Usage and safety precautions

SAFETY PRECAUTIONS

In this manual, symbols are used to highlight warnings and cautions for you to read so that accidents can be prevented. The meanings of these symbols are as follows:

⚠️ This symbol indicates explanations about extremely dangerous matters. If users ignore this symbol and handle the equipment the wrong way, serious injury or death could result.

주의 This symbol indicates explanations about dangerous matters. If users ignore this symbol and handle the device the wrong way, bodily injury and damage to the equipment could result.

Please observe the following safety tips and precautions to ensure hazard-free use of the R16.

Power requirements

Since power consumption of this unit is fairly high, we recommend the use of an AC adapter whenever possible. If you use batteries, use either alkaline or nickel-metal hydride batteries.

AC adapter operation

- Be sure to use only a DCSV/1A/center plus AC adapter (ZOOM AD-14). Use of an adapter other than that specified could damage the unit and pose a safety hazard.
- Connect the AC adapter only to an AC outlet that supplies the rated voltage required by the adapter.
- When disconnecting the AC adapter from the AC outlet, always grasp the adapter itself and do not pull on the cable.
- During lightning or when not using the unit for an extended period, disconnect the AC adapter from the AC outlet.

Battery operation

- Use six conventional size AA-1.5 volt batteries.
- The R16 cannot be used for recharging. Pay close attention to the labeling of the batteries to make sure you choose the correct ones.
- When not using the unit for an extended period, remove the batteries from the unit.
- If battery leakage has occurred, wipe the battery compartment and the battery terminals carefully to remove all remnants of battery fluid.
- While using the unit, the battery compartment cover should be closed.

About grounding

Depending on installation conditions, a slight electrical charge may be felt when touching a metal part of the R16. If you wish to avoid this, ground the unit by connecting the ground screw on the rear panel to a good external ground.

- To prevent the risk of accidents, never use any of the following for grounding:
  - Gas pipe (risk of explosion)
  - Telephone wiring ground or lightning arrestor (risk of lightning strike)
  - Water pipes (risk of electric shock)

Environment

Avoid using your R16 where it will be exposed to:
- Extreme temperature
- High humidity, moisture, or splashing water
- Excessive dust or sand
- Excessive vibration or shock

Handling

Never place objects filled with liquids, such as vases, on the R16 since this can cause electric shock.

The R16 is a precision instrument. Do not exert undue pressure on the keys and other controls. Also take care not to drop the unit, and do not subject it to shock or excessive pressure.

Connecting cables and input and output jacks

You should always turn off the power to the R16 and all other equipment before connecting or disconnecting any cables. Also make sure to disconnect all connection cables and the power cord before moving the R16.

Alterations

Never open the R16 case or attempt to modify the product in any way since this can result in damage to the unit.

Volume

Do not use the R16 at a loud volume for a long time since this could cause hearing impairment.

Usage Precautions

Electrical interference

For safety considerations, the R16 has been designed to provide maximum protection against the emission of electromagnetic radiation from inside the device, and protection from external interference. However, equipment that is very susceptible to interference or that emits powerful electromagnetic waves should not be placed near the R16, as the possibility of interference cannot be ruled out entirely.

With any type of digital control device, the R16 included, electromagnetic interference could cause malfunction and could corrupt or destroy data. Care should be taken to minimize the risk of damage.

Cleaning

Use a soft, dry cloth to clean the R16. If necessary, slightly moisten the cloth. Do not use abrasive cleanser, wax, or solvents (such as paint thinner or cleaning alcohol), since these may dull the finish or damage the surface.

Back up

The data on the R16 could be lost because of malfunction or incorrect operation. Back-up your data.

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Introduction

Thank you very much for purchasing the ZOOM R16 Recorder/Interface/Controller. In this manual, we will call it the R16. The R16 has the following features.

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

The R16 can record up to 8 tracks simultaneously. For example, recording a full band on individual tracks or multiple microphones placed around a drum kit. After making linear PCM recordings (WAV type) at 16/24-bit and 44.1-kHz sampling rate, you can transfer the recorded files to your computer to make use of them in your DAW software. You can even connect two R16s together with a USB cable, allowing you to record a maximum of 16 tracks.

■ Hi-Speed USB (USB 2.0) audio interface

You can use the R16 as a Hi-speed USB (USB 2.0) audio interface that has abundant input and output jacks. The R16 can handle 8 inputs and 2 outputs at a maximum of 24-bit and 96 kHz, and its effects can even be used at 44.1 kHz sampling rate. The unit can also operate using only USB bus power.

■ Usable as a control surface for DAW software

The R16 is equipped with functions that enable you to control DAW software in a computer via a USB cable. You can operate the transport of the DAW software, such as play, record and stop, and you can physically control fader operations. You can also assign various DAW functions to the R16’s F1–F5 function keys. (The assignable functions depend on the DAW software.)

■ Various effects

The R16 has 2 main built-in effects—an insert effect that can be applied to specific channel signals and a send-return effect that can be used like the send-return bus of a mixer. You can use these effects in a wide variety of ways, including during recording, by applying them to already recorded tracks, and in mastering operations like mixing down and bouncing.

■ Handles various input sources including guitars, microphones and line-level equipment

The R16 is equipped with 8 input jacks that accept both XLR and phone connectors, including one that can handle high impedance signals and two that can supply 48V phantom power. The R16 can handle high impedance guitars and basses, dynamic and condenser microphones, and various line level instruments like synthesizers. It also has two built-in high performance microphones that are very convenient for recording acoustic guitar and vocals.

■ Comprehensive built-in mixer features

The R16 is equipped with a digital mixer that allows you to mix the playback of recorded and imported audio tracks. You can adjust the volume, pan, EQ and effects for each track and mix them into a stereo output.

■ Multiple tuner modes and a metronome for guide rhythms

The R16 not only has a standard chromatic tuning function, it also has functions for unusual tunings, including 7-string guitars and 5-string basses. The metronome can be used as a guide rhythm while recording. You can play the metronome sound through the mixer OUTPUT jacks or you can send it only through the headphones if you want. For example, in a live situation you could send the click just to the drummer via the headphone output.

■ Exchange files with computers and USB memory devices

The R16 has a USB 2.0 jack that allows high speed data transfer. You can transfer WAV audio files recorded on the R16 to a computer just by dragging and dropping. You can also exchange files with a connected USB memory device without using a computer.

Please read through this manual carefully in order to understand the R16 functions effectively. After reading it, please keep the manual along with the warranty in a safe place.

*Specifications are subject to change for improvement without notice.
Multitrack Recorder

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

**Project creation** P.17
Prepare a new project to save and mix recordings.
- **New project**

Connecting external equipment P.18, 19
The R16 can handle various types of instruments and equipment.
- **Built-in microphones** P.19
- **Hi-Z** P.18
- **Phantom power** P.18
- **Stereo link** P.20

Performance settings
- **TUNER** P.33
- **METRONOME** P.34

Recording

Use the various effects to process signals as they are input, during track playback and when outputting a mix.

**Insert effects** P.49
1. After the input jack

**Track recording** P.21
Record the input signals from connected input sources to tracks.
- **Undo/Redo** P.16

**Playback** P.29
Play up to 16 tracks of monaural and stereo audio simultaneously.
- **A-B repeat** P.30
- **Setting marks** P.31

Mixing & Mixdown

Adjust the recorded track using the track mixer.

**Mixer** P.36

Recorded music files and settings for a song can be managed and stored as a project and then edited in various ways.

**Project** P.56
- **PROJECT/FILE** P.56
- **INFORMATION** P.59
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- **DIVIDE** P.63
- **COPY** P.60
- **DELETE** P.62
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- **PROTECT** P.56

**Mixdown**
Combine multiple tracks into one stereo pair.
- **Bounce** P.39
- **Record on the master track** P.42

Connect external equipment
- **USB connection**

Audio Interface

Exchange signals between DAW software and audio equipment

**Mixing** P.36

Adjust parameters for each track.
- **EQ • Volume • Pan** P.37

**Mixdown**
Combine multiple tracks into one stereo pair.
- **Bounce** P.39
- **Record on the master track** P.42

Audio Interface

Operate DAW software with the R16

**Mixing** P.36

Adjust parameters for each track.
- **EQ • Volume • Pan** P.37

**Mixdown**
Combine multiple tracks into one stereo pair.
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Audio Interface

Operate DAW software with the R16

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R16 operation flow

Multitrack Recorder

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

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- Stereo link P.20

Performance settings
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USB connection

Linking two units: Sync recording P.35

Record 8 tracks of mono and stereo audio simultaneously. Select up to 330 effects.

Effects P.45
- Patch editing, etc. P.51

Insert effects P.49
1. After the input jack
- Undo/Redo P.16

Track recording P.21
Record the input signals from connected input sources to tracks.

Playback P.29
Play up to 16 tracks of monaural and stereo audio simultaneously.
- A-B repeat P.30
- Setting marks P.31

Effects used on specific track signals

Recording
Use the various effects to process signals as they are input, during track playback and when outputting a mix.

Mixing & Mixdown
Adjust the recorded track using the track mixer.

Mixdown P.36
Combine multiple tracks into one stereo pair.
- Bounce P.39
- Record on the master track P.42

Starting over
Pick and re-record just part of a file.
- Punch in/out P.27

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 send levels of both effects separately for each mixer track.

Mixing P.36
Adjust parameters for each track.
- EQ • Volume • Pan P.37

Mixdown
Combine multiple tracks into one stereo pair.
- Bounce P.39
- Record on the master track P.42

Playback P.29
Play up to 16 tracks of monaural and stereo audio simultaneously.

Insert effects P.49
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Record the input signals from connected input sources to tracks.

Effects used on specific track signals

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Playback P.29
Play up to 16 tracks of monaural and stereo audio simultaneously.
Basic recording guide

Here we explain how to record in stereo with the built-in microphones on the left and right side of the R16 and how to make a monaural recording of an electric guitar using the high impedance function.

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

**STEP 2** Create a new project.

1. Press and hold until you return to the main screen.
2. Press [PROJECT].
3. Select >NEW.
4. Name the new project.
5. Select [CONTINUE].

**STEP 3** Turn input source switches on.

Using the built-in microphones (Stereo recording)

1. Turn the [MIC] switch on for INPUT 7 & 8.
2. Press the status keys of INPUT 7 & 8 until their indicators light red.
   - Press the [PLAY/MUTE/REC] key one or two times.

To record an electric guitar (High impedance/monaural input)

1. Connect the guitar to INPUT 1.
2. Turn the [Hi-Z] switch on for INPUT 1.
3. Press the status key of INPUT 1 until the indicators lights red.
   - Press the [PLAY/MUTE/REC] key one or two times.

**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 2 mono tracks by default. When you are using the built-in mics for a stereo recording, make a stereo link to create one stereo track.

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Ref: Project P.56

Ref: Stereo link Instrument connection P.20 P.18, 19
Adjust the input sensitivity, monitoring level and output

1. Adjust the INPUT sensitivity with the [GAIN] knob. You should adjust the [GAIN] of each INPUT so that the PEAK indicator blinks 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. You should adjust the PATCH LEVEL, for example, if necessary.

3. Adjust the monitoring level. You can adjust the monitoring level of an instrument with the fader of the track it is being recorded on. (INPUT 1, for example, would be TRACK 1 or 9).

NOTE

If the input signals distort during recording, adjust the input sensitivity or recording level, referring to Step 4.
After recording has completed, the “wait” bar will be displayed. Do not turn the power off or take the SD card out until the “wait” bar disappears. If you do not follow this procedure, you may damage the data or cause other problems.

Record—Complete—Play

Record


3. Start performing. Press the STATUS KEY to turn the green light on. When lit green, you can play the track.

Playback

1. Exit record standby mode. Press the STATUS KEY to turn the green light on.

2. Return to the top. Press [STOP] & [REW] at the same time.


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You can download the Audio Interface Manual from ZOOM’s website (www.zoom.co.jp).
Panel Layout and functions

Rear panel

Level meters (1/9~8/16, MASTER)

Input section

Control section

Display

Battery compartment

Built-in mic

Fader section

Transport section

Display section

Right side panel

SD card slot

USB HOST jack

USB DEVICE jack

Bottom panel (not shown)
### Panel Layout and functions

**Input section**
- [Hi-Z] switch
- [PHANTOM] switch
- [MIC] switch
- [METRONOME] switch
- 10
- 9-16Tr key
- 1-8Tr key
- DC5V1A jack
- OUTPUT control
- PHONES control
- INPUT jacks
- PHONES jack
- OUTPUT jacks
- POWER switch
- Faders
- Status keys
- Cursor keys
- [EXIT] key
- [REC] key
- [PLAY] key
- [STOP] key
- [FF] key
- [REW] key
- [A-B REPEAT] key
- [MARKER] key
- PEAK indicators
- GAIN controls (1–8)
- BALANCE control
- [TOOL] key
- [PROJECT] key
- [SEND RETURN EFFECT] key
- [INSERT EFFECT] key
- [UNDO/REDO] key
- [SWAP/BOUNCE] key
- [USB] key
- [MARK/CLEAR] key
- [SWAP/BOUNCE] key
- [UNDO/REDO] key
- [TOOL] key
- [PROJECT] key
- 8 / 16
- MASTER
- Rear panel
- DCSV1A jack
- OUTPUT control
- PHONES control
- INPUT jacks
- [DCSV1] jack
Connections

Refer to the instructions on this page when you connect instruments, microphones, audio equipment or a computer to the R16.

