

NOTE

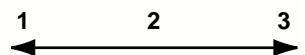
Pitch Change requires more processing time than other sample editing operations. Also, the audio quality of the stretched sample may be inferior to that of the original sample.

MEMO

1 semitone = 100 cents

MEMO

“Grade”



For sound with a sharp attack.

For sound with a dull attack.

Making fine adjustments to the location at which a sample starts/ends

When you arrange samples in a sequence track to create a song, you will sometimes need to make fine adjustments to the sample's start/loop points, or to its length. By using the {Preview function} or {Scrub function}, you can make precise and detailed adjustments while listening to the sound.

Specifying a point while you listen to the sound before and after it—Preview

The preview button [TO] means “To Now” (to the point). Each time you press [TO], a brief region of sound (one second) ending at that point will be played. By turning the TIME/VALUE dial to move the point back and forth while listening to this sound, you can easily make accurate adjustments to the point.

When you press the preview button [FROM], the preview function will play “From Now” (from the point), allowing you to hear a brief region of sound (one second) beginning at that point.

1. Press PAD RECORDING [TEMPO MATCH] twice.

Alternatively, press [TEMPO MATCH] and then press CURSOR [].

The Pad Edit menu are displayed as icons.





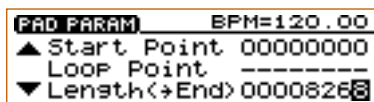
2. Press CURSOR [] [] to select the Pad Parameter icon.



3. Press [YES/ENTER].

The Pad Parameter screen appears.

4. Press CURSOR [] [] to move the cursor to the point “Start Point,” “Loop Point,” or “Length(→End)” you want to adjust.



5. Press PREVIEW [TO] or [FROM] to play back the sound as described below.

[TO]: Playback once from one second before the current point to the current point.

[FROM]: Playback once from the current location to one second after the current location.

6. While listening to the sound, turn the TIME/VALUE dial to make fine adjustments to the current point.
7. Press [DISPLAY] to return to the Basic screen.



For details on the Start/Loop point and Length, refer to “What are the Start/Loop point and Length” (Owner’s Manual; p. 78).



The sample waveform will not be displayed for PREVIEW [TO] [FROM] operations.

Using scrub to set a point—Scrub Preview

Scrub Preview repeatedly plays an extremely brief region (45 milliseconds) either before or after the point. At the same time, the sample waveform will be displayed in the screen. While monitoring the displayed waveform and the sound, you can turn the TIME/VALUE dial to easily make precise adjustments to the point.

1. Press **PAD RECORDING [TEMPO MATCH]** twice.

Alternatively, press [TEMPO MATCH] and then press **CURSOR []**.

The Pad Edit menu are displayed as icons.



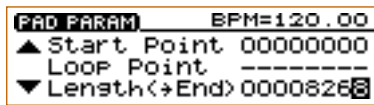
2. Press **CURSOR [] []** to select the Pad Parameter icon.



3. Press **[YES/ENTER]**.

The Pad Parameter screen appears.

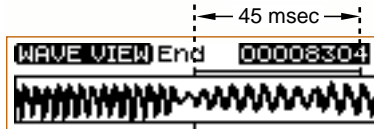
4. Press **CURSOR [] []** to move the cursor to the point “Start Point,” “Loop Point,” or “Length(→End)” you want to adjust.



5. Press **[SCRUB]**.

[SCRUB] lights, the Wave View screen appears.

The sound either before or after the point will play repeatedly.



6. While monitoring the sound and the screen, turn the **TIME/VALUE dial** to make fine adjustments to the point.

As necessary, you can switch the region that is repeated, or switch the screen display.

[TO]: Repeatedly play from a point 45 milliseconds before the current point, up to the current point.

[FROM]: Playback once from the current point to one second after the current point.

CURSOR []: Expand the waveform vertically (amplitude axis).

CURSOR []: Shrink the waveform vertically (amplitude axis).

CURSOR []: Expand the waveform horizontally (time axis).

CURSOR []: Shrink the waveform horizontally (time axis).

7. Press **[SCRUB]**.

[SCRUB] go out, the Pad Parameter screen reappears.

8. Press **[DISPLAY]** to return to the Basic screen.

Adjusting the crossfade time

You can adjust the time over which two pads will be exchanged by the Pad Crossfade function (Owner's Manual; p. 71).

1. Press [UTILITY].

The Menu are displayed as icon.

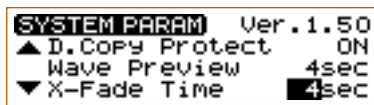
2. Press CURSOR [] [] to select the System icon.



3. Press [YES/ENTER].

The System Parameter screen appears.

4. Press CURSOR [] to move the cursor to "X-Fade Time" line.



5. Turn the TIME/VALUE dial to select the crossfade time: "1sec"-"10sec" (units: second).
6. Press [DISPLAY] to return to the Basic screen.

