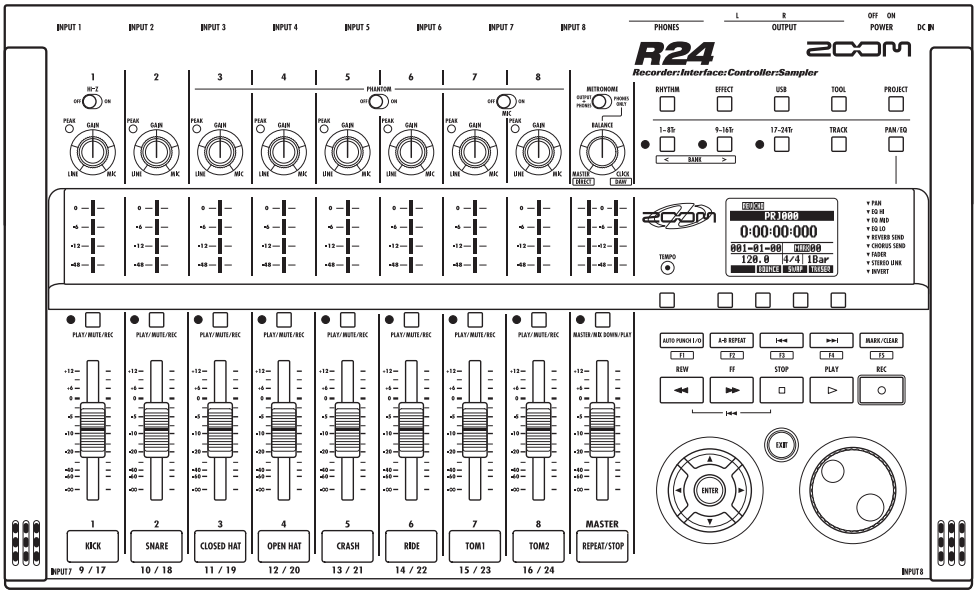
R24

Recorder:Interface:Controller:Sampler



OPERATION MANUAL

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Usage and safety precautions

SAFETY PRECAUTIONS

In this manual, symbols are used to highlight warnings and cautions that you must read to prevent accidents. The meanings of these symbols are as follows:

Warning	This symbol indicates explanations about extremely dangerous matters. If users ignore this warning and handle the device incorrectly, serious injury or death could result.
Caution	This symbol indicates explanations about dangerous matters. If users ignore this caution and handle the device incorrectly, bodily injury and damage to the equipment could result.

Please observe the following precautions to ensure safe use of this unit.

Power requirements

Warning

Since the power consumption of this unit is high, we recommend using the AC adapter. When using batteries, use either alkaline or nickel-metal hydride batteries.

Operation using an AC adapter

- Be sure to use only a DC5V/1A/center plus AC adapter (ZOOM AD-14). Use of an AC adapter other than that specified could damage the unit, cause malfunction or result in a fire or other trouble.
- Connect the AC adapter only to an outlet that supplies the rated AC voltage required by the adapter. Before using the R24 in other countries (or regions) where the power voltage differs from AC 100 V, always consult with a store that handles ZOOM products and use a suitable AC adapter.
- When disconnecting the AC adapter from an outlet, always pull the body of the adapter itself.
- During lightning storms or when not using the unit for an extended period of time, disconnect the AC adapter from the AC outlet.

Operation using batteries

- Use six conventional 1.5-volt AA batteries
- The R24 cannot recharge batteries.
- Read battery labels carefully.
- When not using the unit for an extended period of time, remove the batteries from the unit.
- If a battery leak should occur, wipe the battery compartment and the battery terminals carefully to remove all battery residue.
- Always close the battery compartment cover when using the unit.

About grounding

Warning

Depending on the placement conditions of the unit, a slight electrical charge might be felt when touching a metal part of the R24. If you wish to avoid this, ground the unit by connecting an external ground to a screw on the rear panel. To avoid danger from electricity, never connect it to any of the following for grounding.

- Water pipes (risk of electric shock)
- Gas pipes (risk of explosion)
- Telephone wiring grounds or lightning arrestors (danger during lightning strikes)

Operating environment

Caution

Avoid using the R24 where it might be exposed to the following conditions that could cause it to malfunction.

- Extremely high or low temperatures
- Very high humidity or splashing water
- Excessive dust or sand
- Excessive vibrations

Handling

Warning

Never put vases or other items filled with liquids on the R24 as they could cause electric shock.

Caution

The R24 is a precision instrument. Do not put unnecessary pressure on the keys and other controls. Use of excessive force and dropping or bumping the unit, for example, could cause the unit to break.

Connecting cables with input and output jacks

Caution

Always turn the power OFF for all equipment before connecting any cables. In addition, make sure to disconnect all connection cables and the AC adapter before moving the unit.

Alterations

Caution

Never open the case or attempt to modify the product in any way since this could result in damage to the unit. Zoom Corporation will not take any responsibility for damage resulting from alterations to the unit.

Volume

Caution

Do not use the R24 at a loud volume for a long time. Doing so could damage hearing.

Usage Precautions

Interference with other electrical equipment

In consideration of safety, the R24 has been designed to provide maximum protection against the emission of electromagnetic radiation from the device and to be protected from external interference. However, equipment that is very susceptible to interference or that emits powerful electromagnetic waves could result in interference if placed near the R24. If this occurs, place the R24 and the other device farther apart.
With any type of electronic device that uses digital control, including the R24, electromagnetic interference could cause malfunction, corrupt or destroy data and result in other unexpected trouble. Always use caution around other devices.

Cleaning

Use a soft cloth to clean the panels of the unit if they become dirty. If necessary, use a damp cloth that has been wrung out well. Never use an abrasive cleanser, wax or solvent including alcohol, benzene and paint thinner.

Malfunction

If the unit becomes broken or malfunctions, immediately disconnect the AC adapter, turn the power OFF and disconnect other cables. Contact the store where you bought the unit or Zoom service with the following information: product model, serial number and specific symptoms of failure or malfunction, along with your name, address and telephone number.

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Introduction

Please read through this manual carefully in order to understand the R24 functions well. After reading it, please keep the manual along with the warranty in a safe place.

Thank you very much for purchasing the ZOOM R24 Recorder:Interface:Controller:Sampler. We will call it simply the “R24” in this manual. The R24 has the following features.

■ Multitrack recorder that can use up to 32 GB SDHC cards

The R24 can record up to 8 tracks simultaneously, allowing serious live recording. For example, you can record a complete band on individual tracks or a drum kit with multiple microphones. After making linear PCM recordings (WAV format) at 16/24-bit and 44.1/48-kHz sampling rate, you can transfer recorded files to your computer to use them in DAW software. You can even connect two R24s together with a USB cable, allowing recording of up to 16 tracks.

■ Hi-Speed USB (USB 2.0) audio interface

You can use the R24 and its many input and output jacks as a Hi-speed USB (USB 2.0) audio interface. As an interface, the R24 can handle 8 inputs and 2 outputs at a maximum of 24-bit and 96 kHz. Its effects can even be used (at 44.1 kHz only). The unit can also operate using USB bus power.

■ Usable as a control surface for DAW software

The R24 has functions that enable control of DAW software on a computer via a USB cable. You can operate its transport, including play, record and stop keys and physically control onscreen faders. You can also assign various DAW functions to the R24’s F1–F5 function keys. (The assignable functions depend on the DAW software.)

■ Diverse effects

The R24 has two types of built-in effects. Insert effects can be applied to specific channel signals and send-return effects can be used through the mixer send-return bus. You can use these effects in a wide variety of ways, including during recording, by applying them to already recorded tracks, and in the mastering process of mixing down and bouncing.

■ Comprehensive built-in mixer features

The R24 is equipped with a digital mixer that allows you to mix the playback of audio tracks. You can adjust the volume, pan, EQ and effects for each track and mix them into a stereo signal.

■ Handles a variety of input sources including guitars, microphones and line-level equipment

The R24 is equipped with 8 input jacks that accept both XLR and standard phone connectors, including 1 that can handle high impedance and 6 that can supply phantom power (24 V or 48 V). The R24 can handle all types of sources, including high impedance guitars and basses, dynamic and condenser microphones, and synthesizers and other line level instruments. It also has two built-in high-performance microphones that are convenient for recording acoustic guitars and vocals.

■ Exchange files with computers and USB memory devices

The R24 has a USB 2.0 jack that allows high speed data transfer. You can transfer WAV audio files recorded on the R24 to a computer just by dragging and dropping. You can also exchange files with a connected USB memory device without using a computer.

■ 24-voice built-in sampler can be triggered using 8 pads and 3 bank keys

Use the sampler to assign sounds to each track (pad) and create loops. Play the pads in real-time, and even create performance data for a complete song by combining loops. By simply lining up drum loops from the included USB memory, anyone can easily create professional-quality backing parts and basic tracks. While listening to loop playback, you can record audio on other tracks because the R24 recorder and sampler work together seamlessly.

■ Rhythm and metronome functions can be used as guides and backing tracks

The unit starts with over 400 rhythm patterns that use the built-in drum machine, and you can create your own original patterns using both real-time and step input. You can output the metronome sound only to the headphones, allowing you to send just a click to the drummer in a live situation, while the signals from the output jacks are sent to a mixer.

Note: For the improvement of this product, its specifications are subject to change without notice.

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R24 operation flow

Multitrack recorder

24 audio tracks

Recording preparations

Make various settings for the built-in microphones, connected musical instruments and other input sources, signals and tracks. Use the tuner and the metronome to prepare for a new project or a live performance.

Project creation P17

Prepare a project to save recordings.

- **NEW PROJECT**

Instrument connection settings P18,19

This recorder can handle various instruments.

- **Built-in mics P19**
- **Hi-Z P18**
- **PHANTOM power P18**
- **Stereo link P20**

Performance tools

- **TUNER P35**
- **METRONOME P36**

Track assignment P49

Assign audio files and rhythm patterns to tracks.

Create rhythm patterns P68

Create rhythm patterns or use the unit's preset patterns.

Recording

Effects P77

Insert effects P79

1. After input jacks

Track recording P23

Record the input signals from connected input sources to tracks. Undo the previous recording if the results were unsatisfactory.

- **UNDO/REDO P16**

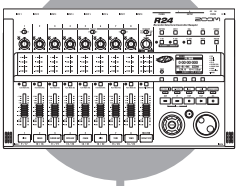
Playback P31

Play up to 24 tracks of mono and stereo audio.

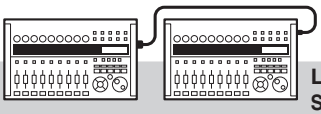
- **A-B REPEAT P32**
- **MARK settings P33**

Loop settings P50

Set assigned audio files and rhythm patterns to loop.



USB connection



Linking two units
SYNC REC P37

Audio interface

Control surface

8 simultaneous tracks of stereo and mono recording

Track mixer
330 types of effects

Mixing mixdown

Apply various effects to process input signals, recorder playback and sound generator output.

• **PATCH EDIT, etc.** **P83~**

Mixer P39

Adjust recorded tracks using the track mixer.

Effects used on specific track signal paths

2. Desired tracks in mixer

Overdubbing P27

Record new tracks while playing back previously recorded tracks.

Re-recording

Re-record just part of a recorded file.

• **PUNCH IN/OUT** **P29**

Create a sequence P53

Use looped material to create performance data for an entire song.

3. Before the MASTER fader

Send-return effect

There are two internal send/return effects in the built-in mixer—a chorus/delay effect and a reverb effect. Adjust the effect send levels for each mixer track individually.

Mixing P39

Adjust parameters for each track.

• **EQ • Volume • Pan** **P40**

Mixdown

Combine multiple tracks into one stereo track.

• **Bounce** **P43**
• **Recording a MASTER track** **P46**

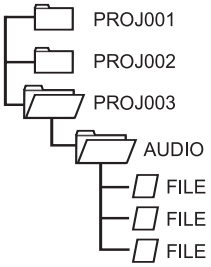
Editing & output

Project P89

Recorded sound files and settings can be managed and stored on a per song basis as a project and then edited in various ways.

• **PROJECT/FILE** **P91**
• **INFORMATION** **P92**
• **DIVIDE** **P96**
• **COPY** **P93**
• **DELETE** **P95**
• **RENAME** **P94**
• **PROTECT** **P89**

SD card P101



Card reader P106

USB memory P107

Send signals between DAW software and audio equipment.

P110~ **■Audio interface manual**

Operate DAW software with the R24.

P110~ **■Audio interface manual**

Basic recording guide

Make a quick recording with the R24

Here we explain how to record in stereo with the built-in microphones on the unit's left and right sides and how to record an electric guitar in mono using the high impedance input.

STEP 1 Insert an SD card and turn the power on.

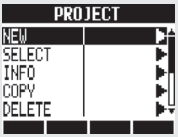
STEP 2 Create a new project.



PROJECT

1 Press

2 Select NEW.

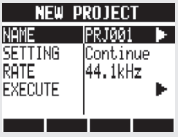


Change menu

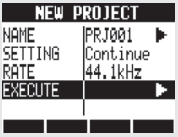
Use the up/ down keys

ENTER Press

3 Confirm the project name, etc.



4 Select EXECUTE.

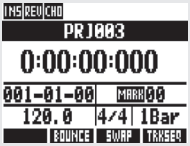


Change menu

Use the up/ down keys

ENTER Press

Return to the main screen.



Ref: Projects P89

STEP 3 Turn the input source ON.

Using built-in mics (stereo recording)

1 

Turn the **INPUT 7 & 8 MIC** switch **ON**.

2 Press the status keys of **INPUTS 7 & 8** until their indicators light red.



or

Recording an electric guitar (high-impedance mono input)

1 Connect the guitar to **INPUT 1**.

2 

Turn the **INPUT 1 Hi-Z** switch **ON**.

3 Press the status key of **INPUT 1** until the indicator lights red.



NOTE

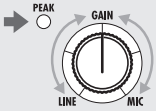
- Hi-Z is only on **INPUT 1**, and the built-in stereo microphones function only on tracks 7 & 8.
- Tracks 7 & 8 correspond to **INPUT 7 & 8** and are set up as two mono tracks by default. To use the built-in mics for a stereo recording, set stereo link to create one stereo track.

Ref: Stereo link P20
Connecting instruments P18, 19

STEP 4 Adjust the input sensitivity, monitoring level and output

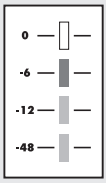
1 Adjust the input sensitivity (GAIN)

Adjust the **GAIN** of each **INPUT** so that their **PEAK** indicators blink occasionally.

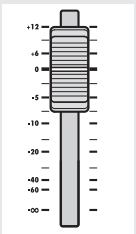


2 Adjust the recording level

The red (0 dB) indicator of the level meter should not light when you apply an insert effect to an **INPUT**. Adjust the patch level, for example, if necessary.



3 Adjust the monitoring level



Adjust the monitoring level of an instrument with the fader of the track it is being recorded on. (**INPUT 1** would be track 1, 9 or 17, for example.)

NOTE

- If an input signal distorts during recording, refer to STEP 4 and adjust the input sensitivity and recording level.
- After recording has completed, the “Please wait” pop-up will be displayed. Do not turn the power OFF or take the SD card out while this pop-up is open. Doing so could damage data or cause other problems.

Ref: Recording methods in detail P17~
Using insert effects P81

STEP 5 Record—Complete—Play

Recording

1 While pressing [STOP] press [REW] to move to the beginning.



2 Press [REC] and then [REC] to start recording.

3 Start performing.

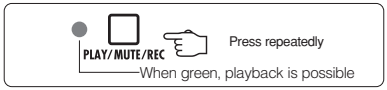


Counter starts

4 Press [STOP] to stop recording.

Playback

1 Press the status key to end recording standby and make the light green.



The track changes from recording standby (red) to playback standby (green).

2 While pressing [STOP] press [REW] to move to the beginning.

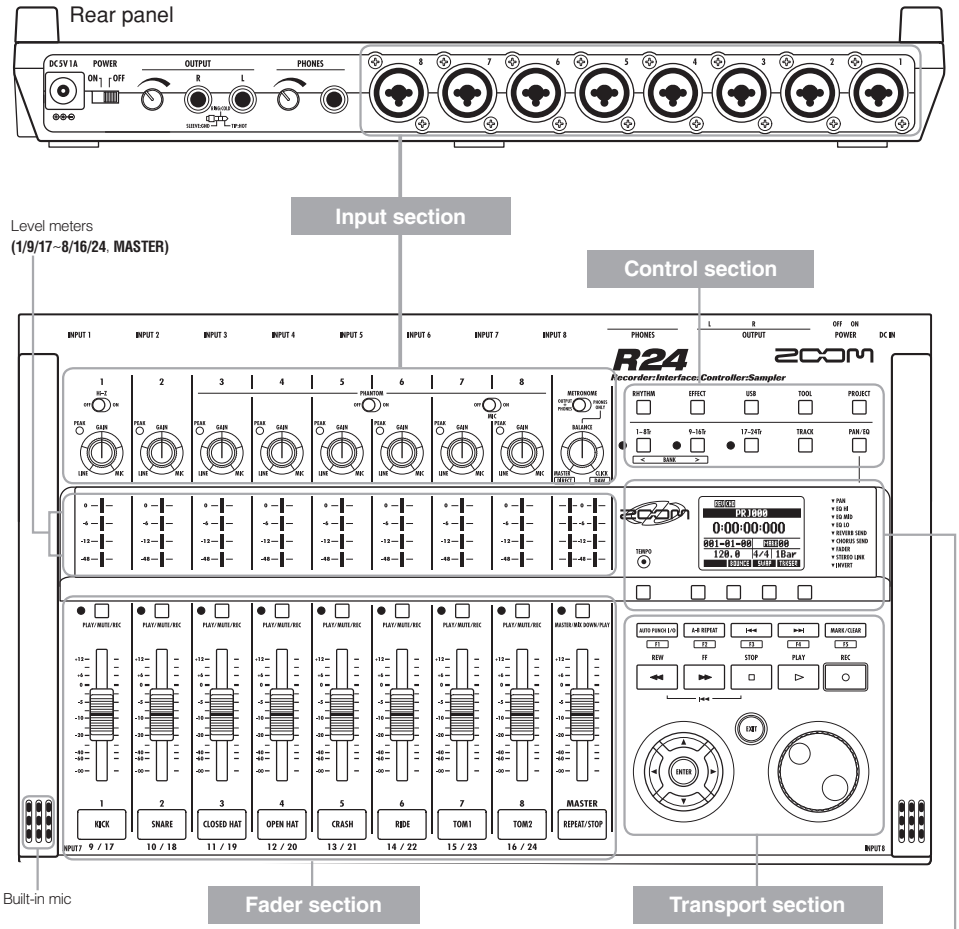


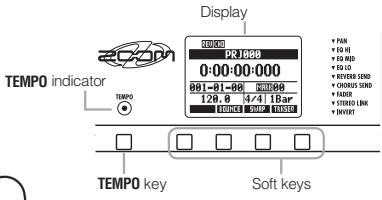
3 Press [PLAY] to start playback.



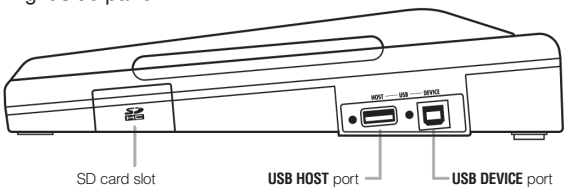
4 Press [STOP] to stop playback.

Panel layout and functions





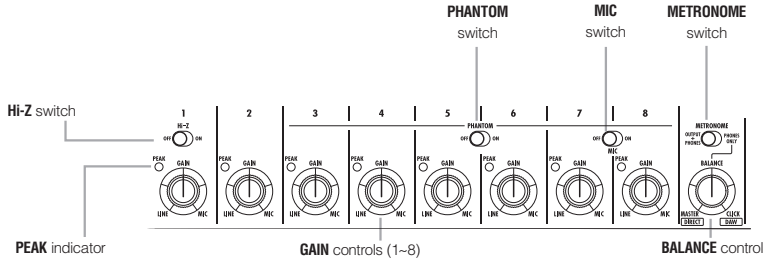
Right side panel



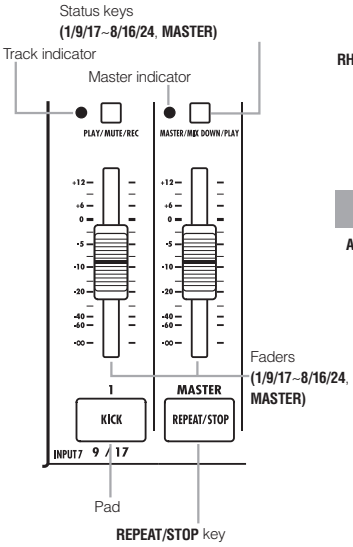
Bottom panel (not shown)

Battery compartment

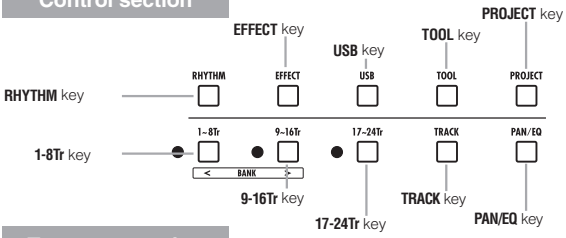
Input section



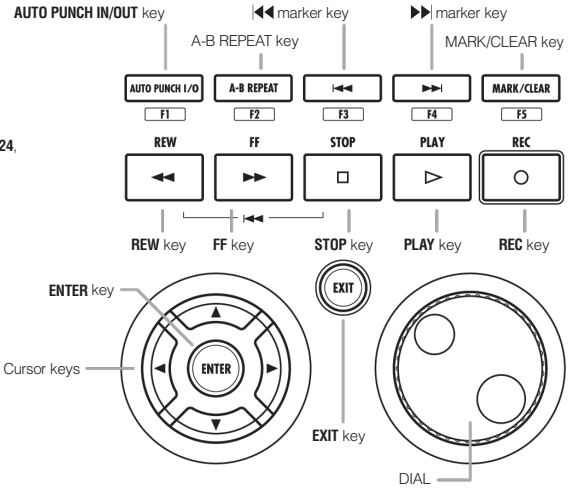
Fader section



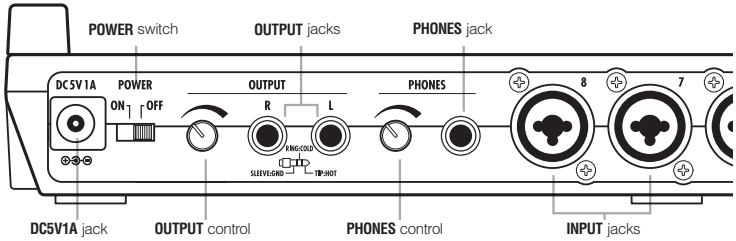
Control section



Transport section



Rear panel



Connections

Refer to the following to connect other devices, including instruments, microphones, audio equipment and computers.

Outputs

Set the **METRONOME** switch to output it to only the **PHONES** jack or also to the **OUTPUT** jacks.

❶ Stereo system, speakers with built-in amplifiers, etc.

Turn off the system's power (or turn down the volume) before connecting speakers to avoid damage.

Inputs

Connect cables with XLR or mono phone plugs (balanced or unbalanced) to the **INPUT** jacks.

❷ Microphones

In order to supply phantom power to a condenser microphone, first connect the microphone to **INPUT 5** or **6** and then turn the **PHANTOM** switch **ON**. Phantom power can also be provided to **INPUTS 3,4,7** and **8** (see P104).

❸ Devices with stereo outputs

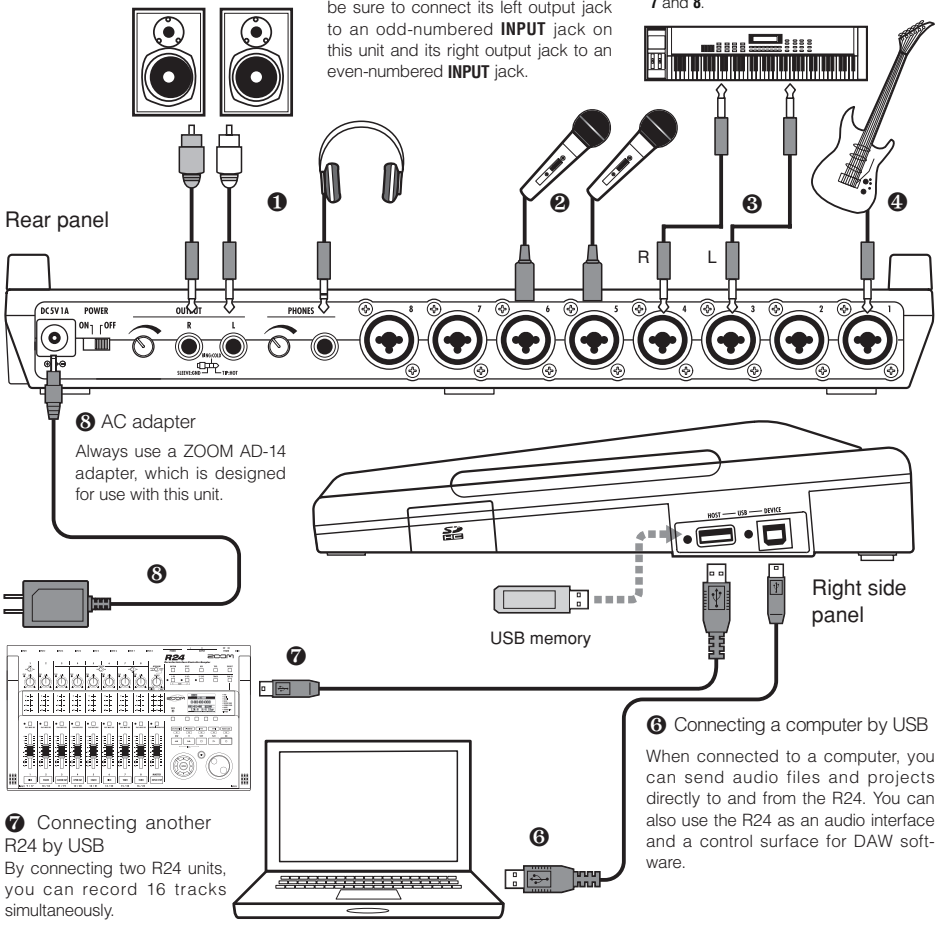
When using a synthesizer or a CD player, for example, with stereo outputs be sure to connect its left output jack to an odd-numbered **INPUT** jack on this unit and its right output jack to an even-numbered **INPUT** jack.

❹ Guitar/bass

When directly connecting a passive electric guitar or bass, use **INPUT 1**, which can handle high impedance, and turn the **Hi-Z** switch **ON**.

❺ Built-in microphones

Use these microphones to record drums indirectly or record a band. Turn the **MIC** switch ON to input the sounds to **INPUTS 7** and **8**.



❻ Connecting a computer by USB

When connected to a computer, you can send audio files and projects directly to and from the R24. You can also use the R24 as an audio interface and a control surface for DAW software.

❼ Connecting another R24 by USB

By connecting two R24 units, you can record 16 tracks simultaneously.

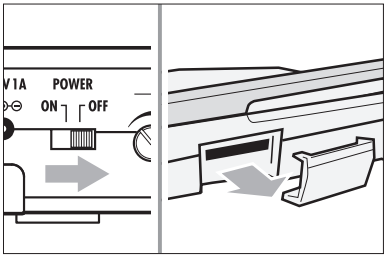
SD card installation

The R24 saves recording data and settings on SD cards.
To protect your data, turn the power off before inserting or ejecting a card.

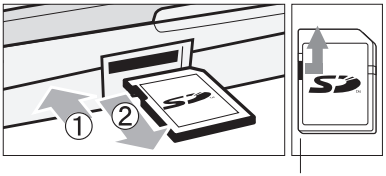
An SD card is necessary for recording.

Turn the power OFF beforehand (ordinary use)

1 **Turn the POWER OFF and detach the cover of the SD card slot.**



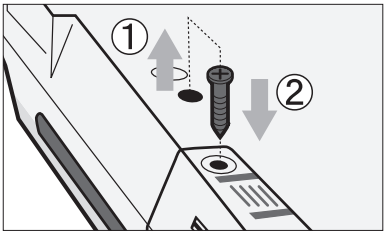
2 **Insert an SD card that is not write-protected into the slot completely.**
To eject, push the card in first .



Unlock the write-protection

Preventing unwanted removal of an SD card

Remove the screw near the slot, and screw it into the hole in the SD card cover.



NOTE

- If you want to change the SD card while the power is ON, follow special procedures (see P101).
- When inserting or removing an SD card, always turn the power OFF. If you do so when the power is ON, recording data might be lost.
- If you cannot insert a card into the slot, you might be trying to insert it in the wrong direction or upsidedown. Try again with the correct card orientation. If you force the card in, you might break it.
- If an SD card was previously used with a computer or a digital camera, you must format it in the R24 before using it.
- If no SD card is inserted, the REC key will not function in Recorder Mode.

If one of these messages is shown

- "No Card": No SD card is detected. Make sure an SD card is inserted properly.
- "Card Protected": The SD card write-protection lock is closed, preventing rewriting. To release it, slide the switch away from the lock position.

HINT

- This unit can use SD cards with capacities of 16 MB~2 GB, as well as 4~32 GB SDHC cards.
- You can check the most recent information about compatible SD cards on the ZOOM website. http://www.zoom.co.jp

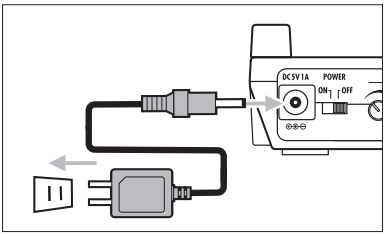
Ref: SD CARD>EXCHANGE P101
SD CARD>FORMAT P102

Powering the unit

Use the included AC Adapter, which is designed for the unit, or six AA batteries (sold separately) to power the unit.

Using ordinary power (included AC adapter)

1 Make sure that the power is OFF, and then plug the included AC adapter into the back of the unit.

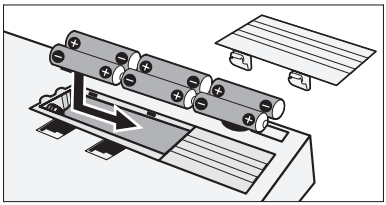


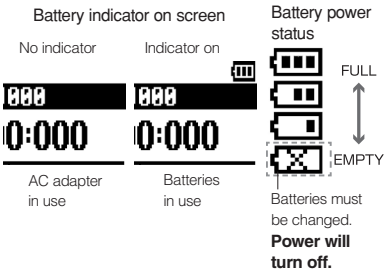
Caution Always use the included ZOOM AD-14 AC adapter, which is designed for use with the unit. Using any other adapter could damage the unit.

Using batteries

1 Turn the power OFF and open the battery case cover on the bottom of the unit.

2 Install the batteries and close the cover.





HINT

Power supply from USB

If the **POWER** switch is set to **OFF**, connecting the unit to a computer with a USB cable makes the unit start-up automatically with power supplied by USB. In this state, functions are different from when the **POWER** switch is **ON**. The unit can be used only as an SD card reader or as an audio interface.

- When using the unit as an audio interface, if supplying phantom power, we recommend that you use the AC adapter.