OUTPUTS

Use the [METRONOME] switch to set whether the metronome is output to only the [PHONES] jack or also to the [OUTPUT] jacks.

1) Stereo system, speakers with built-in amplifiers, etc.
When connecting speakers, be sure to turn off the system’s power beforehand. Connecting them with the power on could cause damage.

2) Microphones
In order to supply phantom power to a condenser microphone, first connect the microphone to [INPUT 5/6] and then turn the [PHANTOM] switch ON.

3) Other equipment with stereo outputs
When using a synthesizer or a CD player with stereo outputs, for example, be sure to connect its left output jack to an odd number [INPUT] jack on the R16 and its right output jack to an even number [INPUT] jack on the R16.

4) Guitar/Bass
Use [INPUT 1], which can handle high impedance, when you directly connect a passive-type electric guitar or bass, and turn the [Hi-Z] switch ON.

5) Built-in microphones
These microphones are useful for recording drums indirectly and recording a band. When you turn the [MIC] switch ON, the sounds will be input into INPUT 7 and 8.

6) Connecting a computer by USB
Connecting to a computer, you can send audio files and projects directly to and from the R16. You can also use the R16 as an audio interface and a control surface for DAW software.

7) Connecting two R16s
By connecting two R16s together, you can record 16 tracks simultaneously.

8) AC adapter
Make sure to use a ZOOM AD-14 adapter designed for this unit.

INPUTS

You can connect cables with XLR and monaural phone plugs (balanced or unbalanced) to the INPUT jacks.

2) Microphones
In order to supply phantom power to a condenser microphone, first connect the microphone to [INPUT 5/6] and then turn the [PHANTOM] switch ON.

3) Other equipment with stereo outputs
When using a synthesizer or a CD player with stereo outputs, for example, be sure to connect its left output jack to an odd number [INPUT] jack on the R16 and its right output jack to an even number [INPUT] jack on the R16.

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7) Connecting two R16s
By connecting two R16s together, you can record 16 tracks simultaneously.

8) AC adapter
Make sure to use a ZOOM AD-14 adapter designed for this unit.
SD card installation

The R16 saves recording data and settings on SD cards.
To protect your data, turn the [POWER] switch OFF when inserting or ejecting a card.

An SD card is necessary for recording.

**NOTE**

- If you must change an SD card while the power is on, please follow the specific procedures described on page 69.
- When inserting or ejecting an SD card make sure the [POWER] switch is OFF. If you insert with the [POWER] switch ON, your data might be lost.
- If you cannot insert a card into the slot, you may be trying to insert it in the wrong direction or upsidedown. Try again with the correct card orientation. If you force it in, you might break the card.
- If an SD card was previously used with a computer or a digital camera, you must format it in the R16 before using it.
- If no SD card is inserted, [REC] and [UNDO/REDO] keys will not function in RECORDER MODE.

If these messages about SD cards are 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.
- “SD Card Format?”: The inserted card is not formatted for the R16. Press the [ENTER] key to format it. (Ref. P.70)

**HINT**

- The R16 can use 16 MB – 2 GB SD cards and 4–32 GB SDHC cards.
- You can get up-to-date information about compatible SD cards on the Zoom site.
Zoom site: http://www.zoom.co.jp

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1) Turn the [POWER] switch OFF and detach the cover of the SD card slot.

2) Insert an SD card (write-protect unlocked) into the slot.
To eject: Push the card in first to eject it.

Unlock the SD card write-protection.

Prevent unwanted removal of an SD card

1) First remove the screw beside the slot, and then screw it into the screw-hole in the SD card cover.
Powering the R16

Please use the included AC ADAPTER that is designed for the R16 or six AA batteries (sold separately).

**Using the included AC ADAPTER with an ordinary electricity supply**

1. Make sure that [POWER] is OFF, and then plug the included AC ADAPTER into the back of the unit.

   ![AC ADAPTER connected to R16]

   You must use the included ZOOM AD-14 AC ADAPTER, which is designed for the R16. Using any adapter other than the AS-14 may damage the unit and void the warranty.

**Using batteries**

1. Turn the [POWER] switch OFF and open the battery case cover on the bottom of the unit.
2. Install six AA batteries and close the cover.

   ![Battery case cover opened and batteries installed]

   **NOTE**

   You must turn the [POWER] switch OFF when you open/close the battery case cover or plug/unplug the AC adapter. Removing batteries or unplugging the AC adapter when the [POWER] switch is ON might cause lost recording data.

   The approximate lifetime for Alkali batteries is about 4.5 hours.

   Battery power status:

   - No Indicator
   - Indicator On

   **HINT**

   Power supply from USB

   With the [POWER] switch OFF, connecting a computer to a USB cable makes the R16 start-up automatically with power supplied by USB.

   In this status, functions are different from when the [POWER] switch is ON. The R16 can be used only as an SD Card Reader or as an audio interface.

   ![Battery power status indicator]

   **Ref.: R16 Battery type settings**

   | BATTERY TYPE | P.71 |

   **NOTE**

   - Make sure that the [POWER] switch is OFF when you open/close the battery cover or plug/unplug the AC adapter. Removing batteries or unplugging the AC adapter when the [POWER] switch is ON might cause lost recording data.
   - The R16 can only use Alkali and NiMH batteries. The approximate lifetime for Alkali batteries is about 4.5 hours.
   - Replace the batteries when you notice “Low Battery” or the empty battery icon on the display. Turn the [POWER] switch OFF immediately and install new batteries, or connect the included AC adapter.
   - Be sure to set the correct BATTERY TYPE setting for accurate battery metering.
Powering the R16 · Date & time setting

Precautions for starting-up and shutting down and how to set the date and time for files and data

### Turning the power on and off

1. Make sure the power is off on all equipment.
2. Insert an SD card into the R16. Confirm that the connections for the power, instruments, and monitoring system (or stereo headphones) are correct.

#### Turn [POWER] switch ON: Start-up

1. Turn the [POWER] switch ON.

#### Turn power on for connected instruments and then for the monitoring system.

#### Turn [POWER] switch OFF: Shut-down

1. Turn the [POWER] switch OFF.

### Setting the date and time

#### TOOL>SYSTEM>DATE/TIME

1. Press [TOOL].

2. Press [ENTER].

3. Press [ENTER].

4. Select items under >DATE/TIME.

5. Change the time

   - Make setting for the year, month, day and time (hour: minute: second).

6. Press [ENTER].

### NOTE

- Before turning the [POWER] switch ON, turn the volume down on all instruments and the monitoring system connected to the R16.
- If no power is supplied to the R16 for more than 1 minute, the DATE/TIME setting will be reset to its initial value.

### If this is displayed:

- The DATE/TIME setting has been set to its initial value. Reset the DATE/TIME settings.
Switch and key operation overview

Here we explain how to use the keys of the R16 and their functions. Please look at the display for keys that have icons shown on the screen.

Transport section

[REC] key
Functions only when tracks are in recording standby.
This key puts the R16 in recording standby mode.
When in recording standby this key stops recording standby.

[PLAY] key
This key starts playback.
When in recording standby this key starts the recording.

[STOP] key
When recording this key will stop the recording.
This key stops playback.

[REW] key
Rewind.
Press [REC] and [REW] keys at the same time to return to the top of the song.

[FF] key
Fast forward.

[ENTER] key
Confirms selections

[EXIT] key
A quick press returns to the previous step, and a long press returns to the top screen.

[DIAL]
Use to change and move among menus and numbers.
Ref.: Mark-related keys see P.31.

Cursor: Appearance and indication

The display shows cursor directions

Display: Movement in the menu
Manual notation:
- Black: direction explained
- Gray: movable directions
- No color: not effective

Use the cursor to move up, down, left and right to choose different function items. The appearance of the display and its notation in the manual is shown above.

Control section

[PAN/EQ] key
Press to access track mixer settings (P.57)

[TOOL] key
Opens TOOL menu (TUNER, METRONOME, SYSTEM and SD CARD)

[PROJECT] key
Opens PROJECT menu

[1-8Tr] & [9-16Tr] keys
Select tracks 1-8 or 9-16 with light showing selected tracks

[USB] key
Opens USB menu

[SWAP/BOUNCE] key
Opens SWAP/BOUNCE menu

Fader section

[PLAY/MUTE/REC] key
TRACK 1-8 (9-16) status keys
Change track ready status
Green: PLAY (playback)
No light: MUTE (mute)
Red: REC (record)

[MASTER/MIX DOWN/PLAY] key
MASTER status key
Change MASTER track status
Green: PLAY (playback)
No light: MASTER (not playback/recording ready)
Red: MIX DOWN (recording)

Various switches & controls

[POWER] switch
Turns power ON & OFF

[Hi-Z] switch
Turns Hi-Z connection on/off (only for INPUT 1).

[MIC] switch
Turn built-in microphones on/off (signals to INPUT 7 & 8).

[METRONOME] switch
Set metronome output.

[GAIN] controls
Adjust input sensitivity

[PEAK] indicators
Light at the moment of maximum input

[BALANCE]
When [METRONOME] is set to "PHONES ONLY" during recording, this adjusts the balance of the pre-MASTER fader and metronome signals

Level meters
Show recording/playback levels

[METRONOME] indicator
Flashes in time with the count

During audio interface use, control surface functions (shown in boxes below keys) are provided by the row of keys starting with AUTO PUNCH I/O (F-1 to F-5), as well as the [1-8Tr] and [9-16Tr] keys (<BANK>) and the [MASTER/MIX DOWN/PLAY] (REC/SOLO/MUTE) key.
Display information

On the R16’s display you can see project data, recorder connection and operation status, computer audio-interface connection and status, available functions and the R16 menus.

**Display and indications**

The TOP screen shows the current projects.
Top line: project number and project name
Bottom line: icon mark/number and counter (time)

**MENU screens show operation menus**

PROJECT > SELECT
Top line: current menu
Bottom line: menu & items available

**Effect & Mode**

- **PHANTOM icon**
  - Display: 48V phantom power is supplied to mics connected to INPUT 5 & 6
  - Setting: [PHANTOM] switch ON

- **BATTERY icon → P.13**
  - Display: Batteries in use and their remaining charge
  - No display: AC adapter or USB power in use (no display while powering with batteries means the batteries need to be replaced)

- **PROTECT icon → P.56**
  - Display: project cannot be overwritten
  - No display: project not protected
  - Set using menu

- **UNDO/REDO**
  - Icon shown/not shown
  - After certain operations, “UNDO” is displayed, meaning an UNDO operation is possible
  - After pressing the [UNDO/REDO] key, “REDO” is displayed, meaning a REDO operation is possible.
  - Set by key operation.

- ** NOTE**
  - • UNDO is only valid for audio data recorded on tracks.
  - • You can only UNDO and REDO one operation.

**Icon display and setting keys**

- **A-B REPEAT icon → P.30**
  - Display: A-B points are set
  - Set by key operation

- **AUTO PUNCH IN/OUT icon → P.27**
  - Display: active
  - Set by key operation

- **BOUNCE icon → P.39**
  - Display: active

- **UNDO icon**
  - UNDO: You can return to the previous recording operation
  - Valid UNDO operations: PUNCH IN/OUT, BOUNCE, MIX DOWN (to MASTER TRACK)
  - REDO: Reverse the UNDO operation
R16 recording flow • Creating a new project

With multitrack recording you can create a complete work of music using the R16. To begin, create a new project for each piece.

Recording preparation

Connect instruments to the appropriate INPUT jacks

Make 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 PRE-COUNT/METRONOME
- Set and use TUNER

Record the first tracks

- Record standby—Record—Stop

Record more tracks

- Overdubbing
- Playback of already recorded tracks
- Overdubbing
- Record standby—Record—Stop

Create a new project

PROJECT>NEW

1. Press [PROJECT].
2. Select >NEW.
3. Confirm the PROJECT name.
4. Select whether to use the settings of the last project.
5. Execute.

HINT

You can change the new project name at Step 3.

Ref: Name change P.43
Using the previous settings P.57
Connecting instruments and making monaural settings

You will need to adjust settings for musical instruments such as high impedance guitars, line input synthesizers, the built-in microphones and microphones that use phantom power, as well as stereo and monaural inputs, for example.

**Connecting passive-type guitars**
Connect high impedance (Hi-Z) instruments to INPUT 1, and turn the [Hi-Z] switch ON.

**Connecting low-impedance instruments (monaural connection)**
Connect low impedance instruments to any of the INPUTS.

**Using phantom power**
Supply phantom power to INPUT 5 and 6 jacks.

**NOTE**
*Turn the [PHANTOM] switch on to provide +48V power to INPUT 5 and 6. You can use either INPUT 5 or 6 or both when the switch is ON.  
*Use the fader that corresponds to the INPUT jack. The signal from INPUT 1 goes to track 1/9.  
*To use Track 9~16, switch the fader by pushing the [9~16Tr] key.  
*Depending on the INSERT EFFECT selection, the output flow will change.  
*Creating one stereo file from two faders requires the use of the STEREO LINK setting.

---

**Assign INPUT 1–8 connections to tracks 1–16**

1. **Connect instruments and microphones to jacks**

2. **Make settings for specific instruments, built-in microphones and stereo tracks.**

3. **Select the Track switches**

4. **Change the status of the connected INPUTS**

Press the status key of a track one or two times to turn the red light on.

**Set tracks to receive INPUTS**

Press the [1-8Tr] or [9-16Tr] key to set which tracks will record the INPUTS.