Exchanging the contents of sequence tracks —Exchange Track

A sequence track and its corresponding audio track cannot be played back at the same time. For example, sequence track A and audio tracks 1-2 cannot be played back simultaneously. In such cases, you can exchange the contents of the sequencer track with another track, so that the sequence track and audio tracks can be played simultaneously.

1. Press **PAD SEQUENCING [EDIT]**.

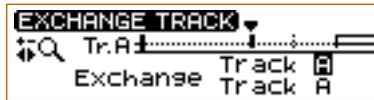
[EDIT] lights, and the Sequence Edit menu are displayed as icons.



2. Press **CURSOR** [] [] to select the Exchange Track icon.



3. Press **[YES/ENTER]**.

The Exchange Track screen appears.



4. Press **CURSOR** [] [] to move the cursor, and turn the **TIME/VALUE** dial to specify the two sequence tracks that are exchanged.
5. Press **[YES/ENTER]**.
The two sequence tracks are exchanged.
6. Press **[DISPLAY]** return to the Basic screen.



For details, refer to “Playing sequence tracks and audio tracks simultaneously” (Owner’s Manual; p. 97).



When you carry out the Exchange Track procedure, the entire contents of the sequence tracks will be exchanged. It is not possible to specify a region of time that will be exchanged.



The status data of the sequence tracks will also be exchanged.

Copying the contents of a sequence track —Copy Track

The contents of a sequence track can be copied to another sequence track.

1. Press **PAD SEQUENCING [EDIT]**.

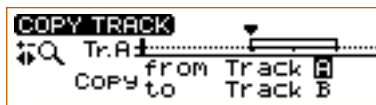
[EDIT] lights, and the Sequence Edit menu are displayed as icons.

2. Press **CURSOR [◀] [▶]** to select the Copy Track icon.



3. Press **[YES/ENTER]**.

The Copy Track screen appears.



4. Press **CURSOR [▲]** to move the cursor to “Copy from Track.”
5. Turn to **TIME/VALUE** dial to select the copy-source track.
6. Press **CURSOR [▼]** to move the cursor to “Copy from Track.”
7. Turn to **TIME/VALUE** dial to select the track-copy destination.
8. Press **[YES/ENTER]**.

The contents of the copy-source sequence track is copied to the copy-destination track.

9. Press **[DISPLAY]** return to the Basic screen.

NOTE

When you execute the Copy Track operation, the entire contents of the sequence track will be copied. It is not possible to copy only a specified time region.

NOTE

If the copy-destination sequence track has already been recorded, the entire contents will be lost.

Editing a specified region of a sequence track —Region In/Out

In the Sequence Play List screen, you can specify a region, then edit only that region. You can also edit multiple tracks at once.

Specifying the editing region

1. Press PAD SEQUENCING [SEQ PLAY].

[SEQ PLAY] lights, and the Sequence Play List screen appears.



2. Select the sequence tracks for playback as described in “Playing back sequence tracks” (Owner’s Manual; p. 96).

Get the “Tr.SEL” (track select) box to be highlighted in black for the track(s) in which you want to specify a region. You may select more than one track.

3. Use the REW [◀◀] /FF [▶▶] or the TIME/VALUE dial to move the “NOW” (current location) to the starting point of the segment.



4. Press [YES/ENTER].

A mini-menu “SET REGION IN” appears.



5. Press [YES/ENTER] to specify the beginning (in point) of the segment.

6. Use the REW [◀◀] /FF [▶▶] or the TIME/VALUE dial to move the “NOW” (current location) to the end point of the segment.



7. Press [YES/ENTER].

A mini-menu appears.

8. Press CURSOR [◀] to select the “SET REGION OUT.”



9. Press [YES/ENTER] to specify the end (out point) of the segment.

NOTE

In case edit region is specified, you cannot execute editing phrase by phrase basis (Quick Edit). If you want to do such editing, please cancel the editing region as described in “Canceling an editing region” (p. 10).

For details of Quick Edit, refer to “Edit on Sequence Play List screen—Quick Edit” (Owner’s Manual; p. 106).

MEMO

If a region has already been specified in step 4, press

CURSOR [▶] to select “SET REGION IN.”



Press [YES/ENTER] in step 5, the specified region will be cancelled, and the In point will be newly set.

Canceling an editing region

To cancel an editing region that you've specified, perform the following.

1. Press PAD SEQUENCING [SEQ PLAY].

[SEQ PLAY] lights, and the Sequence Play List screen appears.



2. Press [YES/ENTER].

A mini-menu appears.

3. Press CURSOR [] to select the "CLEAR REGION."



4. Press [YES/ENTER].

The specified region are canceled.

Editing the specified region

Erasing Segments—Erase

This operation erases the phrases of the specified region, creating silence. If phrases exist following the region, they will not move forward.