Ref: Setting the battery type P103

NOTE

- Always turn the power OFF when you open/close the battery cover or plug/unplug the AC adapter. Doing so when the power is ON might cause recording data to be lost.
- The unit can use alkaline of NiMH batteries. The approximate lifetime for alkaline batteries is about 4.5 hours.
- Replace the batteries when "Low Battery!" is shown. Turn the **POWER** switch to **OFF** immediately and install new batteries or connect the included AC adapter.
- Set the battery type to increase the accuracy of the battery indicator.

Turning the power on & off/Date & time setting

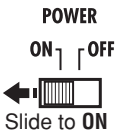
Follow these precautions for starting-up and shutting down the unit.
Follow these instruction to set the date and time for files and data.

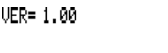
Turning the power on & off

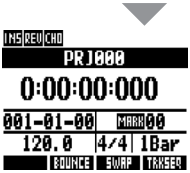
1. Make sure all the equipment is OFF.
2. Insert an SD card into the R24. Confirm that the power, the instruments and the monitoring system (or stereo headphones) are correctly connected.

Turn the power ON to start the unit

1



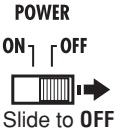




2 Then turn the power ON for connected instruments and for the monitoring system in that order.

Turn the power OFF to shut down the unit

1







NOTE

- Before turning the **POWER ON**, turn down **PHONES** and **OUTPUT** controls and volume on monitoring systems and other connected devices.
- If no power is supplied to the unit for more than a minute, the DATE/TIME setting will be reset to its initial value.

Setting the date and time

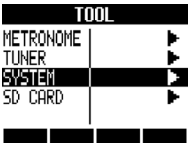
TOOL>SYSTEM>DATE/TIME

1 TOOL



Press

2 Select SYSTEM.



3 Select DATE/TIME.



4 Select the date and time units and set their values in the following order.

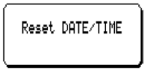
YEAR > MONTH > DAY > 00:00:00



5 Select OK.



If this message appears



- The DATE/TIME setting has been set to its initial value. Set the DATE/TIME again.

Switch and key operation overview

Here we explain how to use the keys and switches of the R24.
Please look at the display for icons that show key functions.

Transport section

REC

REC key — Functions only when tracks are in recording standby.

When stopped	Starts recording standby
Recording standby	Ends recording standby
During playback	Starts recording (manual punch-in/punch-out)

PLAY

PLAY key

When stopped	Starts playback
Recording standby	Starts recording

STOP

STOP key

During recording	Ends recording
During playback	Stops playback
Recording standby	Stops unit

REW

REW key

Stopped/playback	Rewinds
STOP REW	Hold **STOP** and press **REW** to return to the top of the song.

FF

FF key

Stopped/playback	Fast forwards

ENTER **ENTER** key	Confirm items.
EXIT **EXIT** key	Press to go back. Hold to return to the top screen.
DIAL	Change and move among menus and numbers.
◄◄ ►►I MARK/CLEAR	Ref.: Mark-related keys P33
AUTO PUNCH I/O A-B REPEAT	Set/cancel auto punch-in/out and A-B repeat

Cursor appearance and indication in manual

◄ ► =

Indications in manual — Unit

Appearance in manual	
◄ ► — Move in menu	In the explanations, only the usable directions are shown

Note: The cursors are used often to move up, down, left and right to choose different items. An example of their notation in the manual is shown above.

Control section

RHYTHM **RHYTHM** key	Play, create and set rhythm patterns
EFFECT **EFFECT** key	Set the insert and send-return effects
USB **USB** key	Use audio interface, card reader and USB memory
TOOL **TOOL** key	Metronome, tuner, system and SD card settings
PROJECT **PROJECT** key	Create, set and work with projects
1~8Tr **1-8Tr** key 9~16Tr **9-16Tr** key 17~24Tr **17-24Tr** key	Switch between track groups 1~8, 9~16 and 17~24 (the indicator for the active track bank lights)
TRACK **TRACK** key	Assign tracks and make settings
PAN/EQ **PAN/EQ** key	Access track mixer settings

Fader section

PLAY/MUTE/REC **1/9/17~8/16/24** TRACK status keys	Change track status to PLAY (green), MUTE (no light) or REC (red). Playback tracks that are already assigned appear orange.
MASTER/MIX DOWN/PLAY MASTER status key	Change MASTER track status to PLAY (green), MASTER (no light—no playback/recording) or MIX DOWN (red).

Switches and controls

POWER switch	Turns power ON & OFF
Hi-Z switch	Turns Hi-Z connection on/off (only for **INPUT 1**)
MIC switch	Turns built-in microphones on/off (signals to **INPUTS 7 & 8**)
METRONOME switch	Sets metronome output
PHANTOM switch	Turns phantom power ON & OFF

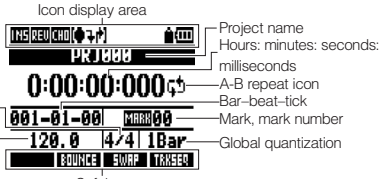
GAIN control	Adjusts input sensitivity
PEAK indicator	Lights if maximum input detected
BALANCE control	During recording, when the **METRONOME** switch is set to **PHONES ONLY**, use to balance the volume of the stereo mix and the metronome
Level meters	Shows recording/playback levels
TEMPO indicator	Flashes in time with the count

Display information

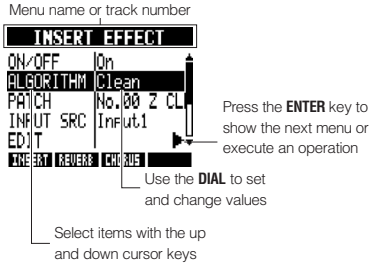
The display shows data about projects and other elements, connection and operation status as a recorder or a computer audio-interface, available functions and various menus.

Display and indications

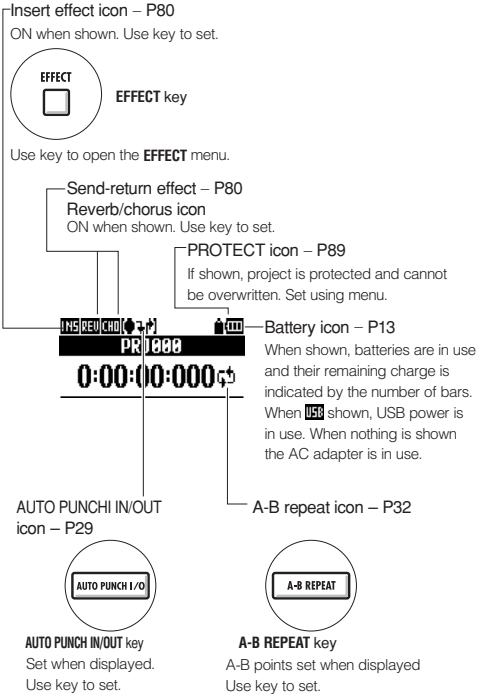
Top Screen: Shows the current project



Menu screen: Shows an operation menu



Icon display and setting keys



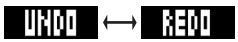
The indications in enclosed in boxes, including **F1**~**F5** beneath the row starting with the **AUTO PUNCH I/O** key, **< BANK >**, **DIRECT**, and **DAW**, are functions when used as a control surface in audio interface mode.

Soft keys



The functions of the soft keys appear at the bottom of the display. Press the key under the indication to use that function.

UNDO/REDO



UNDO indicator REDO indicator

UNDO: Return to the state before the previous operation after (PUNCH IN/OUT) recording, BOUNCE or MIX DOWN (to MASTER TRACK)
REDO: Reverse the UNDO operation

When indicators are shown
After recording and certain other operations, "UNDO" is shown. After pressing the UNDO soft key, "REDO" is shown. Press the soft key to execute.

NOTE

- Undo only works on tracks with recorded audio data
- Only the previous operation can be undone. Any earlier operations cannot be undone.

R24 recording flow/Creating a new project

With the R24, you can use multitrack recording to create a complete work of music. Create a new project for each song that you make.

Recording preparations

Connecting instruments

Project and track settings

Create a new project

Select the **INPUTS** and the recording tracks

Set stereo links

Change track status (recording, play, mute)

Adjust input sensitivity using the **GAIN** controls

Performance preparation

Set metronome including pre-count

Set and use tuner

Recording the first tracks

Recording standby—record—stop

Recording more tracks

Overdubbing

Playback of already recorded tracks

Overdubbing

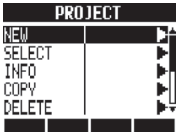
Record standby—Record—Stop

Create a new project
PROJECT>NEW

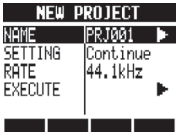
1 PROJECT

Press

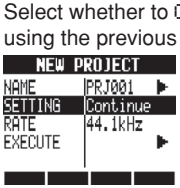
2 Select NEW.



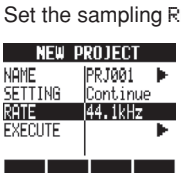
3 Confirm the project NAME.



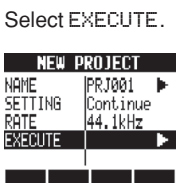
4 Select whether to CONTINUE using the previous settings.



5 Set the sampling RATE.



6 Select EXECUTE.



HINT

You can change the name of the new project in step 3.

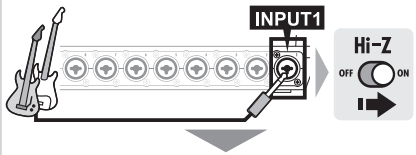
☞ Ref: Creating a new project P90

Connecting instruments/Making mono settings

Make settings for instruments such as high impedance guitars, line-input synths, the built-in mics and mics that use phantom power as well as for stereo and mono input sources.

Connecting passive-type guitars

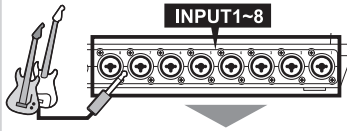
Connect the high impedance instrument to **INPUT 1**, and the turn the **Hi-Z** switch **ON**.



Signal to **INPUT 1**

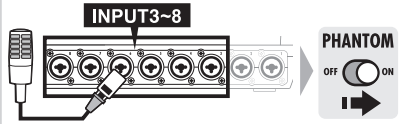
Connecting low-impedance instruments (mono connections)

Connect low impedance instruments to any **INPUT 1~8**.



Signals to any **INPUT 1~8**

Using phantom power



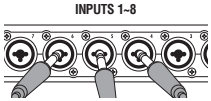
Supply phantom power to the connected mic

NOTE

- Turn the **PHANTOM** switch **ON** to provide +48 V power to **INPUTS 3~8**.
- In order to reduce battery consumption by the use of phantom power, it can be turned off to **INPUTS 3**, **4**, **7** and **8**, and the voltage can be reduce to +24 V (Ref. P104).
- Use the fader that is in line with the **INPUT** jack. The signal from **INPUT 1** goes to track 1,9 or 17.
- To use tracks 9~16 or 17~24 press the **9~16Tr** or **17~24Tr** key to switch the fader assignment.
- Depending on the insert effect selection, the output can change.
- Create one stereo file from two faders by using the stereo link setting.

Assign INPUT 1~8 connections to tracks 1~24

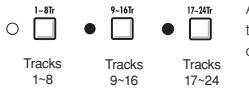
1 **Connect instruments and mics.**



2 **Make settings for instruments, built-in mics, stereo tracks, etc.**

Hi-Z	PHANTOM	MIC
Stereo	Mono x 2	Mono

3 **Select the bank of tracks.**



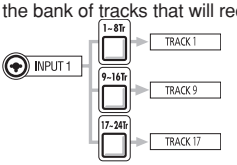
4 Change the status of the connected inputs.

Press the status key of a track 1–2 times to turn its red light on.



Set the tracks to receive inputs

Press the **1-8Tr**, **9-16Tr** or **17~24Tr** key to set the bank of tracks that will record the inputs.



INPUT	TRACK		
	1~8Tr key active	**9~16Tr** key active	**17~24Tr** key active
1	1	9	17
2	2	10	18
3	3	11	19
4	4	12	20
5	5	13	21
6	6	14	22
7	7	15	23
8	8	16	24

☞ Ref: Stereo setting P19

Connecting instruments/Stereo settings & status keys

To make a stereo recording, set a stereo link for adjacent odd and even-numbered tracks and record on them. Use the status keys to send input signals to recording tracks.

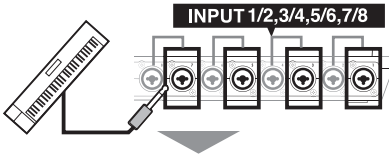
Using the built-in mics



Turn the **MIC** switch **ON**

Signals to **INPUTS 7/8**

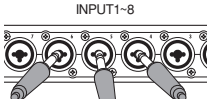
Connecting line input instruments (stereo connection)



Use **INPUTS 1/2**, **3/4**, **5/6** and **7/8** as pairs. Input left signals to odd-numbered tracks and right signals to even numbered tracks.

Assign INPUTS 1–8 to tracks 1–8, 9–16 or 17–24.

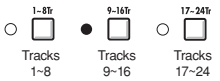
1 Connect instruments and mics.



2 Make settings for instruments, built-in mics, stereo tracks, etc.

Stereo | Mono x 2 | MIC

3 Select the track bank.



Assign faders to tracks 1~8, 9~16 or 17~24

4 Set the status of the connected inputs.

Press a status key of the linked tracks one or two times to turn both lights red.



NOTE

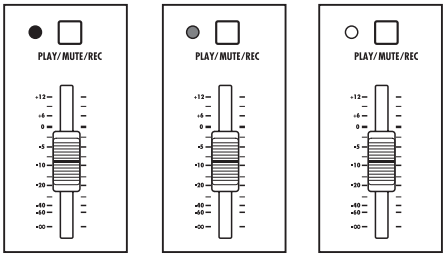
- Use the fader that is in line with the **INPUT** jack. The signal from **INPUT 1** goes to track 1, 9 or 17.
- To use tracks 9~16 or 17~24, press the **9~16Tr** or **17~24Tr** key to switch the fader assignment.

Stereo link

Enable a stereo link for tracks in advance of recording to create a stereo file when recording. You can also assign stereo files.

Status keys and track indicators

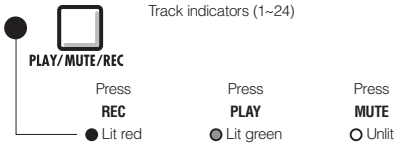
Press a status key to set the role of a track fader and change the color of the track indicator light. The track indicator colors show the status as follows.

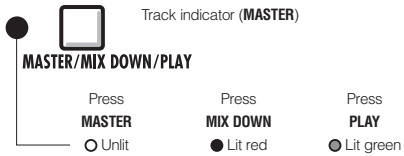


REC
Record ready

PLAY
Playback ready

MUTE
Sound disabled





HINT

- In order to send the signal from an **INPUT** to a recording track, press its status key 1–2 times until the track indicator lights red.
- To use two inputs press both status keys to connect both to tracks.
- To create one stereo file when recording two tracks set a stereo link.
- If the **MASTER** track is set to **PLAY**, all other tracks will be set to **MUTE** (no sound).

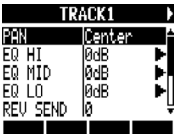
Stereo link

PAN/EQ>STEREO LINK

1 **PAN/EQ**

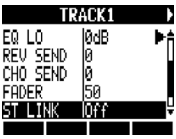
Press

2 Select a track.



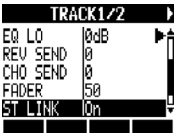
Change tracks ◀ ▶

3 Select ST LINK.



Change menu ▲ ▼

4 Select On.



The tracks that are joined with a stereo link are shown.



On/Off

HINT

- The track pairs than can be joined with stereo link are: 1/2, 3/4, 5/6, 7/8, 9/10, 11/12, 13/14, 15/16, 17/18, 19/20, 21/22 and 23/24
- Stereo link changes the setting from two mono tracks to one stereo track.
- Whatever track number you choose, an adjacent track will be linked. You cannot change these combinations.
- To adjust the volume of a pair of tracks joined by stereo link, use the odd number fader. The even number fader has no effect.
- The pan parameter of a pair of tracks joined by stereo link can be used to adjust their relative volume balance.
- Stereo files can be assigned to tracks joined by stereo link. The left channel is sent to the odd track and the right is sent to the even track.

Setting the tempo

Set the tempo for the music. The tempo is saved for each project.

Changing the tempo

1 Press ▢ beneath TEMPO ⦿.

2 Use the dial to change the value.

Tap ▢ beneath TEMPO ⦿ repeatedly.

The average pace will be set as the tempo value.



Tempo	
Range	
40.0~250.0	Default value : 120.0

Preparing a rhythm track

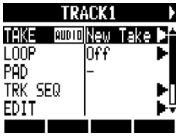
The R24 has a sampler function that allows loops to be played back on each track. Here, we assign a rhythm pattern that is built-in to the R24 to a track as a guide rhythm.

Assignment to a track

1 TRACK

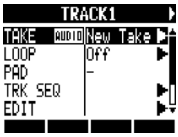
Press

2 Select the track to assign.



Select track

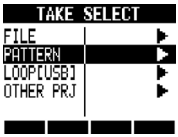
3 Select TAKE.



Change menu

ENTER Press

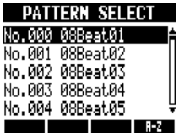
4 Select PATTERN to use a rhythm pattern.



Change menu

ENTER Press

5 Select the rhythm pattern.



Select a file or pattern

ENTER Press

HINT

- You can also play the selected audio file or rhythm pattern.

PLAY ▷ Play

STOP □ Stop

- If rhythm patterns are assigned to multiple tracks and played back simultaneously, or patterns with numerous note-on events are played, they might not all play as expected due to the maximum polyphony limitation of the unit.
- You can assign the loop files on the included USB memory (ref. P49).
- In Step 5, you can change the order of the pattern list.
  Press the A–Z soft key to list the patterns in alphabetical order.
  Press the No. soft key to list the patterns in numerical order.

Recording the first track

After connecting instruments and completing recording preparation, ready the recorder and start recording the first track.

Starting from the Top Screen of a new project

1 Return the counter to the beginning

Press and hold STOP (□) and press REW (◄◄) to return to the beginning.

Top Screen



Counter at head position (mark 00).

Adjusting the input level

2 Arm the track for recording.



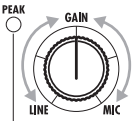
Press 1-2 times until the track light turns red.

When red, recording is possible

3 Adjust the input sensitivity **GAIN**.



Make noise!

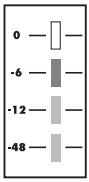


Adjust the input level.

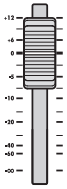
Should light briefly when the volume reaches maximum

4 Adjust the recording level.

If an insert effect is applied to an **INPUT**, adjust the patch level, for example, so that the red indicator (0dB) on the level meter does not light.



5 Adjust the monitoring system.



Use the fader for the recording track to adjust the monitoring level of the instrument being recorded (**INPUT 1** is track 1, 9 or 17).

HINT

- The Top Screen display of a new project



Counter at head position (mark 00).

- After setting the input (Step 5 and after), you can process input signals with the insert effect.

☞ Ref: New project creation P90
Insert effect P81

NOTE

Red lights on **PEAK** indicators and level meters

A **PEAK** indicator turns red when the signal exceeds the maximum detectable level of 0 dB, resulting in input clipping. The red indicator on a level meter means that the signal being recorded (signal after passing through the insert effect) is clipping. If clipping happens, the recorded sound will be distorted. You should reduce the recording level.

Recording the first track

6 Start recording standby.



7 Start recording.



8 Stop recording.



HINT

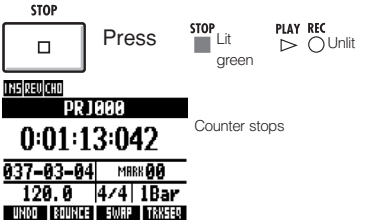
- Press the UNDO soft key to cancel the operation.

Recording again

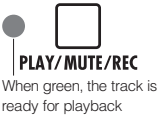
- If you record again on the same track, the previous recording will be overwritten.
- There are two ways to make a new recording or re-record.
  - Press the UNDO soft key to undo the recording.
  - Use the TRACK > TAKE > FILE menu to assign the track used for recording to a "New Take" (Ref. P25).

Playing back the recorded track

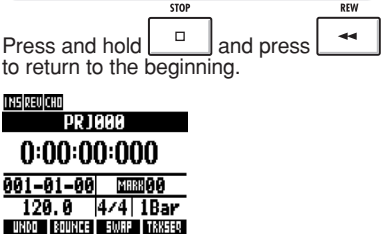
9 Press stop (if you have not already).



10 Play the track.



11 Return the counter to the beginning.



12 Play the track.



13 Stop playback.



NOTE

- If the REC MODE is set to Overwrite, recorded audio files on tracks will be overwritten when new recordings are made. Be careful when returning the counter to the beginning and recording again. Set the REC MODE to Always New if you do not want to overwrite recordings.
- When set to play, the recording currently on the track will be played.

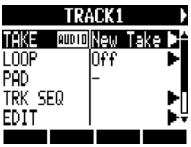
Changing the playback take

You can assign audio files to tracks freely. By recording multiple takes of vocals, guitar solos and other parts in different files, you can later select the best take.

1 TRACK

Press

2 Select the track to assign.



Select track

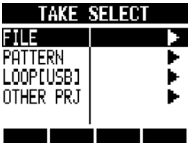
3 Select TAKE.



Change menu

ENTER Press

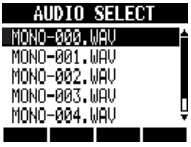
4 For an audio file, select FILE.



Change menu

ENTER Press

5 Select the desired audio file.



Select the file or pattern

ENTER Press

HINT

- You can also play the selected audio file.

PLAY ▷ Play

STOP □ Stop

- Files that are already assigned to tracks have an * to the left of their names.

Switching two tracks (SWAP)

1 Press beneath SWAP.



2 Select the first track to swap.



Indicators blink orange on tracks that can be selected. Press the status key to select a track.

PLAY/MUTE/REC

Selectable: blinking orange
Selected: lit orange

3 Select the second track to swap.



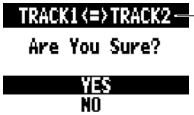
Already selected track

Indicators blink orange on tracks that can be selected. Press the status key to select a track.

PLAY/MUTE/REC

Selectable: blinking orange
Selected: lit orange

4 Swap the tracks.



Tracks to be swapped

Move cursor

ENTER Press

NOTE

The swap function switches two tracks, including the assigned files, track sequence data and all track parameter information.

Recording additional tracks

After recording the first track, you can record additional tracks while playing back already recorded audio. Preparations for recording are the same as for the first track, but you can also set recordings to play on different tracks.

Playing already recorded tracks

1 PLAY/MUTE/REC

Press 1-2 times until the indicator lights green for all tracks to be played back.

Playback-ready when green

Preparing to record more tracks

2 PLAY/MUTE/REC

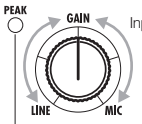
Press for all recording tracks 1-2 times until the track light turns red.

When red, recording is possible

3 Adjust the input level.

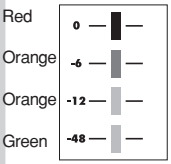


Make noise!



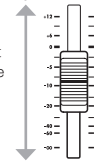
Input sensitivity

Briefly lights when the volume reaches maximum.



Recording level

Set the level so that at maximum volume the red light (0 dB) does not light.



Monitoring system

Start and stop recording

4 Press and hold STOP and press REW to return to the beginning.



5 REC + PLAY

Press **REC** and **PLAY** in order to start recording.

REC Lit red

PLAY Lit green



Counter starts



Play!

6 STOP

Press to stop.

STOP Lit green

REC PLAY Unlit



The counter stops moving, but does not return to 0.

HINT

- If you want to use a track that has already been recorded on for a later recording, assign the recorded file to another track, and make the target track empty. Refer to "Changing the playback take" (P25).
  You can also swap recorded tracks with unrecorded tracks.
  Do this, when creating a second guitar track using Hi-Z, for example.

Playback all tracks

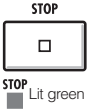
1 

Press 1-2 times until the indicator lights green for all tracks to be played back.

2 Press and hold STOP ☐ and press REW ◄◄ to return to the beginning.

3 

Press to start playback.

4 

Press to stop playback.

NOTE

- When you move files on tracks, confirm that no files are assigned to the tracks to be recorded ("New Take").
  If there is a file assigned to a track, that recording will be overwritten by new recording.
- If the REC MODE is set to Overwrite, recorded audio files on tracks will be overwritten when new recordings are made. Be careful when returning the counter to the beginning and recording again. Set the REC MODE to Always New if you do not want to overwrite recordings.
- When a track is play-enabled, the file on it will play back.

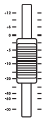
HINT

- If you are recording on a different track than the first track, there is no need to move or swap the first track.
- If you want to record a new file, set that track to New Take.

Automatic punch-in/punch-out

Punch-in and punch-out allow you to re-record a single part of a recorded file. You can set the beginning (punch-in) and ending (punch-out) points in advance to start and stop recording automatically.

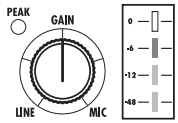
Prepare the track that you want to punch-in/punch-out

1 
Raise the fader on the track you want to re-record

2 

Press 1-2 times until lit red

When red, recording is possible

3 

Adjust the recording level and the **GAIN** to be the same as the already recorded part.

Set the punch-in/out points

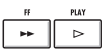
4 

Locate the starting position (punch-in point)

5 

Press to set the punch-in point


Appears on display

6 

Locate the ending position (punch-out point)

7 

Press to set the punch-out point


Appears on display

NOTE

- Once you set auto punch-in/out point, you cannot change them. Cancel and set them again.
- If the REC MODE is set to Always New, a new file will be recorded.

Rehearse

1 

Press to start playback.

PLAY Lit

When the punch-in point is passed, the track is automatically muted.


Perform (not recording)

When the punch-out point is passed, the track is automatically unmuted.

2 

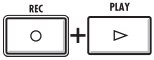
Press to stop playback.

PLAY Unlit

Re-recording: punch-in/punch-out

8 

Locate to before the punch-in point.

9 

Press **REC** and **PLAY** in order to start recording.

PLAY Lit REC Blinks Not recording

Pass the punch-in point


Perform PLAY REC Lit Recording

Pass the punch-out point

PLAY Lit REC Blinks Not recording

10 

Press to stop recorder.

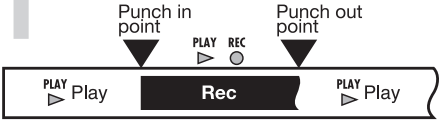
PLAY REC Unlit

Cancel punch-in/out

11 

Press

Indicators disappear from display

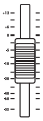


Re-recorded part

Manual punch-in/punch-out

You can also punch in and out manually. Press the **REC** key during playback to start re-recording from that point.

Prepare the track that you want to punch-in/punch-out

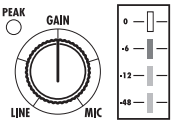
1 

Raise the fader on the track you want to re-record

2 PLAY/MUTE/REC

Press 1-2 times until lit red

When red, recording is possible

3 

Adjust the recording level and the **GAIN** to be the same as the already recorded part.

Re-recording: punch-in/punch-out

4 REW

Locate to before the punch in point.

5 PLAY

Press to start playback.

PLAY Lit



Perform (not recording)

6 REC

Press **REC** to punch-in and start recording.

PLAY REC Lit



Perform (recording)

7 REC

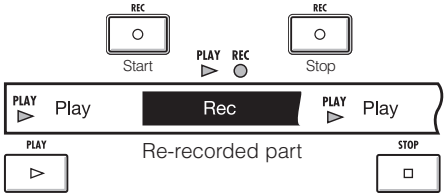
Press **REC** to punch-out, stop recording and start playback.

PLAY Lit REC unlit

8 STOP

Press to stop recorder.

PLAY REC unlit



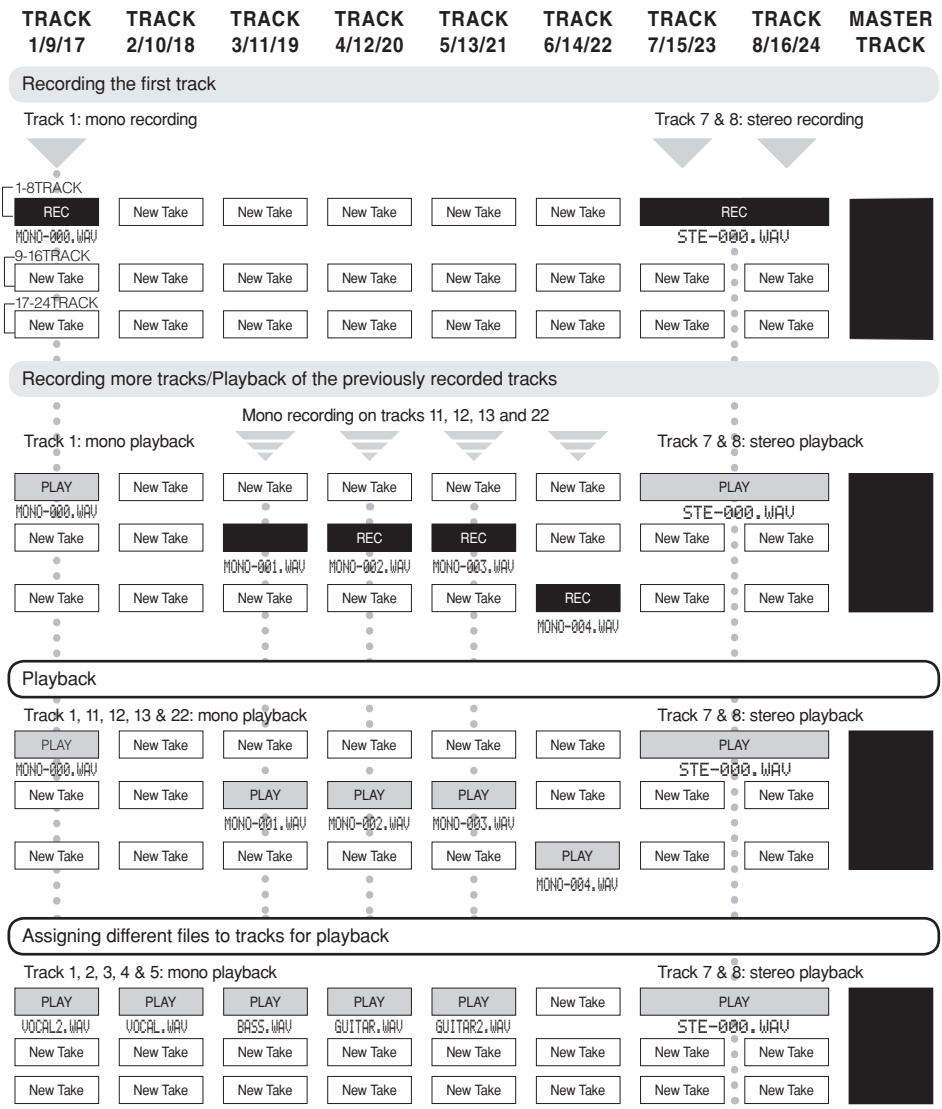
NOTE

- Punch-in/out overwrites the recording on the track.
- If the track is set to `New Take`, the track will be silent before punching in and after punching out.
- If the `REC MODE` is set to `Always New`, a new file will be recorded.
- Use the `UNDO` soft key to cancel the re-recording and keep the previous take.