<table>
<thead>
<tr>
<th>INPUT</th>
<th>TRACK</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1~8Tr] active</td>
<td>[9~16Tr] active</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

---

Ref: STEREO setting  P.19
Instrument connections: stereo settings and status keys

To make a stereo recording, you can create one stereo file by recording on the neighboring odd/even-numbered tracks and by setting a stereo link. The status key must be pushed to transfer the signal from an INPUT to a recording track.

### Using the built-in microphones

Turn the [MIC] switch ON.

Signals to INPUT 7/8

### Connecting line input instruments (stereo connection)

Choose INPUT 1, 3, 5 or 7 and connect the musical instrument.

Use INPUT 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 or tracks 9–16.

1. Connect instruments and microphones to the jacks.

2. Make stereo settings for the specific instruments and built-in microphones.

   - **STEREO**
   - **MONOULAR x2**
   - **MONOULAR**

3. Select the tracks.

   - **TRACKS 1–8**
   - **TRACKS 9–16**

   Assign faders to either tracks 1–8 or 9–16

4. Set the status of the connected INPUTS.

   Press the STATUS KEY of the paired tracks one or two times each to turn both lights on.

   - **PLAY/MUTE/REC**
   - **PLAY/MUTE/REC**

   Red lights on: record ready (REC)

### Files corresponding to INPUTS

Recording INPUTS 1–8 results in file names that correspond with the track numbers.

When STEREO LINK has been used

Stereo-linked tracks result in stereo files.

Lch = odd-numbered input signal recorded

Rch = even-numbered input signal recorded

### NOTE

- Use the fader that corresponds to the INPUT jack. Signals from INPUT 1 go into Track 1/9.
- To use tracks 9-16, press the [9-16tr] key to switch the fader assignments.
- The input and output flow change depending on the INSERT EFFECT setting.
Stereo link

Set STEREO LINK for tracks for recording in advance to create a stereo file of the recording. You can also assign stereo files.

STATUS KEYS and TRACK INDICATORS

Press a STATUS KEY to change the color of the TRACK INDICATOR light and set the role of the track fader. The three TRACK INDICATOR colors show the track status.

Stereo link
PAN/EQ>STEREO LINK

1
PAN/EQ
Press [PAN/EQ].
Switch tracks.

2
Select a track.

3
Select STEREO LINK.

4
Turn STEREO LINK On.

5
Press [EXIT] to complete the setting.

HINT

* In order to send the signals from an INPUT to a recording track, press its STATUS KEY 1–2 times until the track indicator lights red.
* For use of two INPUTS press both STATUS KEYS to connect both INPUTS to tracks.
* Creating one stereo file from 2 tracks requires STEREO LINK to be set.
* If the MASTER track is set to PLAY, all other tracks will be set to MUTE (no sound).

* The STEREO LINK track pairs are Track 1/2, Track 3/4, Track 5/6, Track 7/8, Track 9/10, Track 11/12, Track 13/14 and Track 15/16.
* STEREO LINK changes the setting from two monaural tracks to one stereo track.
* At Step 4, whatever track number you choose, the neighboring number track will be linked. You cannot change these combinations.
* To adjust the volume of a pair of tracks set to STEREO LINK you must operate the odd number fader. The even number fader has no effect.
* The PAN parameter of a pair of tracks set to STEREO LINK can be used to adjust their relative volume balance.
* Even when STEREO LINK is active you can select files and make phase settings for each track.
Recording the first track

After connecting instruments and completing all recording preparation, we can prepare the recorder and start recording the first track.

**Starting from the top screen of the new project**

1. Return to the top screen.
   - Press and hold [EXIT] for more than 2 seconds.

2. Return the counter to its head.
   - Press [REW] & [Stop] at the same time to return the counter to its head.
   - The top screen should look like this.

![Top screen display](image)

   The counter is at the head position (mark 00).

**HINT**

The top screen display of the new project

![Top screen display](image)

   Counter at the head position (mark 00)
   Batteries and phantom power active
   After setting the input (Step 5 and after), you can process input signals with the INSERT EFFECT.

**NOTE**

Red lights on PEAK indicators and Level meters
- A PEAK indicator turns red when the input signal exceeds the maximum detectable level of 0 dB, resulting in input clipping. The red light 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.

**Adjusting the input level**

3. Arm the track for recording.
   - Press 1-2 times until the track light turns red.
   - Red light on: recording enabled (REC).

4. Adjust the input sensitivity (GAIN).
   - Adjust the recording level
   - Should light occasionally when the volume reaches maximum

5. Adjust the recording level.
   - If an INSERT EFFECT is applied to an INPUT, make adjustments to the patch level, for example, to prevent the LEVEL METER red light (0dB) from turning on.

6. Adjust the monitoring system
   - Using the recording track fader, adjust the monitoring level of the instrument being recorded. (INPUT 1 is track 1 or 9).
Recording the first track

7 Start record standby.
   - Press [REC].
     - Red light on

8 Start recording.
   - Press [PLAY].
     - Red light on
     - Green light on
   - The counter starts to move.

9 Stop recording.
   - Press [STOP].
     - Green light on
     - Lights off
   - The counter stops moving, but does not return to 0.

HINT
- Press [UNDO/REDO] to cancel the recording.

Recording again
- If you record on the same track again, the previous recording will be overwritten.
- The three ways to record a new file or re-record are:
  - Press the [UNDO/REDO] key to execute the undo-action (cancel the recording).
  - Through PROJECT>FILE, set the recorded track assignment to “NOT ASSIGN.” (Ref.: P.23)
  - Through PROJECT>FILE>EDIT>DELETE, delete the FILE (AUDIO DATA). (Ref.: P.62)

Playing back the first track

10 Stop.
   - Press [STOP].
     - Green light on
     - Lights off

11 Play the track.
   - Press the [PLAY/MUTE/REC] key of the TRACK to playback 1–2 times until the green light is on.

12 Return the counter to its head.
   - Press [REW] & [Stop] at the same time to return the counter to its head.

13 Play.
   - Press [PLAY].
     - Green light on

14 Stop.
   - Press [STOP].
     - Green light on

NOTE
- Recorded audio files in a track will be recorded over. If you rewind the counter back to the head, a new recording will overwrite the previous one. During playback the files stored on the tracks will be played.

If you want to record a new file, do not assign a file to the track.

Ref. : Assigning files to tracks P.23
Mark P.31
Track assignment

Here, after completing the first track recording, we record the next track while playing back the already recorded audio file. The preparation is almost identical to the first one, but we will conduct playback on a different track.

**Playback track preparation**

1. **Assign the playback file to a different tracks.**
   - **PROJECT** Press [PROJECT].
   - **PROJECT >SELECT**
   - **PROJECT >FILE** Press [ENTER].

2. **Select **FILE.**
   - **PROJECT >FILE**
   - **ENTER** Press [ENTER].

3. **Select the track for playback.**
   - **TRACK1**
   - **NOT ASSIGN**
   - **Select a different track from the one for the next recording.**

4. **Select the file for the track.**
   - **TRACK5**
   - **MOHO-000**
   - **[TR 5]**
   - **Assign it.** Press [ENTER].

5. 

6. **EXIT** Press and hold [EXIT] to return to the top screen.

7. **Prepare the already recorded track for playback.**
   - **PLAY/MUTE/REC**
   - Press the [PLAY/MUTE/REC] of the track to be played back 1–2 times until the green light turns on.
   - Green light on: playback enabled [PLAY].

**NOTE**

- Recorded audio files on tracks will be overwritten by new recording. If you rewind the counter to the top and begin recording again, be aware that the overwritten previous recording will be lost.
- During playback the file assigned to the track is played.
- If you want to record to a new file, do not assign any file to a track.
- When you move a file on a track, confirm that no files are assigned to the track to be recorded ("NOT ASSIGN"). If there is any assigned file, that recording will be overwritten by new recording.
- Files exclusively for reading (read only) are shown with <R,0> on the display, and you cannot record over them if they are assigned to tracks.
- Files marked with an asterisk (*) cannot be assigned to the selected track.

**HINT**

- File track assignment status

- **TRACK 5**
  - **NOT ASSIGN**
  - Display of a track with no file

- **TRACK 5**
  - **MOHO-000**
  - Display of track with no assigned files

- **TRACK 5**
  - **MOHO-000**
  - Display of a track with assigned file

- If the first and second recordings are on different tracks, you can skip to Step 7, because you only need to change the track status and start recording.
- You can select tracks using the status key. The indicators of selectable tracks will light orange.
- You can assign files imported from a computer or USB memory.
- Stereo files can only be assigned to the tracks set to stereo link or the master track.
Switch two tracks (SWAP)

1

SWAP/BOUNCE

Press [SWAP/BOUNCE].

2

Select →SWAP →SWAP

Press [ENTER].

3

Select the first track to swap.

SELECT TRACK

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

PLAY/MUTE/REC

Selectable: blinking orange
Selected: lit orange

4

Select the second track to swap.

SELECT TRACK

Already selected track

PLAY/MUTE/REC

Selectable: blinking orange
Selected: lit orange

5

Swap the tracks.

TRACK1 → TRACK2

Swap?

Press [ENTER] to confirm.

NOTE

- The swap function switches two tracks, including the assigned files and all track parameter information.
- Stereo tracks cannot be swapped.
Recording the second and later tracks

After completing the first track recording, you can record the next track in turn while playing back recorded audio files. The preparation for recording is the same as for the first track, and you can playback on a different track.

### Playing back the already recorded track

1. **Press the [PLAY/MUTE/REC] of the TRACK for playback 1-2 times until the green light turns on.**
   - Green light on: playback enabled [PLAY]

### Recording preparation for the second track

2. **Press the [PLAY/MUTE/REC] of the recording track 1-2 times until the red light turns on.**
   - Red light on: recording enabled [REC]

3. **Adjust the [GAIN].**

   - Instrument starts sounding
   - Briefly lights when the sound volume reaches maximum.

   - Red
   - Orange
   - Green
   - Green
   - Level should cause no red light (0dB) even at the maximum sound.

### Recording~Stop

4. **Press [REW] & [Stop] at the same time to return the counter to the head.**

   - PRJ 001 PRJ001
   - 00 00:00:00:00:00

5. **Press [REC] and then [PLAY] to start recording.**

   - PRJ 001 PRJ001
   - 00 00:00:00:123

   - The counter starts moving.

6. **Press [STOP] to stop recording.**

   - PRJ 001 PRJ001
   - 00 00:01:02:04:247

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

### NOTE

- If the first and second recordings are on different tracks, you can skip to Step 7, because you only need to change the track status and start recording.
- When you move file tracks, make sure there is no file assigned to the track where you plan to record (display says “NOT ASSIGN”). If there are assigned files, old files will be overwritten and cannot be retrieved.
- Select tracks using the STATUS KEYS. Orange lights indicate selectable tracks.
- Read-only files are displayed as <R.0> and cannot be recorded over if assigned.

### HINT

- **Other Uses**
  - If you want to use the same track as you recorded before for the second track recording, you should transfer the file to another track, and make the target track empty. Refer to “Preparation of playback tracks” on P.23.
  - You can also swap recorded tracks with unrecorded tracks.
  - This method is useful for creating a second guitar track using Hi-Z.
**NOTE**

- When you move a file on a track, confirm that no files are assigned to the track to be recorded (“NOT ASSIGN”). If there is an assigned file, that recording will be overwritten by new recording.
- Recorded audio files on tracks will be overwritten by new recording. If you rewind the counter to the top and begin recording again, be aware that the overwritten previous recording will be lost.
- During playback the file assigned to the track is played.

**HINT**

- If you want to record a new file, do not assign any file to a track.
Automatic punch-in/punch-out

The punch-in and punch-out functions enable you to pick already recorded portions of a recorded file and re-record them. You can set the beginning and ending points of the portion in advance and record automatically with punch-in at the beginning and punch-out at the ending.

Prepare the track you want to re-record with punch-in/punch-out

1. Raise the fader.
2. 
   - Press [PLAY/MUTE/REC] 1-2 times until the red light is on.
   - Red light on: recording enabled
3. Adjust the recording level and the GAIN to be the same as the already recorded part.

Make punch-in and punch-out settings

4. Using [REW], [FF] and [PLAY] locate the point just before the re-recording (PUNCH IN).
5. Press [AUTO PUNCH I/O] Set the punch-in point.
   - Icon blinks
6. Pressing [FF] & [PLAY], locate the punch-out point.
7. Press [AUTO PUNCH I/O] Set the punch-out point.
   - Icon lights

NOTE

- Once you make auto punch-in/out settings, you cannot change the points. To change the points you must cancel and reset them.
- Press the [AUTO PUNCH IN/OUT] key again to cancel the points set.

Rehearse

1. Press [PLAY] to start playing. Light on
   - When the punch-in point is passed, the [MUTE] function of the track automatically starts.
2. Press [STOP] to stop. Light off
   - When the punch-out point is passed, the [MUTE] function is released.

Re-recording: punch-in/punch-out

8. Move to before the PUNCH IN point.
9. Press [REC] and then [PLAY] to start playback.

Release PUNCH IN/OUT

11. Press [AUTO PUNCH I/O].
   - Icon off
   - Punch in point
   - Punch out point
   - Play
   - Rec

Re-recorded portion.
Manual punch-in/punch-out

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

Prepare the track for punch-in/punch-out

1. Raise the fader


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

Re-recording: punch-in/punch-out

4. Using [REW], locate the point just before where you want to re-record.

5. Press [PLAY] to start playback.

6. Press [REC] to start recording, (punch-in)

7. Press [REC] to stop recording/start playback (punch out).


NOTE

- Punch-in/punch-out recording overwrites the existing recording. A previously recorded file should be assigned to the track.
- You can use the [UNDO/REDO] function.
Playback of a project

Recorded audio files are assigned to tracks for storage. During playback, all the tracks that you have enabled for playback with their status keys (green lights on) will be played.