1. Specify the region that you want to erase, as described in "Specifying the editing region" (p. 9) of this booklet.



2. Press [YES/ENTER].

A mini-menu appears.

3. Press CURSOR [] to select the "REGION ERASE?"



4. Press [YES/ENTER].

The specified region are erased.



Cutting Segments—Cut

This operation cuts the phrases of the specified region. Any phrases that followed the region will be moved forward.

1. Specify the region that you want to cut, as described in “Specifying the editing region” (p. 9) of this booklet.



2. Press [YES/ENTER].
A mini-menu appears.



3. Press CURSOR [] to select the “REGION CUT?”

4. Press [YES/ENTER].

The specified region are cut.



Moving to a Another Location—Move

This operation moves the phrases of the specified region to another location. The phrases in the specified region will be erased; i.e., they will change to silence. If there were any phrases in the move-destination, they will be overwritten by the phrases from the specified region.

1. Specify the region that you want to move, as described in “Specifying the editing region” (p. 9) of this booklet.



2. Use the REW[]/FF[] or the TIME/VALUE dial to set the move-destination “NOW” (current location).



3. Press [YES/ENTER].
A mini-menu appears.



4. Press CURSOR [] to select the “REGION MOVE?”

5. Press [YES/ENTER].

The specified region are moved.



Editing a specified region of a sequence track

Pasting to a Another Location—Paste

This operation pastes the phrases of the specified region to another location. If there were any phrases in the paste-destination, they will be overwritten by the phrases from the specified region.

1. Specify the region that you want to paste, as described in “Specifying the editing region” (p. 9) of this booklet.



2. Use the REW[◀]/FF [▶] or the TIME/VALUE dial to set the paste-destination “NOW” (current location).



3. Press [YES/ENTER].

A mini-menu appears.

4. Press CURSOR [▾] to select the “REGION PASTE?”



5. Press [YES/ENTER].

The specified region are pasted.



Inserting to a Another Location—Insert

This operation inserts the phrases of the specified region to another location. If there were any phrases in the inserting location of backward, they will be moved back for duration of specified region.

1. Specify the region that you want to insert, as described in “Specifying the editing region” (p. 9) of this booklet.



2. Use the REW[◀]/FF [▶] or the TIME/VALUE dial to set the insert-destination “NOW” (current location).



3. Press [YES/ENTER].

A mini-menu appears.

4. Press CURSOR [▾] to select the “REGION INSERT?”



5. Press [YES/ENTER].

The specified region are inserted.



Muting (silencing) a specific audio track

During playback, you can switch audio tracks between muted (silent) and playing statuses.

- 1. During playback, press [STATUS] for the audio track that you want to mute (silence).**

[STATUS] will change from green to blinking, and the sound of that audio track will be muted (silenced).

- 2. Once again, press the [STATUS] key that you caused to blink in step 1.**

[STATUS] will change from blinking to lighting solidly in green, and that audio track will resume playing.



An audio track whose [STATUS] was dark when playback began cannot be switched to Play status by pressing [STATUS] during playback. ([STATUS] will not light in green.)

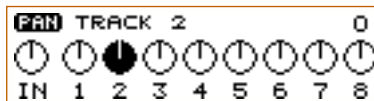
Using [STATUS] to select the track whose parameters you want to adjust

When you want to adjust an audio track's mixer settings (pan, equalizer), or loop effect settings, you can also press [STATUS] for that audio track to select it directly.

Setting the left/right position (pan) of each audio track

1. Hold down TRACK EDIT [PAN] and press AUDIO TRACK [STATUS] that you want to adjust.

The pan setting screen appears.

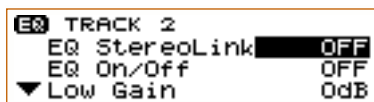


2. Turn the TIME/VALUE dial to set the pan.
3. Press [DISPLAY] to return to the Basic screen.

Adjusting the tone of each audio track

1. Hold down TRACK EDIT [EQ] and press AUDIO TRACK [STATUS] that you want to adjust.

The equalizer setting screen appears.



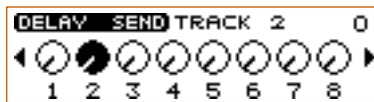
2. Press CURSOR [] [] to move the cursor to the line of the parameter you want to adjust.
3. Turn the TIME/VALUE dial to change the value.
 - For details on the parameters, refer to “Mixer effect parameter functions” (Owner’s Manual; p. 174).
4. Press [DISPLAY] to return to the Basic screen.

Editing the loop effect settings

Chorus/delay/doubling

1. Hold down LOOP EFFECT [DELAY], and press AUDIO TRACK [STATUS] that you want to adjust.

The equalizer setting screen appears.