Project playback

Recorded audio files are assigned to the tracks that they were recorded on.
All tracks that are enabled for playback by their status keys (green lights on) will be played.

Overview of recording and playback process in a project



☞ Ref: Changing the playback take P25

Repeat playback of a specific section (A-B repeat)

You can set a beginning point (A) and an ending point (B) in a project and repeat playback between them.

Setting A-B points

1 REW ◄◄ FF ►► PLAY ▷ Locate the beginning point.

2 A-B REPEAT Press



Appears on display

3 FF ►► PLAY ▷ Locate the end point.

4 A-B REPEAT Press



Appears on display

A-B repeat: playback repeatedly

5 PLAY ▷ Press to start playback.

6 STOP □ Press to stop playback.

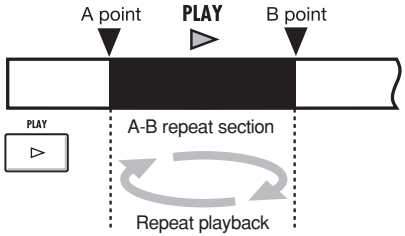
Cancel repeat and clear points

7 A-B REPEAT Press to cancel repeat playback and clear the A-B points.

The repeat icons disappear from the display.

HINT

- When playback reaches point B, it automatically goes back to point A and continues playback.
- While the A-B icon appears, playback repeats continuously.
- These settings can be made both during playback and when stopped.
- If you set point B at a time before point A, repeat playback will occur from point B to point A instead.
- To make new settings, press the **A-B REPEAT** key to cancel it once and then follow the procedures to make new ones.



Using the counter and marks to locate

The counter shows the recording or elapsed time in hours: minutes: seconds: milliseconds and bars–beats–ticks (1/48 beat). Set marks in a project to locate to them quickly.

Locate using the counter

To prepare, stop the recorder, select the project and start from the Top Screen.

1 Select the hours: minutes: seconds or bars–beats–ticks.



Change item

Bars beats ticks

Hours: minutes: seconds: milliseconds

2 Change the values.



Change numbers

NOTE

You cannot change the counter this way during recording or playback.

HINT

- After Step 2, you can start playback from the set counter position.
- Mark icon display



Mark 03 shown set at 10 minutes, 08 seconds, 15 milliseconds

MARK Mark set at current counter position

MARK No mark set at counter position

- Mark zero (MARK 00) is always set at counter 0 (project beginning) and cannot be changed.
- If you add a mark at a time earlier than an existing mark, all the following marks will be automatically renumbered in order.
- One project can have a maximum of 100 marks, including the zero mark.

Add a mark

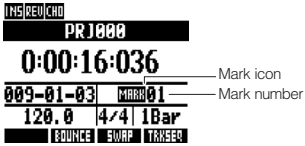
Add a mark using the counter

1 Start from the top screen. Set the counter to the desired mark position.



Change unit or digit

2 MARK/CLEAR Press



Mark icon

Mark number

Add a mark during recording/playback

1 During recording or playback



2 MARK/CLEAR Press



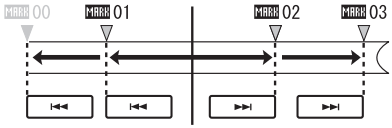
Locate to the position of a mark

Use keys to move between marks in order

1 Press the forward or backward mark key until you reach the desired mark.



Project



Move to marks in counter sequence

1 Select the mark number.



Blinks

Move between units and digits

2 Select a mark number.



Change number

Delete a mark

1 Press the forward or backward mark key until you reach the desired mark.



Mark icon highlighted

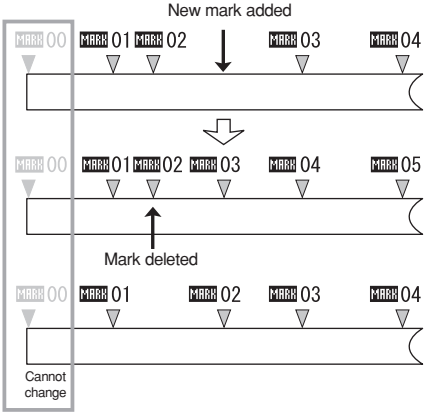
2 MARK/CLEAR Press



The highlighted mark is erased and the preceding mark is shown.

NOTE

- Once deleted, a mark cannot be recovered.
- MARK 00 (the project beginning) cannot be erased.
- Press the **MARK/CLEAR** key when the mark icon is highlighted (light letters on dark background) to erase that mark. Press the **MARK/CLEAR** key when the mark icon is not highlighted to create a new mark at that position.
- When marks are added and removed between other marks, all the marks are automatically renumbered in order from the beginning.



Tuner

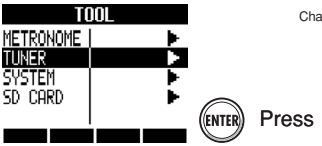
The R24 has a multifunction tuner that includes chromatic tuning that detects note names by semitones, standard guitar/bass tuning and half-step-down tuning.

1 TOOL Press

2



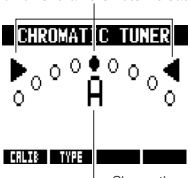
3 Select TUNER.



Chromatic tuner

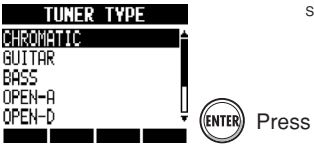
4 Tune the instrument

Shows whether the pitch is higher or lower than the note indicated.

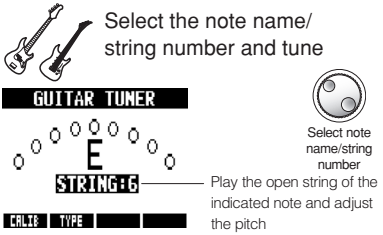


Other tuner types

5 Press the ☐ under TYPE.



6 Select the note name/ string number and tune



Changing the standard pitch

Press the ☐ under CALIB, and set the standard pitch



HINT

- The pitch indicator responds to sources input on tracks with red status lights.
- The standard pitch can be set between 435–445 Hz in 1 Hz units. The default setting is 440 Hz.
- With the tuner types other than chromatic, the calibration can be used to lower the pitch by 1–3 semitones (♭–♭♭♭).
- The standard pitch value setting is stored separately for each project.

Tuner type		GUITAR	BASS	OPEN A	OPEN D	OPEN E	OPEN G	DADGAD
String/ note	String1	E	G	E	D	E	D	D
	String2	B	D	C#	A	B	B	A
	String3	G	A	A	F#	G#	G	G
	String4	D	E	E	D	E	D	D
	String5	A	B	A	A	B	G	A
	String6	E		E	D	E	D	D
	String7	B						

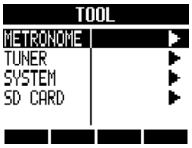
Metronome

This metronome, which includes a pre-count function, allows you to change its volume, tone and pattern. You can also output the metronome sound only through the headphones.

1 TOOL

Press

2 Select METRONOME.

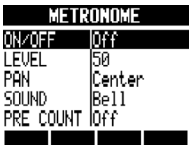


Change menu

ENTER Press

This is the standard method for setting the metronome.

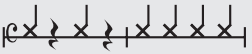
3 **Select each menu and adjust the settings.**



Change menu

Change setting

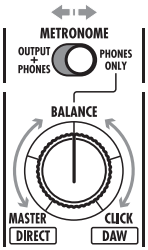
Menu settings and setting values

ON/OFF: Set when operative	
Settings	
Play Only	During playback only
Rec Only	During recording only
Play & Rec	During both playback and recording
Off (default)	No metronome sound
LEVEL: Change metronome volume	
Setting range	
0–100	Default value: 50
PAN: Change the stereo positionn	
Setting range	
L100–R100	Default value: Center
SOUND: Change tone	
Settings	
Bell (default)	Metronome sound with a bell on the accent
Click	Click sound only
Stick	Drum stick sound
Cowbell	Cowbell tone
Hi-Q	Synthesized click sound
TRACK1~TRACK24	TRACK 1~24 sound (mono)
TRACK1/2~TRACK23/24	TRACK 1/2~23/24 sound (stereo)
PRE COUNT: Pre-count setting	
Settings	
Off (default)	No sound
1~8	Enable sound during pre-count for 1 to 8 beats.
SPECIAL	Special pre-count pattern 

HINT

Changing and adjusting the metronome output

- Use the **METRONOME** switch to set the output.



OUTPUT + PHONES

The metronome sound is output through both **OUTPUT** and **PHONES** jacks

PHONES ONLY

The metronome sound is output only through the **PHONES** jack.
Use the **BALANCE** knob to adjust the relative volumes of the **MASTER** fader signal and the metronome sound.

MASTER — CLICK (metronome)

- Metronome settings are saved for each project.
- You can use the metronome even during **MASTER TRACK** playback.

NOTE

- Be aware that if you turn the metronome volume up high, the accented beat of some sounds might become difficult to distinguish.
- If a track with a rhythm pattern assigned is selected in the SOUND setting, no sound will be output.

16-track synchronized recording with two units

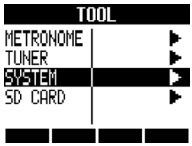
If you want to record more then 8 tracks at the same time during a band performance, for example, you can increase the number of tracks by connecting two R24s units by USB.

Make sender settings

Set the R24 to use for key control as the master.

1 TOOL Press

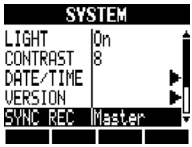
2 Select SYSTEM.



Change menu

ENTER Press

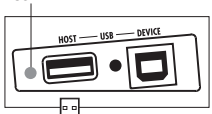
3 Select SYNC REC and set it to Master.



Change menu

Master/Slave

HOST USB indicator lit

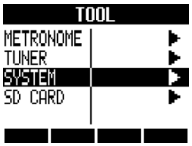


Make receiver settings

Set the R24 that will receive commands as the slave.

1 TOOL Press

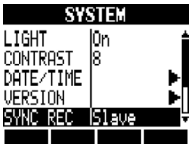
2 Select SYSTEM.



Change menu

ENTER Press

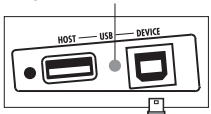
3 Select SYNC REC and set it to Slave.



Change menu

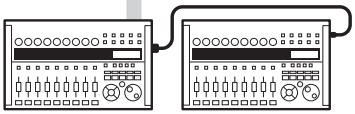
Off/Master/Slave

DEVICE USB indicator lit



4 Connect the two R24 units by USB cable

Plug a USB 2.0 (AB-type) cable into the ports that have lit indicators.



HINT

Command keys that affect both units.

REC ○	**REC** key	FF ►►	**FF** key
PLAY ▷	**PLAY** key	REW ◄◄	**REW** key
STOP □	**STOP** key		

NOTE

- Perfect synchronization of the starting time of recording of two units is not guaranteed.
  A gap of approximately 1-2 ms will occur.
- Connection with an R16 is also possible. When connecting to an R16, always set the R24 as the `Master`.
- Pre-count is disabled when using synchronized recording.
- When an R24 is set to `Slave`, operation using bus power is not guaranteed. Use an AC adapter or batteries.

R24 mixing process

Use the track mixer to make stereo link settings, adjust volume, EQ, pan (balance) and the send amount to send-return effects.

Adjust the volume, EQ and PAN of tracks

Select the send-return effect

Adjust the send-return effect

Apply insert effects to tracks

Mix down

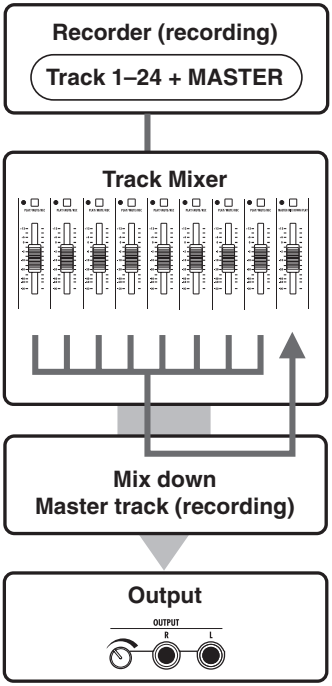
NOTE

Except for phase settings, both left and right channels of stereo tracks share the same parameter values.

HINT

What is the track mixer?

- Use the mixer to mix the recorder's audio tracks to stereo.
- Use each track's fader to adjust its volume, pan, EQ and other parameters.



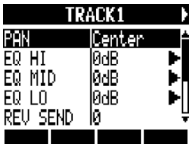
EQ, pan and send level track settings

Use the track mixer to set track parameters that, for example, adjust pan (stereo position), EQ (equalizer) and send-return effects.

1 **PAN/EQ**

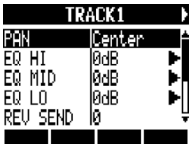
Press

2 Select a track.



Change tracks

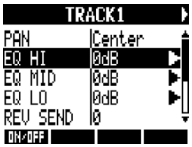
3 Select a menu item and its setting.



Change menu

Change setting

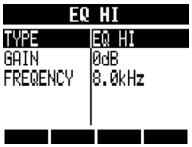
4 Select `EQ HI`, `EQ MID` or `EQ LO`.



Change menu

ENTER Press

5 Select each item and change settings.



Change menu

Change setting

HINT

- Use the track mixer to adjust each track parameter, including pan and the send-return effect levels, to process the signals.
- In step 2, you can also select a track by pressing its status key so that its indicator lights orange.

NOTE

- Except for phase settings (`INVERT`), both left and right channels of stereo tracks share the same parameter values.
- Settings are stored separately for each project.
- The only setting that the **MASTER TRACK** has is volume control using its fader.

Track parameters

These parameters can be set for each track

Mono tracks: 1~24
Stereo tracks: 1/2~23/24

Display	Parameter	Setting range (default value)	Explanation	Mono tracks	Stereo tracks	Master track
PAN	PAN	L100~R100 (Center)	Adjusts a track's PAN. For stereo tracks adjusts the volume balance between the left and right channels.	○	○	
EQ HI	High-frequency range boost/cut					
EQ HI	TYPE	EQ HI, HI CUT (EQ HI)	Set whether to boost/cut the high-frequency range (EQ HI) or clearly cut unnecessary high frequencies (HI CUT). This parameter can only be accessed when EQ HI is ON.	○	○	
	GAIN	–12dB~12dB (0dB)	Adjust amount of boost/cut of high frequencies by -12 ~ +12 dB. This parameter is shown only when the TYPE is set to EQ HI. When set to HI CUT, it is not shown.	○	○	
	FREQUENCY	500Hz~18kHz (8.0kHz)	Adjust EQ boost/cut frequency of high frequencies. This parameter can only be accessed when EQ HI is ON.	○	○	
EQ MID	Middle-frequency range boost					
EQ MID	GAIN	–12dB~12dB (0dB)	Adjust amount of boost/cut of medium frequencies by -12 ~ +12 dB. This parameter can only be accessed when EQ MID is on.	○	○	
	FREQUENCY	40Hz~18kHz (1.0kHz)	Adjust EQ boost/cut frequency of medium frequencies. This parameter can only be accessed when EQ MID is on.	○	○	
	Q	0.1~2.0 (0.5)	Adjust the width of the medium frequency band affected. This parameter can only be accessed when EQ MID is on.	○	○	
EQ LOW	Low-frequency range boost/cut					
EQ LO	TYPE	EQ LO, LO CUT (EQ LO)	Set whether to boost/cut the low-frequency range (EQ LO) or clearly cut unnecessary low frequencies (LO CUT). This parameter can only be accessed when EQ LO is on.	○	○	
	GAIN	–12dB~12dB (0dB)	Adjust amount of boost/cut of low frequencies by -12 ~+12 dB. This parameter is shown only when the TYPE is set to EQ LO. When set to LO CUT, it is not shown.	○	○	
	FREQUENCY	40Hz~1.6kHz (125Hz)	Adjust EQ boost/cut frequency of low frequencies. This parameter can only be accessed when EQ LO is on.	○	○	
Send-return effect levels						
REV SEND	REVERB SEND LEVEL	0~100 (0)	Adjust the signal level sent from the track to the reverb effect.	○	○	
CHO SEND	CHORUS/ DELAY SEND LEVEL	0~100 (0)	Adjust the signal level sent from the track to the chorus/ delay effect.	○	○	
FADER	FADER	0~127 (100)	Adjust the current volume.	○	○	○
ST LINK	STEREO LINK	On/Off (Off)	Switch on/off to set the stereo link function that connects two mono tracks together. (Ref. P.20)	○	○	
INVERT	INVERT	On/Off (Off)	Set whether the phase of a track is inverted or not. Set it to Off to use normal phase or ON to invert the phase.	○	○	

NOTE

- Use the ON/OFF soft key to turn EQ HI, EQ MID, EQ LO, REV SEND, CHO SEND and INVERT parameters ON/OFF.
- When a stereo link is ON, the INVERT parameter is shown as INVERT L for the odd odd track, and as INVERT R for the even track.

Combine multiple tracks into 1–2 tracks

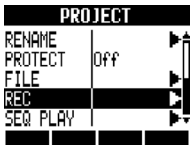
Bounce to combine multiple tracks into one new mono or stereo file in the same project.

Bounce destination track settings
PROJECT>REC>BOUNCE TR

Start from the Top Screen

1 PROJECT
Press

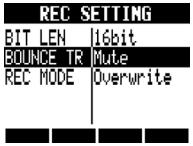
2 Select REC.



Change menu

ENTER Press

3 Select BOUNCE TR.



Change menu

To include the signal of the track that is overwritten by the bounce in the bounce.

4 Select Play.



Change setting

BOUNCE TR: bounce destination track	
Setting	
Mute	Mute the bounce destination track (default value)
Play	Play bounce destination track

5 Return to the start of the project.

Bounce (preparation)

1 Select the bounce source tracks (set each track to play back).

PLAY/MUTE/REC
Playback-ready when green

Press 1–2 times until indicator lights green

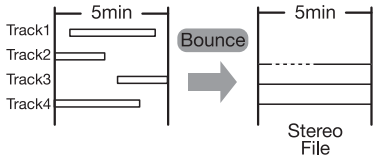
2 Select bounce destination track(s).

PLAY/MUTE/REC
When red, recording is possible

Press 1-2 times until the track light turns red.

HINT

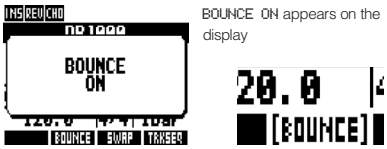
- "Bouncing" means combining audio data from several tracks and files together into one stereo or mono file.
  This is also called "ping-pong recording."



- To also play (and include in the bounce) the signal of the bounce destination track, set BOUNCE TR to Play as described in Step 4 of "Bounce destination track settings".
- A new file will be created in the same project.
- If you set the bounce destination to a mono track, the recorded signals are mixed to mono. If set to a stereo linked pair of tracks, the recorded signals will be mixed to stereo.

Bouncing

3 Press ☐ beneath BOUNCE.



BOUNCE ON appears on the display

Note: Press the BOUNCE soft key again to cancel bounce mode.

4 Press and hold STOP ☐ and press REW ◄◄ to return to the beginning.

5 REC ○ + PLAY ▷ Press in order to start recording.

REC ● Lit red PLAY ► Lit green

6 STOP ☐ Press to stop recording.

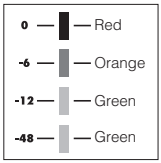
NOTE

- This operation can be undone by pressing the UNDO soft key.
- If you bounce in stereo to two mono tracks, the pan of the odd number track will be set to L100, and the even number track will be set to R100.

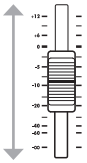
Adjust the mix balance (audition)

1 PLAY ▷ Press to start playback.

2 Adjust the mix balance, including level, volume, pan and EQ settings, for each track.



Make sure that the red (0 dB) indicator does not light on the **MASTER** level meter.



3 STOP ☐ Press to stop.

Playback the track after bouncing

1 Enable playback of the bounce destination tracks.



Press 1–2 times until indicator lights green

2 Disable playback of the bounce source tracks.



Press 1–2 times until unlit

3 Press and hold STOP ☐ and press REW ◄◄ to return to the beginning.

4 PLAY ▷ Press to start playback.

Using a mastering effect

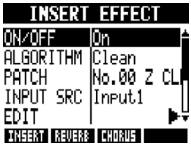
Use a mastering algorithm as an insert effect on the master track before recording to process the mix down.

Insert an insert effect before the MASTER fader

1 **EFFECT**

Press

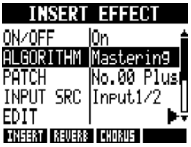
2 Selectt ON/OFF and set it to On.



Change menu

Change setting

3 Select ALGORITHM and set it to Mastering.



Change menu

Change setting

4 Select INPUT SRC and set it to Master.



Change menu

Change setting

5 Select PATCH and set it.



Change menu

Change setting

Select a patch while playing the project. (Listen to the effect that the patch has on the project and choose one you like.)

PLAY ▷ ▶ STOP □

6 EXIT Press

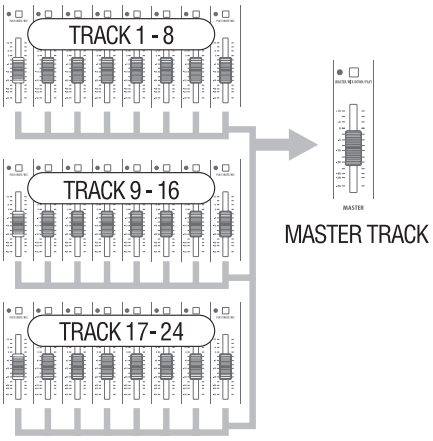
NOTE

- When the insert effect is applied before the **MASTER** fader in advance, the insert effect cannot also be applied to tracks, either during recording or playback.
- At step 5, if you notice distortion because of the mastering effect, check the sound of the playback tracks by lowering their faders. (If a track sound is distorted, adjust that track.)
- You can select Stereo, Dual, Mic or Mastering algorithms. If you set another algorithm, the insert position changes to the inputs.

HINT

You can also select a MASTERING algorithm to process a stereo mix.

Recording signal flow to the master track



Recording to the master track

Record a "final" stereo mix as a mix down on the **MASTER** track.
Signals are sent to the master track after passing through the **MASTER** fader.

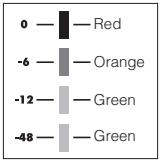
Recording to the MASTER track

Prepare by adjusting the signal levels.

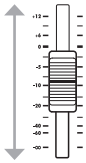
1 Press and hold STOP and press REW to return to the beginning.

Then, press PLAY to start playback, and adjust the levels of each track.

2 Adjust the level of the signal that passes through the master fader.



Make sure that the red (0 dB) indicator does not light on the **MASTER** level meter.



3 STOP Press to stop.

Record to the master track

4 

Press the **MASTER** status key 1-2 times until the indicator lights red.

5 Press and hold STOP and press REW to return to the beginning.

6 REC + PLAY Press in order to start recording.

7 STOP Press to stop.

NOTE

The settings of the pan, balance, insert and send-return effects of each track affect the signals sent to the **MASTER** track.

Play the master track

1 

Press the **MASTER** status key 1-2 times until the indicator lights green.

Doing this mutes all other tracks and disables all effects.

2 Press and hold STOP and press REW to return to the beginning.

PLAY Press to start playback.

3 STOP Press to stop.

Disable **MASTER** track playback

4 

Press the **MASTER** status key 1-2 times until the indicator is unlit.

Muting of the other tracks is canceled and their status lights become as they were before.

HINT

- Each project can have one **MASTER** track.
- A file can be assigned to the **MASTER** track.
- If you mix down from the middle of a song, it will always be recorded to a new file.
- During recording, you can check the playback levels of each track and the recording level of the **MASTER** track.
- The signals that have passed through the **MASTER** fader are the same as those sent from the **OUTPUT** jacks.
- This operation can be undone by pressing the UNDO soft key.
- You can use the metronome during playback.

☞ Ref: Sequential playback of projects P97

Using the sampler to make songs

Use the sampler functions of the R24 to easily create backing tracks, rhythm parts and other basic tracks that have high sound quality. These features can be used to make a wide variety of music, from demo songs to produced recordings.

1 Make a loop to provide the basic rhythm of the entire song.

You can assign a rhythm made with the included loops and the unit's rhythm functions to a track (pad) and set it to loop. You can develop a vision for an entire song by selecting drum loops, for example, and other materials that inspire you.

☞ Ref: Assigning tracks P49
Loop settings P50

2 As you listen to the rhythm loop that you prepared, record guitar, bass, keyboard and other instruments to create more loop materials.

Keep recording until you are satisfied with the performance of the riff, backing part or other musical phrase. You can loop only the parts of the recordings that you like.

☞ Ref: Loop settings P50

3 Repeat step 2 to record other phrases to use as loops.

Prepare all the phrases that are necessary to make your song.

4 When the loops are ready, play them with the pads and think about the structure of the entire song.

Play the pads with the rhythm and think about the flow of the entire song and how to put the loop materials together.

☞ Ref: Playing the pads P52

5 After you have determined the structure of the song, create the sequence (loop performance data for the entire song).

A sequence can be input by playing the pads along with a rhythm (click) in real time or step by step (step input). Doing this, you can complete the basic tracks, including backing parts and the rhythm for an entire song.

☞ Ref: Creating a sequence P53

6 Record vocals, guitar solos and other parts as you listen to the sequence.

Record the main vocals and instruments in time with the basic tracks.

Overview of sampler functions

With the R24, you can assign audio files and rhythm patterns to tracks, which can then be played back and played in real time using the pads.

The following settings can be made related to playing the pads.
- Pad playback types
- Global quantization to fix timing errors

You can also set the R24 to loop an audio file assigned to a track. The starting point and length of a loop can be set.

In addition, audio files and rhythm patterns that have been assigned to tracks and set to loop can be used to create a sequence, including backing parts and rhythms for an entire song.

A sequence can be input by playing the pads along with a rhythm (click) in real time or step by step (step input).
Bars and beats can be inserted and deleted, and the time signature can also be changed.

Audio files assigned to tracks can also be altered, including by changing their tempo without changing the pitch, deleting unnecessary parts, applying fade-ins and fade-outs and changing the tempo (BPM).

Assigning tracks

To use the sampler function, first assign audio files and rhythm patterns to tracks.
In this example, we explain how to assign loops stored on the included USB memory.

1 TRACK

Press

2 Select the track to assign.



Select track

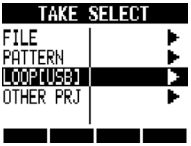
3 Select TAKE.



Change menu

ENTER Press

4 Select LOOP[USB].

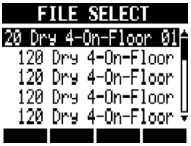


Change menu

FILE	Audio files in the current project
PATTERN	Rhythm pattern
LOOP[USB]	Loops on the USB memory
OTHER PRJ	Audio files in other projects

ENTER Press

5 Select a loop.



Select file

ENTER Press

NOTE

- To load an audio file from another project, select OTHER PRJ in step 4. From PROJECT, select the project that contains the file. Then, from NEXT, select the file. Change the file name if necessary before loading it.
- In a new project, the BPM (tempo) of the first audio file assigned to a track sets the BPM of the project.
- In the LOOP[USB] menu, you can see the files in the ZOOM_R24/LOOP folder on the USB memory. To use a new USB memory device, create a folder with the same name on the memory using a computer (Ref. P109), or use the STORAGE>INIT option from the USB menu, and then put loops into the folder.
- If rhythm patterns are assigned to multiple tracks and played back simultaneously, or patterns with numerous note-on events are played, they might not all play as expected due to the maximum polyphony limitation of the unit.
- In step 2, you can also select tracks by pressing their status keys.

HINT

You can also play audio files and rhythm patterns as you select them.

PLAY ▷ Start playback

STOP □ Stop playback

Loop settings

Make loop settings separately for each track.
Turn loops ON and set their starting points and lengths.

Setting tracks to loop

Turn loops ON and OFF for each track.

1 **TRACK**

Press

2 Select the track to be looped.



Select track

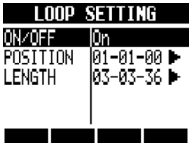
3 Select LOOP.



Change menu

ENTER Press

4 Select ON/OFF, and set it to ON to enable loop playback.



Change menu

Change setting

NOTE

- The status key indicator of a track with LOOP set ON lights orange instead of green when enabled for playback. Moreover, a track with LOOP set ON cannot be used to record (the indicator will not be lit red). In addition, the following functions can be used when a track has LOOP set ON.
  - The pad can be used to trigger the loop.
  - Pressing the PLAY key starts loop playback.
  - Sequence data can be recorded.
- When a rhythm pattern is assigned to a track, it cannot be set to loop.
- In step 2, you can also select tracks by pressing their status keys.

Loop settings

Setting the loop interval

The loop interval (starting point and length) can be set for tracks that have audio files assigned and LOOP set to ON.

1 **TRACK**

Press

2 Select the track to be looped.



Select track

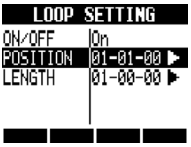
3 Select LOOP.



Change menu

ENTER Press

4 Select POSITION.



Change menu

ENTER Press

5 Set the loop starting point.

Starting point



Locate

Change starting point

6 Press beneath **LENGTH** to set the length of the loop.

Length



Locate

Change length

HINT

- When setting the loop starting point and length you can switch between the POSI and LENGTH soft keys.
- You can also play the audio file that you are setting.

PLAY ▷ Start playback

STOP □ Stop playback

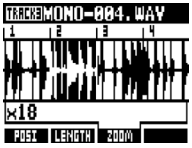
FF ►► Fast forward

REW ◄◄ Rewind

Zooming in on the waveform

When setting the loop starting point and length, you can zoom in on the waveform that is displayed. Zooming up to 32x is possible.

Press beneath **ZOOM** to zoom.

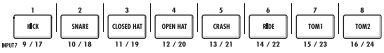


Change zoom

Playing the pads

Press the pad beneath a fader to play the audio file or rhythm pattern assigned to that track.

1 Press a pad





Press a pad while holding **REPEAT/STOP** to enable loop playback (if PAD is set to 1Shot).



Press a pad again while holding **REPEAT/STOP** to stop loop playback.

Setting the playback method

Set how the pads function when played.

1 **TRACK**



Press

2 Select PAD and set the playback method.



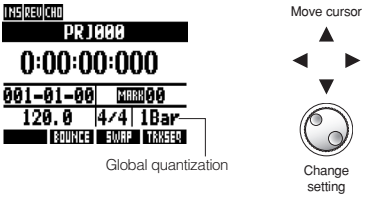


PAD: playback method	
Setting	
Repeat	Play loop repeatedly
Gate	Stop playback as soon as the pad is released
1Shot	Play the file once completely even if the pad is released

Set global quantization

The unit can be set to correct timing errors when playing the pads or inputting sequence data in real time so that sounds are aligned with bars and beats.