Overview of recording and playback process in a project

Recording the first track
- Track 1: monaural recording
- Track 7 & 8: stereo recording

Recording more tracks/Playback of the previously recorded tracks
- Monaural recording on tracks 11, 12 and 13

Playback
- Track 1, 11, 12 and 13: monaural playback
- Track 7 & 8: stereo playback

Assigning tracks and playback
- Track 1, 2, 3 & 4: monaural playback
- Track 7 & 8: stereo playback

Ref. : Assigning files to tracks. P.23
Repeat playback of a specific section (A-B repeat)

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

Setting A-B points

1. Locate the beginning point.
2. Press [A-B REPEAT].
3. Locate the end point.
4. Press [A-B REPEAT].

A-B repeat: playback repeatedly

5. Press [PLAY] to start repeat playback.

Cancel A-B repeat and the points


HINT

- When playback reaches point B, it automatically goes back to point A and continues playback.
- While the A-B icon is on, playback repeats continuously.
- You can make these settings both during playback and when stopped.
- If you set point B at a time before point A, repeat playback will start from point B.
- If you want to make new settings, cancel the previous ones by pressing the [A-B REPEAT] key again and then make the new ones.
Using the counter and markers to move (locate)

The counter indicates recording time and elapsed time in hour/minute/second/millisecond and bar/beat/tick (1/48 beat). Use it to set marks that you can then quickly move (locate) to in your project.

**Locate a time or position using the counter**

**Preparation:** Stop the recorder.
Select the project.
Start from the top screen.

1. **Select hour: minute: second or bar-beat-tick.**

   ![Counter display](PRJ01: PRJ001: 00: 00: 00: 00: 00)
   
   **Switch**
   
   ![Switch icons](
   
   **Counter**
   
   ![Counter display](PRJ01: PRJ001: 00: 00 - 00 - 000)
   
   **Switch**
   
   ![Switch icons](
   
2. **Choose the desired unit.**

   (Hour: minute: second: millisecond or bar-beat-tick.)

   ![Counter display](PRJ01: PRJ001: 00: 00: 00: 00: 00)
   
   **Move between units, the selected item blinks**
   
3. **Change the values.**

   ![Counter display](PRJ01: PRJ001: 00: 00: 15: 00: 00: 00)
   
   **Move between items**

**Place a mark**

**Place a mark using the counter**

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

1. **Press [MARK/CLEAR].**

   ![Mark/Clear button](
   
   **Mark number**
   
   ![Mark number display](
   
   **Marker icon**
   
   ![Marker icon](
   
**Place a mark during recording/playback**

In the middle of recording/playback

1. **Press [MARK/CLEAR].**

   ![Mark/Clear button](
   
   **Mark number**
   
   ![Mark number display](
   
**HINT**

Mark icon display

![Mark icon](

- Mark number 3 is located at 10 minutes, 8 seconds, 15 milliseconds.
- Counter is at the indicated mark
- No mark registered at this counter position

**Mark Numbers**

- Mark 0 = Counter 0. This is the head of the project. You cannot change this particular mark.
- If you place a new mark ahead of a registered mark, all the following marks will be automatically renumbered in order.
- You can place a maximum of 100 marks in one project.

**NOTE**

- You cannot use these procedures during recording/playback.

**HINT**

- After Step 3 you can start playback from the set counter value.
**Locate to the position of a mark**

With key operations you can move between marks.

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

   - **Press the forward or backward mark key until you reached the desired mark.**
   - **NOTE**
   - Once you delete a mark, you cannot retrieve it.
   - You cannot delete the top mark 00.

2. **HINT**
   - If you press the [MARK/CLEAR] key at a place where a mark exists (mark icon highlighted), that mark is deleted. If there is no mark at a location (icon not highlighted), a new mark is placed there.
   - To delete a mark, you must move to it first (mark icon highlighted).
   - When placing and deleting marks, numbers are automatically given in order from the beginning.

**Delete a mark**

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

   - **Press the forward and backward mark key until you reach the desired mark.**

2. **MARK/CLEAR** Press [MARK/CLEAR].

   - The selected (highlighted) mark is erased and the preceding mark is shown (the counter does not move).

**Move to mark numbers in counter sequence**

1. Choose a mark.

   - **Choose a mark.**

2. Choose the mark number.

   - **Choose the mark number.**

   - **NOTE**
   - Once you delete a mark, you cannot retrieve it.
   - You cannot delete the top mark 00.

   - **HINT**
   - If you press the [MARK/CLEAR] key at a place where a mark exists (mark icon highlighted), that mark is deleted. If there is no mark at a location (icon not highlighted), a new mark is placed there.
   - To delete a mark, you must move to it first (mark icon highlighted).
   - When placing and deleting marks, numbers are automatically given in order from the beginning.
The R16 has a multifunctional tuner that includes, for example, chromatic tuning that detects note names by semitones, standard guitar/bass tuning and half-step-down tuning.

1. Press [TOOL].
2. Select \text{TUNER}. Menu select
3. Press [ENTER].
4. Select the type of tuner.
5. Chromatic tuner \text{TOOL}>\text{TUNER}>\text{CHROMATIC}
6. Change the standard pitch (if necessary) and begin tuning.

Other tuner types
\text{TOOL}>\text{TUNER}>\text{GUITER}/\text{BASS}, \text{etc.}

5. Select the tuner type.
6. Set the standard pitch and string number. Start tuning.

- The pitch indicator responds to sources input on tracks with red status lights.
- The standard pitch setting is between 435 Hz and 445 Hz in 1 Hz units. The initial setting is 440 Hz.
- Using the other tuners you can use common half-step and whole-step down tunings, for example.
- The standard pitch value setting will be stored separately for each project.

<table>
<thead>
<tr>
<th>String/ note</th>
<th>Tuner type</th>
<th>GUITAR</th>
<th>BASS</th>
<th>OPEN A</th>
<th>OPEN D</th>
<th>OPEN E</th>
<th>OPEN G</th>
<th>DADGAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>String1</td>
<td>E</td>
<td>G</td>
<td>E</td>
<td>D</td>
<td>E</td>
<td>D</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>String2</td>
<td>B</td>
<td>D</td>
<td>C#</td>
<td>A</td>
<td>B</td>
<td>B</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>String3</td>
<td>G</td>
<td>A</td>
<td>A</td>
<td>F#</td>
<td>G#</td>
<td>G</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>String4</td>
<td>D</td>
<td>E</td>
<td>E</td>
<td>D</td>
<td>E</td>
<td>D</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>String5</td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>G</td>
<td>A</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>String6</td>
<td>E</td>
<td>E</td>
<td>D</td>
<td>E</td>
<td>D</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>String7</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Tool**

### Metronome

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

1. **TOOL** Press [TOOL].

   TOOL > TUNER

   Press [ENTER].

2. Select > METRONOME.

   TOOL > METRONOME

   Press [ENTER].

   These are the standard metronome settings (common).

3. Select each setting MENU.

   METRONOME > ON/OFF

   METRONOME > TEMPO

4. Select the settings and setting values.

   METRONOME ON/OFF

   Press [ENTER].

   METRONOME > PLAY & REC

   Press [ENTER].

   Change menu

<table>
<thead>
<tr>
<th>Change menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command</td>
</tr>
<tr>
<td>TOOL</td>
</tr>
<tr>
<td>EXIT</td>
</tr>
</tbody>
</table>

**HINT**

**Tapping the tempo**

- On the TEMPO screen, press the (TOOL) key several times at the tempo you desire, and the tempo will be set to the detected median value.

**Changing and adjusting the metronome output**

[METRONOME] switch: Sets the output

- These settings are stored for each project.
- You can use the metronome even during MASTER TRACK playback.

**MENU settings and setting values**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON/OFF</td>
<td>Set when active</td>
</tr>
<tr>
<td>Settings</td>
<td></td>
</tr>
<tr>
<td>Play Only</td>
<td>During playback only</td>
</tr>
<tr>
<td>REC Only</td>
<td>During recording only</td>
</tr>
<tr>
<td>Play&amp;REC</td>
<td>During both playback &amp; recording</td>
</tr>
<tr>
<td>Off</td>
<td>No metronome sound</td>
</tr>
<tr>
<td>TEMPO</td>
<td>Set manually or by number</td>
</tr>
<tr>
<td>Manual input</td>
<td>Input the tempo by tapping the</td>
</tr>
<tr>
<td></td>
<td>[TOOL] key repeatedly</td>
</tr>
<tr>
<td>Setting range</td>
<td></td>
</tr>
<tr>
<td>40.0–250.0</td>
<td>Initial value: 120.0</td>
</tr>
<tr>
<td>LEVEL</td>
<td>Change metronome volume</td>
</tr>
<tr>
<td>Setting range</td>
<td></td>
</tr>
<tr>
<td>0–100</td>
<td>Initial value: 50</td>
</tr>
<tr>
<td>PAN</td>
<td>Stereo position</td>
</tr>
<tr>
<td>Setting range</td>
<td></td>
</tr>
<tr>
<td>L100–R100</td>
<td>Initial value: C (center)</td>
</tr>
<tr>
<td>SOUND</td>
<td>Change tone</td>
</tr>
<tr>
<td>Settings</td>
<td></td>
</tr>
<tr>
<td>BELL (default)</td>
<td>Metronome sound with a bell on the</td>
</tr>
<tr>
<td></td>
<td>accent</td>
</tr>
<tr>
<td>CLICK</td>
<td>Click sound only</td>
</tr>
<tr>
<td>STICK</td>
<td>Drum stick sound</td>
</tr>
<tr>
<td>COWBELL</td>
<td>Cowbell tone</td>
</tr>
<tr>
<td>HIGH-Q</td>
<td>Synthesized click sound</td>
</tr>
<tr>
<td>PATTERN</td>
<td>Change rhythm</td>
</tr>
<tr>
<td>Settings</td>
<td></td>
</tr>
<tr>
<td>0/4 (no accent)</td>
<td>Initial value: 4/4</td>
</tr>
<tr>
<td>1/4–8/4, 6/8</td>
<td></td>
</tr>
<tr>
<td>PRE-COUNT</td>
<td>Pre-count setting</td>
</tr>
<tr>
<td>Settings</td>
<td></td>
</tr>
<tr>
<td>Off</td>
<td>No sound</td>
</tr>
<tr>
<td>1–8</td>
<td>Enable sound during pre-count for 1</td>
</tr>
<tr>
<td></td>
<td>to 8 beats. Initial: 4 to 8 beats</td>
</tr>
<tr>
<td>SPECIAL</td>
<td>Special (rhythm shown below)</td>
</tr>
</tbody>
</table>

**NOTE**

Be aware that the metronome starts sounding from the instant that recording/playback begins. Therefore, if you begin in the middle of a song, the metronome sound and the pulse of the music might be out of sync. Moreover, if you turn the metronome volume up high, the accented beat of some sounds might become difficult to distinguish.

**METRONOME**

During metronome use the metronome indicator lights in time with the tempo.
16-track synchronized recording by connecting two R16s

If you want to record more than 8 tracks at the same time for a band performance, for example, you can increase the number of tracks by connecting two R16s with a USB cable.

**Make sender settings.**
Set the R16 that will be used for key control as the Master.

1. Press [TOOL].
2. Select >SYSTEM.
   - PROJECT
   - SYSTEM
   - Press [ENTER].
3. Select >SYNC REC.
   - SYSTEM
   - SYNC REC
   - Press [ENTER].
4. Select >Master.
   - SYNC REC
   - Master
   - Press [ENTER].

USB Indicator: [HOST] light on

**Make receiver settings.**
Set the R16 that receives commands as the Slave.

1. Press [TOOL].
2. Select >SYSTEM.
   - PROJECT
   - SYSTEM
   - Press [ENTER].
3. Select >SYNC REC.
   - SYSTEM
   - SYNC REC
   - Press [ENTER].
4. Select >Slave.
   - SYNC REC
   - Slave
   - Press [ENTER].

USB Indicator: [DEVICE] light on

**Connect two R16 with a USB cable.**
Plug a USB 2.0 (AB-type) cable into the socket that has a lit indicator.

**HINT**
Command keys that effect both sender and receiver.

<table>
<thead>
<tr>
<th>REC</th>
<th>[REC] key</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLAY</td>
<td>[PLAY] key</td>
</tr>
<tr>
<td>STOP</td>
<td>[STOP] key</td>
</tr>
<tr>
<td>FF</td>
<td>[FF] key</td>
</tr>
<tr>
<td>REW</td>
<td>[REW] key</td>
</tr>
</tbody>
</table>

**NOTE**
- Perfect synchronization of the start timing in recording by two R16s is not guaranteed.
- There will be a gap of approximately 1-2 ms.
R16 mixing procedure flow

Use the track mixer to make stereo link settings, to adjust sound volume, EQ and PAN (balance), and to adjust the send signal strength, which affects the depth of send return effects.