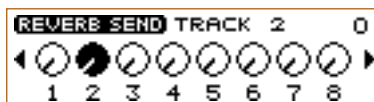


2. Turn the TIME/VALUE dial to adjust the send level.
3. Press [DISPLAY] to return to the Basic screen.

Reverb

1. Hold down LOOP EFFECT [REVERB], and press AUDIO TRACK [STATUS] that you want to adjust.

The equalizer setting screen appears.



2. Turn the TIME/VALUE dial to adjust the send level.
3. Press [DISPLAY] to return to the Basic screen.

MEMO

In step 1, you can hold down [DELAY] and press PAD [STATUS] to select “PAD.”



For details on setting the effect parameters, refer to “Editing the loop effect settings” (Owner’s Manual; p. 145–146).

MEMO

In step 1, you can hold down [REVERB] and press PAD [STATUS] to select “PAD.”

Preventing tempo data from being read from a CD-RW disc

When pads or sequences are stored in internal memory, you can specify that the tempo data of a song saved on a CD-RW disc not be loaded when you insert a CD-RW disc on which pads or sequences have been saved.

1. Press [UTILITY].

The Menu are displayed as icon.

2. Press CURSOR [] [] to select the System icon.



3. Press [YES/ENTER].

The System Parameter screen appears.

4. Press CURSOR [] to move the cursor to "T.Map LoadCinfirm" line.



5. Turn the TIME/VALUE dial to select "ON."

● **T.Map LoadCinfirm (Tempo Map Load Confirm):**

ON: You will be able to select whether the tempo data saved on the CD-RW disc will be loaded.

OFF: The tempo data saved on the CD-RW disc will be loaded.

6. Press [DISPLAY] to return to the Basic screen.

If "T.Map LoadConfirm" is "ON"

Insert a CD-RW disc on which pads/sequences have been saved.

If internal memory contains pads/sequences, a message of "Load PAD/SEQ data?" will be displayed.

If you press [NO/EXIT] at this time, a message of "Use song's tempo map?" (use the tempo data of the song saved on the CD-RW disc?) will be displayed. Press either [NO/EXIT] or [YES/ENTER] to select whether to load the tempo data from the song on the CD-RW disc.

[NO/EXIT]: The tempo data in internal memory will be preserved. The tempo data of the song saved on the CD-RW disc will not be loaded.

[YES/ENTER]: The tempo data of the song saved on the CD-RW disc will be loaded. The tempo data in internal memory will be overwritten.

Using the tempo of a sample to modify the tempo map

Here's how you can easily modify the tempo map to match a drum loop sample on which your song is based.

1. Press [UTILITY].



The Menu are displayed as icon.

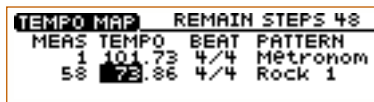
2. Press CURSOR [] [] to select the Tempo Map icon.



3. Press [YES/ENTER].

The Tempo Map Setting screen appears.

4. Press CURSOR [] [] to move the cursor to tempo whose tempo you want to change.



TEMPO MAP		REMAIN STEPS 48	
MEAS	TEMPO	BEAT	PATTERN
1	101.73	4/4	Metronom
58	73.86	4/4	Rock 1

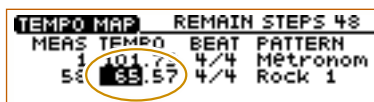
5. Press the pad that contains the desired tempo data.

For example, if the sample tempo is “65.57”, a message of “Tempo → 65.57 Are you sure? (OK to change the tempo to 65.57?) will be displayed.

6. Press [YES/ENTER].

The tempo map will be changed to the tempo of the sample.

If you press [NO/EXIT], the tempo map will not be changed.



TEMPO MAP		REMAIN STEPS 48	
MEAS	TEMPO	BEAT	PATTERN
1	101.73	4/4	Metronom
58	65.57	4/4	Rock 1

7. Press [DISPLAY] to return to the Basic screen.

MEMO

The tempo of a sample is displayed in the upper right of the pad parameter screen. For details, refer to “Displaying the correct tempo of a sample” (Owner’s Manual; p. 77).



For the procedure used to create a tempo map, refer to “Setting the tempo and rhythm pattern of the song—Tempo Map” (Owner’s Manual; p. 117).

Using Pads/Sequences while you mix down

You can play sequence tracks and pads while mixing down. This can be done in any combination: for example, you can mix down sequence tracks and pads together with audio tracks, or mix down only pads and/or sequences.

Even if a CD-RW disc is not inserted, you can mix down just pads/sequences if internal memory contains pads/sequences.

- * ***When you mix down using pads/sequences, the time available for the mixdown will be the remaining amount of sampling memory. For this reason, if you need to perform lengthy mixdowns, we recommend that you expand the memory. The time available for mixdown can be checked in the Song Information screen (Owner's Manual; p. 39).***

1. Press AUDIO TRACK RECORD [MIX DOWN].

If the pads/sequences contained in the CDX-1's internal memory, a message of "Also use PAD/SEQ for Mixdown?" appears, [MIX DOWN] blinks.