1 Move the cursor to the global quantization display area and adjust the setting.



Global quantization	
Settings	
8Bars, 4Bars, 2Bars, 1Bar (default value)	8 bars, 4 bars, 2 bars, 1 bar
1/2, 1/2T, 1/4, 1/4T, 1/8, 1/8T, 1/16, 1/16T, 1/32	Half-note, half-note triplet, quarter-note, quarter-note triplet, eigth-note, eigth-note triplet, sixteenth-note, sixteenth-note triplet, thirty-second note
Hi	1 tick (1/48 of a quarter-note)

NOTE

- When you press a pad, the sound will be delayed until it is in time with the set quantization (bar, note).
- The pad blinks during playback.
- When you stop playback, the operation is delayed until it is in time with the set quantization (bar, note).

Creating a sequence

Assign audio files and rhythm patterns to tracks and set their LOOP settings to ON. Combine them to create backing parts, rhythms and other data (sequence data) for an entire track. A sequence can be created with real-time input or step input.

Create a sequence with real-time input

With real-time input, you can create a sequence by playing the pads in time with the rhythm (metronome).

1 TRACK

Press

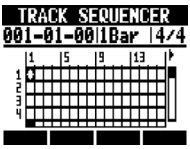
2 Select TRK SEQ.



Change menu

Press

3 Start real-time input by pressing and holding REC and pressing PLAY.



4 Play the pads in time with the rhythm to input data.



5 To delete input, press and hold beneath DELETE. Data that has already been input for a track will be deleted while its pad is being pressed.

6 STOP

Press to end input.

NOTE

- If your timing is slightly off, it will be corrected in accordance with the quantize setting
- A metronome pre-count can also be set (Ref. P36).

Create a sequence using step input

A sequence can be created one step at a time using step input.

1 **TRACK**

Press

2 Select TRK SEQ.



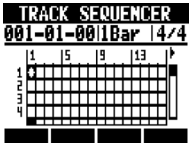
Change menu

Press

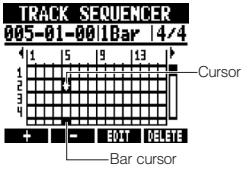
3 Start step input.

REC

Press



4 Move the cursor to the position where you want to input or delete data.



Move cursor

REW

Go back 1 step

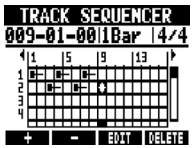
FF

Go forward 1 step

Press beneath + or − to change the length of one step to a bar, beat or 16th note.

5 Press a pad to input that pad's data at that position.

Or, press **ENTER** to input the data of that track at that position.



Note-on

Length of loop or rhythm pattern

6 To delete input, press beneath DELETE to delete data at that position.

7 STOP

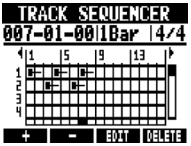
Press to end input.

Creating a sequence

Deleting data

When using step input, you can delete data before and after the cursor position together.

1 Move the cursor to the position of data that you want to delete.



Move cursor



REW



Go back 1 step

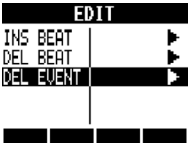
FF



Go forward 1 step

2 Press ☐ beneath EDIT.

3 Select DEL EVENT.



Change menu



ENTER Press

4 Select MODE and set it to Before or After to delete data to the left or right of the cursor.



Change menu





Change setting

5 Select EXECUTE.



Change menu



ENTER Press

Editing a sequence

When creating a sequence by step input, you can insert and delete beats.
You can also change the time signature.

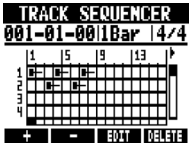
Inserting and deleting beats

When using step input for a sequence, you can insert and delete beats.
You can insert and delete a number of beats that differ from the project time signature, changing the time signature for only that part.

1 Start step input.

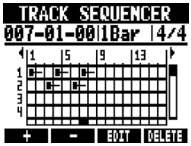
REC

Press



2 Press beneath + or - to change the length of one step.

3 Move the cursor to the position where you want to insert or delete beats.



Move cursor

REW

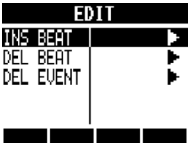
Go back 1 step

FF

Go forward 1 step

4 Press beneath EDIT.

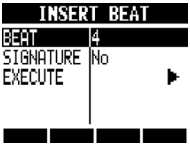
5 Select INS BEAT to insert beats or DEL BEAT to delete beats.



Change menu

ENTER Press

6 Select BEAT and set the number of beats that you want to insert or delete.



Change menu

Change setting

7 Select SIGNATURE and set it to No to not change the time signature or Add to change the time signature.



Change menu

Change setting

8 Select EXECUTE.



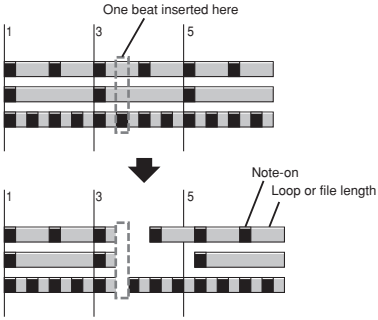
Change menu

ENTER Press

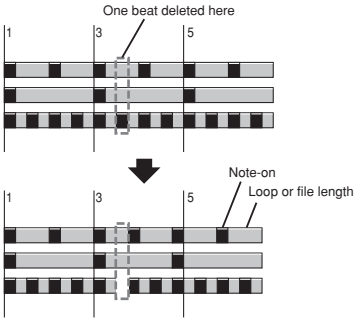
Editing a sequence

NOTE

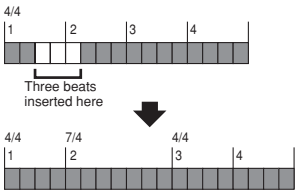
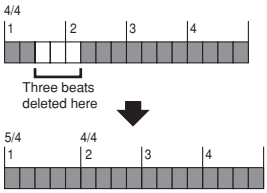
- When you insert beats, the sounds of loops and files playing back will be cut at that point.



- When you delete beats, the sounds of loops and files playing back at that time will become shorter by the same amount.



- If you insert or delete beats that differ from the set time signature, the time signature for that part might change depending on the SIGNATURE setting.

SIGNATURE: time signature setting	
Setting	
No	The time signature does not change. The beats are shifted by the amount inserted or deleted.
Add	• If you insert beats, the time signature of the bar that contains the last inserted beat will change. For example, if 3 beats are inserted into a song with a 4/4 time signature, the bar where the 3rd beat is added will become 7/4.  • If you delete beats, the time signature of the bar that they are deleted from will change. For example, if 3 beats are deleted from a song with a 4/4 time signature, that bar will become 5/4.  • The time signature of only 1 bar changes, time signatures of other bars do not change.

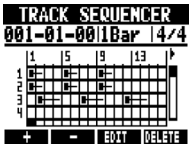
Changing the time signature

During step input of a sequence, you can also change the time signature.

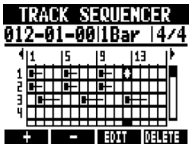
1 Start step input.

REC

Press



2 Move the cursor to the position where you want to change the time signature.



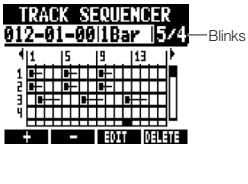
REW

Go back 1 step

FF

Go forward 1 step

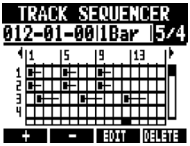
3 Move to the time signature indication area, and change the setting



Changing the time signature	
Setting range	
1/4~8/4	Time signature

Delete an inserted time signature

1 Move the cursor to the position where you want to delete the time signature



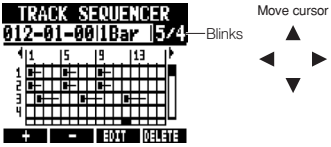
REW

Go back 1 step

FF

Go forward 1 step

2 Move to the time signature indication area.



3 Press ☐ beneath **DELETE**.

Playing back a sequence

Use the following procedures to play back the sequence that you made.

Playback from the sequencer

1 TRACK

Press

2 Select TRK SEQ.

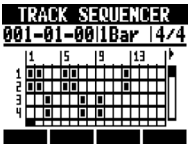


Change menu

ENTER Press

3 PLAY

Press



STOP

Press to stop

Press and hold STOP and press REW to return to the beginning.

Playback from the Top Screen

1 Press beneath TRKSEQ to turn the track sequence ON/OFF.



2 PLAY

Press



Track sequencer ON

STOP

Press to stop

FF

Press to fast forward

REW

Press to rewind

Press and hold STOP and press REW to return to the beginning.

Changing the BPM

The BPM of each track is automatically calculated when an audio file is assigned to it. Depending on the material, however, the calculated result might differ from the actual BPM. If this occurs, use the following procedures to adjust the BPM. The set BPM is used as the standard tempo when changing the tempo of the audio without changing its pitch.

1 **TRACK**

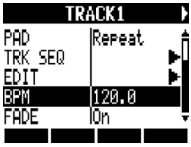
Press

2 Select the track where you want to change the setting.



Select track

3 Select BPM and change the setting



Change menu

Change setting

NOTE

- BPM is calculated for an audio file assuming 4/4 time.
- When a track is recorded, the current BPM value is used.

Changing audio tempo without changing pitch

When an audio file is assigned to a track, you can change the tempo of audio without changing its pitch (time-stretching). You can change all tracks at once or individual tracks. Be aware that this operation will overwrite the original audio file.

1 TRACK

Press

2 To change one track at a time, select a track.



Select track

3 Select EDIT.



Change menu

ENTER Press

4 Select STRETCH.



Change menu

ENTER Press

5 Select MODE and set it to Each to change only the current track or All to change all the tracks.



Change menu

Change setting

6 Select BPM and the new tempo after time-stretching.



Change menu

Change setting

7 Select ALGORITHM and set it to the one most appropriate for the audio file



Change menu

Change setting

ALGORITHM	
Setting	
Beat	Stretching algorithm suitable for rhythm sources and other sounds that have short notes
Tone	Stretching algorithm suitable for songs and sound sources with long notes

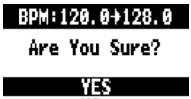
8 Select EXECUTE.



Change menu

ENTER Press

9 Select YES.



Move cursor

ENTER Press

NOTE

- STRETCH operations cannot be undone (UNDO).
- STRETCH operations overwrite the original audio files. If you want to save the original files, make a copy of the project and files in advance (Ref. P93).
- The BPM of each track is automatically calculated when an audio file is assigned. Depending on the file material, however, the calculated result might differ from the actual BPM. Set the BPM of each track (TRACK > BPM) if this occurs (Ref. P60). The set BPM is used as the standard tempo when changing the tempo without changing the pitch of the audio..
- The tempo of an audio file can be set to from 50%~150% of the original. If the stretched tempo value is outside this range, an error message appears, "TRACK X is out of the setting range" (X is the track number) and stretching is stopped.
- If a rhythm pattern is assigned to a track, the rhythm pattern screen opens after Step 3.

HINT

You can listen to a preview of the results of time-stretching for individual tracks.



Press to play the preview



Press to stop the preview

Trimming unnecessary parts of audio files

By trimming, you can delete audio data that is outside bounds that you set to change the starting and stopping points of the file. This operation overwrites the original audio file.

1 TRACK

Press

2 Select the track that you want to trim.



Select track

3 Select EDIT.



Change menu

ENTER Press

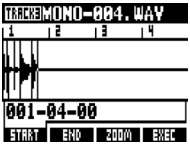
4 Select TRIM.



Change menu

ENTER Press

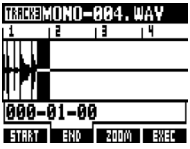
5 Set the starting point



Locate

Change setting

6 Press ☐ beneath END to set the ending position.

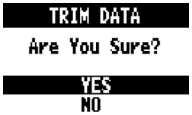


Locate

Change setting

7 Press ☐ beneath EXEC.

8 Select YES.



Move cursor

ENTER Press

NOTE

- The TRIM operation cannot be undone (UNDO).
- The TRIM operation overwrites the original file. If you want to save the original files, make a copy of the project and files in advance (Ref. P93).
- If a rhythm pattern is assigned to a track, the rhythm pattern screen opens after Step 3.

HINT

- The trim starting and ending points can be adjusted alternately by using the START and END soft keys.
- Use the ZOOM soft key to view the waveform more closely.
- You can also play the audio file while setting its starting and ending points.

PLAY ▷ Start playback

STOP □ Stop playback

FF ►► Fast forward

REW ◄◄ Rewind

STOP □ + REW ◄◄ Return to starting point

Setting fade-ins and fade-outs

When playing normal audio files, short fade-ins and fade-outs are applied to their beginnings and ends. You can turn these off, however, for rhythm tracks and other sounds where the attack is important.

1 **TRACK**

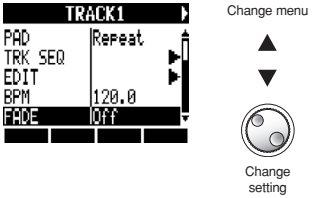
Press

2 Select the track for which you want to change the fade settings.



Select track

3 Select FADE and set it to Off if you want to disable it.



Change menu

Change setting

Overview of rhythm functions

With the R24, you can select a pre-installed rhythm pattern that you like and play along.
You can also add accents in real-time as you play the pads.

The following settings related to playing the rhythms can be made.
- Change the drum kit and pad sounds
- Set pads to roll (keep playing while pressed)
- Set pad sensitivity

Moreover, you can create original rhythm patterns with the R24.
Play the pads along with a rhythm (click) and input data in real-time or input one note at a time using step input.

The following settings can be made for rhythm patterns.
- Number of bars (when creating a new one)
- Time signature (when creating a new one)
- Volume
- Quantization
- Drum kit stereo positions
- Drum kit sounds

The following operations can be conducted on rhythm patterns.
- Copy pattern
- Delete pattern
- Change the pattern name
- Import a pattern from another project
- Check remaining pattern memory

Playing rhythm patterns

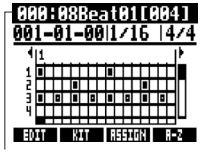
Selecting a rhythm pattern

Select a rhythm pattern and play it.

1 RHYTHM

Press

2 Select the rhythm pattern.



Select pattern

Rhythm pattern name

3 PLAY

Press to play

STOP

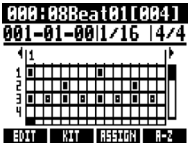
Press to stop

Press and hold STOP and press REW to return to the beginning.

Selecting the drum kit

Select the drum kit sounds.

1 Press beneath KIT.



2 Select the drum kit.



Select kit

ENTER Press

HINT

You can change the pattern order.
Press the A-Z soft key to list the patterns in alphabetical order.
Press the No. soft key to list the patterns in numerical order.

NOTE

The drum kit setting is saved with each project.

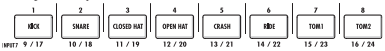
Playing pad sounds

You can add accents in real-time as you play the pads below the track faders.

1 **RHYTHM**

Press

2 Play the pads



Switch banks

You can change the sounds of the pads.

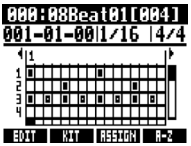
1~8Tr ○ ● 9~16Tr

Press **1-8Tr** to use the bank of drum kit sounds, and press **9-16Tr** to use the bank of percussion sounds.

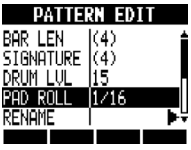
Drum rolls (continuous playback)

You can set a pad sound to play at a set interval repeatedly while pressed.
This is convenient when entering hi-hat 16th notes, for example.

1 Press beneath **EDIT**.



2 Select PAD ROLL and set the repeat rate.



Change menu

Change setting

PAD ROLL: repeat interval	
Settings	
2/4~16/4	1/4 notes x 2~16
3/8, 1/3, 1/4, 3/16, 1/6, 1/8, 1/12, 1/16, 1/24, 1/32	Dotted 1/4 notes, 1/2 note triplets, 1/4 notes, dotted 8th notes, 1/4 note triplets, 8th notes, 8th note triplets, 16th notes, 16th note triplets, 32nd notes

3 **MASTER** **REPEAT/STOP**

Press and hold **REPEAT/STOP**, and press the pad to roll.

If you release **REPEAT/STOP** before the pad, that sound continues rolling after the pad is released. Press the pad again to stop the roll.

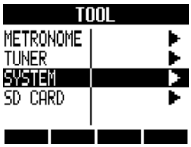
Pad sensitivity

Set the pad sensitivity. You can set pads to respond to playing strength or to trigger sounds at a consistent volume regardless of how hard they are played.

1 **TOOL**

Press

2 Select SYSTEM.



Change menu

ENTER Press

3 Select PAD SENSE and set it.



Change menu

Change setting

PAD SENSE: pad sensitivity	
Setting	
Soft	Regardless of playing strength, sounds are triggered with a soft volume.
Medium	Regardless of playing strength, sounds are triggered with a medium volume.
Loud	Regardless of playing strength, sounds are triggered with a loud volume.
Lite	Highest sensitivity—even light playing produces loud volume.
Normal	Medium sensitivity.
Hard	Low sensitivity—must play the pads hard to trigger with loud volume.
EX Hard	Lowest sensitivity—must play the pads very hard to trigger with loud volume.

Creating a rhythm pattern

You can create your own original rhythm patterns.
After preparing, you can create a rhythm pattern using real-time or step input.

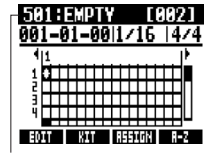
Prepare to create a rhythm pattern

Select an empty rhythm pattern and set the number of bars, time signature and quantization. You can also check the memory remaining for rhythm patterns.

1 RHYTHM

Press

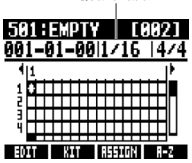
2 Select an empty rhythm pattern (pattern name is EMPTY).



Rhythm pattern name

Select pattern

3 Move to the quantization area and set the value.



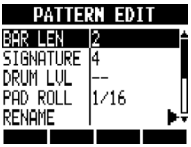
Move cursor

Change setting

Quantizations	
Setting	
1/4	Quarter note
1/8	8th note
1/8T	8th note triplet
1/16	16th note
1/16T	16th note triplet
1/32	32nd note
Hi	Tick (1/48 quarter note)

4 Press beneath EDIT.

5 Set number of bars and time signature.

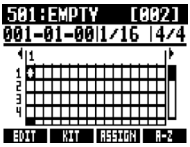


Change menu

Change setting

BAR LEN: Number of bars	
Setting range	
1~99	Number of bars
SIGNATURE: Time signature	
Setting range	
1~8	Number of beats per bar
MEMORY	
Shows current remaining pattern memory	

6 EXIT Press



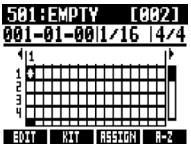
Creating a rhythm pattern

Create a rhythm pattern using real-time input

After preparing, play the pads along with the rhythm (metronome) to create a rhythm pattern with real-time input.

1 Start input.

While pressing and holding REC ○, press PLAY ▷.



2 Play the pads in time with the rhythm to input data.



3 Delete input.

Press and hold ☐ under **DELETE** and press a pad. While that pad is being pressed, data that has already been input on that track while be erased.

Press ☐ under **ALL DEL** to erase the data that has already been input on all tracks.

4 End input

Press STOP □

NOTE

- If your timing is slightly off, it will be corrected in accordance with the quantize setting.
- Depending on the pad sensitivity setting, the force used to play the pads is also recorded as volume changes.
- A metronome pre-count can also be set (Ref. P36).

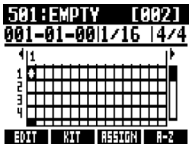
Create a rhythm pattern using step input

After preparing, you can input notes one at a time (step input) to create a rhythm pattern.

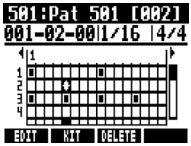
1 Start input.

REC

Press



2 Move the cursor to the position where you want to input or delete notes.



Move cursor

REW

Go back one beat

FF

Advance one beat

The horizontal axis shows the bars and the vertical access shows the pads by number. One step (one box) is the length of the quantize setting.

3 Play the pads to input notes at the current position. The volume of each note will correspond to the strength it is played (unless sensitivity set otherwise).

ENTER Press ENTER to add a note with a fixed volume level at that position.

4 Delete a note or change its volume.

Press beneath DELETE to delete an input note.

Turn to change the volume of the note at that position.

Loud (high velocity)

Quiet (low velocity)

5 End input.

STOP

Press

NOTE

- Notes at locations that are between the current quantize settings cannot be deleted. A note at such a position appear as an "X".
- In Step 4, you can also use the dial to input and delete notes.

Copying rhythm patterns

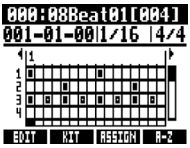
You can copy a rhythm pattern to create a new one based on it, for example.

1 **RHYTHM**

Press

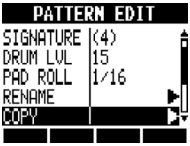
2 Select the rhythm pattern that you want to copy.

Press beneath EDIT.



Select pattern

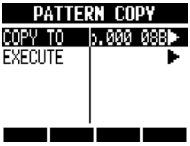
3 Select COPY.



Change menu

Press

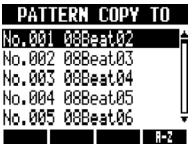
4 Select COPY TO.



Change menu

Press

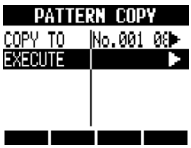
5 Select the copy destination.



Select the pattern

Press

6 Select EXECUTE.



Change menu

Press

HINT

In step 5, you can change the order of the pattern list.

Press the A–Z soft key to list the patterns in alphabetical order.

Press the No. soft key to list the patterns in numerical order.

Deleting rhythm patterns

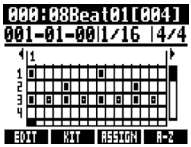
You can delete rhythm patterns.

1 **RHYTHM**

Press

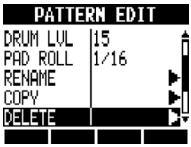
2 Select the rhythm pattern that you want to delete.

Press beneath **EDIT**.



Select pattern

3 Select DELETE.



Change menu

Press

4 Select YES.



Move cursor

Press

Changing rhythm pattern names

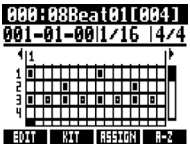
You can change the names of rhythm patterns.

1 **RHYTHM**

Press

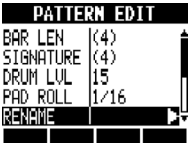
2 Select the rhythm pattern that you want to change the name of.

Press beneath **EDIT**.



Select pattern

3 Select RENAME.



Change menu

Press

4 Change the name.



Move cursor

Change character

DELETE
Delete character

INSERT
Insert character

Press

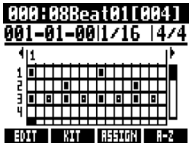
Import rhythm patterns

You can import rhythm patterns from other projects.
You can import all the rhythm patterns (All) at once or one at a time (Each).

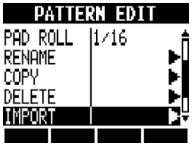
1 **RHYTHM**

Press

2 Press beneath EDIT.



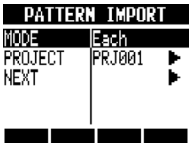
3 Select IMPORT.



Change menu

Press

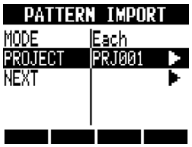
4 Select MODE and set it to All or Each.



Change menu

Change setting

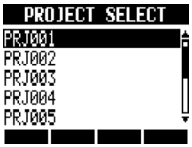
5 Select PROJECT.



Change menu

Press

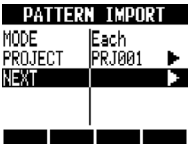
6 Select the source project.



Select project

Press

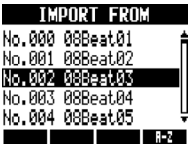
7 Select NEXT.



Change menu

Press

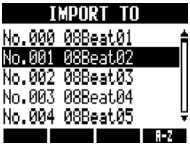
8 Select the rhythm pattern to import (when set to Each).



Select project

Press

9 Select the destination rhythm pattern to import (when set to Each).



Select project

Press

10 Select YES.



Move cursor

Press

NOTE

- Destination rhythm patterns will be overwritten. When set to All, all the original rhythm patterns in the project will be deleted. When set to Each, the rhythm pattern selected as the destination will be deleted.
- In step 8 or 9, you can change the order of the pattern list.
  Press the A–Z soft key to list the patterns in alphabetical order.
  Press the No. soft key to list the patterns in numerical order.

Setting volume and stereo placement

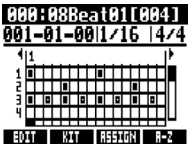
You can change the volume of a rhythm pattern and the stereo placement of the drum kit.

1 **RHYTHM**

Press

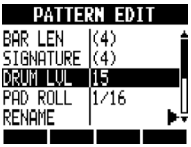
2 Select the rhythm pattern that you want to make settings for.

Press beneath EDIT.



Select pattern

3 Select a menu item and change the setting.



Change menu

Change setting

DRUM LVL: Drum volume	
Setting range	
1~15	Drum volume
POSITION: Drum placement	
Setting	
Listener	Drums are placed from left to right as heard from an audience member
Player	Drums are placed from left to right as heard from a drummer

NOTE

POSITION settings are saved for each project.

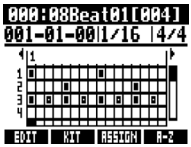
Assigning rhythm patterns to tracks

The rhythm pattern displayed on the screen can also be assigned to a track.

1 **RHYTHM**

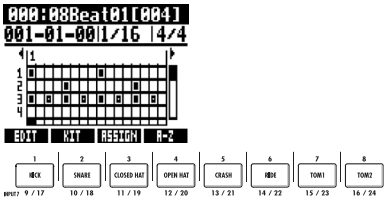
Press

2 Select the rhythm pattern to assign.



Select pattern

3 While pressing beneath **ASSIGN**, press the pad of the track where you want to assign it.



NOTE

- If rhythm patterns are assigned to multiple tracks and played back simultaneously, or patterns with numerous note-on events are played, they might not all play as expected due to the maximum polyphony limitation of the unit.
- When a rhythm pattern is assigned to a track, it cannot be set to loop.
- When you press the ASSIGN soft key, the pads of tracks currently set to New Take blink.

HINT

- You can also assign rhythm patterns from the TRACK menu (Ref. P22).
- In step 2, you can change the order of the pattern list.
  Press the A–Z soft key to list the patterns in alphabetical order.
  Press the No. soft key to list the patterns in numerical order.

Effect and patch overview

You can select R24 preset patches, and easily apply effects. You can also edit and save patches, making fine adjustments and processing tracks to suit specific songs. Effect and patch operations can only be conducted when the project sample rate is set to 44.1 kHz.

Effect and patch use process

Using effects
→ Insert effects P79
→ Send-return effects P79

• Adjust effect send level
→ REV SEND P40

○ Adjust effect send level
→ CHO/DLY SEND P40

◎ Patch selection
→ PATCH SELECT P80

Turn algorithms and preset patches ON/OFF and select their combinations.

◎ Edit a patch
→ EDIT P83

Edit modules
Select type
Adjust parameters

You can make fine adjustments to effect module parameters and set levels to achieve sounds you like.

Edit patch level

◎ Save patches
→ SAVE P85

◎ Import patches
→ IMPORT P86

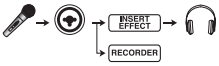
All patches
One patch

You can use patches imported from other projects.

◆ Set insertion point → INPUT SRC P81

INPUT 1~8
Track 1~24
MASTER

◆ Monitoring only use → REC SIG P87



◇○ Patch initialization
→ Audio interface manual

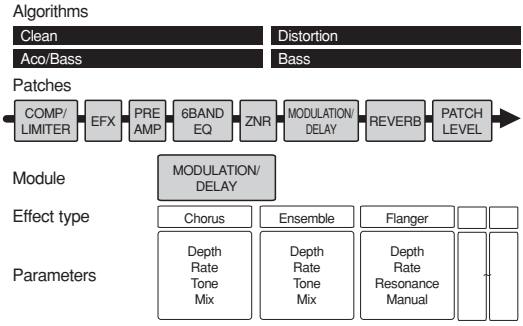
Guide
- ○ AI-only SEND
- • Both R/AI SEND
- ◇ AI-only INSERT
- ◆ Both R/AI INSERT
- ◎ All cases (R/AI, INSERT/SEND)

R: Recorder
AI: Audio Interface
SEND: Send-return effect
INSERT: insert effect

Algorithms and patches

A single effect, which is called an “effect module” (or "module"), consists of two elements—the effect type and its parameters, which control how it processes sound.

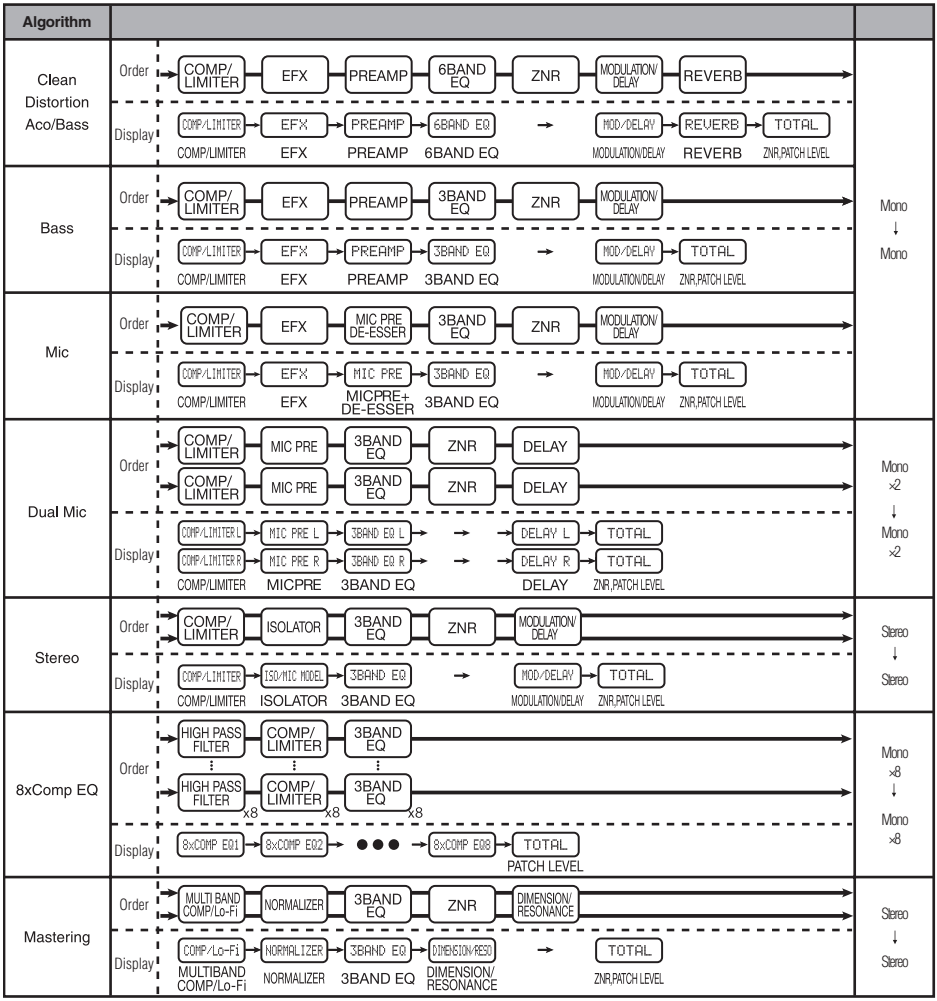
A "patch" is the result of adjusting the effect type and parameters of each module. An "algorithm" is an ordered arrangement of patches set to default values prepared for different types of recording and other purposes.