Adjust volume, EQ and PAN of sounds

Select the SEND-RETURN EFFECT patch

Adjust the SEND-RETURN EFFECT

Apply the insert effect to tracks

Mix down

**NOTE**
- When you are using a stereo track, except for the phase setting, parameter values are shared by both L and R channels.

**HINT**

*What is the track mixer?*
- This mixer can mix audio tracks from the recorder into stereo.
- You can adjust the sound volume and PAN and EQ parameters of each track using its fader.
Mixing

Track settings for EQ, pan and send-return level

This track mixer uses track parameters to adjust PAN (stereo position), EQ (equalizer) and SEND-RETURN EFFECT of the recorder’s audio tracks.

1. Press [PAN/EQ].

   Track
   Track1
   EQ HI G=0dB
   Parameter
   Type (EQ is on)

2. Select a track.

   Change track number
   Track1
   EQ HI G=0dB

3. Turn ON/OFF and select types and values.

   Turn setting off.
   Track3
   EQ HI G=0dB
   Parameter ON/OFF
   Press [ENTER].

   Change the parameter type.
   Track3
   EQ HI G=0dB
   Parameter ON/OFF

   Change the parameter type.
   Track3
   PAN=0
   Change the parameter type.

   Adjust the value of the parameter.
   Track3
   EQ HI G=0dB

4. Press [ENTER] to confirm settings.

HINT

- Using the track mixer, you can adjust each track element (track parameter), including PAN and the SEND-RETURN EFFECT settings to change the signal processing track by track.
- At step 2, tracks can be selected using track status keys. Track indicators light orange when the track is selected.

NOTE

- The parameters of the L/R channels in stereo tracks are the same except the phase setting (INVERT).
- The settings are stored with the project.
- The MASTER TRACK does not have any settings except for volume control with its fader.
### Track parameters

Parameters available to each track

<table>
<thead>
<tr>
<th>Display</th>
<th>Parameter</th>
<th>Setting range: Initial value</th>
<th>Explanation</th>
<th>Monaural tracks</th>
<th>Stereo tracks</th>
<th>Master track</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAN</td>
<td>PAN</td>
<td>L100–R100</td>
<td>Adjusts a track’s PAN. In case of a stereo track, it adjusts the volume balance between the left and right tracks.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

---

**EQ HI**  
EQ boost for high pitch/frequency range

<table>
<thead>
<tr>
<th>Display</th>
<th>Parameter</th>
<th>Setting range: Initial value</th>
<th>Explanation</th>
<th>Monaural tracks</th>
<th>Stereo tracks</th>
<th>Master track</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQ HI G</td>
<td>EQ HI GAIN*</td>
<td>–12–+12dB</td>
<td>Adjust amount of boost/cut of high frequencies by -12 – +12 dB. This parameter is shown only when EQ HI is on.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>EQ HI F</td>
<td>EQ HI FREQUENCY*</td>
<td>500(Hz)–18(kHz)</td>
<td>Adjust EQ boost/cut frequency of high frequencies. This parameter is shown only when EQ HI is on.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

---

**EQ MID**  
EQ boost for middle pitch/frequency range

<table>
<thead>
<tr>
<th>Display</th>
<th>Parameter</th>
<th>Setting range: Initial value</th>
<th>Explanation</th>
<th>Monaural tracks</th>
<th>Stereo tracks</th>
<th>Master track</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQ MID G</td>
<td>EQ MID GAIN*</td>
<td>–12–+12dB</td>
<td>Adjust amount of boost/cut of medium frequencies by -12 – +12 dB. This parameter is shown only when EQ MID is on.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>EQ MID F</td>
<td>EQ MID FREQUENCY*</td>
<td>40(Hz)–12(kHz)</td>
<td>Adjust EQ boost/cut frequency of medium frequencies. This parameter is shown only when EQ MID is on.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>EQ MID Q</td>
<td>EQ MID Q-FACTOR*</td>
<td>0.1–1.0</td>
<td>Adjust the Q value (width of the frequency band affected) of medium frequencies. This parameter is shown only when EQ MID is on.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

---

**EQ LOW**  
EQ boost for low pitch/frequency range

<table>
<thead>
<tr>
<th>Display</th>
<th>Parameter</th>
<th>Setting range: Initial value</th>
<th>Explanation</th>
<th>Monaural tracks</th>
<th>Stereo tracks</th>
<th>Master track</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQ LO G</td>
<td>EQ LO GAIN*</td>
<td>–12–+12dB</td>
<td>Adjust amount of boost/cut of low frequencies by -12 – +12dB. This parameter is shown only when EQ LO is on.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>EQ LO F</td>
<td>EQ LOW FREQUENCY*</td>
<td>40(Hz)–125(kHz)</td>
<td>Adjust EQ boost/cut frequency of low frequencies. This parameter is shown only when EQ LO is on.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

## SEND-RETURN EFFECT levels

<table>
<thead>
<tr>
<th>Display</th>
<th>Parameter</th>
<th>Setting range: Initial value</th>
<th>Explanation</th>
<th>Monaural tracks</th>
<th>Stereo tracks</th>
<th>Master track</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVERB SEND</td>
<td>REVERB SEND LEVEL*</td>
<td>0–100</td>
<td>Adjust the signal level sent from tracks to the Reverb effect.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>CHORUS SEND</td>
<td>CHORUS/DELAY SEND LEVEL*</td>
<td>0–100</td>
<td>Adjust the signal level sent from tracks to the Chorus/Delay effect.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

---

**FADER**  
Adjust the sound volume.

<table>
<thead>
<tr>
<th>Display</th>
<th>Parameter</th>
<th>Setting range: Initial value</th>
<th>Explanation</th>
<th>Monaural tracks</th>
<th>Stereo tracks</th>
<th>Master track</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST LINK</td>
<td>STEREO LINK</td>
<td>On/Off</td>
<td>Switch on/off to set the stereo link function that connects 2 monaural tracks together. (+P.20)</td>
<td>○</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INVERT</td>
<td>INVERT</td>
<td>On/Off</td>
<td>Set whether the phase of a track is inverted or not. Off: normal phase, ON: inverted phase.</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

*Switch parameters with asterisks (*) On/Off using the ENTER key.

---

**Mixing**

Monaural tracks: 1 – 16
Stereo tracks: 1/2 – 15/16

---

38
Combine multiple tracks into one monaural or stereo file. Using BOUNCE, this creates a new file in the same project.

**Mix down/Bounce**

**Combine multiple tracks into 1~2 tracks**

Combine multiple tracks into one monaural or stereo file.

**Settings for the bounced tracks**

PROJECT>REC SETTING>BOUNCE

**Start from the top screen.**

1. **PROJECT**
   - Press [PROJECT].

2. **Select >REC SETTING.**
   - Press [ENTER].

3. **Select >BOUNCE.**
   - Press [ENTER].

**Set whether the track that is overwritten by the bounce recording is muted or not.**

4. **Select >REC TRACK: Play.**
   - Press [ENTER].

5. **Mute: Set the bounce destination track to be silent (initial setting).**
   - **Play: Set the bounce destination track to play and be included in the bounce.**

**Bounce (preparation)**

1. **Set tracks that you want to bounce to playback.**
   - **PLAY/MUTE/REC**
     - Press the [PLAY/MUTE/REC] 1-2 times until the green light turns on.
   - **Green light on: playback enabled (PLAY)**

2. **Select destination track(s) for the bounce.**
   - **PLAY/MUTE/REC**
     - Press [PLAY/MUTE/REC] 1-2 times until the red light turns on.
   - **Red light on: record enabled [REC]**

**HINT**

- **“Bounce” means combining audio data from several tracks and files together into one stereo or monaural file. This is also called “ping-pong recording.”**

- To also record the signal of the track(s) that the bounce is being recorded to, set “REC TRACK” to “Play” in the BOUNCE Menu as described at Step 4.
- Once the bounce is executed, a new file will be created in the same project.
- If you set the bounce destination to a monaural track, the recorded signals are mixed to monaural. If set to a stereo link track pair, the recorded signals are mixed to stereo.

**NOTE**

- You can cancel a bounce using the [UNDO/REDO] key.
- If you bounce 2 monaural tracks to stereo, set the PAN of the odd number track to L 100 and the even number track to R 100.

[Ref: Mix down P.40, 42]
Bounce (recording)

1. **SWAP/BOUNCE**
   - Press [SWAP/BOUNCE].

2. **Select >BOUNCE**
   - Press [ENTER].

3. **Select On**
   - Press [ENTER].

   **BOUNCE icon** appears on display.

4. **Proced to the next step or cancel**
   - Press [EXIT] to return to the top.

5. **Adjust the mix balance (audition)**
   - Press [SWAP/BOUNCE].

   **Set On/Off**
   - Press [ENTER].

   **Green light on**: playback enabled (PLAY)
   - Press [PLAY/MUTE/REC] of the bounce destination track.

   **Light off**: mute (no sound)
   - Press [PLAY/MUTE/REC] on the tracks bounced.

   **Press [REW] & [STOP] at the same time to return the counter to the head.**

   **Red light on**
   - Press [REC] and then [PLAY] to start recording.

   **Green light on**
   - Press [STOP] to end the bounce.

   **Press and hold [EXIT] to return to the top.**

   **Press [STOP] to stop playback.**

   **Press [RETP] & [STOP] at the same time to return the counter to the head.**

   **Press [PLAY] to start playback.**
Using a mastering effect

Use a mastering algorithm as an insert effect on the master track that affects just the mix down.

Insert an INSERT EFFECT before the [MASTER] fader.

1. Press [INSERT EFFECT].

Effect ON/OFF switch

If "INSERT EFFECT OFF" is displayed, press [ENTER].

2. Select MASTERING.

Select MASTERING .

No.00:PlusAlfa

3. Press [▼].

No.00:PlusAlfa

4. Select >INPUT SOURCE.

No.00:PlusAlfa

5. Select MASTER.

No.00:PlusAlfa

6. Press [▲].

MASTERING No.00:PlusAlfa

7. Select the patch.

MASTERING <MASTER>
No.00:DiscoMst.

Audition the patches while listening to the tracks playback, and then select one.

8. Press [EXIT].

PRJ001 <MASTER>
00 000:00:00

NOTE

- If the INSERT EFFECT is applied to the [MASTER] fader, you cannot also use the INSERT EFFECT on track inputs.
- At step 7, if you notice any distortion of the signals because of the MASTERING EFFECT, check the sound of playback on the track and adjust it by lowering all the faders. (If a track sound is distorted, adjust that track.)
- You can select STEREO, DUAL, MIC or MASTER algorithms. If you set another algorithm, the insert position changes to the inputs.

HINT

- When you choose a MASTERING algorithm, you can use the MASTERING EFFECT processing on the 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 recorded to the [MASTER] track after passing through the [MASTER] fader.

**Recording to the [MASTER] track.**

**Preparation: Adjust the signal levels.**

1. Press [REW] + [STOP] at the same time and then [PLAY] to start playback from the top.
   - **HINT**: This mutes the other tracks and disables all effects.

2. Adjust the level of the signal that passes through the master fader.
   - **NOTE**: The settings of the pan/balance, insert and send/return effects of each track affect the signals sent to the master track and are reflected in its sound.
   - **HINT**: Each project can have one master track.
   - **HINT**: The master track will have a file assigned.
   - **HINT**: During recording you can confirm the playback levels of each track and the recording levels of the master track.
   - **HINT**: The signals sent from the OUTPUT jacks are the same signals that have passed through the [MASTER] fader.
   - **HINT**: You can use the [UNDO/REDO] key.
   - **HINT**: You can use the metronome during playback.

3. Press [STOP].

4. Press [REW] & [Stop] at the same time to return the counter to the head.

5. Press [REC] and [PLAY] in turn to start recording.


7. Press [STOP] to stop recording.

**Play the master track**

- **MASTER/MIX DOWN/PLAY**
  - Press [MASTER/MIX DOWN/PLAY] 1-2 times until the light turns on.
  - **Green light on: playback enabled**
  - **Light off: muted**

- **REC/SOLO/MUTE**
  - **Red light on: recording enabled**

**Disable master track playback.**

- **MASTER/MIX DOWN/PLAY**
  - Press [MASTER/MIX DOWN/PLAY] 1-2 times until the light turns off.
  - **Light off: muted**

- **REC/SOLO/MUTE**
  - **Light off: muted**
Entering names

You can change names when you create new data, use RENAME menu functions or edit patches. Whatever name change method you use, the handling of letter positions and letters is the same.

### Keys used for name changes

- **Move letter position**
- **Letter deletion**
- **Insert and select letter**

1. **Select a letter.**
   - PRJ001
   - When a letter in a name is highlighted, you can change it.