If you press [YES/ENTER], you will be able to use pads/sequences, and [MIX DOWN] will light.

If you do not want to use pads/sequences, press [NO/EXIT]. For the subsequent steps, refer to step 1 of "Mixing down" (Owner's Manual; p. 133).

2. If you want to use sequence tracks, press [SEQ PLAY] to make it light.

For sequence tracks that you want to include in the mixdown. For details, refer to "Playing sequence tracks and audio tracks simultaneously" (Owner's Manual; p. 96).

3. For audio tracks that you want to include in the mixdown, press [STATUS] to make the button light in green.

4. Make sure that master track [STATUS] light in red.

5. Press ZERO [◀◀] to return the SONG POSITION to "00:00:00-00" (beginning of the song).

Alternatively, you can move to a desired location so that recording will start from that point.

6. Press PLAY [▶].

Mixdown begins.

If you play samples pressing pads during mix down is processing, the sample sounds in pads will be mixed down together. However, please be careful that sample sound dose not come out in case four stereo (incl. audio track and sequence track) are outputted. In such case, the pads goes out.

7. When mixdown is finished, press STOP [■].

The screen will ask "Do you want to burn a CD? "

If you want to create an audio CD, press [YES/ENTER] and continue with the procedure "Writing to a CD-R disc" (Owner's Manual; p. 135).

If you want to make sure that the result of mixdown, press [NO/EXIT]. For details, refer to "Listen to the result of Mixing down" (Owner's Manual; p. 135).



When CD recorder screen or CD player screen is appearing, you cannot switch to mix down eves pressing [MIX DOWN].



If you mix down without a CD-RW disc, the "Data Type" will be "Standard."



If you mix down without a CD-RW disc in step 1, a message of "Also use PAD/SEQ for Mixdown?" will not appears.



If you mix down without a CD-RW disc, step 3 will not be necessary.



A sequence track and its corresponding audio track cannot be played back simultaneously. If you are unable in step 3 to select an audio track that you want to mix down, you must first exchange sequence tracks so that the desired tracks can be played back simultaneously. For details, refer to "Exchanging the content of sequence tracks—Exchange Track" (p. 7) in this booklet.

Editing the Mastering Tool settings

You can edit the mastering tool settings while you listen to the mixdown. Select one of the preset patches (P01–P21) that is closest to what you have in mind, and edit the patch settings

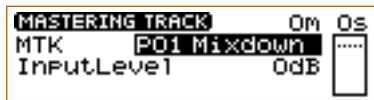
MEMO

You can also edit the mastering tool settings in the CD Burning screen or CD Recorder screen. However, it will not be possible to audition the results of the mastering tool before writing to the CD-R disc.

? Mastering Tools

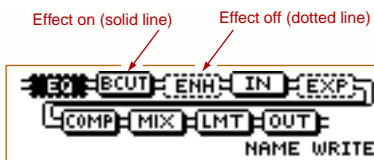
The mastering tools are a convenient set of tools that divide the sound into high-frequency, mid-frequency, and low-frequency ranges, and make the volume consistent so that the audio CD can be created with the optimal levels.

1. In step 1 of “Listen to the result of Mixing down” (Owner’s Manual; p. 133), the Mastering track screen appears.



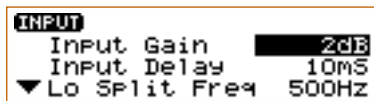
2. Make sure that [MASTERING TOOLS] lights in red.
If [MASTERING TOOLS] is dark, press [MASTERING TOOLS], and it will go light in red.
3. Press CURSOR [▲] to move the cursor to “MTK” line.
4. Turn the TIME/VALUE dial to select the mastering tool patch that you want to edit.
5. Press [YES/ENTER].
The mastering tools effect block screen appears.

6. Press CURSOR [▲] [▼] [◀] [▶] to select an effect, and turn the TIME/VALUE dial to turn the effect on/off.



7. Press CURSOR [▲] [▼] [◀] [▶] to select the effect whose parameters you want to edit, and press [YES/ENTER].

The parameter setting screen for the selected effect appears.



8. Press CURSOR [▲] [▼] to select a parameter, and turn the TIME/VALUE dial to edit the value.
For details on each parameter, refer to “Mastering Tools parameter list” (p. 20–22) in this booklet.
9. If you would like to edit another effect, press [NO/EXIT] to return to the previous screen, and repeat steps 6–8.

If you want to save the current effect settings, perform the procedure described in “Saving mastering tools settings,” below.

- * Edited effect settings are temporary. If you return to the previous screen without saving the edited patch, “TMP” will be displayed in front of the patch name. While “TMP” is displayed, newly selecting a different patch will cause the edited patch to revert to its previous state, and your edits will be lost.