Insert and send-return effects

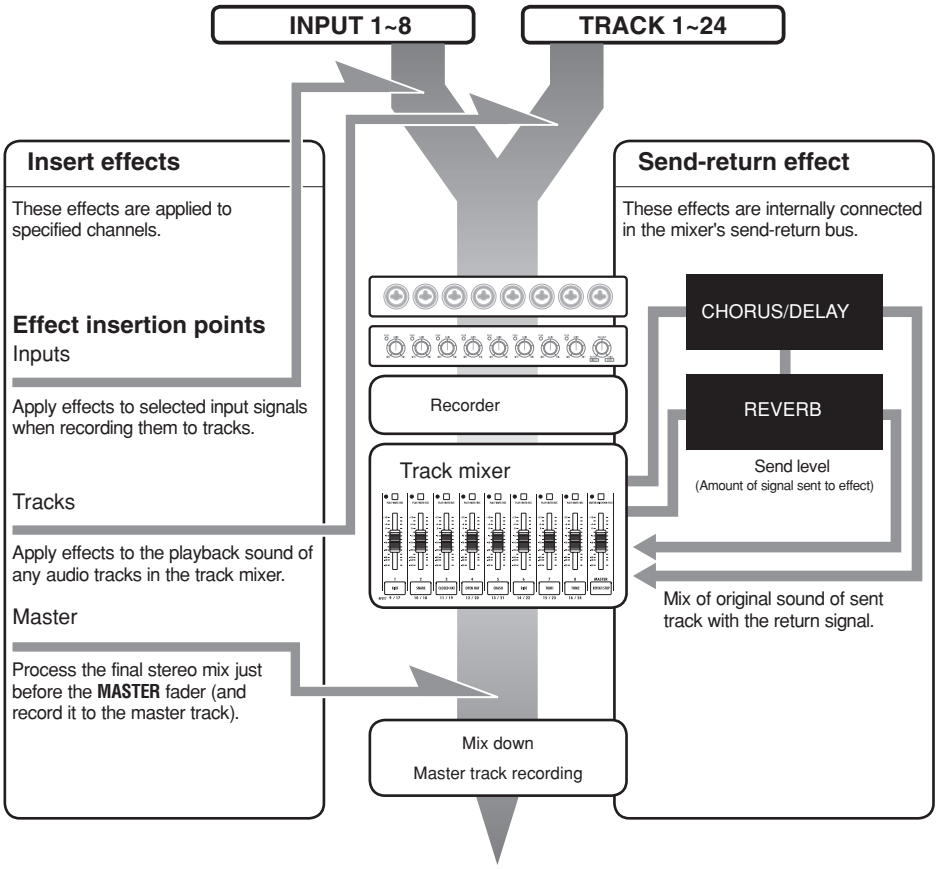
The insert effects in one project include 330 patches classified into 9 algorithms. You can select algorithms and the patches that they contain to suit your purposes and choose where to insert those patches.

Two types of send/return effects, which are connected internally in the mixer section, can be adjusted using mixer send levels (amount of signal sent to the effect) and can be used together.



Input and output of insert and send-return effects

The R24's two types of built-in effects—insert effects and send-return effects—can be used at the same time.

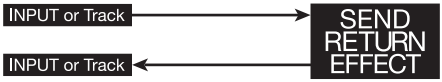


Insert effect signal flow

Insert the effect on a mono input and output in mono.



Send-return effect signal flow



☞ Ref: Effect insertion point P81

Uses of effects and patches

Patches are selected and adjusted the same way for both insert and send-return effects.

Select suitable modules from algorithms, edit patch types and parameters, and save them for use later.

There are some major differences between making settings for the two types of effects. For insert effects, you must select patches and set insertion points. For send-return effects, you must adjust the send level of signals using the mixer.

Other functions include IMPORT to bring in patches from other projects and REC SIG to apply the effect only to monitoring the playback signal.

The procedures for using effects are the same when using the R24 as a recorder and as an audio interface, but the patches can also be initialized when the unit is used as an audio interface (INITIAL).

Insert effects

Algorithm name	Display name	Number of patches (preprogrammed patches)
▼ Clean and crunchy sounds that are suitable for guitars		
Clean/Crunch	Clean	30 (21)
▼ Overdrive and other distorted sounds suitable for guitars		
Distortion	Distortion	50 (45)
▼ Instrument simulation algorithm that is suitable for guitars		
Aco/Bass SIM	Aco/Bass	20 (10)
▼ Algorithm that is suitable for recording bass guitars		
Bass	Bass	30 (20)
▼ Algorithm that is suitable for vocals and other mic recordings		
Mic	Mic	50 (30)
▼ Algorithm for two completely independent mic channels		
Dual Mic	Dual Mic	50 (30)
▼ Algorithm for synths, built-in mics and other stereo recording		
Stereo	Stereo	50 (40)
▼ Algorithm for 8 channels of independent input and output		
8xComp EQ	8xComp EQ	20 (10)
▼ Algorithm for processing final stereo mix signals		
Mastering	Mastering	30 (21)

Send-return effect

Algorithm display name	Number of patches (preprogrammed patches)
REVERB	30 (22)
CHORUS/DELAY	30 (18)

Select effect and patch

Effect

1 EFFECT

Press

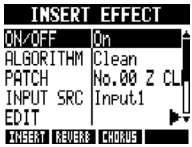
Select effect type

Press ☐ beneath INSERT to select an insert effect.

Press ☐ beneath REVERB to select a reverb send-return effect.

Press ☐ beneath CHORUS to select a chorus/delay send-return effect.

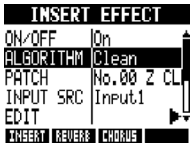
2 Select ON/OFF and set it to ON.



Change menu

Change setting

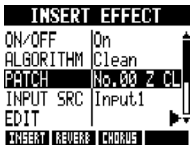
3 Select an algorithm (when setting an insert effect).



Change menu

Change algorithm

4 Select a patch.



Change menu

Change patch

Setting the insert effect position

You can set the insert effect position.
This menu item only appears for the insert effect.

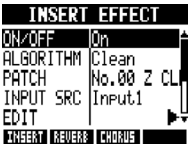
1 **EFFECT**

Press

Select effect type

Press beneath **INSERT** to select an insert effect.

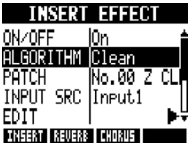
2 Select ON/OFF and set it to ON.



Change menu

Change setting

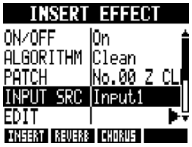
3 Select an algorithm and patch.



Change menu

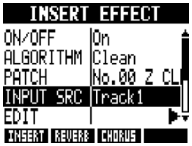
Change setting

4 Select INPUT SRC.



Change menu

5 Select the input source.



Select input source

Display	Insertion point
Input1~Input8	One input
Track1~Track24	Output of one mono track
Track1/2~ Track23/24	Output of a stereo track or two mono tracks
Master	Before **MASTER** fader
8xCOMP EQ insertion points	
Input1-8	All track 1–8 inputs
Track1-8	All track 1–8 outputs
Track9-16	All track 9–16 outputs
Track17-24	All track 17–24 outputs

NOTE

- You can select a single INPUT (1~8) only if you have chosen the CLEAN, DISTORTION, ACO/BASS SIM, BASS or MIC algorithm.
- You can select Track1-8, Track9-16 or Track17-24 only if you have chosen the 8xCOMP EQ algorithm.
- You can select INPUT 1-8 only when the 8xCOMP EQ algorithm has been chosen.
- After setting the insertion point, if you change the algorithm to 8xCOMP EQ, the insertion point will be changed to Input1-8, Track1-8, Track9-16, Track17-24 (depending on the previously selected setting).
- To insert on a single mono track output, select TRACK1 ~ TRACK24. To insert on two mono tracks or a stereo track, select TRACK1/2 ~ TRACK 23/24. To insert before the **MASTER** fader, select MASTER.

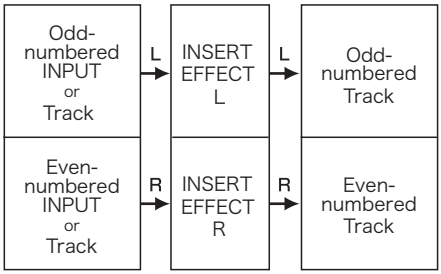
HINT

Changing the insertion point of the effect

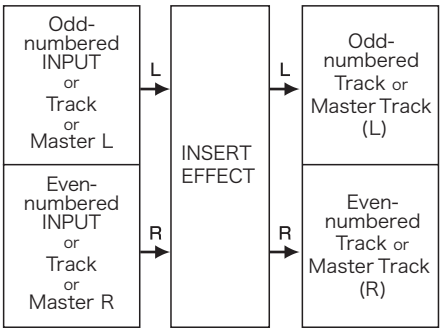
By default, the insert effect is inserted on **INPUT 1** in a project. To change this, set the INPUT SRC at Step 4.

Setting the insert effect position

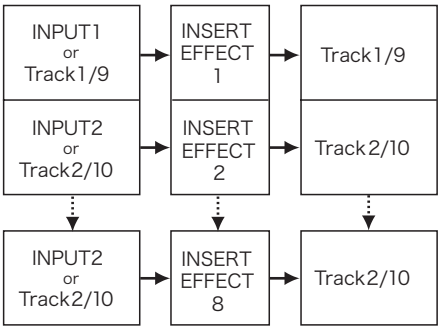
Inserting the insert effect on 2 mono inputs
(Dual Mic algorithm)



Inserting the insert effect on a stereo input
(Stereo, Mastering algorithms)



Inserting the insert effect on 8 inputs
(8xComp EQ algorithm)



Patch editing (insert and send-return effects)

You can create patches that combine effects together, change effect types in patches, or change processing as you like by adjusting effects using their parameters.

1 **EFFECT**

Press

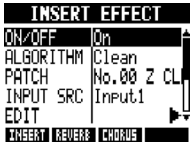
Select effect type

Press beneath **INSERT** to select an insert effect.

Press beneath **REVERB** to select a reverb send-return effect.

Press beneath **CHORUS** to select a chorus/delay send-return effect.

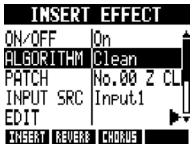
2 Select ON/OFF and set it to ON.



Change menu

Change setting

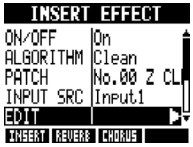
3 Select the algorithm/patch.



Change menu

Change setting

4 Select EDIT.



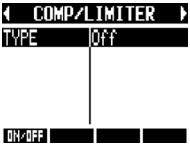
Change menu

ENTER Press

Edit effect modules

5 Select TYPE.

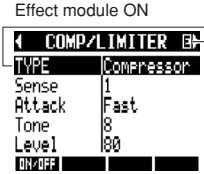
Effect module OFF



Press **ENTER** or press the ON/OFF soft key to turn the module on and off.

ENTER ON/OFF

Effect module ON

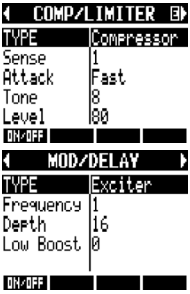


Effect type

E: Edit mark shown when a patch has been edited or changed

Set the effect module

6 Select the effect module.



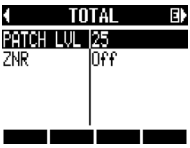
Change module

Edit the patch level (final patch sound volume)

7 Select the TOTAL effect module.

Change module

8 Select PATCH LVL and set the value.



Change menu

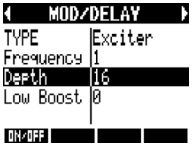
Change value

9 Return to the main effect screen

EXIT Press

Adjust effect parameters

Select a parameter and set it.

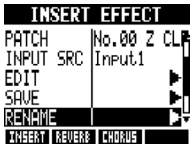


Select parameter

Change value

Change the name (insert effect)

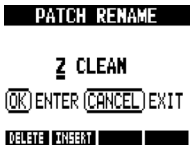
1 Select RENAME.



Change menu

ENTER Press

2 Change the name.



Move cursor

Change character

DELETE Delete character

INSERT Insert character

ENTER Press

HINT

- None of the modules in "Empty" patches have been set yet.
- The level of the ZNR module can be adjusted on the TOTAL module screen.
- You can individually edit the modules arranged in the L/R Channels of the DUAL MIC ALGORITHM. The left channel is selected when "L" appears in the effect module name and the right channel is selected when "R" appears.
- Each channel of the 8×COMP EQ algorithm has its own high pass filter, compressor and EQ that can be independently turned on/off and adjusted. Check the current channel by looking at the number shown at the end of the effect module name.

NOTE

- You cannot edit an algorithm itself, including the combination and arrangement of its effect modules.
- When you turn an effect module OFF, all its settings, including the type and parameters are disabled.
- When using the 8×COMP EQ effect, you cannot turn it ON/OFF for all channels at once. You must set it for each channel separately.
- You cannot turn off TOTAL modules.
- The 8×Comp EQ algorithm does not include a ZNR module.
- If you switch to another patch without saving a patch that has been edited (showing the 'E' mark), changes will be lost. Please refer to the next page for how to save patches.

Patch saving (insert and send-return effects)

Once you have edited a patch, always save it if you want to keep the changes.
You can save a patch at any patch number within the same algorithm.

1 **EFFECT**

Press

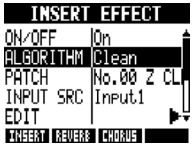
Select effect type

Press beneath **INSERT** to select an insert effect.

Press beneath **REVERB** to select a reverb send-return effect.

Press beneath **CHORUS** to select a chorus/delay send-return effect.

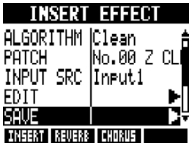
2 Select the algorithm/patch.



Change menu

Change setting

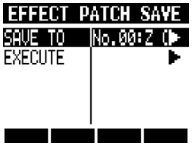
3 Select SAVE.



Change menu

ENTER Press

4 Select SAVE TO.



Change menu

ENTER Press

5 Select where you want to save it.



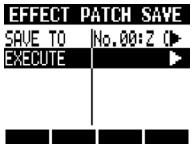
Patch number: patch name where you want to save it

Set save location

ENTER Press

Continued on the next page

6 Select EXECUTE.



ENTER Press

NOTE

- These procedures are the same for both insert and send-return effects.
- If you switch to another patch without saving a patch that has been edited (showing the 'E' mark), changes will be lost. Always save patches.
- The import source and the import destination are different projects when using PATCH IMPORT.

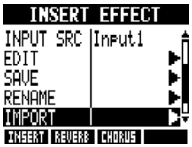
HINT

You can save your edited patch to any patch number within the same algorithm. By doing this, you can also can make a patch copy by saving an existing patch to a different number.

Patch importing (insert and send-return effects)

You can import one or all patches that have been created in another project for use in the current project.

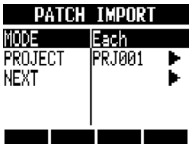
3 Select IMPORT.



Change menu

Press

4 Select MODE and set it to All or Each.



Change menu

Change setting

All	Import all patches from the source project
Each	Select and import one patch from the source

Import all patches
IMPORT>All

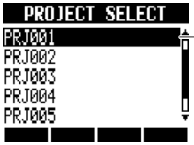
1 Select PROJECT.



Change menu

Press

2 Select the project to import from.



Import source project name

Select project

Press

3 Select NEXT.



Change menu

Press

4 Select YES.



Move cursor

Press

Import one patch
IMPORT>Each

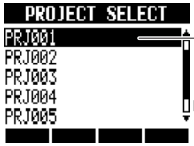
1 Select PROJECT.



Change menu

Press

2 Select the project to import from.



Import source project name

Select project

Press

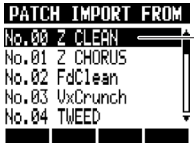
3 Select NEXT.



Change menu

Press

4 Select the patch to import.

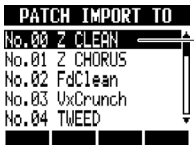


Import source patch

Select patch

Press

5 Select the destination patch.



Import destination patch

Select patch

Press

6 Select YES.



Move cursor

Press

Using the insert effect only for monitoring

By applying an insert effect only to monitoring, input signals can be recorded unprocessed to tracks.

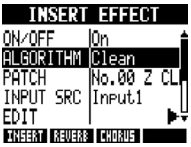
1 **EFFECT**

Press

Select effect type

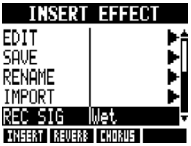
Press beneath **INSERT** to select an insert effect.

2 Select algorithm/patch.





3 Select REC SIG and set it.

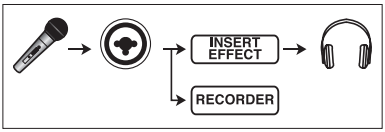




Wet	Input signals are recorded to tracks after being processed by the insert effect. (Default value)
Dry	Input signals are recorded to tracks before being processed by the insert effect. The input signal monitored from the OUTPUT and PHONES jacks, however, is processed by the insert effect first.

Using the insert effect only for monitoring

By default, when an insert effect is applied to an input signal, the signal with the effect is recorded to the track.
However, if necessary, you can apply the insert effect only to monitoring and record the unprocessed input signals to the tracks.
For example, you can record vocals without an effect, but apply an insert effect to a microphone signal to make singing easier for a vocalist.



HINT

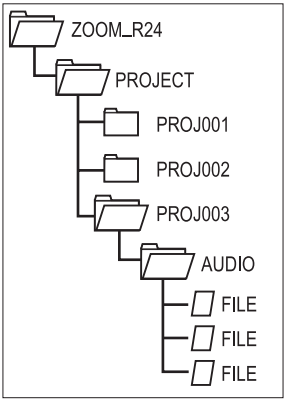
- The settings made here are stored for each project separately.
- If necessary, reset to Wet before recording other parts.

Project overview & project protection

A project stores data and settings necessary for music playback.
The “PROTECT” function allows you to prevent the alteration of a completed project.

All elements of a piece of music, including audio files, information about track assignments, and mixer, effect, metronome and tuner settings are stored in a project as one unit.
A maximum of 1000 projects can be stored on a single card. Create a new project for each new piece of music.
DATA saved in a project:

- Audio data for every track including the MASTER track
- Mixer settings
- Patch numbers and settings made for insert and send-return effects
- Contents of play lists
- Other necessary files
- Sampler loop and sequence data settings
- Rhythm pattern, volume and stereo placement settings

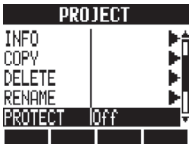


The names of the folders in the PROJECT folder correspond to the projects with the same names.

Protecting a project
PROJECT>PROTECT

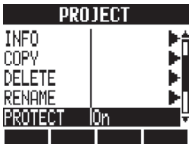
1 PROJECT
Press

2 Select PROTECT.



Change menu

3 Select ON.



Change

NOTE

- When a project is protected, you cannot record in it or edit it, and any changes will not be saved to the SD card. Set “PROTECT” to “Off” if you want to record in it or edit it again.
- Projects that are not protected will be automatically saved to the SD card when you turn the **POWER** switch OFF or when you open another project.
- We recommend setting “PROTECT” to “On” once you complete a piece of music to avoid saving unwanted changes mistakenly later.

HINT

This icon appears when a project is protected.

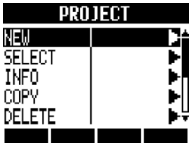


Creating a new project

With the R24 you can create up to 1000 projects on a single card.
You can also transfer the settings of the previous project to a new project.

1 PROJECT Press

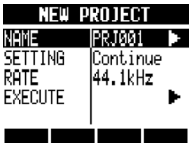
2 Select NEW.



Change menu

ENTER Press

3 Select NAME.



Change menu

ENTER Press

4 Change the project name as necessary.



Move cursor

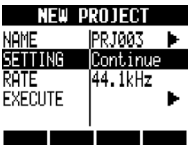
DELETE Delete character

Change character

INSERT Insert character

ENTER Press

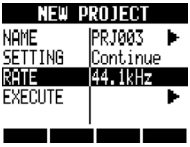
5 Set whether to use the settings from the last project.



Change menu

Change setting

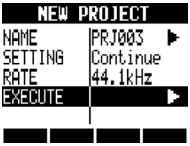
6 Set the sample rate.



Change menu

Change setting

7 Select EXECUTE.



Change menu

ENTER Press

NOTE

- You can use the settings and values of the last project in the new one.

Settings carried over with Continue
• BIT LENGTH settings • INSERT EFFECT settings • Send-return EFFECT settings • Track status (PLAY/MUTE/REC) settings • BOUNCE settings • Track parameters settings • METRONOME settings
Reset
Default settings are used for each item

- The RATE can also be set to a sampling rate that is suitable for DVD audio.

RATE: sampling rate	
Setting	
44.1kHz	Standard (default value)
48.0kHz	For DVD sound, etc.

- When set to 48 kHz, effects cannot be used.

Selecting projects and files

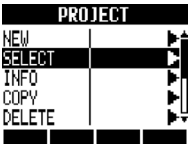
You can select a project to use for recording, playback and editing from the Top Screen. You can also select files for playback, copying, deletion and other operations.

Select a project
PROJECT>SELECT

1 PROJECT

Press

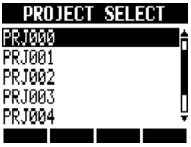
2 Select SELECT.



Change menu

ENTER Press

3 Select the project.



Change project

ENTER Press

Select a file
PROJECT>FILE

1 PROJECT

Press

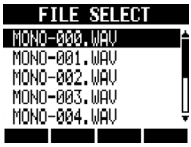
2 Select FILE.



Change menu

ENTER Press

3 Select the file.



Select file

ENTER Press

Asterisks (*) appear to the left of names of files that are already assigned to tracks.

You can use the following keys if you want to listen to a file for confirmation.

PLAY ▷	Press the **PLAY** key to start playback
STOP □	Press the **STOP** key to stop playback.

NOTE

You can only playback and record to the project that is currently loaded. You cannot use multiple projects at the same time.

HINT

When the R24 power is turned ON, the project loaded the last time the unit was used will be loaded automatically.

Project and file information

You can display information about the currently loaded project, file names, creation dates, sizes, recording times and other information.

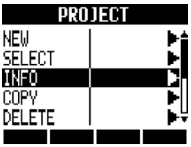
Project information
PROJECT>INFO

Follow these procedures after opening the project which has the information that you want to see.

1 PROJECT

Press

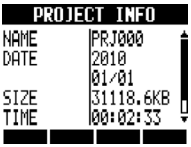
2 Select INFO.



Change menu

ENTER Press

3 Check the information.



Scroll

PROJECT INFO: project information	
NAME	Project name
DATE	Year/month/date of creation
SIZE	Capacity used
TIME	Recording time
RATE	Sample rate

HINT

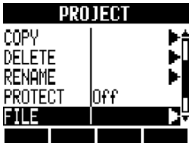
On the PROJECT INFO screen, project and file information can only be viewed. Their contents cannot be changed directly.

File information
PROJECT>FILE>INFO

1 PROJECT

Press

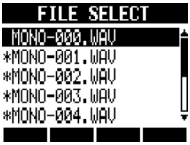
2 Select FILE.



Change menu

ENTER Press

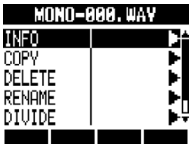
3 Select the file.



Change file

ENTER Press

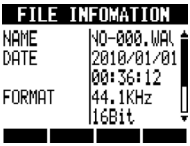
4 Select INFO.



Change menu

ENTER Press

5 Check the information.



Scroll

FILE INFOMATION: file information	
NAME	File name
DATE	Year/month/date/time of creation
FORMAT	Sampling frequency and bit rate
SIZE	Capacity used
TIME	Recording time

Copying projects and files

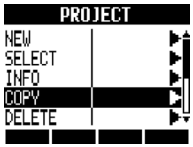
You can copy a saved project and use it as a new project.
Within the same project, you can change the names of files and make copies of them.

Copy a project
PROJECT>COPY

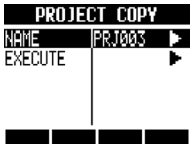
Follow these procedures after opening the project that you want to copy.

1 PROJECT
Press

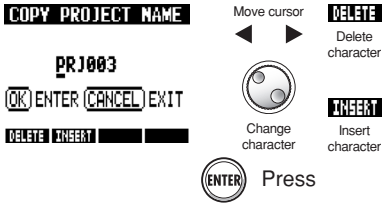
2 Select COPY.



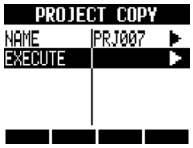
3 Select NAME.



4 Change the project name.



5 Select EXECUTE.



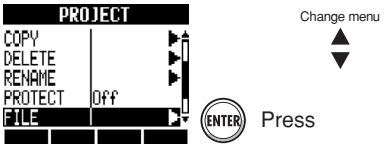
NOTE

You cannot copy a project without changing the name to something different from the original.

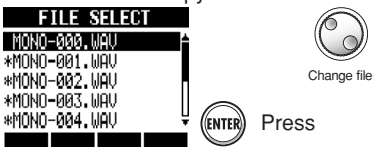
Copy a file
PROJECT>FILE>COPY

1 PROJECT
Press

2 Select FILE.



3 Select the file to copy.



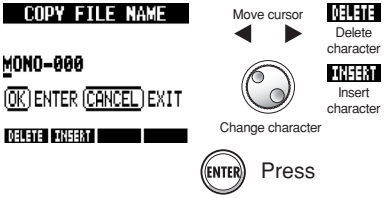
4 Select COPY.



5 Select NAME.



6 Change the file name.



7 Select EXECUTE.



Changing project and file names

You can change the names of the currently loaded project and files.

Changing a project name
PROJECT>RENAME

Open the project that you want to change the name of and follow these procedures.

1 PROJECT

Press

2 Select RENAME.



Change menu

ENTER Press

3 Change the characters.



Move cursor

DELETE Delete character

Change character

INSERT Insert character

ENTER Press

NOTE

- You cannot change the name to the same name as that of an existing project.
- The name of each project folder in the ZOOM_R24/PROJECT folder on the SD card is the same as the name of the corresponding project.

HINT

Project names

Max. number of characters: 8
Alphabet: A-Z (upper case)
Symbols: _ (underscore)
Numerals: 0-9

File names

Max. number of characters: 219 (not incl. extension)
Alphabet: A-Z, a-z
Symbols: (space) ! # $ % & \ ( ) + , - ; = @ [ ] ^ _ ` { } ~
Numerals: 0-9

Changing a file name
PROJECT>FILE>RENAME

1 PROJECT

Press

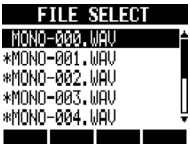
2 Select FILE.



Change menu

ENTER Press

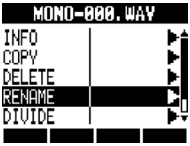
3 Select the file name.



Change file

ENTER Press

4 Select RENAME.



Change menu

ENTER Press

5 Change the characters.



Move cursor

DELETE Delete character

Change character

INSERT Insert character

ENTER Press

Deleting projects and files

Delete selected projects and files.

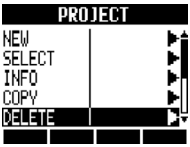
Delete a project

PROJECT>DELETE

1 PROJECT

Press

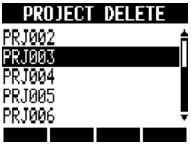
2 Select DELETE.



Change menu

ENTER Press

3 Select the project to delete.



Change project

ENTER Press

4 Select YES.



Move cursor

ENTER Press

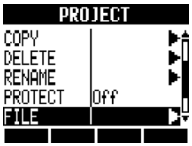
Delete a file

PROJECT>FILE>DELETE

1 PROJECT

Press

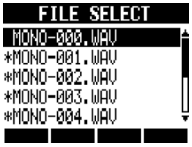
2 Select FILE.



Change menu

ENTER Press

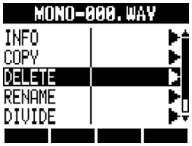
3 Select the file name.



Change file

ENTER Press

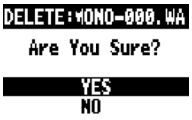
4 Select DELETE.



Change menu

ENTER Press

5 Select YES.



Move cursor

ENTER Press

NOTE

- Once a project or file is deleted, it cannot be recovered. Please delete with care.
- If PROTECT is On for a project, that project and its files cannot be deleted.

Dividing files

You can divide a file at any point to make two files.
Do this to delete unnecessary portions of recordings or to divide long recordings.

1 PROJECT Press

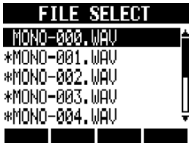
2 Select FILE.



Change menu

ENTER Press

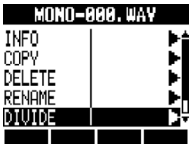
3 Select the file.



Select file

ENTER Press

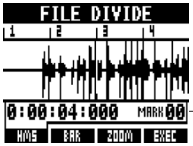
4 Select DIVIDE.



Change menu

ENTER Press

5 Set the division point.



Change value

Change time unit

6 Press ☐ beneath EXEC.

7 Select YES.



Move cursor

ENTER Press

You can use the following keys to listen to a file and to set the division point.

PLAY ▷	Press to start playback
STOP □	Press to stop playback
FF ►►	Press to fast forward
REW ◄◄	Press to rewind
STOP □ + REW ◄◄	Press together to return to the beginning of the file
►►| |◄◄	Use the mark keys to move to marks

HINT

- When a file is divided, files with new names will be created automatically in the same folder.
  "A" is added to the end of the name of the file of the part before the dividing point.
  "B" is added to the end of the name of the file of the part after the dividing point.
- The original divided file is deleted.

Ref: Using the counter and marks to locate P33

Sequential playback of projects

The playback order of multiple projects can be registered and managed in playlists. Use these to play songs consecutively, for live performance accompaniment and when outputting to an external recorder, for example.

Playback a playlist

1 PROJECT

Press

2 Select SEQ PLAY.



Change menu

ENTER Press

3 Select the playlist.



Number of projects in list

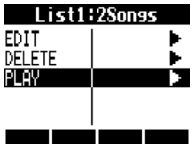
Select list

"Empty" shown when no songs in list

Playlist number

ENTER Press

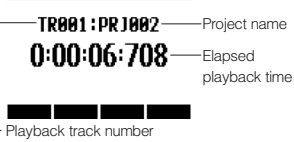
4 Select PLAY.



Change menu

ENTER Press

Screen appearance during playback



Playlist number

Project name

Elapsed playback time

Playback track number

Playback stops at the end of the last project.