2. **Change the initial letter.**
   - @PRJ001

3. **Choose the second letter to be changed.**
   - 0PRJ001

4. **Change the second letter.**
   - 05PRJ001

5. **Delete the third letter.**
   - 05PRJ001

6. **Choose the last letter and change.**
   - 0518_0

7. **Proceed to the next action** or **exit without saving the change.**

### Names and rules

<table>
<thead>
<tr>
<th>Project</th>
<th>Usable characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project number</td>
<td>Numerals: 0-9</td>
</tr>
<tr>
<td>PRJ xxx: PRJ</td>
<td>Alphabet: A-Z, a-z</td>
</tr>
<tr>
<td>(space, 3 numerals)</td>
<td>Symbols: (space)! *</td>
</tr>
<tr>
<td>The project number is given automatically starting with the lowest and is not changeable.</td>
<td></td>
</tr>
</tbody>
</table>

| Project name     | Numerals: 0-9     |
| PRJxxx: PRJ, 3 numerals, Maximum of 8 characters |
| Alphabet: A-Z, a-z |
| Symbols: (space)! * |
| # $ & ‘( ) *+ . : |
| &> = ?@ [ ] ^ _ ` |
| The name is displayed with an initial letter highlighted. You can change the name. |

<table>
<thead>
<tr>
<th>File (recorded)</th>
<th>Usable characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monaural files</td>
<td>Maximum of 8 characters +</td>
</tr>
<tr>
<td>MONO-xxx.WAV</td>
<td>WAV (extension)</td>
</tr>
<tr>
<td>MONO-, 3 numerals (x), extension (.WAV)</td>
<td></td>
</tr>
<tr>
<td>Stereo files</td>
<td>Numerals: 0-9, Alphabet: A-Z, Symbols: (space)</td>
</tr>
<tr>
<td>STE-xxx.WAV</td>
<td>(under score)</td>
</tr>
<tr>
<td>STE-, 3 numerals, extension (.WAV)</td>
<td></td>
</tr>
<tr>
<td>Mix Down (Master)</td>
<td></td>
</tr>
<tr>
<td>&quot;MASTRxxx.WAV&quot;</td>
<td></td>
</tr>
<tr>
<td>MASTR, 3 numerals, extension (.WAV)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Insert effect/Send-Return effect</th>
<th>Usable characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patch number: 2 numerals.</td>
<td>None</td>
</tr>
<tr>
<td>The patch number is given automatically starting with the lowest and is not changeable.</td>
<td></td>
</tr>
<tr>
<td>Patch name: 8 characters.</td>
<td>Numerals: 0-9, Alphabet: A-Z, Symbols:</td>
</tr>
<tr>
<td></td>
<td>(space) ! * $</td>
</tr>
<tr>
<td></td>
<td>% &amp; ‘( ) *+ . :</td>
</tr>
<tr>
<td></td>
<td>&amp;&gt; = ?@ [ ] ^ _ `</td>
</tr>
</tbody>
</table>

### NOTE

- When a name is displayed and the initial letter is highlighted during operation, you can change the name.
- If the same name exists, a symbol will be attached to the top of the name. You have to change the name to save it.
- Deleted letters cannot be retrieved. You can restart the procedure with the EXIT key.
- If you have mistakenly changed a patch name, move to the next patch without saving.
- The numbers “xxx” of a name are automatically assigned at naming time.
Error list: what to do when these messages appear on the screen

Push the [EXIT] key when you see a message like “---Error” or “Please push the EXIT key.”

When other errors and messages occur, the displayed screen will automatically close within three seconds.

<table>
<thead>
<tr>
<th>Message</th>
<th>Meaning</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message when something is missing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Card</td>
<td>There is no card inserted.</td>
<td>Make sure that an SD card is inserted correctly.</td>
</tr>
<tr>
<td>No Project</td>
<td>There is no project at all.</td>
<td>Check that the project has not been deleted or changed to a different place.</td>
</tr>
<tr>
<td>No File</td>
<td>There is no file in the project.</td>
<td>Check that the file has not been deleted or stored in a different place.</td>
</tr>
<tr>
<td>No USB Device</td>
<td>There is no USB connection.</td>
<td>The connection may have been canceled or there may be problems with the cable.</td>
</tr>
</tbody>
</table>

Messages shown frequently

<table>
<thead>
<tr>
<th>Message</th>
<th>Meaning</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset DATE/TIME</td>
<td>Setting lost because of low battery.</td>
<td>Set the [DATE/TIME] again. →P.14</td>
</tr>
<tr>
<td>Low Battery!</td>
<td>Time to change the batteries.</td>
<td>Change batteries or connect the adapter.</td>
</tr>
<tr>
<td>Stop Recorder</td>
<td>Cannot be accessed during playback/recording.</td>
<td>Stop the recorder first, and then try again.</td>
</tr>
</tbody>
</table>

Messages that objects (projects, files, etc) are protected

<table>
<thead>
<tr>
<th>Message</th>
<th>Meaning</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Card Protected</td>
<td>SD card is protected.</td>
<td>Eject the SD card and unlock the write protection. Insert the card again. →P.12</td>
</tr>
<tr>
<td>Project Protected</td>
<td>The project is protected.</td>
<td>Disable project protection using the [PROTECT] menu. →P.56</td>
</tr>
<tr>
<td>File Protected</td>
<td>This is a read-only file, you cannot write to it.</td>
<td>Disable the read-only status of the file using a computer.</td>
</tr>
<tr>
<td>USB Device Protected</td>
<td>USB device connection is protected.</td>
<td>Disable the protection of the equipment.</td>
</tr>
</tbody>
</table>

Over capacity or over limit messages

<table>
<thead>
<tr>
<th>Message</th>
<th>Meaning</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Card Full</td>
<td>The card is full.</td>
<td>Change to a new card or delete unneeded data.</td>
</tr>
<tr>
<td>Project Full</td>
<td>No more projects can be saved on the card.</td>
<td>Delete unneeded projects.</td>
</tr>
<tr>
<td>File Full</td>
<td>File is full.</td>
<td>Delete unneeded files.</td>
</tr>
<tr>
<td>USB Device Full</td>
<td>The connected USB device is full.</td>
<td>Change the connected USB device or delete data.</td>
</tr>
</tbody>
</table>

No access messages

<table>
<thead>
<tr>
<th>Message</th>
<th>Meaning</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Card Access Error</td>
<td>Unable to read or write the card.</td>
<td>Press EXIT and try the operation again.</td>
</tr>
<tr>
<td>Project Access Error</td>
<td>Unable to read or write the project.</td>
<td>Press EXIT and try the operation again.</td>
</tr>
<tr>
<td>File Access Error</td>
<td>Unable to read and write the file.</td>
<td>Press EXIT and try the operation again.</td>
</tr>
<tr>
<td>USB Device Access Error</td>
<td>Unable to read or write to the connected USB device.</td>
<td>Press EXIT and try the operation again.</td>
</tr>
<tr>
<td>Card Format Error</td>
<td>This is a card format the R16 cannot use.</td>
<td>Change the card format to one that the R16 can use.</td>
</tr>
<tr>
<td>File Format Error</td>
<td>This is the file format the R16 cannot use.</td>
<td>Change the file format to one that the R16 can use.</td>
</tr>
<tr>
<td>USB Device Format Error</td>
<td>This is a USB format the R16 cannot use</td>
<td>Change the USB format to one that the R16 can use.</td>
</tr>
</tbody>
</table>

Other errors

<table>
<thead>
<tr>
<th>Message</th>
<th>Meaning</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Card Error</td>
<td>There is an error occurring.</td>
<td>Press EXIT and try the operation again.</td>
</tr>
<tr>
<td>Project Error</td>
<td></td>
<td></td>
</tr>
<tr>
<td>File Error</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USB Device Error</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Effect patch overview

You can select patches in the R16, use effects easily, make fine adjustments to suit the music, and then edit and save patches.

Effect patch use process

Use effects
- INSERT EFFECT P.47
- SEND RETURN P.47

Adjust the effect send level
- REV/DLY SEND P.37
- REV SEND P.37

Edit a patch
- EDIT P.51
You can make subtle adjustments to effect module parameters to achieve sounds you like.

Edit the modules

Select the types

Adjust the parameters

Adjust the effect send level

Edit the patch level

Patch selection
- PATCH SELECT P.48
You can select and use algorithms, pre-set patches and their combinations.

Import patches
- IMPORT P.54
You can use patches imported from other projects.

Set insertion position
- INPUT SOURCE P.49
Use only for monitoring
- REC SIGNAL P.55

All patches

One patch

Save patches
- SAVE P.53

Patch

Algorithms and patches

One effect is called an “effect module” and it consists of 2 elements. Effect types, which are different types, and effect parameters, which control the depth of the effect. A patch is the result of adjusting the effect type and parameters of each module. An algorithm is the orderly arrangement of the initial patches arranged for recording targets or methods.

Algorithms
- CLEAN
- DISTORTION
- ACO/BASS SIM
- BASS

Patch
- COMP/ LIMITER
- EFX
- PRE AMP
- 3BAND
- EQ
- ZNR
- MODULATION/ DELAY
- PATCH LEVEL

Module
- MODULATION/ DELAY

Effect types
- CHORUS
- ENSEMBLE
- FLANGER

Parameters
- Depth Rate
- Tone
- Mix
- Depth Rate
- Resonance
- Manual
Insert effects and send return effects

The insert effects in one project include 330 patches classified into 9 algorithms. You can select the algorithms and patches according to your application and choose where to insert those patches.

The send/return effect is internally connected in the SEND/RETURN at the MIXER section. There are 2 types of effects adjustable by their mixer SEND LEVELS (signal volumes sent to the effect) and they can be used together.
**Input/output of the insert and send return effects**

There are 2 types of effects processors built in to the R16—insert effects and send return effects. You can use them at the same time.

---

**INSERT EFFECT**
- You can use insert effects on specific channels.
- **Insert effect points**
  - **Input**
    - You can select inputs to apply effects to signals before recording them to recorder tracks.
  - **Track**
    - Apply processing to the playback sound of any audio tracks in the track mixer.
  - **Master**
    - Process the final stereo mix just before the [MASTER] fader (signals recorded to the master track).

**SEND RETURN EFFECT**
- The built-in effects in the send return effect of the mixer.
  - **CHORUS/DELAY**
  - **REVERB**
- **Send level**
  - (Signal volume sent to the effect)
- **Mix (return)** with the original sounds of the sent track.

---

**Insert effect signal flow**
- Put the insert effect on a monaural input and output in monaural.

**Send return effect signal flow**
- (INPUT or Track) ➔ **SEND RETURN EFFECT** ➔ INPUT or Track

---

Ref.: Insert effect position  P.49
Includes effects and patch return effects are selected and adjusted the same way.

You can select the most appropriate modules from the algorithms, edit types and parameters and use saved patches.

There are a few major differences between the two types of effects when making settings. For an INSERT EFFECT, you select a patch and set the insertion point. For a SEND RETURN EFFECT, you adjust the send level of the signals using the mixer.

Other functions are “IMPORT” to get patches from another project and “REC SIGNAL” to apply the effect only to monitoring.

The use procedures of effects are the same when using the R16 as an audio interface and control surface, but the patches are initialized when the unit is not used as a recorder.

**Insert Effect and Patch**: 

<table>
<thead>
<tr>
<th>Algorithm name on display</th>
<th>Number of patches (programmed patches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithm suitable for guitar/bass recording</td>
<td></td>
</tr>
<tr>
<td>CLEAN</td>
<td>30(22)</td>
</tr>
<tr>
<td>DISTORTION</td>
<td>50(40)</td>
</tr>
<tr>
<td>ACO/BASS SIM</td>
<td>20(10)</td>
</tr>
<tr>
<td>BASS</td>
<td>30(20)</td>
</tr>
</tbody>
</table>

- For microphone recording, such as vocals
- For 2 independent channels (2 mono inputs/outputs)
- For recording synthesizers, electric pianos and other line-output instruments
- Algorithm with 8 independent channels of input/output
- 8xCOMP EQ
- Processing for final stereo mixes
- MASTERING

**Send Return Effect**

<table>
<thead>
<tr>
<th>Algorithm name on display</th>
<th>Number of patches (programmed patches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithm suitable for guitar/bass recording</td>
<td></td>
</tr>
<tr>
<td>CLEAN</td>
<td>30(18)</td>
</tr>
<tr>
<td>CHORUS/DELAY</td>
<td>30(22)</td>
</tr>
</tbody>
</table>

- Process final stereo mix signals
- CHORUS/DELAY
- Process final stereo mix signals
- REVERB

**Select effect & patch**

Press until the red light turns on.

Press (INSERT EFFECT) or (SEND RETURN EFFECT).

Press [ENTER] to turn on/off.

Select the algorithm.

<table>
<thead>
<tr>
<th>Algorithm name</th>
<th>Patch number: Patch name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLEAN</td>
<td>00: Standard</td>
</tr>
<tr>
<td>DISTORTION, ACO/BASS SIM, BASS, MIC, DUAL MIC, STEREO, 8x COMP EQ, MASTERING</td>
<td></td>
</tr>
<tr>
<td>CHORUS/DELAY</td>
<td>00: ShortDLY</td>
</tr>
</tbody>
</table>

Select the patch.

Press [\].

- EDIT
- IMPORT
- INPUT SOURCE
- REC SIGNAL
**Insert effect insertion position**

You can change the insert position of the Insert Effect. This menu is only for Insert Effect.

1. **INSERT EFFECT**
   - Press [INSERT EFFECT].
   - Effect on/off switch.
   - Press [ENTER].

2. **Select the algorithm/patch.**
   - Current insert position
   - CLEAN
   - No.00: Standard

3. **Press [▼].**

4. **Select INPUT SOURCE.**
   - No.00: Standard
   - Press [ENTER].
   - Change menu
   - Press [ENTER].
   - Input Source
   - INPUT 1

5. **Set source of input into effect.**
   - Input Source
   - TRACK 8
   - Press [ENTER].
   - Change input place

6. **Press [▲].**

**NOTE**

- You can select a single INPUT (1~8) only when you have chosen the CLEAN, DISTORTION, ACO/BASS SIM, BASS or MlC algorithm.
- You can select Track 1-8 or Track 9-16 only when the 8 x COMP EQ is chosen as the algorithm.
- INPUT 1-8 can be selected only when the 8 x COMP EQ algorithm has been chosen.
- After you select an insertion place, if you change the algorithm to 8 x COMP EQ, the insertion place will be changed to Input 1-8, Track 1-8 or Track 9-16 (depending on the previous setting).
- To insert into a single monaural track output, you must select TRACK 1 ~ TRACK 8. To insert into two monaural tracks or a stereo track, you must select TRACK 1/2 ~ TRACK 15/16. If you want to insert before the MASTER FADER, you must select MASTER.