NOTE

“IN” (input), “MIX” (mixer), and “OUT” (output) of the effect block are always on. These cannot be turned off.

Saving the mastering tool settings

You can assign a name (patch name) to the mastering tool settings you've edited, and save your settings. This procedure is a continuation of "Editing the mastering tool settings," above.

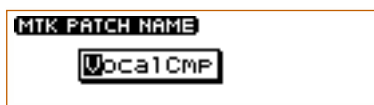
Your edited patch can be saved at one of twenty-one patch numbers U01–U21, and recalled at any time, just like a preset patch.



1. In the mastering tools effect block screen, press CURSOR [] to select "NAME."



2. Press [YES/ENTER].

The Patch Name input screen appears.



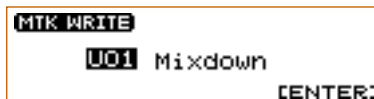
3. Press CURSOR [] [] to move to the desired character location, and turn the TIME/VALUE dial to input patch name.
4. When you are finished inputting the patch name and editing the settings of each effect, press [NO/EXIT] to return to the effect block screen.

5. Press CURSOR [] to select "WRITE."



6. Press [YES/ENTER].

The Patch-save screen appears.



7. Turn the TIME/VALUE dial to select the patch-save destination (U01–U21).
 8. After you have specified the patch-save destination, press [YES/ENTER].
- When the data has been saved, you're returned to the Mastering track screen.



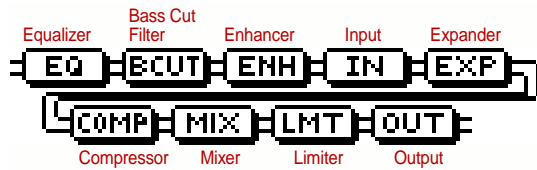
You can input a patch name of up to eight characters.



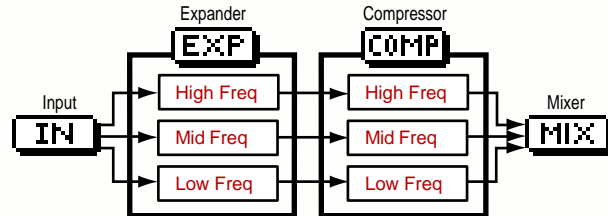
Patches are stored in internal memory.

Mastering Tools parameter list

The Mastering Tools is compressor that splits sounds into different frequency band to unify their volumes.



* Below shows the signal form "INPUT" to "MIXER."



Parameter (full name) **Setting** **Function**

● EQ (Equalizer): A 4-band equalizer.

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the equalizer effect on/off.
Input Gain (Input Gain)	-24+12 dB	This parameter sets the overall volume before passing through the equalizer.
Low Type (Low Type)	SHELV, PEAKING	This parameter sets the type of the low frequency band equalizer (Shelving type or peaking type).
Low Gain (Low Gain)	-12+12 dB	This parameter sets the gain (amount of boost or cut) for the bass equalizer.
Low Freq (Low Frequency)	20 Hz–2.00 kHz	This parameter sets the central frequency for the low equalizer.
Low Q (Low Q) *1	0.3–16.0	This parameter sets the range of change in gain for the frequency set by "Low Freq." A larger value results in a narrower range of change.
Low-Mid Gain (Low Middle Gain)	-12+12 dB	This parameter sets the gain (amount of boost or cut) for the low-midrange equalizer.
Low-Mid Freq (Low Middle Frequency)	20 Hz–8.00 kHz	This parameter sets the central frequency for the low-midrange equalizer.
Low-Mid Q (Low Middle Q)	0.3–16.0	This parameter sets the range of change in gain for the frequency set by "Low-Mid Freq." A larger value results in a narrower range of change.
High-Mid Gain (High Middle Gain)	-12+12 dB	This parameter sets the gain (amount of boost or cut) for the high-midrange equalizer.
High-Mid Freq (High Middle Frequency)	20 Hz–8.00 kHz	This parameter sets the central frequency for the high-midrange equalizer.
High-Mid Q (High Middle Q)	0.3–16.0	This parameter sets the range of change in gain for the frequency set by "High-Mid Freq." A larger value results in a narrower range of change.
High Type (High Type)	SHELV, PEAKING	This parameter sets the type of the High frequency band equalizer (Shelving type or peaking type).
High Gain (High Gain)	-12+12 dB	This parameter sets the gain (amount of boost or cut) for the treble equalizer.
High Freq (High Frequency)	1.40–2.00 kHz	This parameter sets the central frequency for the high equalizer.
High Q (High Q) *1	0.3–16.0	This parameter sets the range of change in gain for the frequency set by "High Freq." A larger value results in a narrower range of change.
Output Level (Output Level)	-24+12 dB	This parameter adjusts the volume after the equalizer stage.