HINT

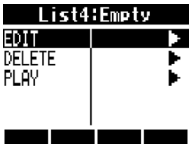
Key operation during playback

PLAY ▷	Play from the beginning of the current project
STOP □	Stop playback and return to the beginning of the current project
REW ◄◄ + STOP □	Play from the beginning of the first project (TR001)
FF ►►	Stop playback and start playback from the beginning of the next project
REW ◄◄	Stop playback and start playback from the beginning of the previous project

Edit a playlist

PROJECT>SEQ PLAY>EDIT

4 Select EDIT.



Change menu

ENTER Press

Register projects, edit and change playlists

5 Select the first project (or the project to change).



End of list indication

Change tracks

DELETE INSERT

6 Register project to be played.



Change project

DELETE INSERT

7 Select and register more projects.



Change tracks

DELETE INSERT



Change project

DELETE INSERT

8 EXIT Press to return.

Remove a project from a list

5 Select a project to remove.



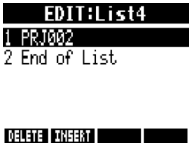
Change tracks

6 Press ☐ beneath **DELETE**.



Insert a project into a list

5 Select the track number to insert to.



Change tracks

6 Press ☐ beneath **INSERT**.



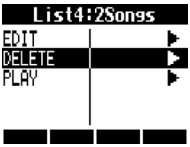
This inserts the current project. Use the dial to change to a different project.



Change project

Delete a playlist
PROJECT>SEQ PLAY>DELETE

4 Select DELETE.



Change menu

(ENTER) Press

5 Select YES.



Move cursor

(ENTER) Press

NOTE

- If a master track or the file assigned to the master track is deleted, the playlist will become empty.
- Set the master track to the recording that you want to hear when you register a project in a playlist.
- To change the file of a registered project, set its master track and edit the playlist.
- The maximum number of playlists is 10. Each playlist can have a maximum of 99 registered projects.
- A project cannot be registered if its master track is not set or its file is less than 4 seconds.

☞ Ref: Master track settings P46

Recording settings

The R24 can record at 24-bit, which is higher quality than the 16-bit format used for audio CDs. When recording, the unit can overwrite previous recordings or save them and create new ones. This is useful for bands and drums and when you want to record multiple takes.

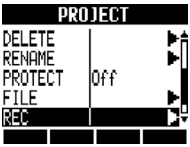
Setting/changing the bit rate

PROJECT>REC>BIT LEN

1 PROJECT

Press

2 Select REC.



Change menu

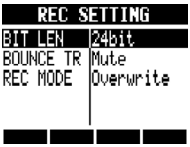
ENTER Press

3 Select BIT LEN.



Change menu

4 Set the bit rate.



16bit/24bit

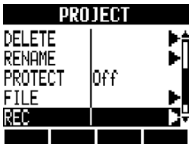
Setting/changing recording mode

PROJECT>REC>REC MODE

1 PROJECT

Press

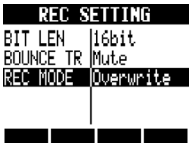
2 Select REC.



Change menu

ENTER Press

3 Select REC MODE.



Change menu

4 Set the recording mode.



Change setting

REC MODE: recording mode	
Setting	
Overwrite	Previous recordings overwritten (default value)
Always New	Previous recordings saved and new recordings always made

HINT

- When overwriting, recording will be at the bit rate of the original file. For example, you cannot overwrite a file recorded at 16-bit with a 24-bit file.
- Settings are stored separately for each project.
- The default value is 16bit.
- If you use 44.1kHz/24bit, 48kHz/16bit or 48kHz/24bit formats, you will have to convert files to 44.1kHz/16bit to create an audio CD.

NOTE

See "Bounce destination track settings" for use of the BOUNCE TR item (Ref. P43).

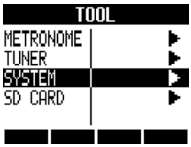
Adjusting the display

You can adjust the backlight and contrast of the display.

Turning the backlight ON/OFF
TOOL>SYSTEM>LIGHT

1 TOOL — Press

2 Select SYSTEM.



Change menu

ENTER — Press

3 Select LIGHT.



Change menu

4 Set the value.



Change value

On	Backlight lit (default value)
Off	Backlight unlit
15sec	Backlight darkens if the unit is not used for 15 seconds
30sec	Backlight darkens if the unit is not used for 30 seconds

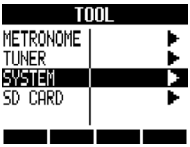
HINT

Turn the backlight off to conserve batteries.

Adjusting the contrast
TOOL>SYSTEM>CONTRAST

1 TOOL — Press

2 Select SYSTEM.



Change menu

ENTER — Press

3 Select CONTRAST.



Change menu

4 Set the value.



Change value

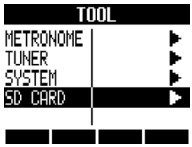
1	Low contrast
2	
3	
4	
5	(Default value)
6	
7	
8	High contrast

Changing the SD card while the power is on

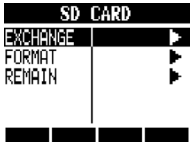
You can change the SD card while the power is on. Do this if the remaining capacity of the inserted card is low or if you need to import previously recorded data from the SD card.

1 TOOL Press

2 Select SD CARD.



3 Select EXCHANGE.





4 **Remove the SD card**



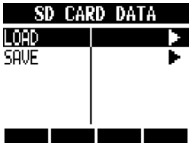
5 **Insert an SD card**

NOTE

- If the inserted SD card is already formatted for the R24, proceed to Step 6 of "Load data from the new SD card" or "Save R24 data to the new SD card".
- If you insert an SD card that has not been formatted for use with the R24, follow the procedures for formatting an SD card on the next page.

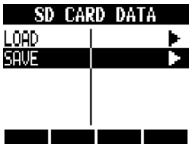
Load data from the new SD card

6 Select LOAD.

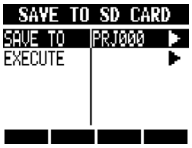


Save R24 data to the new SD card

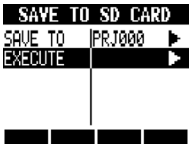
6 Select SAVE.



7 Select SAVE TO and set the project where you want to save it



8 Select EXECUTE.



NOTE

- Disable write-protection on an SD card before inserting it.
- SAVE includes various data for the project in use, but no audio data is saved.

Formatting SD cards/Checking card capacities

You can format an SD card for use with the R24, delete all the data on it, and check its capacity (remaining space).

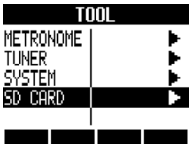
Format SD card/delete all data

TOOL>SD CARD>FORMAT

1 TOOL

Press

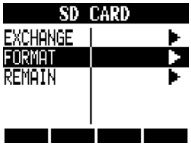
2 Select SD CARD.



Change menu

ENTER Press

3 Select FORMAT.



Change menu

ENTER Press

4 Select YES.



Move cursor

ENTER Press

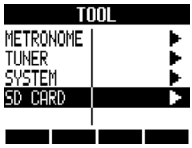
Check SD card remaining capacity

TOOL>SD CARD>REMAIN

1 TOOL

Press

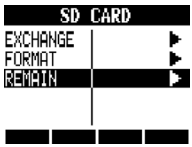
2 Select SD CARD



Change menu

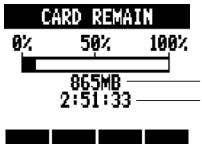
ENTER Press

3 Select REMAIN.



Change menu

ENTER Press



Card open space

Remaining recording time for the current recording format

NOTE

- If you format an SD card, all its data will be permanently erased.
- When you format an SD card, all the data on the card is deleted and folders and files that are exclusively for R24 use will be created.
- If the remaining capacity of the SD card is less than the amount of the data being recorded, recording will fail. Change the card before you run out of space.

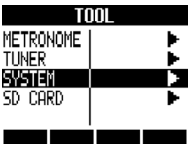
Checking the system version/Setting the battery type

You can check the current version of the system software.
Set the battery type to make display of the remaining battery charge more accurate.

Checking the system version
TOOL>SYSTEM>VERSION

1 TOOL
Press

2 Select SYSTEM.



Change menu

ENTER Press

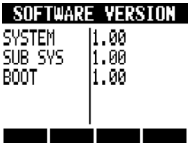
3 Select VERSION.



Change menu

ENTER Press

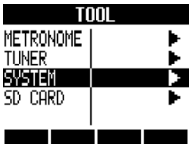
4 Check the information.



Setting the battery type
TOOL>SYSTEM>BATTERY

1 TOOL
Press

2 Select SYSTEM.



Change menu

ENTER Press

3 Select BATTERY.



Change menu

4 Set the battery type.



Change type

Alkaline	Alkaline batteries (default value)
Ni-MH	Nickel-metal hydride batteries

HINT

Check for the latest system software at the ZOOM website (http://www.zoom.co.jp).

NOTE

Use only alkaline or nickel-metal hydride batteries.

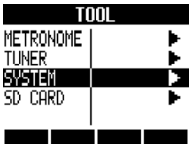
Phantom power settings

Set the **PHANTOM** switch to **ON** to supply phantom power to **INPUTS 3~8**.
To conserve batteries, you can turn it off for input pairs 3/4 and 7/8 and reduce the voltage to 24 V.

Setting phantom power
TOOL>SYSTEM>PHANTOM

1 TOOL
Press

2 Select SYSTEM.



Change menu

ENTER Press

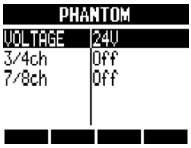
3 Select PHANTOM.



Change menu

ENTER Press

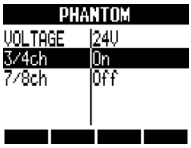
4 Select VOLTAGE and set the value.



Change menu

Change setting

5 Select 3/4ch or 7/8ch and set it to On or Off.



Change menu

Change setting

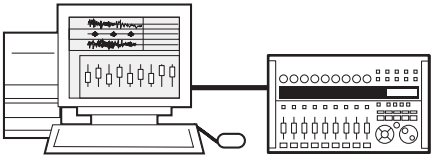
NOTE

- The phantom power for inputs 5 and 6 cannot be turned off separately. They will be supplied with phantom power unless the **PHANTOM** switch is set to **OFF**.
- Do NOT supply phantom power to microphones and instruments that do not need it. Doing so could cause damage. Check the instructions for the microphone that you are using before supplying phantom power.

Connecting with a computer

Use USB to connect an R24 to a computer (Windows or Macintosh OS).

By connecting this unit to a computer, you can use it as an SD card reader, an audio interface for sound input and output and a control surface to control DAW software



NOTE

- To import an audio file into the R16, its format must be WAV with a sampling rate of 44.1/48 kHz and a bit rate of 16 or 24.
- To use WAV files in a project, they must use the sampling rate as set for the project when it was created (RATE).
- File name can have up to 219 characters (not including the extension). The following characters are allowed
  Alphabet: A-Z, a-z
  Numerals: 0-9
  Symbols: (space) ! # $ % & \ ( ) + , - ; = @
  [ ] ^ _ ` { } ~
- You can connect an R24 when its power is ON with a computer by USB. If you connect the R24 by USB when its power is OFF, you can start it up with power supplied over USB.
- When using the R24 as a card reader or as an audio interface, it cannot be used as a recorder at the same time.

HINT

- Card reader OS compatibility
  Windows: Windows XP and later
  Macintosh: Mac OS x 10.2 and later
- Project data is saved to the corresponding PROJECT folder in the ZOOM_R24 folder on the SD card as. Folders are created and managed for each project.
- Audio data is saved as WAV files inside the AUDIO folder of its project folder.
- The "PRJINFO.TXT" file inside each AUDIO folder shows the names of files assigned to tracks.
- MASTER tracks and stereo tracks are stereo WAV files.

For details about use with a computer, refer to the Audio Interface Manual (PDF) on the CD-ROM included with the unit.

Card reader

You can access the R24 SD card using a computer to backup, read and import various data, projects and files.

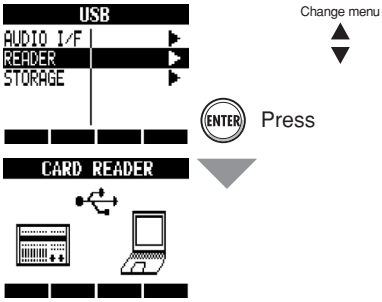
Using the unit as an SD card reader

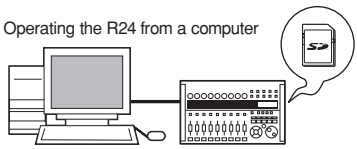
USB>READER

1 Connect the R24 with a computer by USB (DEVICE port)

2 USB Press

3 Select READER.





To computer ←

Back up project data on an SD card to a computer.

From computer →

Import audio data and computer backups to the SD card.

Disconnecting

1 Eject the R24 volume icon from your computer to end the connection.

2 EXIT or USB Press to disconnect the R24

3 Select YES.



HINT

- To import WAV files from a computer, copy them to the “AUDIO” folder in the project folder where you want to use them. Use the R24 to assign the files to tracks.

For details about use with a computer, refer to the Audio Interface Manual (PDF) on the CD-ROM included with the unit.

Using USB memory to save and import data

By connecting USB memory directly to the R24, you can save and import files. This is convenient for exchanging files with band members. When using USB memory with the unit for the first time, you must create a folder especially for the R24 on that USB memory.

Saving files to USB memory

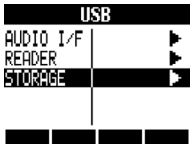
USB>STORAGE>FILE SAVE

1 Connect the USB memory to the R24 USB HOST port.

2 USB

Press

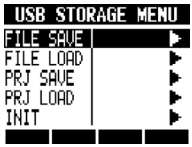
3 Select STORAGE.



Change menu

ENTER Press

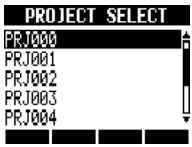
4 Select FILE SAVE.



Change menu

ENTER Press

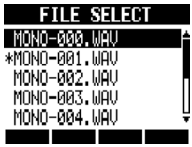
5 Select the project with the file to save.



Change project

ENTER Press

6 Select the file.



Change file

ENTER Press

7 Change the file name as necessary.



Move cursor

DELETE Delete character

Change character

INSERT Insert character

ENTER Press

8 Select YES



Move cursor

ENTER Press

Loading files from USB memory

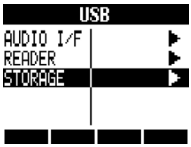
USB>STORAGE>FILE LOAD

1 Connect the USB memory to the R24 USB HOST port.

2 USB

Press

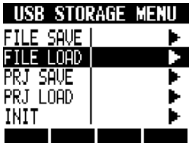
3 Select STORAGE.



Change menu

ENTER Press

4 Select FILE LOAD.



Change menu

ENTER Press

5 Select the folder.



Select folders and files

If data is in a folder

ENTER Press

For details about use with a computer, refer to the Audio Interface Manual (PDF) on the CD-ROM included with the unit.

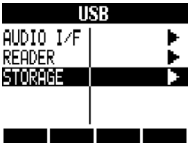
Saving projects to USB memory

USB>STORAGE>PRJ SAVE

1 USB

Press

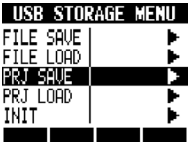
2 Select STORAGE.



Change menu

ENTER Press

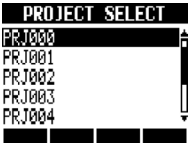
3 Select PRJ SAVE.



Change menu

ENTER Press

4 Select the project.



Change project

ENTER Press

5 Change the project name as necessary.



Move cursor

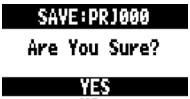
DELETE Delete character

Change character

INSERT Insert character

ENTER Press

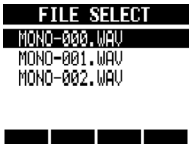
6 Select YES.



Move cursor

ENTER Press

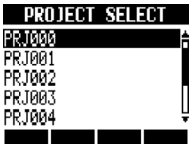
6 Select the file.



Change file

ENTER Press

7 Select where to save it .



Change project

ENTER Press

8 Change the file name as necessary.



Move cursor

DELETE Delete character

Change character

INSERT Insert character

ENTER Press

9 Select YES.



Move cursor

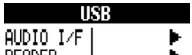
ENTER Press

For details about use with a computer, refer to the Audio Interface Manual (PDF) on the CD-ROM included with the unit.

Loading projects from USB memory
USB>STORAGE>PRJ LOAD

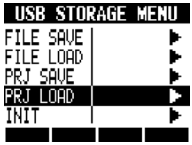
1 USB
Press

2 Select STORAGE.



Change menu
ENTER Press

3 Select PRJ LOAD.



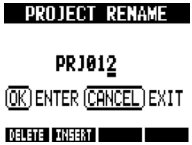
Change menu
ENTER Press

4 Select the project.



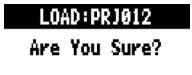
Change project
ENTER Press

5 Change the project name as necessary.



Move cursor
DELETE Delete character
INSERT Insert character
Change character
ENTER Press

6 Select YES.



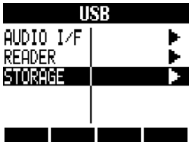
Move cursor
ENTER Press

Creating an R24 folder on the USB memory
USB>STORAGE>INIT

1 Connect the USB memory to the R24 USB HOST port.

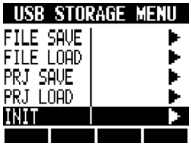
2 USB
Press

3 Select STORAGE.



Change menu
ENTER Press

4 Select INIT.



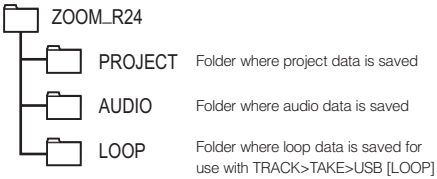
Change menu
ENTER Press

5 Select YES.



Move cursor
ENTER Press

USB memory folder structure



NOTE

- Never remove USB memory when sending or receiving data. Disconnect after the “Saving” or “Loading” display closes.
- During USB storage use, recorder operations are not possible.
- When saving on USB memory, the saved data is stored in the AUDIO and PROJECT folders inside the ZOOM_R24 folder.
- If a file or project with the same name already exists, an "Overwrite?" confirmation pop-up appears. Press EXIT to cancel overwriting and change the name or select a new project.

Audio interface/control surface

Connect the R24 by USB to a computer to use it as an audio interface to input and output sound and as a controller for DAW software.

Connecting the unit as an audio interface/control surface

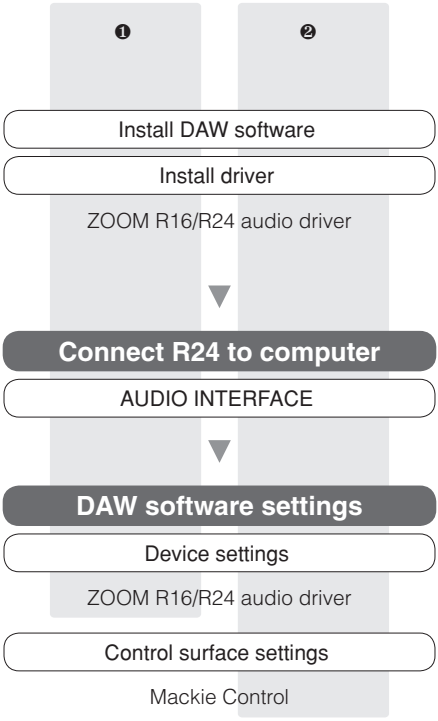
❶ Audio interface

The R24 can be used as an interface between a computer and instruments and other audio equipment, allowing audio signals to be recorded directly into DAW software, for example.

You can connect instruments and microphones that require Hi-Z or phantom power when used as an audio interface.

❷ Control surface

Use the faders and keys on the R24 to control transport and mixer operations in your DAW software.



Connecting an R24 to a computer for the first time

1 Install the ZOOM R16/R24 Audio Driver on the computer.

☞ Ref: Cubase LE5 Startup Guide

2 Connect the R24 to the computer.

Set and connect the R24

See "Connecting and setting the R24" on the next page.

3 Make DAW software settings

Device settings

Control surface settings

NOTE

- To use the R24 as an audio interface for DAW software (for example, Cubase LE 5) it is necessary to install the ZOOM R16/R24 Audio Driver. Install it correctly according to the directions given in the included installation guide.
- Download the latest R24 audio driver from the ZOOM website (http:// www.zoom.co.jp).

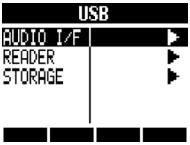
Connecting and setting the R24

Follow these procedures after the first time

1 USB

Press

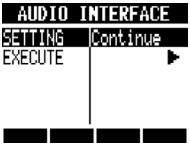
2 Select AUDIO I/F.



Change menu

ENTER Press

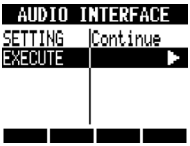
3 Select whether or not to use the settings of the previous project.



Change menu

Change setting

4 Select EXECUTE.



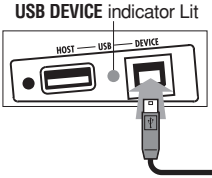
Change menu

ENTER Press

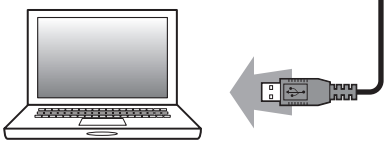
5 Connect the USB cable to the R24.



USB DEVICE indicator Lit



6 Connect the USB cable to the computer.



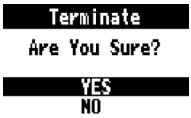
Disconnecting

1 USB

Press

Press the below EXIT.

2 Select YES.



Move cursor

ENTER Press

3 Disconnect the USB cable

NOTE

Select CONTINUE to use the same settings as last time.
• INSERT EFFECT settings • SEND RETURN EFFECT settings • Mixer settings • TUNER settings
Select RESET to restore default settings for each item.

- Before removing the USB cable when disconnecting from a computer, always follow the proper procedures for the computer OS to disconnect the device first.
- Before removing the USB cable, conduct step 2 of "Disconnecting" first.
- The audio interface and control surface functions of the R24 can be used by drawing power through a USB cable from the USB bus.
- We recommend always using the latest R24 system software. If you use an R24 running an older system, a computer might not recognize it properly.

For details about use with a computer, refer to the Audio Interface Manual (PDF) on the CD-ROM included with the unit.

Rhythm pattern list

Patterns 35~234 are typical patterns and fills for various genres.

No.	Name	Beats
Variation		
0	08Beat01	4
1	08Beat02	4
2	08Beat03	4
3	08Beat04	4
4	08Beat05	4
5	08Beat06	4
6	08Beat07	4
7	08Beat08	4
8	08Beat09	4
9	08Beat10	4
10	08Beat11	4
11	08Beat12	4
12	16Beat01	4
13	16Beat02	2
14	16Beat03	4
15	16Beat04	4
16	16Beat05	4
17	16Beat06	4
18	16Beat07	2
19	16Beat08	2
20	16Beat09	4
21	16Beat10	4
22	16Beat11	4
23	16Beat12	4
24	16FUS01	2
25	16FUS02	2
26	16FUS03	4
27	16FUS04	2
28	04JAZZ01	4
20	04JAZZ02	4
30	04JAZZ03	4
31	04JAZZ04	4
32	DANCE	2
33	CNTRY	2
34	68BLUS	4
No.	Name	Beats
Variation		
35	ROCKs1VA	2
36	ROCKs1Va	1
37	ROCKs1FA	1
38	ROCKs1VB	2
39	ROCKs1Vb	1
40	ROCKs1FB	1
41	ROCKs2VA	2
42	ROCKs2Va	1

43	ROCKs2FA	1
44	ROCKs2VB	2
45	ROCKs2Vb	1
46	ROCKs2FB	1
47	ROCKs3VA	1
48	ROCKs3FA	1
49	ROCKs3VB	1
50	ROCKs3FB	1
51	ROCKs4VA	2
52	ROCKs4Va	1
53	ROCKs4FA	1
54	ROCKs4VB	2
55	ROCKs4Vb	1
56	ROCKs4FB	1
57	HRKs1VA	1
58	HRKs1FA	1
59	HRKs1VB	1
60	HRKs1FB	1
61	HRKs2VA	2
62	HRKs2Va	1
63	HRKs2FA	1
64	HRKs2VB	2
65	HRKs2Vb	1
66	HRKs2FB	1
67	MTLs1VA	1
68	MTLs1FA	1
69	MTLs1VB	1
70	MTLs1FB	1
71	FUSs1VA	2
72	FUSs1Va	1
73	FUSs1FA	1
74	FUSs1VB	2
75	FUSs1Vb	1
76	FUSs1FB	1
77	FUSs2VA	2
78	FUSs2Va	1
79	FUSs2FA	1
80	FUSs2VB	2
81	FUSs2Vb	1
82	FUSs2FB	1
83	FUSs3VA	2
84	FUSs3Va	1
85	FUSs3FA	1
86	FUSs3VB	2
87	FUSs3Vb	1
88	FUSs3FB	1
89	INDTs1VA	2

90	INDTs1Va	1
91	INDTs1FA	1
92	INDTs1VB	2
93	INDTs1Vb	1
94	INDTs1FB	2
95	POPs1VA	2
96	POPs1Va	1
97	POPs1FA	1
98	POPs1VB	2
99	POPs1Vb	1
100	POPs1FB	1
101	RnBs1VA	2
102	RnBs1Va	1
103	RnBs1FA	2
104	RnBs1VB	2
105	RnBs1Vb	1
106	RnBs1FB	1
107	RnBs2VA	2
108	RnBs2Va	1
109	RnBs2FA	1
110	RnBs2VB	2
111	RnBs2Vb	1
112	RnBs2FB	1
113	MTNs1VA	2
114	MTNs1Va	1
115	MTNs1FA	1
116	MTNs1VB	2
117	MTNs1Vb	1
118	MTNs1FB	1
119	FUNKs1VA	2
120	FUNKs1Va	1
121	FUNKs1FA	1
122	FUNKs1VB	2
123	FUNKs1Vb	1
124	FUNKs1FB	1
125	FUNKs2VA	2
126	FUNKs2Va	1
127	FUNKs2FA	1
128	FUNKs2VB	2
129	FUNKs2Vb	1
130	FUNKs2FB	1
131	HIPs1VA	2
132	HIPs1Va	1
133	HIPs1FA	1
134	HIPs1VB	2
135	HIPs1Vb	1
136	HIPs1FB	1

137	HIPs1VC	2
138	HIPs1Vc	1
139	HIPs1VD	2
140	HIPs1Vd	1
141	HIPs2VA	2
142	HIPs2Va	1
143	HIPs2VB	2
144	HIPs2Vb	1
145	HIPs2FB	1
146	HIPs2VC	2
147	HIPs2Vc	1
148	HIPs2VD	2
149	DANCs1VA	1
150	DANCs1FA	1
151	DANCs1VB	1
152	DANCs1FB	1
153	DANCs2VA	2
154	DANCs2Va	1
155	DANCs2FA	1
156	DANCs2VB	2
157	DANCs2Vb	1
158	DANCs2FB	1
159	HOUSs1VA	1
160	HOUSs1FA	1
161	HOUSs1VB	1
162	HOUSs1FB	1
163	TECHs1VA	1
164	TECHs1FA	1
165	TECHs1VB	1
166	TECHs1FB	1
167	DnBs1VA	2
168	DnBs1Va	1
169	DnBs1FA	1
170	DnBs1VB	2
171	DnBs1Vb	1
172	DnBs1FB	1
173	TPs1VA	1
174	TPs1FA	1
175	TPs1VB	1
176	TPs1FB	1
177	AMBs1VA	2
178	AMBs1Va	1
179	AMBs1FA	1
180	AMBs1FB	1
181	BALDs1VA	2
182	BALDs1Va	1
183	BALDs1FA	1

184	BALDs1VB	2
185	BALDs1Vb	1
186	BALDs1FB	1
187	BLUSs1VA	2
188	BLUSs1Va	1
189	BLUSs1FA	1
190	BLUSs1VB	2
191	BLUSs1Vb	1
192	BLUSs1FB	1
193	CNTRs1VA	2
194	CNTRs1Va	1
195	CNTRs1FA	1
196	CNTRs1VB	2
197	CNTRs1Vb	1
198	CNTRs1FB	1
199	JAZZs1VA	2
200	JAZZs1Va	1
201	JAZZs1FA	1
202	JAZZs1VB	2
203	JAZZs1Vb	1
204	JAZZs1FB	1
205	AFROs1VA	2
206	AFROs1Va	1
207	AFROs1FA	1
208	AFROs1VB	2
209	AFROs1Vb	1
210	AFROs1FB	1
211	REGGs1VA	2
212	REGGs1Va	1
213	REGGs1FA	1
214	REGGs1VB	2
215	REGGs1Vb	1
216	REGGs1FB	1
217	LATNs1VA	2
218	LATNs1Va	1
219	LATNs1FA	1
220	LATNs1VB	2
221	LATNs1Vb	1
222	LATNs1FB	1
223	LATNs2VA	2
224	LATNs2Va	1
225	LATNs2FA	1
226	LATNs2VB	2
227	LATNs2Vb	1
228	LATNs2FB	1
229	MidEs1VA	2
230	MidEs1Va	1

231	MidEs1FA	1
232	MidEs1VB	2
233	MidEs1Vb	1
234	MidEs1FB	1
No.	Name	Beats
Variation		
235	ROCK01	2
236	ROCK02	2
237	ROCK03	2
238	ROCK04	2
239	ROCK05	2
240	ROCK06	2
241	ROCK07	2
242	ROCK08	2
243	ROCK09	2
244	ROCK10	2
245	ROCK11	4
246	ROCK12	2
247	ROCK13	2
248	ROCK14	2
249	ROCK15	2
250	ROCK16	2
251	ROCK17	2
252	ROCK18	2
253	ROCK19	2
254	ROCK20	2
255	ROCK21	2
256	ROCK22	2
257	ROCK23	2
258	ROCK24	2
259	ROCK25	2
260	ROCK26	2
261	ROCK27	2
262	ROCK28	2
263	HRK01	2
264	HRK02	2
265	HRK03	2
266	HRK04	2
267	HRK05	2
268	HRK06	2
269	HRK07	2
270	MTL01	2
271	MTL02	2
272	MTL03	2
273	MTL04	2
274	THRS01	2
275	THRS02	2
276	PUNK01	2
277	PUNK02	2
278	FUS01	2
279	FUS02	2
280	FUS03	2

281	FUS04	2
282	FUS05	2
283	FUS06	2
284	FUS07	2
285	FUS08	2
286	POP01	2
287	POP02	2
288	POP03	2
289	POP04	2
290	POP05	2
291	POP06	2
292	POP07	2
293	POP08	2
294	POP09	2
295	POP10	2
296	POP11	2
297	POP12	2
298	RnB01	2
299	RnB02	2
300	RnB03	2
301	RnB04	2
302	RnB05	2
303	RnB06	2
304	RnB07	2
305	RnB08	2
306	RnB09	2
307	RnB10	2
308	FUNK01	2
309	FUNK02	2
310	FUNK03	2
311	FUNK04	2
312	FUNK05	2
313	FUNK06	2
314	FUNK07	2
315	FUNK08	2
316	FUNK09	2
317	FUNK10	2
318	FUNK11	2
319	FUNK12	2
320	HIP01	2
321	HIP02	2
322	HIP03	2
323	HIP04	2
324	HIP05	2
325	HIP06	2
326	HIP07	2
327	HIP08	2
328	HIP09	2
329	HIP10	2
330	HIP11	2
331	HIP12	2
332	HIP13	2

333	HIP14	2
334	HIP15	2
335	HIP16	2
336	HIP17	2
337	HIP18	2
338	HIP19	2
339	HIP20	2
340	HIP21	2
341	HIP22	2
342	HIP23	2
343	DANC01	2
344	DANC02	2
345	DANC03	2
346	DANC04	2
347	DANC05	2
348	DANC06	2
349	HOUS01	2
350	HOUS02	2
351	HOUS03	2
352	HOUS04	2
353	TECH01	2
354	TECH02	2
355	TECH03	2
356	TECH04	2
357	TECH05	2
358	TECH06	2
359	TECH07	2
360	TECH08	2
361	TECH09	2
362	TECH10	2
363	DnB01	2
364	DnB02	2
365	DnB03	2
366	DnB04	2
367	DnB05	2
368	DnB06	2
369	TRIP01	2
370	TRIP02	2
371	TRIP03	2
372	TRIP04	2
373	AMB01	2
374	AMB02	2
375	AMB03	2
376	AMB04	2
377	BALD01	2
378	BALD02	2
379	BALD03	2
380	BALD04	2
381	BALD05	2
382	BALD06	2
383	BALD07	2
384	BALD08	2

385	BALD09	2
386	BALD10	2
387	BALD11	4
388	BLUS01	2
389	BLUS02	2
390	BLUS03	2
391	BLUS04	2
392	BLUS05	2
393	BLUS06	2
394	CNTR01	2
395	CNTR02	2
396	CNTR03	2
397	CNTR04	2
398	JAZZ01	2
399	JAZZ02	2
400	JAZZ03	2
401	JAZZ04	2
402	JAZZ05	2
403	JAZZ06	2
404	JAZZ07	4
405	SHFL01	2
406	SHFL02	2
407	SHFL03	2
408	SHFL04	2
409	SHFL05	2
410	SKA01	2
411	SKA02	2
412	SKA03	2
413	SKA04	2
414	REGG01	2
415	REGG02	2
416	REGG03	2
417	REGG04	2
418	AFRO01	2
419	AFRO02	2
420	AFRO03	2
421	AFRO04	2
422	AFRO05	2
423	AFRO06	2
424	AFRO07	2
425	AFRO08	2
426	LATN01	2
427	LATN02	2
428	LATN03	2
429	LATN04	2
430	LATN05	2
431	LATN06	2
432	LATN07	2
433	LATN08	2
434	LATN09	2
435	LATN10	2
436	LATN11	2

437	LATN12	2
438	BOSSA01	4
439	BOSSA02	4
440	SAMBA01	4
441	SAMBA02	4
442	MidE01	2
443	MidE02	2
444	MidE03	2
445	MidE04	2
446	INTRO01	1
447	INTRO02	1
448	INTRO03	1
449	INTRO04	1
450	INTRO05	1
451	INTRO06	1
452	INTRO07	1
453	INTRO08	1
454	INTRO09	1
455	INTRO10	1
456	INTRO11	1
457	INTRO12	1
458	INTRO13	1
459	INTRO14	1
460	INTRO15	1
461	INTRO16	1
462	INTRO17	1
463	INTRO18	1
464	ENDING01	1
465	ENDING02	1
466	ENDING03	1
467	ENDING04	1
468	ENDING05	1
469	ENDING06	1
470	ENDING07	1
471	COUNT	2
472 | 510	EMPTY	2

Effect types and parameters 1

Effect parameters

Insert effects

Clean/Crunch, Distortion, Aco/Bass SIM algorithms

• COMP/LIMITER module

Type	Parameters/Descriptions			
Compressor	**Sense**	**Attack**	**Tone**	**Level**
	MXR Dynacomp type compressor.			
Rack Comp	**Threshold**	**Ratio**	**Attack**	**Level**
	Compressor with more detailed adjustments.			
Limiter	**Threshold**	**Ratio**	**Release**	**Level**
	Limiter for suppressing signal peaks above a certain level.			