**HINT**

Change the insertion place of the insert effect.
When a project is at the default status, the insert effect is inserted on INPUT 1.
To change this place, select an INPUT SOURCE at Step 4:
Insert position of insert effect

Inserting the INSERT EFFECT into 2 monaural inputs (DUAL algorithm)

Odd-numbered INPUT or Track

Even-numbered INPUT or Track

INSERT EFFECT L

INSERT EFFECT R

Odd-numbered Track

Even-numbered Track

Inserting an INSERT EFFECT into a stereo input (Stereo Master algorithm)

Odd-numbered INPUT or Track or Master L

Even-numbered INPUT or Track or Master R

INSERT EFFECT

INSERT EFFECT

Odd-numbered Track or Master Track (L)

Even-numbered Track or Master Track (R)

Inserting an INSERT EFFECT on 8 inputs (8 x COMP EQ algorithm)

INPUT1 or Track1/9

INPUT2 or Track2/10

INPUT2 or Track2/10

INSERT EFFECT 1

INSERT EFFECT 2

INSERT EFFECT 8

Track1/9

Track2/10

Track2/10
You can create patches that combine effects together, change effect types in patches, or change processing however you like by adjusting the depth of effects using their parameters.

**HINT**
- Some patches say “Empty,” because no modules in the patch have been set yet.
- When you want to edit the ZNR module, go to the page with “TOTAL” in the first row.
- You can individually edit the modules arranged in the L/R Channels of the DUAL MIC ALGORITHM. Your selection is the left channel when the first row displays “L” and the right channel when the first row displays “R.”
- In the 8 x COMP EQ ALGORITHM, each channel has its own HPF, COMPRESSOR and EQ modules and you can turn each effect module on/off on each channel independently. You can check the current channel by looking at the number in the first row of the display.

**NOTE**
- You cannot edit an algorithm itself, including the combination and arrangement of the effect modules.
- If you turn “off” an effect module, all the settings after the effect module, such as the type and parameters will also be turned off.
- When you are using 8 x COMP EQ, you cannot turn an effect on or off for all channels at once. But if you press [ENTER] when an effect setting value is displayed for the desired channel, you can switch it off for that channel.
- You cannot turn off the “TOTAL” modules.
- There is no ZNR module in the 8 x COMP EQ algorithm.
- If you change to another patch without saving a patch that shows the ‘E’ mark, your edits will be lost completely. Please refer to the next page for patch saving.

### Patch editing

#### Edit the patch level (final patch sound volume)

1. Press [EXIT] to return.

#### Set the effect module


#### Change INSERT EFFECT name


#### Adjust the effect parameters


#### Change SEND RETURN EFFECT name

5. Press [EXIT] to return.

#### Set the effect module


#### Edit the patch level (final patch sound volume)


#### Edit effect modules


### Insert effect

Send return effect

Press [INSERT EFFECT] or [SEND RETURN EFFECT].

1. Effect on/off switch.

2. Select the algorithm/patch.


4. Select > EDIT.

5. Edit effect modules

6. Select the effect module.

7. Set the effect module

8. Edit the patch level

Press [EXIT] to finish.

**Press [EXIT] to finish.**

**Press [EXIT] to return.**

**Press [EXIT] to return.**

**Press [EXIT] to return.**

**Press [EXIT] to return.**

**Press [EXIT] to return.**

**Press [EXIT] to return.**

**Press [EXIT] to return.**

**Press [EXIT] to return.**

**Press [EXIT] to return.**
Patch editing

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

**HINT**

- Some patches say “Empty,” because no modules in the patch have been set yet.
- When you want to edit the ZNR module, go to the page with “TOTAL” in the first row.
- You can individually edit the modules arranged in the L/R Channels of the DUAL MIC ALGORITHM. Your selection is the left channel when the first row displays “L” and the right channel when the first row displays “R.”
- In the 8 x COMP EQ ALGORITHM, each channel has its own HPF, COMPRESSOR and EQ modules and you can turn each effect module on/off on each channel independently. You can check the current channel by looking at the number in the first row of the display.

**NOTE**

- You cannot edit an algorithm itself, including the combination and arrangement of the effect modules.
- If you turn “off” an effect module, all the settings after the effect module, such as the type and parameters will also be turned off.
- When you are using X#/-0 %1, you cannot turn an effect on or off for all channels at once. But if you press [ENTER] when an effect setting value is displayed for the desired channel, you can switch it off for that channel.
- You cannot turn off the “TOTAL” modules.
- There is no ZNR module in the 8 x COMP EQ algorithm.
- If you change to another patch without saving a patch that shows the ‘E’ mark, your edits will be lost completely. Please refer to the next page for patch saving.

---

1. **Edit effect modules**
   - Turn the effect types on/off.

2. **Set the effect module**
   - Select the effect module.

3. **Edit the patch level**
   - Set the patch level.

4. **Change INSERT EFFECT name**
   - Select TOTAL.

5. **Adjust the effect parameters**
   - Select a parameter.

6. **Change SEND RETURN EFFECT name**
   - Press [ENTER] to finish.

7. **Mix EFFECT**
   - If “INSERT EFFECT Off” is displayed, press [ENTER].

8. **Exit**
   - Press [EXIT] to return.
Once you have edited a patch, use “SAVE” to save it. You can save a patch at any place within the same algorithm.

**Effect ON/OFF switch**

When “INSERT EFFECT off” is displayed, press [ENTER].

Select the algorithm/patch.

See steps 1~3 on the previous page.

**NOTE**

- These procedures are the same for both insert and send return effects.
- If you switch to another patch without saving an edited patch, you will lose all the edits. Remember to always save your edited patches.
- The import source and the import destination are different projects when using PATCH IMPORT.

**HINT**

- You can save your edited patch at any place within the same algorithm.
- You can make a patch copy by saving an existing patch to a different area.

Import one or all patches that have been created in another project to use in the current project.

**Effect ON/OFF switch**

When “INSERT EFFECT off” is displayed, press [ENTER].

Select the algorithm/patch.

See steps 1~3 on the previous page.

**NOTE**

- These procedures are the same for both insert and send return effects.
- If you switch to another patch without saving an edited patch, you will lose all the edits. Remember to always save your edited patches.
- The import source and the import destination are different projects when using PATCH IMPORT.

**HINT**

- You can save your edited patch at any place within the same algorithm.
- You can make a patch copy by saving an existing patch to a different area.
Once you have edited a patch, use “SAVE” to save it. You can save a patch at any place within the same algorithm.

Once you have edited a patch, use “SAVE” to save it. You can save a patch at any place within the same algorithm.

HINT

- You can save your edited patch at any place within the same algorithm.
- You can make a patch copy by saving an existing patch to a different area.

NOTE

- These procedures are the same for both insert and send return effects.
- If you switch to another patch without saving an edited patch, you will lose all the edits. Remember to always save your edited patches.
- The import source and the import destination are different projects when using PATCH IMPORT.

HINT

- You can save your edited patch at any place within the same algorithm.

Import one or all patches that have been created in another project to use in the current project.

Import one or all patches that have been created in another project to use in the current project.

See steps 1~3 on the previous page.

Select >IMPORT.

Select >IMPORT.

Change menu. Select import method.

Change menu. Select import method.

Import all patches.

Import all patches.

Select >ALL.

Select >ALL.

Change menu/item

Change menu/item

Import one patch.

Import one patch.

Select >PATCH.

Select >PATCH.

Change menu

Change menu

Select the project to import from.

Select the project to import from.

Select the project to import.

Select the project to import.

Select the project to import.

Select the project to import.

Confirm the project to import from and press [IMPORT].

Confirm the project to import from and press [IMPORT].

Confirm the project to import from and press [IMPORT].

Confirm the project to import from and press [IMPORT].

Import the patch.

Import the patch.

Import the patch.

Import the patch.
Using the insert effect only for monitoring

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

1. **INSERT EFFECT**
   - Press [INSERT EFFECT].
   - **Effect ON/OFF switch**
     - When “INSERT EFFECT Off” is displayed, press [ENTER].

2. **Select the Algorithm/Patch.**
   - **CLEAN**
     - No. 15: Standard
   - Change algorithm
   - Press [▼].

3. **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, when desired, you can apply the insert effect only to the monitoring outputs and record the non-processed input signal on the track. For example, you can apply an insert effect to a microphone, to make a vocalist feel more comfortable singing, but still record the vocal without the effect.

4. **Select >REC SIGNAL.**
   - No. 00: Standard
   - Press [ENTER].

5. **Select DRY.**
   - REC SIGNAL
   - Press [ENTER].

<table>
<thead>
<tr>
<th><strong>WET</strong> (Default value)</th>
<th>The input signal will be recorded to the track after it passes through the insert effect.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DRY</strong></td>
<td>The input signal will be recorded to the track before passing through the insert effect. However, the input signal monitored from the OUTPUT and PHONES jacks will pass through the insert effect first.</td>
</tr>
</tbody>
</table>

- **HINT**
  - The settings made here will be stored project by project.
  - If necessary, restore the initial “Wet” setting before recording other parts.
Project overview & project protection

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

All elements of a piece of music are stored in a project as one unit, including audio files, information about track assignments, and mixer, effect, metronome and tuner settings. The unit can handle a maximum of 1000 projects 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
* Folder settings selected by tracks
* Mixer settings
* Patch numbers and patch contents set for insert and send return effects
* Contents of play lists
* All other necessary files

### Protecting a project

**PROJECT>EDIT>PROTECT**

1. Press [PROJECT].
2. Select >EDIT .
   - Press [ENTER].
3. Select >PROTECT .
   - Press [ENTER].
4. Select >ON .
   - Turn ON/OFF

**NOTE**

- You can play back a project when it is protected, but you cannot change it. If you want to record in it or edit it again, set “PROTECT” to “Off.”
- 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 strongly recommend setting “PROTECT” to “On” once you complete a piece of music to avoid saving a mistaken operation later.

### HINT

- The lock icon appears on the screen when a project is protected.
Create a new project

With the R16 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 [PROJECT].

2. **PROJECT**
   - Press [ENTER].

3. **PROJECT**
   - Press [ENTER].

4. **PROJECT**
   - Press [ENTER].

5. **PROJECT**
   - Press [ENTER].

**NOTE**
You can use the settings and values of the last project in the new one or use the R16 default settings.

<table>
<thead>
<tr>
<th>Settings carried over with CONTINUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>• BIT LENGTH setting</td>
</tr>
<tr>
<td>• INSERT EFFECT settings</td>
</tr>
<tr>
<td>• SEND RETURN EFFECT settings</td>
</tr>
<tr>
<td>• Track status (PLAY/MUTE/REC) settings</td>
</tr>
<tr>
<td>• BOUNCE settings</td>
</tr>
<tr>
<td>• REC TRACK settings</td>
</tr>
<tr>
<td>• Track parameter settings</td>
</tr>
<tr>
<td>• METRONOME settings</td>
</tr>
</tbody>
</table>

**[RESET]**
Use default setting values for every item

**HINT**
At Step 3, you can change the name of the new project.

[Ref.: Changing names] P.43
Selecting projects and files

You can select a project for recording, playback and editing from the top screen. You can also select files for playback and assign them to tracks.

Select a project

1. Press [PROJECT].
2. Select >SELECT.
3. Select the project.
4. Load the project.

Select a file

1. Press [PROJECT].
2. Select >FILE.
3. Select the file.

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

HINT
When the R16 [POWER] switch is turned ON, the project loaded the last time the unit was used will be loaded automatically. (If you have changed SD cards, then the last project used on the inserted card will be loaded.)
Project and file information

You can display information about the currently loaded project and files including creation dates and times, capacities, recording lengths and file formats.

**Project information**

PROJECT>INFORMATION

1. **Press [PROJECT].**

2. **Select >INFORMATION.**

3. **Select the type of information.**

   - **NAME**
     - Project name
   - **DATE**
     - Year/month/day/time of creation
   - **SIZE**
     - Size
   - **TIME**
     - Length of project recording

**File information**

PROJECT>FILE>INFORMATION

1. **Press [PROJECT].**

2. **Select >FILE.**

3. **Select track number (1–16, MASTER) and file name.**

4. **Select >INFORMATION.**

5. **Select the types of information.**

   - **NAME**
     - File name
   - **DATE**
     - Year/month/day of the creation
   - **TIME**
     - Time of creation
   - **FORMAT**
     - Format, sampling frequency/bit rate, ST (stereo), MN (monaural)
   - **SIZE**
     - Size
   - **LENGTH**
     - File recording length

**HINT**

- Project and file INFORMATION pages can only be viewed. Their contents cannot be edited directly.
**Project > Copy/Project > File > Copy**

**Project copy**

1. **PROJECT** Press [PROJECT].
2. Select >EDIT.  
   - Press [ENTER].
3. Select >COPY.  
   - Press [ENTER].
4. Select the project to copy.  
   - Press [ENTER].
5. The new project number of the copy is shown.  
   - Press [ENTER].
6. Copy the project.  
   - Press [ENTER].
   - **NOTES**
     - When there is a project with the same name, a * will be added to the top. Change the name and save.