● B CUT (Bass Cut Filter):

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the bass cut filter effect on/off.
Bass Cut Freq (Bass Cut Frequency)	THRU, 20 Hz–2.00 kHz	This parameter sets the frequency for cutting off undesired low frequency band sounds such as pop noise.

● ENH (Enhancer): This effect enhances the definition of the sound, and pushes it to the forefront.

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the enhancer effect on/off.
Sensitivity (Sensitivity)	0–100	Adjusts the manner in which the enhancer will be applied relative to the input signals.
Enhancer Freq (Enhancer Frequency)	1.00 –10.0 kHz	Adjusts the frequency at which the enhancer effect will begin to be applied. The effect will be made apparent in the frequencies above the frequency set here.
Mix Level (Mix Level)	-24+12 dB	Adjusts the amount of phase-shifted sound of the range set by "Frequency" that is to be mixed with the input.

- **IN (Input): Specify the frequency points at which the original sound will be divided, so that the expander/compressor can be applied independently to the low, mid, and high frequency ranges.**

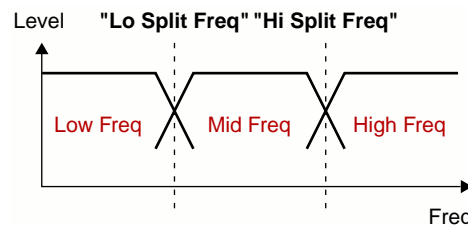
Input Gain (Input Gain)	-24– +12dB	This parameter sets the overall volume before entering expander/compressor.
Input Delay (Input Delay)	0–10 ms	This parameter sets the length of delay to add to the direct sound input.
Lo Split Freq (Low Split Frequency)	20–800 Hz	This parameter sets the frequency at which the direct sound is split into three bands (on the low frequency band side).
Hi Split Freq (High Split Frequency)	1.60–16.0 kHz	This parameter sets the frequency at which the direct sound is split into three bands (on the High frequency band side).

Effect of “Input Delay” under Input

With ordinary compressors, a moment of delay occurs to suppress a level over instance after it has been detected. With Mastering Tool, this problem is bypassed by using the input sound only for level detection and adding a specified length of delay to the sound for processing and output. “Input Delay” under Input is the setting of the delay time for this purpose. Note that supplying Delay Time causes time difference between input and output of audio signals.

Splitting into frequency bands

To split into High, middle and low frequency bands, “Low Split Freq” (Low Split Frequency) and “High Split Freq” (High Split Frequency) under Input are used to specify frequencies.



- **EXP (Expander): Expands the dynamic range (the proportion between the loudest and softest sounds) at a certain ratio.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the expander effects on/off.
Low Threshold (Low Threshold)	-80–0 dB	This parameter sets the volume at which the expander for the low frequency band starts working.
Mid Threshold (Middle Threshold)	-80–0 dB	This parameter sets the volume at which the expander for the middle frequency band starts working.
Hi Threshold (High Threshold)	-80–0 dB	This parameter sets the volume at which the expander for the high frequency band starts working.
Low Ratio (Low Ratio)	1:1.0–1:16.0, 1:INF	This parameter sets the ratio at which the output in the low frequency band is increased when the input level has dropped below the low threshold level.
Mid Ratio (Middle Ratio)	1:1.0–1:16.0, 1:INF	This parameter sets the ratio at which the output in the middle frequency band is increased when the input level has dropped below the middle threshold level.
High Ratio (High Ratio)	1:1.0–1:16.0, 1:INF	This parameter sets the ratio at which the output in the middle frequency band is increased when the input level has dropped below the High threshold level.
Low Attack (Low Attack)	0–100 ms	This parameter sets the time until when the low frequency band expander starts working after the input level has exceeded the low threshold level.
Mid Attack (Middle Attack)	0–100 ms	This parameter sets the time until when the middle frequency band expander starts working after the input level has exceeded the middle threshold level.
High Attack (High Attack)	0–100 ms	This parameter sets the time until when the High frequency band expander starts working after the input level has exceeded the High threshold level.
Low Release (Low Release)	50–5000 ms	This parameter sets the time until when the low frequency band expander stops working after the input level has dropped below the low threshold level.
Mid Release (Middle Release)	50–5000 ms	This parameter sets the time until when the middle frequency band expander stops working after the input level has dropped below the middle threshold level.
High Release (High Release)	50–5000 ms	This parameter sets the time until when the High frequency band expander stops working after the input level has dropped below the High threshold level.