Parameter descriptions

Parameter	Setting range	Description
Sense	0~10	Adjusts compressor sensitivity.
Attack	Compressor: Fast, Slow	Selects compressor response speed.
	Rack Comp: 1~10	Adjusts compressor response speed.
Tone	0~10	Adjusts tonal quality.
Level	2~100	Adjusts signal level after passing module.
Threshold	0~50	Adjusts threshold for compressor/limiter action.
Ratio	1~10	Adjusts compressor/limiter compression ratio.
Release	1~10	Adjusts delay until compressor/limiter release from time when signal level falls below threshold level.

Effect types and parameters 2

• EFX module

Type	Parameters/Descriptions						
Auto Wah	**Position**	**Sense**	**Resonance**	**Level**			
	Auto wah dependent on dynamics of input signal.						
Tremolo	**Depth**	**Rate**	**Wave**	**Level**			
	Periodically varies the volume level.						
Phaser	**Position**	**Rate**	**Color**	**Level**			
	Produces a swooshing sound.						
Ring Modulator	**Position**	**Frequency**	**Balance**	**Level**			
	Produces a metallic ringing sound. Adjusting the Frequency parameter results in a drastic change of sound character.						
Slow Attack	**Position**	**Time**	**Curve**	**Level**			
	Slows down the attack rate of the sound.						
Fix-Wah	**Position**	**Frequency**	**Dry Mix**	**Level**	**RTM Mode**	**RTM Wave**	**RTM Sync**
	Changes the wah frequency according to rhythm tempo.						
Booster	**Range**	**Tone**	**Level**				
	Increases signal gain to make the sound more powerful.						

Parameter descriptions

Parameter name	Setting range	Description
Position	Before, After	Sets connection position of EFX module to before or after preamp.
Sense	–10~–1, 1~10	Adjusts auto wah sensitivity.
Resonance	0~10	Adjusts resonance intensity.
Level	2~100	Adjusts signal level after passing through module.
Depth	0~100	Adjusts modulation depth.
Rate	0~50 ♪ (P124 Table1)	Adjusts modulation rate. Can be set in rhythm tempo note units.
Wave	Up 0~9, Down 0~9, Tri 0~9	Sets modulation waveform to "Up" (rising sawtooth), "Down" (falling sawtooth) or "Tri" (triangular). Higher values result in stronger clipping, emphasizing the effect.
Color	4Stage, 8State, Invert4, Invert8	Selects sound type.
Frequency	Ring Modulator: 1~50	Adjusts frequency used for modulation.
	Fix-Wah: 1~50	Adjusts wah center frequency.
Balance	0~100	Adjusts balance between original sound and effect sound.
Time	1~50	Adjusts rise time for sound.
Curve	0~10	Adjusts volume rise curve.
Dry Mix	0~10	Adjusts original sound mix ratio.
RTM Mode	P124 Table 2	Adjusts change range and direction.
RTM Wave	P124 Table 3	Selects control waveform.
RTM Sync	♪ (P124 Table 4)	Adjusts control wave frequency.
Range	1~5	Selects frequency range to boost.
Tone	0~10	Adjusts tone.

Effect types and parameters 3

• PREAMP module

Type	Parameters
FD Combo	Modeled sound of Fender Twin Reverb ('65 model) favored by guitarists of many music styles
VX Combo	Modeled sound of combo amp VOX AC-30 operating in class A
US Blues	Crunch sound of FENDER Tweed BASSMAN
BG Crunch	Crunch sound of Mesa Boogie MkIII combo amp
HW Stack	Modeled sound of legendary all-tube Hiwatt Custom 100 from Britain
MS Crunch	Crunch sound of legendary Marshall 1959
MS Drive	High gain sound of Marshall JCM2000 stack amp
PV Drive	High gain sound of Peavey 5150 developed in cooperation with a world-famous hard rock guitarist
DZ Drive	High gain sound of the Diezel Herbert hand-made German guitar amp with three separately controllable channels
BG Drive	High gain sound of Mesa Boogie Dual Rectifier red channel (vintage mode)
OverDrive	Modeling of BOSS OD-1 effect pedal that was the world's first overdrive effect of its kind
T Scream	Simulation of the Ibanez TS808, which is loved by many guitarists as a booster and has inspired numerous clones
Governor	Simulation of the Guv'nor distortion effect from Marshall
Dist +	Simulation of the MXR distortion+ effect that made distortion popular worldwide
Dist 1	Simulation of the Boss DS-1 distortion pedal, which has been a long-seller
Squeak	Simulation of the PROCO Rat famous for its edgy distortion sound
FuzzSmile	Simulation of the Fuzz Face, which has made rock history with its humorous panel design and smashing sound
GreatMuff	Simulation of the Electro-Harmonix Big Muff, which is loved by famous artists around the world for its fat, sweet fuzz sound
MetalWRLD	Simulation of the Boss Metal Zone, which is characterized by long sustain and a powerful lower midrange
HotBox	Simulation of the compact Matchless Hotbox pre-amplifier with a built-in tube
Z Clean	ZOOM original unadorned clean sound
Z Wild	A high gain sound with even more overdrive boost.
Z MP1	An original sound created by merging characteristics of an ADA MP1 and a MARSHALL JCM800.
Z Bottom	A high gain sound that emphasizes low and middle frequencies
Z Dream	A high gain sound for lead playing based on the Mesa Boogie Road King Series II Lead channel
Z Scream	An original high gain sound balanced from low to high frequencies
Z Neos	A crunch sound modeled on the sound of a modified VOX AC30
Lead	A bright and smooth distortion sound
ExtremeDS	This distortion effect boasts the highest gain in the world
Acoustic Sim	**Top** / **Body** / **Level** Makes an electric guitar sound like an acoustic guitar
Bass Sim	**Tone** / **Level** Makes an electric guitar sound like a bass guitar

Parameter descriptions

Parameter	Setting range	Explanation
Gain	0~100	Adjusts preamp gain (distortion intensity).
Tone	0~30	Adjusts tonal quality.
Cabinet	Matched	Optimizes cabinet settings according to the drive effect type.
	Combo	Simulates 2x12 Fender combo amp cabinet.
	Tweed	Simulates 4x10 Fender Tweed amp cabinet.
	Stack	Simulates 4x12 Marshall stack amp cabinet.
Level	1~100	Adjusts signal level after passing through module.
Top	0~10	Adjusts characteristic acoustic guitar string resonance.
Body	0~10	Adjusts characteristic acoustic guitar body resonance.

• 6BAND EQ module

Type	Parameters
6Band EQ	**Bass** / **Low-Mid** / **Middle** / **Treble** / **Presence** / **Harmonics** This is an equalizer with 6 frequency bands

Parameter descriptions

Parameter	Setting range	Explanation
Bass	-12dB~12dB	Adjusts low frequency range (160 Hz) boost/cut.
Low-Mid	-12dB~12dB	Adjusts mid-low-frequency range (400 Hz) boost/cut.
Middle	-12dB~12dB	Adjusts middle-frequency range (800 Hz) boost/cut.
Treble	-12dB~12dB	Adjusts high-frequency range (3.2 kHz) boost/cut.
Presence	-12dB~12dB	Adjusts super-high-frequency range (6.4 kHz) boost/cut .
Harmonics	-12dB~12dB	Adjust harmonics (12 kHz) boost/cut.

Effect types and parameters 4

• MOD/DELAY module

Type	Parameters			
Chorus	**Depth**	**Rate**	**Tone**	**Mix**
	Mixes a variable pitch-shifted component with the original sound, resulting in full-bodied resonating tone			
Ensemble	**Depth**	**Rate**	**Tone**	**Mix**
	Chorus ensemble features three-dimensional movement			
Flanger	**Depth**	**Rate**	**Resonance**	**Manual**
	Produces a resonating and strongly undulating sound			
Pitch	**Shift**	**Tone**	**Fine**	**Balance**
	Shifts the pitch up or down.			
Vibe	**Depth**	**Rate**	**Tone**	**Balance**
	Adds automatic vibrato			
Step	**Depth**	**Rate**	**Resonance**	**Shape**
	Special effect makes sound changes in steps.			
Cry	**Range**	**Resonance**	**Sense**	**Balance**
	Changes sound like a talking modulator.			
Exciter	**Frequency**	**Depth**	**Low Boost**	
	Enhances the sound outline, making it more prominent.			
Air	**Size**	**Reflex**	**Tone**	**Mix**
	Recreates the airy ambience of a room, with a feeling of depth.			
Delay	**Time**	**Feedback**	**Hi Damp**	**Mix**
	Delay effect with a maximum setting of 2000 ms.			
Analog Delay	**Time**	**Feedback**	**Hi Damp**	**Mix**
	Warm analog delay simulation with up to 2000 msec delay length.			
Reverse Delay	**Time**	**Feedback**	**Hi Damp**	**Balance**
	Reverse delay with a maximum length of1000 msec.			
ARRM Pitch	**Type**	**Tone**	**RTM Wave**	**RTM Sync**
	Changes pitch of original sound in time with the rhythm tempo .			

Parameter descriptions

Parameter	Setting range	Explanation
Depth	Exciter: 0~30	Adjusts depth of effect.
	Other: 0~100	Adjusts modulation depth.
Rate	Chorus, Ensemble: 1~50	Adjusts modulation speed.
	Flanger, Vibe, Step: 0~50 ♪ (P124 Table 1)	Adjusts modulation speed. Using the rhythm tempo as reference, setting in note units is also possible..
Tone	0~10	Adjusts tonal quality.
Mix	0~100	Adjusts mix ratio of effect sound to original sound.
Resonance	Flanger: –10~10	Adjusts resonance intensity. Negative values result in reversed phase for the effect sound.
	Step, Cry: 0~10	Adjusts resonance intensity.
Manual	0~100	Adjust the frequency range that is effected.
Shift	–12~12, 24	Sets pitch shift in semitones.
Fine	–25~25	Sets pitch shift in cents (1/100 semitone).
Balance	0~100	Balances effect sound and original sound.
Shape	0~10	Sets effect sound envelope.
Range	1~10	Adjusts the frequency range that is affected.
Sense	–10~–1, 1~10	Sets the sensitivity of the effect.
Frequency	1~5	Adjusts the frequencies that are effected.
Low Boost	0~10	Emphasizes low-frequency range.
Size	1~100	Sets size of simulated space.
Reflex	0~10	Adjusts the amount of reflections from the walls.
Time	Delay, Analog Delay: 1~2000 ms ♪ (P124 Table 1)	Adjusts delay time.
	Reverse Delay: 10~1000 ms ♪ (P124 Table 1)	
Feedback	0~100	Adjusts feedback amount.
Hi Damp	0~10	Adjusts the high-frequency attenuation of the delay sound.
Type	P124 Table 5	Selects the type of pitch change.
RTM Wave	P124 Table 3	Selects the wave shape of the effect.
RTM Sync	P124 Table 4	Sets the frequency of the wave.

Effect types and parameters 5

• REVERB module

Type	Parameters			
Hall	Decay	PreDelay	Tone	Mix
	Simulates the acoustics of a concert hall			
Room	Decay	PreDelay	Tone	Mix
	Simulates the acoustics of a room			
Spring	Decay	PreDelay	Tone	Mix
	Simulates a spring reverb			
Arena	Decay	PreDelay	Tone	Mix
	Simulates the acoustics of an arena-sized venue			
TiledRoom	Decay	PreDelay	Tone	Mix
	Simulates the acoustics of a tiled room			

Parameter descriptions

Parameter	Setting range	Explanation
Decay	1~30	Adjusts reverb time.
PreDelay	1~100	Adjusts pre-delay time.
Tone	0~10	Adjusts tonal quality of effect.
Mix	0~100	Adjusts effect sound volume level.

• ZNR module

Type	Setting Range	Explanation
ZNR	Off, 1~30	Adjusts sensitivity. Set value as high as possible without causing unnatural decay.
	ZOOM original noise reduction for reducing noise during playing pauses without affecting the overall tone.	

Bass algorithm

• COMP/LIMITER module

Type	Parameters
Rack Comp	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
Limiter	

• EFX module

Type	Parameters				
Auto Wah	Position	Sense	Resonance	Dry Mix	Level
	This effect varies the wah action according to the intensity of the input signal.				
Tremolo	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.				
Phaser					
Ring Modulator					
Slow Attack					
Fix-Wah					

Parameter descriptions

Parameter	Setting range	Explanation
Position	Before, After	Sets insert position of module to before or after PREAMP module.
Sense	–10~–1, 1~10	Adjusts auto wah sensitivity.
Resonance	0~10	Adjusts resonance intensity.
Dry Mix	0~10	Adjusts original sound mix ratio.
Level	2~100	Adjusts signal level after passing module.

• PREAMP module

Type	Parameters				
SVT	Simulation of Ampeg SVT sound.				
Bassman	Simulation of Fender Bassman sound.				
Hartke	Simulation of Hartke HA3500 sound.				
Super Bass	Simulation of Marshall Super Bass sound.				
SANSAMP	Simulation of Sansamp Bass Driver DI sound.				
Tube Preamp	ZOOM original tube preamplifier sound.				
	Gain	Tone	Cabinet	Balance	Level
	All preamp modules have the same parameters.				

Effect types and parameters 6

Parameter descriptions

Parameter	Setting range	Explanation
Gain	0~100	Adjusts preamp gain (distortion depth).
Tone	0~30	Adjusts tonal quality of effect.
Cabinet	0~2	Adjusts intensity of speaker cabinet sound.
Balance	0~100	Adjusts mix balance of signal before and after module.
Level	1~100	Adjusts signal level after passing through module.

• 3BAND EQ module

Type	Parameters			
3Band EQ	Bass	Middle	Treble	Level
	This equalizer has three bands.			

Parameter descriptions

Parameter	Setting range	Explanation
Bass	–12dB~12dB	Boosts/cuts low-frequency range.
Middle	–12dB~12dB	Boosts/cuts middle-frequency range.
Treble	–12dB~12dB	Boosts/cuts high-frequency range.
Level	2~100	Adjusts signal level after passing through module.

• MOD/DELAY module

Type	Parameters
Chorus	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
Ensemble	
Flanger	
Pitch	
Vibe	
Step	
Cry	
Exciter	
Air	
Delay	
Analog Delay	
Reverse Delay	
ARRM Pitch	

• ZNR module

Type	Parameters
ZNR	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

Mic algorithm

• COMP/LIMITER module

Type	Parameters
Rack Comp	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
Limiter	

• EFX module

Type	Parameters
Tremolo	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
Phaser	
Ring Modulator	
Slow Attack	
Fix-Wah	

• MIC PRE module

Type	Parameters				
Mic Pre	Type	Tone	Level	De-Esser	Low Cut
	This is a preamplifier for use with external microphones.				

Parameter descriptions

Parameter	Setting Range	Explanation
Type	Vocal, AcousticGt, Flat	Selects preamp characteristics.
Tone	0~10	Adjusts tonal quality of effect.
Level	1~100	Adjusts signal level after passing through module.
De-Esser	Off, 1~10	Sets the reduction of sibilant sounds.
Low Cut	Off, 80~240Hz	Sets filter that reduces low-frequency noise easily picked up by mics.

Effect types and parameters 7

• 3BAND EQ module

Type	Parameters
3Band EQ	For an explanation of types and parameters, see the BASS algorithm.

• MOD/DELAY module

Type	Parameters
Chorus	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
Ensemble	
Flanger	
Pitch	
Vibe	
Step	
Cry	
Exciter	
Air	
Delay	
Analog Delay	
Reverse Delay	
ARRM Pitch	

• ZNR module

Type	Parameters
ZNR	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

DUAL MIC algorithm

• COMP/LIMITER L module

Type	Parameters			
Compressor	**Threshold**	**Ratio**	**Attack**	**Level**
	Reduces variation in signal level.			
Limiter	**Threshold**	**Ratio**	**Release**	**Level**
	Attenuates signals that exceed a certain level.			

Parameter descriptions

Parameter	Setting range	Explanation
Threshold	–24~0	Adjusts threshold level of compressor/limiter.
Ratio	Compressor: 1~26	Adjusts compression ratio of compressor/limiter.
	Limiter: 1~54, ∞	
Attack	0~10	Adjusts speed that at which the compressor is activated.
Level	2~100	Adjusts module output level.
Release	0~10	Adjusts speed of limiter release after signal falls below threshold level.

• MIC PREAMP L module

Type	Parameters
Mic Pre	For an explanation of types and parameters, see MIC algorithm.

• 3BAND EQ L module

Type	Parameters
3Band EQ	For an explanation of types and parameters, see BASS algorithm.

• DELAY L module

Type	Parameters		
Delay	**Time**	**Feedback**	**Mix**
	Delay effect with a maximum setting of 2000 ms.		
Echo	**Time**	**Feedback**	**Mix**
	Warm delay effect with a maximum setting of 2000 ms.		
Doubling	**Time**	**Tone**	**Mix**
	Doubling effect that creates body by adding a short delay.		

Parameter descriptions

Parameter name	Setting range	Explanation
Time	Delay, Echo: 1~2000ms ♪ (P124 Table 1)	Adjusts delay time.
	Doubling: 1~100ms	
Feedback	0~100	Adjusts feedback amount.
Tone	0~10	Adjusts tonal quality of effect.
Mix	0~100	Adjusts mix ratio of effect sound to original sound.

Effect types and parameters 8

• COMP/LIMITER R module

Type	Parameters
Compressor	For an explanation of types and parameters, see COMP/LIMITER L algorithm.
Limiter	

• MIC PREAMP R module

Type	Parameters
Mic Pre	For an explanation of types and parameters, see MIC algorithm.

• 3BAND EQ R module

Type	Parameters
3Band EQ	For an explanation of types and parameters, see BASS algorithm.

• DELAY R module

Type	Parameters
Delay	For an explanation of types and parameters, see DELAY algorithm.
Echo	
Doubling	

• ZNR module

Type	Parameters
ZNR L	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
ZNR R	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

Stereo algorithm

• COMP/LIMITER module

Type	Parameters					
Compressor	For an explanation of types and parameters, see DUAL MIC algorithm.					
Limiter						
Lo-Fi	Character	Color	Dist	Tone	EFX Level	Dry Level
	This effect intentionally reduces the quality of the sound.					

Parameter descriptions

Parameter	Setting range	Explanation
Character	0~10	Adjusts filter characteristics.
Color	1~10	Adjusts sound color.
Dist	0~10	Adjusts distortion.
Tone	0~10	Adjusts tonal quality of effect.
EFX Level	0~100	Adjusts effect sound level.
Dry Level	0~100	Adjusts original sound level.

• ISO/MIC MODEL module

Type	Parameters				
Isolator	Xover Lo	Xover Hi	Mix High	Mix Mid	Mix Low
	Divides the signal into three frequency bands and allows the mix amount of each band to be adjusted separately.				
Mic Modeling	Mic Type				
	Changes built-in mi characteristics.				

Parameter descriptions

Parameter	Setting range	Explanation
Xover Lo	50Hz~16kHz	Adjusts low-to-mid crossover frequency.
Xover Hi	50Hz~16kHz	Adjusts mid-to-high crossover frequency.
Mix High	Off, –24 ~6	Adjusts high frequency range mix level.
Mix Mid	Off, –24 ~6	Adjusts mid frequency range mix level.
Mix Low	Off, –24 ~6	Adjusts low frequency range mix level.
Mic Type	SM57	Simulation of SM57 mic, which is great for recording electric guitars and other analog instruments.
	MD421	Simulation of MD421 professional standard mic that is indispensable in broadcasting, recording and live performances.
	U87	Simulation of U87, a condenser type microphone that sets standards and is used in studios worldwide.
	C414	Simulation of C414, a famous microphone highly trusted in recording situations.

Effect types and parameters 9

• 3BAND EQ module

Type	Parameters
3Band EQ	For an explanation of types and parameters, see BASS algorithm.

• MOD/DELAY module

Type	Parameters							
Chorus	**Depth**		**Rate**		**Mix**			
	Mixes a variable pitch-shifted component with the original sound, resulting in full-bodied resonating tone.							
Flanger	**Depth**		**Rate**		**Resonance**			
	Produces a resonating and strongly undulating sound.							
Phaser	**Rate**		**Color**		**LFO Shift**			
	Produces a swooshing sound.							
Tremolo	**Depth**		**Rate**		**Clip**			
	Periodically varies the volume level.							
Auto Pan	**Width**		**Rate**		**Clip**			
	Swings the panning position of the sound between left and right.							
Pitch	**Shift**		**Tone**		**Fine**		**Balance**	
	Shifts the pitch up or down.							
Ring Modulator	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.							
Delay	**Time**		**Feedback**		**Mix**			
	Delay effect with a maximum setting of 2000 ms.							
Echo	**Time**		**Feedback**		**Mix**			
	Warm delay effect with a maximum setting of 2000 ms.							
Doubling	**Time**		**Tone**		**Mix**			
	Doubling effect which creates body by adding a short delay.							
Dimension	**Rise1**		**Rise2**					
	Expands sound spatially.							
Resonance	**Depth**	**Freq OFST**	**Rate**	**Filter**	**Resonance**	**EFX Level**	**Dry Level**	
	Resonant filter with LFO.							

Parameter descriptions

Parameter	Setting range	Explanation
Depth	0~100	Adjusts modulation depth.
Resonance	–10~10	Adjusts resonance intensity. Negative values result in reversed phase for the effect sound.
Color	4Stage, 8Stage, Invert4, Invert8	Selects sound type.
LFO Shift	0~180	Adjusts left/right phase shift.
Width	0~10	Adjusts auto pan width.
Rate	0~50 ♪ (P124 Table 1)	Adjusts modulation speed. Using the rhythm tempo as reference, setting in note units is also possible.
Clip	0~10	Adds emphasis by clipping the modulation waveform.
Shift	12~12, 24	Adjusts the pitch shift in semitones.
Time	Delay, Echo: 1~2000ms ♪ (P124 Table 1)	Adjusts delay time.
	Doubling: 1~100ms	
Feedback	0~100	Adjusts feedback amount.
Mix	~100	Adjusts mix ratio of effect sound to original sound.
Tone	~10	Adjusts tonal quality of effect.
Fine	–25~25	Adjusts the pitch shift in cents (1/100 semitone).
Balance	0~100	Adjust balance between original sound and effect sound.
Rise1	0~30	Adjusts stereo component intensity.
Rise2	0~30	Adjusts width including mono elements.
Freq OFST	1~30	Adjusts LFO offset.
Filter	HPF, LPF, BPF	Selects filter type.
Resonance	1~30	Adjusts resonance intensity.
EFX Level	0~100	Adjusts effect sound level.
Dry Level	0~100	Adjusts original sound level.

• ZNR module

Type	Parameters
ZNR	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS algorithms.

Effect types and parameters 10

Table 1

Parameters marked with ♪ allow values to be set in note units, using the song/pattern tempo as reference.
The note durations for the setting values are shown below.

𝅘𝅥𝅯	32nd note	𝅘𝅥𝅯.	Dotted 16th note	𝅘𝅥𝅯.	Dotted 8th note	♩×2	Delay, Analog Delay and Echo can use up to x8. Reverse Delay can use up to x4.
𝅘𝅥𝅯	16th note	𝅘𝅥𝅯	8th note	♩	Quarter note	:	
♩3	Quarter note triplet	♩3	Half note triplet	♩.	Dotted quarter note	♪×20	

NOTE
• The note range actually available depends on the parameter.
• Depending on the combination of tempo setting and selected note symbol, the parameter variation range could be exceeded. In such a case, the value is automatically halved (or set to 1/4 if the range is still exceeded).

Table 2

Setting	Explanation
Off	Frequency does not change.
Up	Frequency changes from minimum to maximum along with the controlling waveform.
Down	Frequency changes from maximum to minimum along with the controlling waveform.
Hi	Frequency changes from patch setting to maximum along with the controlling waveform.
Lo	Frequency changes from minimum to patch setting along with the controlling waveform.

Table 3

Setting	Explanation	Setting	Explanation
Up Saw	Rising sawtooth wave	**Tri**	Triangular wave
Up Fin	Rising fin wave	**TrixTri**	Squared triangular wave
DownSaw	Falling sawtooth wave	**Sine**	Sine wave
DownFin	Falling fin wave	**Square**	Square wave

Table 4

Setting	Explanation	Setting	Explanation
♪	8th note	**1 bar**	1 measure
♩	Quarter note	**2 bars**	2 measures
𝅗𝅥	Half note	**3 bars**	3 measures
𝅗𝅥.	Dotted half note	**4 bars**	4 measures

Table 5

Setting	Explanation
1	1 semitone lower → original sound
2	Original sound → 1 semitone lower
3	Doubling → detune + original sound
4	Detune + original sound → doubling
5	Original sound → 1 octave higher
6	1 octave higher → original sound
7	Original sound → 2 octaves lower
8	2 octaves lower → original sound
9	1 octave higher + original sound → 1 octave lower + original sound
10	Complete fifth down + original sound → complete fourth up + original sound
11	Complete fourth up + original sound → complete fifth down + original sound
12	0 Hz + original sound → 1 octave up
13	1 octave up → 0 Hz + original sound
14	0 Hz + original sound → 1 octave up + original sound
15	1 octave up + original sound → 0 Hz + original sound
16	1 octave up + original sound → 0 Hz + original sound

8x Comp EQ algorithm

Module 1~8

Unit	Type	Setting range	Explanation
HPF Freq	HPF	80~240Hz	Sets the cut off frequency.
		This filter cuts low frequencies and passes high-frequencies.	
Comp Type	Rack Comp	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.	
	Limiter		
EQ Type	See the BASS algorithm for details.		

Mastering algorithm

• COMP/Lo-Fi module

Type	Parameters							
	Xover Lo	**Xover Hi**	**Sense Hi**	**Sense Mid**	**Sense Low**	**Mix High**	**Mix Mid**	**Mix Low**
3Band Comp	Compressor that divides signal into 3 bands that can be compressed and mixed separately.							
Lo-Fi	For an explanation of the types and parameters, see the STEREO algorithm.							

Parameter descriptions

Parameter	Setting range	Explanation
Xover Lo	50Hz~16kHz	Adjusts low-to-mid crossover frequency.
Xover Hi	50Hz~16kHz	Adjusts mid-to-high crossover frequency.
Sense Hi	0~24	Adjusts high range compressor sensitivity.
Sense Mid	0~24	Adjusts mid range compressor sensitivity.
Sense Low	0~24	Adjusts low range compressor sensitivity.
Mix High	Off, –24~6	Adjusts high frequency range mix level.
Mix Mid	Off, –24~6	Adjusts mid frequency range mix level.
Mix Low	Off, –24~6	Adjusts low frequency range mix level.

Effect types and parameters 11

• NORMALIZER module

Type	Parameters	
Normalizer	Gain	
	Adjusts COMP/Lo-Fi module input level..	

Parameter descriptions

Parameter	Setting range	Explanation
Gain	–12~12	Adjusts level.

• 3BAND EQ module

Type	Parameters
3Band EQ	For an explanation of types and parameters, see BASS algorithm.

• DIMENSION/RESO module

Type	Parameters
Dimension	For an explanation of types and parameters, see the STEREO algorithm..
Resonance	

• ZNR module

Type	Parameters
ZNR	For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

Send-return effects

• CHORUS/DELAY module

Type	Parameters					
Chorus	LFO Type	Depth	Rate	Pre Delay	EFX Level	
	Mixes a variable pitch-shifted component with the original sound, resulting in full-bodied resonating tone.					
Delay	Time	Feedback	Hi Damp	Pan	EFX Level	Rev Send
	Delay effect with a maximum delay of 2000 ms.					

Parameter descriptions

Parameter	Setting range	Explanation
LFO Type	Mono, Stereo	Sets LFO phase to mono or stereo.
Depth	0~100	Adjusts effect depth.
Rate	1~50	Adjusts modulation speed.
Pre Delay	1~30	Adjusts pre-delay time.
EFX Level	0~100	Adjusts effect sound level.
Rev Send	0~30	Adjusts delay sound reverb send level.
Time	1~2000ms ♪(124 Table 1)	Adjusts delay time.
Feedback	0~100	Adjusts feedback amount.
Hi Damp	0~10	Adjusts amount high-frequency range in delay sound is reduced.
Pan	Left10~Left1, Center, Right1~Right10	Adjusts delay sound panning.