Mastering Tools parameter list

● **COMP (Compressor) *2: Compressor the entire output signals when the input volume exceeds a specified value.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the compressor effects on/off.
Low Threshold (Low Threshold)	-24-0 dB	This parameter sets the volume at which the compressor for the low frequency band starts working.
Mid Threshold (Middle Threshold)	-24-0 dB	This parameter sets the volume at which the compressor for the middle frequency band starts working.
Hi Threshold (High Threshold)	-24-0 dB	This parameter sets the volume at which the compressor for the high frequency band starts working.
Low Ratio (Low Ratio)	1:1.0-1:16.0, 1:INF	This parameter sets the ratio at which the output in the low frequency band is suppressed when the input level has exceeded the low threshold level.
Mid Ratio (Middle Ratio)	1:1.0-1:16.0, 1:INF	This parameter sets the ratio at which the output in the middle frequency band is suppressed when the input level has exceeded the middle threshold level.
High Ratio (High Ratio)	1:1.0-1:16.0, 1:INF	This parameter sets the ratio at which the output in the High frequency band is suppressed when the input level has exceeded the High threshold level.
Low Attack (Low Attack)	0-100 ms	This parameter sets the time until when the low frequency band compressor starts working after the input level has exceeded the low threshold level.
Mid Attack (Middle Attack)	0-100 ms	This parameter sets the time until when the middle frequency band compressor starts working after the input level has exceeded the middle threshold level.
High Attack (High Attack)	0-100 ms	This parameter sets the time until when the High frequency band compressor starts working after the input level has exceeded the High threshold level.
Low Release (Low Release)	50-5000 ms	This parameter sets the time until when the low frequency band compressor stops working after the input level has dropped below the low threshold level.
Mid Release (Middle Release)	50-5000 ms	This parameter sets the time until when the middle frequency band compressor stops working after the input level has dropped below the middle threshold level.
High Release (High Release)	50-5000 ms	This parameter sets the time until when the High frequency band compressor stops working after the input level has dropped below the High threshold level.

● **MIX (Mixer): Adjust the volume of the low, mid, and high frequency ranges, and mix them.**

Low Level (Low Level)	-80+6 dB	This parameter sets the volume in the low frequency band after passing through the expander and compressor.
Mid Level (Middle Level)	-80+6 dB	This parameter sets the middle frequency band volume after passing through the expander and compressor.
High Level (High Level)	-80+6 dB	This parameter sets the volume in the High frequency band after passing through the expander and compressor.

● **LMT (Limiter): Prevents distortion by suppressing signals at High levels.**

Effect On/Off (Effect On/Off)	OFF, ON	This parameter turns the limiter effects on/off.
Threshold (Threshold)	-24-0 dB	This parameter sets the volume at which the limiter starts working.
Attack (Attack)	0-100 ms	This parameter sets the time until when the limiter starts working after the input level has exceeded threshold level.
Release (Release)	50-5000 ms	This parameter sets the time until when the limiter stops working after the input level drops below the threshold level.

● **OUT (Output): Provides settings concerning overall output.**

Level (Level)	-80+6 dB	This parameter sets the overall volume after passing through the limiter.
Soft Clip (Soft Clip)	OFF, ON	By turning this ON, suppresses conspicuous distortion that may occur when the effect of compressor/limiter has been applied excessively.
Dither (Dither)	OFF, 8-24 bit	This parameter smooths the transition where the sound disappears.



*1 If "Low Type" or "High Type" is set to "SHELV" (Shelving Type), the setting for "Lo Q" or "High Q" is invalid.

*2 With Compressor (COMP), the level is automatically adjusted to the optimal with the settings for "Threshold" and "Ratio". Setting "Attack" to a relatively long time may cause distortion. For this reason, a margin of -6 dB is provided. Adjust the Mixer (MIX) level as required.

Remembering the icon that was last selected in a menu screen

You can cause the icon that was last selected in the following menu screens to be remembered. This is convenient when you are repeatedly using the same menu item to edit, since you will not have to re-select the desired icon each time.

Button	Screen
[UTILITY]	Utility Menu Screen
PAD SEQUENCING [TEMPO MAP]	Pad Edit Menu Screen
PAD SEQUENCING [EDIT]	Sequence Edit Menu Screen

NOTE

The data identifying the last-selected icon in each screen will be discarded when the power is turned off. The next time the power is turned on, the icon at the beginning of the menu will always be selected when you open a menu screen.

1. Press [UTILITY].

The Menu are displayed as icon.

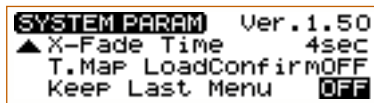
2. Press CURSOR [◀] [▶] to select the System icon.



3. Press [YES/ENTER].

The System Parameter screen appears.

4. Press CURSOR [↓] to move the cursor to "Keep Last Menu" line.



5. Turn the TIME/VALUE dial to select "ON."

● **Keep Last Menu:**

ON: The last-selected icon will be remembered when you access a menu screen.

OFF: The first icon of the menu will be selected when you access a menu screen.

6. Press [DISPLAY] to return to the Basic screen.

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