• REVERB module

Type	Parameters					
Hall	Simulates the acoustics of a concert hall.					
Room	Simulates the acoustics of a room.					
	Pre Delay	Decay	EQ High	EQ Low	E.R.Mix	EFX Level
	Hall and Room have the same parameters.					
Spring	Simulates a spring reverb.					
Plate	Simulates a plate reverb.					
	Pre Delay	Decay	EQ High	EQ Low	EFX Level	
	Spring and Plate have the same parameters.					

Parameter descriptions

Parameter	Setting range	Explanation
Pre Delay	1~100	Adjusts pre-delay time.
Decay	1~30	Adjusts reverb time.
EQ High	–12~6	Adjusts volume of high-frequency range effect sound.
EQ Low	–12~6	Adjusts volume of low-frequency range effect sound.
E.R.Mix	0~30	Adjusts mix ratio of initial reflections.
EFX Level	0~30	Adjusts effect sound level.

Effect patch list 1

Effect patch list

Insert effects

Clean/Crunch algorithm

No.	Patch name	Description
0	**Z CLEAN**	ZOOM original unadorned clean sound
1	**Z CHORUS**	Sound combines "Z CLEAN" with "Chorus" for a clear sound that is great for arpeggios
2	**FdClean**	Clean-crunch sound of Fender Twin Reverb black panel loved by guitarists of various genres
3	**VxCrunch**	British crunch sound of a VOX AC30 operating in Class A
4	**TWEED**	Fender Bassman recreation dry crunch sound with a suitable amount of sustain
5	**BgCrunch**	Mesa/Boogie MKIII combo amp crunch sound
6	**HwLight**	Hiwatt Custom 100 from clean to crunch
7	**MsCrunch**	Marshall 1959 crunch sound becomes cleaner as the guitar volume is reduced
8	**HwCrunch**	Hiwatt Custom 100 fat crunch sound
9	**JM Lead**	Compressed lead sound of John Mayer's "Gravity"
10	**BS Riff**	Brian Setzer's rockabilly sound from the Stray Cats' "Rock This Town"
11	**BROTHER**	George Benson's unique fat jazz sound is mellow an with an attack
12	**Edge**	Bright and clean sound with U2 guitarist The Edge's finely calculated delay added
13	**ClnStep**	Special effect sound that imagines water using "Z CLEAN" and "Step"
14	**CutPhase**	Phase sound with great attack is perfect for cutting guitar and other playing techniques
15	**Ambient**	Combination of "Slow Attack" and delay to create an ambient sound
16	**Space**	Combination of "Reverse Delay" and phaser creates a clean sound with width
17	**FdComp**	Fender Twin Reverb and compressor clean sound great for cutting guitar
18	**Fd Wah**	Auto-wah patch with the natural distortion of an FD Combo amp added as the secret ingredient
19	**60sSPY**	Bizarre sound similar to a 60's spy movie
20	**Flower**	Combination of phaser and "Vibe" crates a psychedelic worldly sound
21-29	**Empty**	

Distortion algorithm

No.	Patch name	Description
0	**MsDrive**	Marshall 1959 drive sound that follows volume changes and provides outstanding dynamics
1	**MdRhythm**	Marshall JCM2000 sound for backing parts is heavy, but still has the unique Marshall sound
2	**PvRhythm**	Peavey 5150 backing part sound with bite that stands out when riffing fast
3	**DzRhythm**	Diezel Herbert sound for heavy backing parts
4	**Recti**	Unique powerful thick sound of the MESA/BOOGIE Rectifier
5	**FullVx**	Sound of Vox AC30 at full volume with room reverb that creates a boxy feeling.
6	**TexasMan**	Texas blues sound of a Fender Bassman with the volume all the way up
7	**BgLead**	MESA/BOOGIE MKIII beautiful drive sound great for lead play with long sustain
8	**FatOd**	Natural overdriven sounds like OD-1 with EQ and can be used backing part and solos
9	**TsDrive**	Tube Screamer overdrive good for all around use
10	**GvDrive**	Guv'nor pedal is great for hard rock sound
11	**dist+**	Drive sound with distortion
12	**DS1**	DS-1 sound modified with extra low end
13	**RAT**	Well sustained lead sound of RAT
14	**FatFace**	Fuzz sound with enhanced FUZZ FACE low end
15	**MuffDrv**	BIG MUFF high gain sound
16	**M World**	Shrapnel-style guitarist sound using Metal Zone
17	**HOT DRV**	Mild driven sound made by the tube saturation of HOT BOX tubes
18	**Z NEOS**	Recreation of modified VOX AC30 creamy crunch sound.
19	**Z WILD**	ZOOM's original hard overdrive sound with extra boost creates a compressed feeling
20	**Z MP1**	Hybrid sound from combination of ADA MP1 and Marshall JCM800
21	**Z Bottom**	ZOOM original high gain sound with rich mids and lows that is great for 80's metal
22	**Z DREAM**	ZOOM original high gain sound great for leads
23	**Z SCREAM**	ZOOM original high gain sound with balanced low to high frequencies cuts through mix
24	**LEAD**	ZOOM's classic lead sound with strong mid-boost and long sustain necessary for soloing
25	**EXT DS**	Extreme digital distortion that pushes the limits
26	**EC LEAD**	Recreation of Eric Clapton's "Layla" lead Fender crunch sound is great sound for guitars with single-coil pickups.
27	**JimiFuzz**	Jimi Hendrix phase sound simulates Octavia using "PitchSHFT"
28	**DT Slide**	Tight tube-amp sound of "Leaving Trunk" by Derek Trucks
29	**KC Solo**	Nirvana "Smells Like Teen Spirit" sound

Effect patch list 2

30	**Every BG**	Buddy Guy's blues sound is dry and overdriven and adds color to any blues lick
31	**EVH1959**	Early Eddie Van Halen sound
32	**BrianDrv**	Brian May drive sound recreated using "Z Neos"
33	**RitchStd**	Sound that Deep Purple's Ritchie Blackmore used recording "Machine Head"
34	**Carlos**	Smooth sound used by Carlos Santana in album recording recreated using "BG Crunch"
35	**PeteHW**	Pete Townshend crunch sound using Hiwatt with clean amp turned all the way up for a powerful tone
36	**JW Talk**	Recreation of the talkbox sound used by Joe Walsh in his "Rocky Mountain Way" solo
37	**Kstone**	Keith Richards's classic intro sound can be heard in The Rolling Stones' "Satisfaction"
38	**RR Mtl**	80's Metal sound with distinctive midrange based on the Metal Zone
39	**SV LEAD**	Stack sound that boldly cuts through the midrange is good for huge guitar solos
40	**Monster**	Weird tone that mixes a heavy sound with a doubling an octave down
41	**FatMs**	Drive sound with detuning added to thicken the sound is great for power chords and backing parts
42	**SlowFlg**	Jet sound combining "Slow Attack" with flanger
43	**DmgFuzz**	Psychedelic tone that adds "Ring Modulator" to fuzz sound that cuts fiercely through low frequencies
44	**Recti Wah**	Bold high gain sound with auto-wah and a short delay added
45-49	**Empty**	

Aco/Bass SIM algorithm

No.	Patch name	Description
0	**Ensemble**	Gorgeous sound with deep ensemble effect.
1	**Delay LD**	Lively acoustic guitar sound for lead playing.
2	**Chorus**	Chorus sound suitable for everything from rhythm guitar to lead guitar.
3	**FineTune**	Detuning creates sonic depth.
4	**Air Aco**	Air sound makes it sound like recording with a mic.
5	**Standard**	Standard bass sound with many uses.
6	**CompBass**	Bass sound comes alive with compressor and exciter.
7	**WarmBass**	Bass sound with warm and round feeling.
8	**Flanging**	Flanging sound covers a lot of ground from 16-beat phrases to melody playing.
9	**Auto Wah**	Funky bass sound that makes good use of auto wah-
10-19	**Empty**	

Bass algorithm

No.	Patch name	Description
0	**SVT**	Royal rock sound great for finger-picking and flatpicking.
1	**BASSMAN**	Vintage rock sound for any occasion.
2	**HARTKE**	Hartke simulation with all the glitz and glitter.
3	**SUPER-B**	Great for guitar unison and solo play.
4	**SANS-A**	Edgy sound with a strong core that is a good match for flatpicking.
5	**TUBE PRE**	All-round tube sound.
6	**Attack**	Compression sound effective for slap and flatpick playing.
7	**Wah-Solo**	Solo sound with distortion and a touch of wah. Pitch shift is the secret ingredient.
8	**Talk&Cry**	Typical special effect that makes a crying sound like a talking modulator.
9	**Melody**	Chorus sound for melody, solo, chord and harmonic playing.
10	**SlapJazz**	Basic slap sound in the jazz bass style.
11	**Destroy**	Smashing sound mixing distortion, pitch shifting and ring modulation.
12	**Tremolo**	Great match for moody bass lines and chord playing.
13	**SoftSlow**	Melody or solo play tone that is great for fretless bass.
14	**Limiter**	Limiter evens out the sound when using a pick.
15	**X'over**	Flanger sound for picking, typical of the crossover genre.
16	**CleanWah**	Auto wah sound that has many uses.
17	**Exciter**	All-around sound with a fresh and transparent character.
18	**ClubBass**	Sound that simulates the ambience of a small club and is suitable for walking bas lines.
19	**DriveWah**	Auto wah sound with variable drive that follows picking dynamics.
20-29	**Empty**	

Mic algorithm

No.	Patch name	Description
0	**Rec Comp**	Conventional preamp and compression sound for recording.
1	**RoomAmbi**	Simulates the ambience of a radio station studio.
2	**VocalDly**	Delay effect that works best with wet vocals. .
3	**Rock**	Heavy compression sound for rock vocals

Effect patch list 3

4	**Long DLY**	Long delay sound for vocals (2-beat at 120 bpm)
5	**InTheBOX**	This effect seems to put the entire sound into a small box
6	**Limiter**	Limiter effect that is very useful for recording
7	**AG MIC**	Preamp tone that is great for recording acoustic guitar
8	**AG Dub**	Doubling sound that gives a stroke more of a pick feeling
9	**12st Cho**	Chorus sound for 12-string guitar
10	**AG-Jumbo**	Increases the apparent body size of an acoustic guitar
11	**AG-Small**	Reduces the apparent body size of an acoustic guitar
12	**AG Lead**	Delay sound for acoustic guitar leads
13	**Live AMB**	Bright reverb sound for acoustic guitar increases the live feeling
14	**Tunnel**	Simulation of tunnel reverb
15	**Filter**	Filter effect lets you change the sound character during a song, for example.
16	**BrethCmp**	Fairly strong compressor sound emphasizes breathiness
17	**Vib MOD**	Crafty vocal sound combines phaser and vibrato
18	**Duet Cho**	Detuned sound creates an instant duet
19	**Ensemble**	Fresh ensemble sound great for chorus
20	**VocalDub**	Conventional doubling sound
21	**Sweep**	Voice sound with slow phase sweep
22	**VoiceFlg**	Flanging chorus sound with strong modulation
23	**PH Voice**	Gimmicky phase sound seasoned with delay
24	**VibVoice**	Clear-cut vibrato sound
25	**FutureVo**	A message from the aliens
26	**M to F**	Transforms male vocals into a female sound
27	**F to M**	Transforms female vocals into a male sound
28	**WaReWaRe**	Special effect sounds like a talking spaceman
29	**Hangul**	Special effect makes Japanese sound like Korean
30-49	**Empty**	

Dual Mic algorithm

No.	Patch name	Description	Suggested left/right inputs
0	**Vo/Vo 1**	For duets	Vocals
1	**Vo/Vo 2**	Chorus for main vocals	Vocals
2	**Vo/Vo 3**	For harmony singing	Vocals
3	**AG/Vo 1**	Creates a story-like character	Acoustic guitar/Vocal
4	**AG/Vo 2**	Similar to AG/Vo 1 but vocal character different	Acoustic guitar/Vocal
5	**AG/Vo 3**	Aggressively modifies vocal character	Acoustic guitar/Vocal
6	**ShortDLY**	Short delay sound with effective doubling	Microphones
7	**FatDrum**	For drum recording with single point stereo mic	Microphones
8	**BothTone**	Condenser mic sound for men on L channel and women on R channel	Vocals
9	**Condnser**	Simulates condenser mic sound with dynamic mic input	Vocals
10	**DuoAtack**	Chorus for lead vocals with emphasized attack	Vocals
11	**Warmth**	Warm sound with prominent midrange	Vocals
12	**AM Radio**	Simulates AM mono radio	Vocals
13	**Pavilion**	For narration that captures sound of demonstration at an exposition booth	Vocals
14	**TV News**	TV newscaster sound	Vocals
15	**F-Vo/Pf1**	For female vocal piano ballads	Vocal/Piano
16	**JazzDuo1**	Simulates jazz session LP with slightly lo-fi sound	Vocal/Piano
17	**Cntmprry**	All around sound with distinct variation	Vocal/Piano
18	**JazzDuo2**	JazzDuo 1 for male vocals	Vocal/Piano
19	**Ensemble**	For balance of guitar with strong attack and mellow piano	Acoustic guitar/Piano
20	**Enhanced**	Emphasizes sound characteristics, optimal for ballads	Acoustic guitar/Vocal
21	**Warmy**	Moderates overbright ambience	Acoustic guitar/Vocal
22	**Strum+Vo**	Smooth fat sound with midrange enhancement	Acoustic guitar/Vocal
23	**FatPlus**	Augments weak midrange	Acoustic guitar/Vocal
24	**Arp+Vo**	Overall solid sound	Acoustic guitar/Vocal
25	**ClubDuo**	Simulates live sound in small club	Acoustic guitars
26	**BigShape**	Enhances overall clarity	Acoustic guitars
27	**FolkDuo**	Fresh and clean sound	Acoustic guitars
28	**GtrDuo**	Suitable for acoustic guitar duos	Acoustic guitars
29	**Bright**	Bright, sharp, global feeling	Acoustic guitars
30-49	**Empty**		

Effect patch list 4

Stereo algorithm

No.	Patch name	Description
0	**Syn-Lead**	For single-note synthesizer lead
1	**OrganPha**	Phaser for synthesizer/organ
2	**OrgaRock**	Boomy distortion for rock organ
3	**EP-Chor**	Beautiful chorus for electric piano
4	**ClavFlg**	Wah for clavinet
5	**Concert**	Concert hall effect for piano
6	**Honkey**	Honky-tonk piano simulation
7	**PowerBD**	Gives bass drum more power
8	**DrumFlng**	Conventional flanger for drums
9	**LiveDrum**	Simulates outdoor live doubling
10	**JetDrum**	Phaser for 16-beat hi-hat
11	**AsianKit**	Changes a standard kit to an Asian kit
12	**BassBost**	Emphasizes low-frequency range
13	**Mono->St**	Gives spaciousness to a mono source
14	**AM Radio**	AM radio simulation
15	**WideDrum**	Wide stereo effect for drum machine tracks
16	**DanceDrm**	Reinforces bass frequencies for dance rhythms
17	**Octaver**	Adds sound one-octave lower
18	**Percushn**	Gives air, presence, and stereo spread to percussion
19	**MoreTone**	Increases midrange frequencies, giving more body to distorted guitar
20	**SnrSmack**	Emphasizes snappiness of snare sound
21	**Shudder!**	Sliced sound for techno tracks
22	**SwpPhase**	Phaser with powerful resonance
23	**DirtyBiz**	Lo-fi distortion using ring modulator
24	**Doubler**	Doubling for vocal track
25	**SFXlab**	Gives synthesizer powerful special effect sound
26	**SynLead2**	Old-style jet sound for synthesizer lead
27	**Tekepiko**	For sequenced phrases or single note muted guitar
28	**Soliner**	Simulates analog strings ensemble
29	**HevyDrum**	For hard rock drums
30	**SM57Sim**	Simulation of SM57 mic, which is great for recording electric guitars and other analog instruments.
31	**MD421Sim**	Simulation of MD421 professional standard mic that is indispensable in broadcasting, recording and live.
32	**U87Sim**	Simulation of U87, a condenser type microphone that sets standards and is used in studios worldwide.
33	**C414Sim**	Simulation of C414, a famous microphone highly trusted in recording situations.
34	**Doubling**	Creates doubled sounds as if the entire sound body became thicker
35	**ShortDLY**	Delay sound suitable for vocals and field recordings that has a gimmicky effect
36	**Lo-Fi**	Creates lo-fi sound with a nostalgic feeling as if coming from a radio
37	**Limiter**	A limiter very effective on band rehearsals and live recording
38	**BoostPls**	Adds overall sound pressure during recording
39	**All Comp**	Compressor evens out volume differences between instruments in a band performance, for example
40-49	**Empty**	

8x COMP EQ algorithm

No.	Patch name	Description	Recommended inputs 1 - 8	
0	**VoclBand**	General purpose patch for vocal band	**1**	Guitar amp
			2	Bass amp
			3	Vocal
			4	Chorus
			5-6	Drums
			7-8	Keyboard
1	**Inst**	For jazz fusion bands	**1-2**	Guitar amp
			3	Bass amp
			4	Piano
			5-6	Drums
			7-8	Keyboard
2	**AcoBand**	For acoustic bands	**1**	Acoustic bass
			2	Piano
			3	Vocal
			4	Chorus
			5-6	Acoustic guitar
			7-8	Percussion

Effect patch list 5

3	**1ManBand**	For self-production	**1-2**	Guitar
			3	Bass
			4	Keyboard
			5	Vocal
			6	Chorus
			7-8	Sequencer
4	**StdDrum**	Standard sounds for recording each drum in a kit	**1**	Bass drum
			2	Snare drum
5	**VtgDrum**	1970s drum sound with enhanced hi-hat	**3**	Hi-hat
			4	High tom
6	**EhcdDrum**	Punchy compressed drum sound	**5**	Mid tom
			6	Low tom
			7-8	Overhead mics
7	**Percus**	Suitable for recording individual percussion sounds	**1-2**	Small percussion
			3-4	Cymbals/bells
			5-6	Drums
			7-8	All percussion together
8	**CompLtr**	Versatile, mellow sound	**1-8**	
9	**A Capla**	For a cappella groups	**1-2**	Female vocals
			3-4	Male vocals
			5-6	Vocal duo
			7-8	All vocals together
10-19	**Empty**			

Mastering algorithm

No.	Patch name	Description
0	**PlusAlfa**	Enhances the overall power
1	**All-Pops**	Conventional mastering
2	**StWide**	Wide-range mastering
3	**DiscoMst**	For club sound
4	**Boost**	For hi-fi finish
5	**Power**	For a powerful low range
6	**Live**	Adds a live feel
7	**WarmMst**	Adds a warm feeling
8	**TightUp**	Adds a tight feeling
9	**1930Mst**	Mastering with 1930's sound
10	**LoFi Mst**	Lo-fi mastering
11	**BGM**	Mastering for background music
12	**RockShow**	Gives a rock style mix a live feel
13	**Exciter**	Lo-fi mastering with slight distortion in mid and upper range
14	**Clarify**	Emphasizes high-end range
15	**VocalMax**	Brings buried vocals to the foreground
16	**RaveRez**	Special sweep effect using sharp filter
17	**FullComp**	Strong compression over full frequency range
18	**ClearPWR**	Power tuning emphasizes midrange and adds sound pressure and clarity
19	**ClearDMS**	Enhances clarity and spaciousness
20	**Maximizr**	Boosts overall sound pressure level
21-29	**Empty**	

Effect patch list 6

Send-return effects

REVERB

No.	Patch name	Description
0	**TightHal**	Hall reverb with a hard tonal quality
1	**BrgtRoom**	Room reverb with a hard tonal quality
2	**SoftHall**	Hall reverb with a mild tonal quality
3	**LargeHal**	Simulates the reverberation of a large hall
4	**SmallHal**	Simulates the reverberation of a small hall
5	**LiveHous**	Simulates the reverberation of a club
6	**TrStudio**	Simulates the reverberation of a rehearsal studio
7	**DarkRoom**	Room reverb with a gentle tonal quality
8	**VcxRev**	Tuned to enhance vocals
9	**Tunnel**	Simulates the reverberation of a tunnel
10	**BigRoom**	Simulates the reverberation of a gym-sized room
11	**PowerSt.**	Gate reverb
12	**BritHall**	Simulates the bright reverb of a concert hall
13	**BudoKan**	Simulates the reverberation at the Budokan in Tokyo
14	**Ballade**	For slow ballads
15	**SecBrass**	Reverb for brass section
16	**ShortPla**	Short reverb
17	**RealPlat**	Spring reverb simulation
18	**Dome**	Reverb simulates playing in a domed-stadium
19	**VinSprin**	Simulates analog spring reverb
20	**ClearSpr**	Clear reverb with short reverb time
21	**Dokan**	Simulates the reverberation of a clay pipe
22-29	**Empty**	

CHORUS/DELAY

No.	Patch name	Description
0	**ShortDLY**	Standard short delay
1	**GtChorus**	Chorus to enhance weak guitar sound
2	**Doubling**	Versatile doubling
3	**Echo**	Showy analog-style delay
4	**Delay3/4**	Dotted-8th-note delay in sync with tempo
5	**Delay3/2**	Dotted-quarter-note delay in sync with tempo
6	**FastCho**	Fast-rate chorus
7	**DeepCho**	Versatile deep chorus
8	**Vocal**	Chorus that enhances vocals
9	**DeepDBL**	Deep doubling
10	**SoloLead**	Keeps fast phrases tight
11	**WarmyDly**	Simulates warm analog delay
12	**EnhanCho**	Enhancer that uses phase-shifted doubling
13	**Detune**	For instruments with strong harmonics such as a digital electronic piano or synthesizer
14	**Natural**	Chorus with low modulation suitable for backing parts
15	**Whole**	Whole-note delay in sync with tempo
16	**Delay2/3**	Half-triplet-note delay in sync with tempo
17	**Delay1/4**	16th-note delay in sync with tempo
18-29	**Empty**	

Error message list

If you see a message like "---Error" push the **EXIT** key. When other errors and messages occur, the displayed screen will automatically close in three seconds.

Message	Meaning	Response
Messages that indicate something is missing		
No Card	There is no card inserted.	Make sure that an SD card is inserted correctly.
No Project	There is no project.	Check that the project has not been deleted or moved to a different place.
No File	There is no file in the project.	Check that the file has not been deleted or stored in a different place.
No USB Device	There is no USB connection.	The connection may have been canceled or there may be a problem with the cable.
Messages that are shown frequently		
Reset DATE/TIME	Setting lost because the batteries died.	Set the DATE/TIME again. → P14
Low Battery!	Time to change the batteries.	Change batteries or connect the adapter.
Stop Recorder	The function you tried cannot be accessed during playback/recording.	Stop the recorder first, and then try again..
Messages that indicate the object is protected		
Card Protected	The SD card is protected.	Eject the SD card, unlock its write-protection and then insert it again. → P12
Project Protected	The project is protected.	Disable using the PROTECT menu. → P89
File Protected	This file is read-only, so you cannot write to it.	Disable the read-only status of the file using a computer, for example.
Messages that indicate the capacity or structural limit has been exceeded		
Card Full	The card is full.	Change to a new card or delete unneeded data.
Project Full	No more projects can be saved on the card.	Delete unneeded projects.
File Full	The maximum number of files has been exceeded.	Delete unneeded files.
USB Device Full	The connected USB device is full.	Change the connected USB device or delete data.
Messages that indicate access failure		
Card Access Error	Unable to read or write to the card.	Press EXIT and try the operation again.
Project Access Error	Unable to read or write to the project.	Press EXIT and try the operation again.
File Access Error	Unable to read or write to the file.	Press EXIT and try the operation again.
USB Device Access Error	Unable to read or write to the connected USB device.	Press EXIT and try the operation again.
Card Format Error	This card is not in a format the unit can use.	Change the card format to one that the unit can use.
File Format Error	This file is not in a format the unit can use.	Change the file format to one that the unit can use.
USB Device Format Error	This USB device is not in a format the unit can use.	Change the USB format to one that the unit can use.
Other error messages		
Card Error	An error of some kind is occurring.	Press EXIT and try the operation again.
Project Error		
File Error		
USB Device Error		

Specifications

Section			R24
Recorder	Track count		24 (mono)
	Maximum number of simultaneous recording tracks		8
	Maximum number of simultaneous playback tracks		24 audio +metronome
	Recording data format		44.1/48 kHz, 16/24bit WAV format
	Maximum recording time		200 minutes/1 GB (44.1 kHz 16-bit, mono tracks)
	Projects		1000
	Markers		100/project
	Locator		Hours/minutes/seconds/milliseconds and bars/beats/ticks
	File editing		Divide, trimming
	Other functions		Punch-in/out (manual, auto), bounce, A-B repeat, undo/redo
Audio Interface	Number of recording channels		8
	Number of playback channels		2
	Quantization bit-rate		24
	Sampling frequency		44.1, 48, 88.2, 96 kHz
Mixer	Faders		9 (mono x 8, master x 1)
	Level meter display		4-segment display
	Track parameters		3-band equalizer, pan (balance), effect send x 2, invert
	Stereo link		Tracks 1/2~23/24 selectable in pairs
Effect	Algorithms		9 (CLEAN, DISTORTION, ACO/BASS, BASS, MIC, DUAL MIC, STEREO, 8xCOMP EQ, MASTERING)
	Patches		330 insert, 60 send-return
	Effect Modules		7 insert, 2 send
	Tuner		Chromatic, guitar, bass, open A/D/E/G, D modal
Rhythm	Voices		8
	Sound format		16-bit linear PCM
	Drum kits		10
	Pads		8 (velocity-sensitive)
	Precision		48 PPQN
	Rhythm patterns		511/project
	Tempo		40.0~250.0 BPM
Sampler	Playback formats		44.1/48 kHz, 16/24-bit WAV format
	Editing functions		Trim, time-stretch
Hardware	Recording media		SD card (16MB-2GB), SDHC card (4-32GB)
	Analog-digital conversion		96kHz 24bit delta-sigma ADC
	Digital-analog conversion		96kHz 24bit delta-sigma DAC
	Display		128 x 64 pixel LCD (with backlight)
	Inputs	INPUT1~8	8 XLR/standard phone combo jacks Input impedance: (Balanced input) 1KΩ balanced (2 hot) (Unbalanced input) 50KΩ unbalanced 1 with Hi-Z, input impedance 1 MΩ (Hi-Z on) 6 with phantom power Input level: –50 dBm < continuous < +4 dBm
		Built-in mics	Omnidirectional condenser microphones Gain: -50dBm < continuous < +4dBm
	Phantom power		48 V, 24 V
	Outputs	OUTPUT	TRS phone type (balanced)
		PHONES	Standard stereo phone jack 20 mW x 2 (32Ω load)
	USB		USB2.0 Hi-Speed (operation as audio interface/control surface/card reader/USB storage)
	Power		DC 5V 1A AC adapter (ZOOM AD-14) Six AA batteries (4.5-hour continuous operation time with backlight set to 15 seconds and phantom power off)
	Dimensions		376 mm (W) x 237.1 mm (D) x 52.2 mm (H)
	Weight		1.3 kg

Troubleshooting

If you think there is a problem with the operation of the R24, check the following tips first.

Problems during playback

◆ No sound, or sound is very weak

- Check the connections with the monitoring system and its volume settings.
- Make sure that status indicators in the mixer section are lit green and that their faders are raised. If a track's indicator is not green, press its key repeatedly until it lights green.
- Make sure that the [MASTER] status key is not lit and that the [MASTER] fader is raised.

◆ Moving the fader does not affect the volume

- On channels for which stereo link is turned ON, the fader of the even-numbered channel will have no effect. Either turn stereo link OFF (→ P20), or use the fader of the odd-numbered channel in the pair.

◆ No sound from the input signal, or the sound is very weak

- Make sure that the **GAIN** control for that input is turned up.
- Check that the status light is green (playback enabled) and that the fader of the track is raised.

◆ An operation does not work and the message “Stop Recorder” is shown on the display

- Some operations are not possible while the recorder is operating. Press the **STOP** key to stop the recorder and then conduct the operation.

Problems during recording

◆ Cannot record on a track

- Make sure that you have selected and enabled a recordable track.
- Check whether you have run out of free space on the SD card (→ P102).
- Recording is not possible if the project is protected. Either set “PROTECT” to “OFF” (→ P87), or use a different project.

◆ The recorded sound is distorted

- Make sure that the **GAIN** knobs (input sensitivity) and recording levels are not set too high.
- Lower the faders so that the 0 (dB) indicators of their level meters do not light.
- If the EQ gain of the track mixer is set extremely high, the sound may be audibly distorted even if the fader is lowered. Lower the EQ gain to a more suitable value.
- If an insert effect is applied to an input, check whether the effect output level (patch level) setting is suitable.

Problems with effects

◆ Insert effect cannot be inserted

- If using the 8xCOMP EQ algorithm, the selection of insert points is limited (→ P81).

◆ Insert effect is not working

- Check that the insert effect icon is shown on the display. If it is not shown, press the **EFFECT** key, then press the INSERT soft key and set ON/OFF to On.
- Make sure that the insert effect is inserted in the desired location (→ P81)

◆ Send-return effect is not working

- Confirm that the REV or CHO icon is shown on the display. If it is not shown, press the **EFFECT** key, then press the REVERB or CHORUS soft key and set ON/OFF to On.
- Make sure that the send levels for the tracks are raised (→ P40, 80).

Other problems

◆ Cannot save a project

- The project cannot be saved if the project is protected. Set “PROTECT” to “Off” (→ P89).

◆ Cannot create a new project or copy a project

- If “Project Full” appears on the display, no more projects can be created on the card. Delete unneeded projects to free up memory.

◆ An error message is shown when attempting to execute a command

- Please check the error message list (→ P132).

Upgrading the firmware

Upgrade the firmware as necessary.

1. Copy the firmware upgrade file to the root directory of an SD card.

2. Insert the SD card with the firmware upgrade software file into the R24 (if it is not already in the unit).

3. While pressing and holding PLAY ▷, turn the POWER switch ON.

   The upgrade screen opens.

4. Select "OK" and press ENTER to start upgrading.

5. When the screen shows that upgrading has completed, turn the R24 power OFF once and then turn it on again.

NOTE

- Download the latest system software at the ZOOM website (http://www.zoom.co.jp).
- Use the TOOL>SYSTEM>VERSION menu item to check the version of the system software that the unit is currently using.

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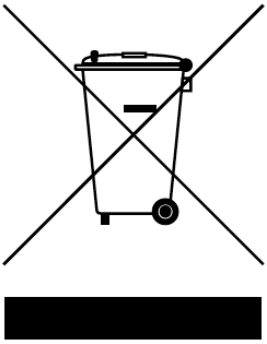
FCC regulation warning (for U.S.A.)

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 to 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.

For EU Countries

Declaration of Conformity:
This product complies with the requirements of
EMC Directive 2004/108/EG and
Low Voltage Directive 2006/95/EC
EuP Directive 2005/32/EC



Disposal of Old Electrical & Electronic Equipment

(Applicable in European countries with separate collection systems)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

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R24-5000-1