**File copy**

1. **PROJECT** Press [PROJECT].
2. Select >FILE.  
   - Press [ENTER].
3. Select the file to copy.  
   - Press [ENTER].
4. Select >EDIT.  
   - Press [ENTER].
5. Select >COPY.  
   - Press [ENTER].
6. Change the name of the copied file.  
   - Press [ENTER].
7. Copy the file.  
   - Press [ENTER].
Renaming files and projects

Change the name of the currently loaded project and files.

**Project name change**

1. Press [PROJECT].
2. Select >EDIT.
3. Select >RENAME.

**File name change**

1. Press [PROJECT].
2. Select >FILE.
3. Select the file name.
4. Select >EDIT.
5. Select >RENAME.
6. Select >RENAME.

**NOTE**

- If there is a project with the same name, a * mark will be added to the top. Change the name and save.

**HINT**

**Project names**

Characters that can be used: 8 maximum
Numerals: 0-9
Alphabet: A-Z, a-z
Symbols: (space) ! " # $ % & ’ ………..etc.

**File names**

Characters that can be used: 12 including extension
Numerals: 0-9
Alphabet: A-Z (capital letters)
Symbol: _ (underscore)

Ref.: Name changing P.43
Deleting files and projects

Delete selected files and projects.

**Delete a project**

PROJECT>EDIT>DELETE

1. Press [PROJECT].
2. Select >EDIT.
3. Select >DELETE.
4. Select the project to delete.
5. Delete the project.

**Delete a file**

PROJECT>FILE>EDIT>DELETE

1. Press [PROJECT].
2. Select >FILE.
3. Select the file name.
4. Select >EDIT.
5. Select >DELETE.
6. Delete.

**NOTE**

- Once deleted, projects and files cannot be retrieved. Please be careful when deleting.
- You cannot delete projects or files that have PROTECT set to ON.
- If you delete the currently loaded project, the project with the lowest number will be loaded.

**NOTE**

- When you delete files, the tracks they are assigned to become empty.
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. Press [PROJECT].
2. Select >FILE.
4. Press [▼].
5. Select >EDIT.
6. Select >DIVIDE.
7. Set the divide point.
   - **DIVIDE POINT**: +00:00:00:00:000
   - **DIVIDE POINT**: +00:00:01:25:086
8. Divide.
   - **MONO-000.WAV**
   - Press [ENTER].

**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 created from the part before the dividing point. 
  - "B" is added to the end of the name of the file created from the part after the dividing point. 
If the original file name already had 8 characters, the last character will be replaced with "A" and "B" in the new file names.
- The original divided file is deleted.
**Project**

**Import files from other projects**

Import files from projects other than the current project.

1. **PROJECT**  
   Press [PROJECT].

2. Select >FILE.  
   - PROJECT
   - Press [ENTER].

   - TRACK15
   - MONO-000.wav
   - Select file

4. Press [▼].

5. Select >IMPORT.  
   - MONO-000.wav
   - Press [ENTER].

6. Select the project that has the file to be imported.  
   - FILE IMPORT
   - No.000:PRJ001
   - Change project
   - Press [ENTER].

7. Select the file to import.  
   - FILE IMPORT
   - LEADGTR.WAV
   - Press [ENTER].

8. Confirm the file.  
   - FILE IMPORT
   - LEADGTR.WAV
   - Change the name to be saved.
   - Cursor blinks
   - Press [ENTER].

9. Import the file.  
   - ACOGTR.WAV
   - Import?
   - Press [ENTER].

**NOTE**

- If there is a file with the same name in the project, a * mark will be added to the top. Change the name and save.

**HINT**

Characters that can be used: 12 maximum  
Numerals: 0-9  
Alphabet: A-Z (Capital letters)  
Signs: _ (underscore)  

[Ref.: Name changing] P.43
Sequential playback of projects

The playback order of multiple projects can be registered and managed in playlists. This is useful for playing back several songs consecutively, live play accompaniment and output to an external recorder.

Play a playlist

1. Press [PROJECT].
2. Select >SEQUENCE PLAY.
3. Select the playlist.
   - "Empty": no songs in list
4. Press [PLAY].
   - Display during playback
     - Project name
     - No. 003: PRJ003
     - Project number
     - 001
     - Elapsed playback time
     - 00:14:58
     - Project playback stops at the end of the final project.

HINT

Audio tracks assigned to the current list play back.

Button operation during playback

- Play From the top of the current project
- Stop playback and return to the top of the project
- Start playback from the top of the first project
- Stop playback and start playback from the top of the previous project

Edit a playlist

1. Press [PROJECT].
2. Select >SEQUENCE PLAY.
3. Select >EDIT.
   - List 1: 2 songs
   - Total playback time: 00:03:16:186
4. Press [PLAY].
   - Project name: Track 1
   - End of List
5. Select >EDIT.
   - List 1: 2 songs
   - Change menu
   - Select the first project (or the project to change).
   - Track 1
   - End of List
6. Register, edit and change projects
   - The end of the project list or no projects registered
   - Track 1
   - End of List display
7. Register project to be played.
   - Project number you want to register
   - Project name you want to register:
   - No. 001: PRJ001
   - 003:00:01:097
   - Total number of tracks
   - 1/1
   - Project playback length
   - Selected track number
8. Select and register more projects.
   - Track 2
   - End of List
   - Change track
   - No. 002: PRJ002
   - 004:00:01:098
   - 2/2
9. Press [EXIT].

Remove a project from a list

1. Press [PROJECT].
2. Select >SEQUENCE PLAY.
3. Select >EDIT.
   - List 1: 2 songs
   - Change menu
4. Select a project to remove.
   - No. 002: PRJ002
   - 004:00:01:098
   - 3/5
5. Press [DELETE].
6. Select item:
   - No. 002: PRJ002
   - INSERT [DELETE]
7. Press [ENTER].

Delete a Playlist

1. Press [PROJECT].
2. Select >SEQUENCE PLAY.
3. Select >DELETE.
   - List 1: 2 songs
   - Change menu
4. Select a project to remove.
   - No. 002: PRJ002
   - 004:00:01:098
   - 3/4
5. Press [DELETE].
6. Delete project:
   - No. 002: PRJ002
   - 004:00:01:098
   - 3/4
7. Press [ENTER].

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 files of registered projects, change the master tracks and edit the playlist.
- The maximum number of registered projects can have a maximum of 99 registered projects.
- To register a project, the master track must have a recorded file with a length of at least 4 seconds.

Ref.: Master Track setting P.42
Sequential playback of projects

The playback order of multiple projects can be registered and managed in playlists. This is useful for playing back several songs consecutively, live play accompaniment and output to an external recorder.

**Play a playlist**

1. Press [PROJECT].
2. Select >SEQUENCE PLAY.
3. Select the playlist. “Empty”: no songs in list
4. Press [PLAY].

**Edit a playlist**

4. Press [▼].
5. Select >EDIT.
6. Select the first project (or the project to change).
7. Register project to be played.
8. Select and register more projects.
9. Press [EXIT].

**Remove a project from a list**

6. Select a project to remove.
7. Select DELETE.

**Insert a project into a list**

6. Select the track to insert to.
7. Select INSERT.

**Delete a Playlist**

4. Press [▼].
5. Select >DELETE.

**HINT**

Audio tracks assigned to the current list play back.

Button operation during playback
- Play
- Pause
- Stop
- Repeat
- Random

Playback stops at the end of the final project.

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 files of registered projects, change the master tracks and edit the playlist.
- The maximum number of playlists is 10, and each playlist can have a maximum of 99 registered projects.
- To register a project, the master track must have a recorded file with a length of at least 4 seconds.

Ref. : Master Track setting P.42
Recording format bit rate setting

Usually CDs are recorded in 16-bit, 44.1 kHz format, but with the R16 you can also use higher quality 24-bit recording.

Setting and changing the bit rate
PROJECT>REC SETTING>BIT RATE

1  
   PROJECT  
   Press [PROJECT].

2  
   Select >REC SETTING.  
   PROJECT  
   >REC SETTING  
   Press [ENTER].

3  
   Select >BIT LENGTH.  
   REC SETTING  
   >BIT LENGTH  
   Press [ENTER].

4  
   Select bit number.  
   BIT LENGTH  
   16bit  
   Press [ENTER].

HINT

- If you are overwriting a recording, you cannot change this.
- This setting is stored for each project.
- The initial setting is 16bit.
- If you use 44.1 kHz/24-bit, you will have to convert to 16-bit to create an audio CD.
Adjusting the display

You can adjust the backlight and contrast.

### Turning the backlight On/Off

1. **TOOL** Press [TOOL].
2. Select **SYSTEM**.
3. Select **LCD**.
4. Select **LIGHT**.
5. Select ON/OFF.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>On</strong></td>
<td>Backlight on (default setting)</td>
</tr>
<tr>
<td><strong>Off</strong></td>
<td>Backlight off</td>
</tr>
</tbody>
</table>

### Adjusting the contrast

1. **TOOL** Press [TOOL].
2. Select **SYSTEM**.
3. Select **LCD**.
4. Select **CONTRAST**.
5. Select a number.

**HINT**

Turn the back light off to conserve the batteries.
**Changing the SD card while the power is on**

You can change the SD card with the power on. You might need to change an SD card when using the R16 if the remaining capacity of the inserted card becomes low, or when you need to import data from a previously recorded SD card.

1. **Select >SD CARD.**
   - Press [TOOL].

2. **Select >EXCHANGE.**
   - Press [ENTER].

3. **Load a project on the card.**
   - Press [ENTER].
   - The highest-numbered project on the inserted SD card is loaded.

4. **Save current R16 project to the SD card**
   - SD card formatted for the R16
   - SD CARD DATA>SAVE
   - Press [ENTER].

5. **Format the SD card for use.**
   - SD card formatted for the R16
   - SD CARD FORMAT
   - Press [ENTER].

6. **Select [SAVE].**
   - SD CARD DATA
   - Press [ENTER].

7. **Select the project to save to.**
   - Save to No.011:PRJ011
   - Press [ENTER].

8. **Save the current project.**
   - Save to No.011
   - Press [ENTER].

**NOTE**
- If you insert an SD card that has not been formatted for use with the R16, the “FORMAT” menu opens automatically.
- If you format an SD card, all its data will be permanently erased.
- When you format an SD card, all data on the card will be deleted, and folders and files exclusively for R16 use will be created.

**HINT**
- Insert an unformatted SD card and execute when “Format?” appears. Then options to [SAVE] and [LOAD] the present project will follow.

**Formatting SD cards and verifying card capacities**

You can format SD cards for use with the R16, deleting all the data on it, and check SD card capacity (remaining space).

1. **Format SD card and delete all data**
   - Tool>SD CARD>FORMAT
   - Press [ENTER].

2. **Verify SD card remaining capacity**
   - Tool>SD CARD>REMAIN
   - Press [ENTER].

**NOTE**
- Release the write-protection lock of the SD card before inserting it. 
- [SAVE] includes various data for the project in use, but no audio data is saved.
Changing the SD card while the power is on

You can change the SD card with the power on. You might need to change an SD card when using the R16 if the remaining capacity of the inserted card becomes low, or when you need to import data from a previously recorded SD card.

1. Press [TOOL].
2. Select >SD CARD.
3. Select >EXCHANGE.
4. Eject SD card.
5. Insert SD CARD
6. Insert another SD card.
7. Format the SD card for use.
8. Select the project to save to.
9. Save the current project.

Formatting SD cards and verifying card capacities

You can format SD cards for use with the R16, deleting all the data on it, and check SD card capacity (remaining space).

1. Press [TOOL].
2. Select >SD CARD.
3. Select FORMAT.
4. Execute.

**NOTE**
- If you insert an SD card that has not been formatted for use with the R16, the “FORMAT” menu opens automatically.
- If you format an SD card, all its data will be permanently erased.
- When you format an SD card, all data on the card will be deleted, and folders and files exclusively for R16 use will be created.

**HINT**
- Release the write-protection lock of the SD card before inserting it.
- [SAVE] includes various data for the project in use, but no audio data is saved.
Confirming the version & setting the battery type

You can confirm the current version of the system software. If you set the battery type, the remaining battery charge will be displayed more accurately.

### Confirming the system version

1. **TOOL>SYSTEM>SYSTEM VERSION**
   - Press [TOOL].
   - Select >SYSTEM.
   - Press [ENTER].
   - Select >VERSION.
   - Press [ENTER].
   - Select the type of information.

#### ZOOM R16
- **SYSTEM Ver:** Current system version
- **SUB SYSTEM Ver:** Current sub-system version
- **BOOT SYSTEM Ver:** Current boot system version

### Set the type of batteries

1. **TOOL>SYSTEM>BATTERY TYPE**
   - Press [TOOL].
   - Select >SYSTEM.
   - Press [ENTER].
   - Select >BATTERY TYPE.
   - Press [ENTER].
   - Select the type of battery set.

#### BATTERY TYPE
- **ALKALINE**
- **Ni-MH**

Default value: ALKALINE

### HINT

You can check for up-to-date system software information at the ZOOM WEB site:
www.zoom.co.jp.

### NOTE

Please use only either alkaline or nickel-metal hydride batteries.
Computer connection

Use USB to connect an R16 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 frequency of 44.1 kHz and a bit rate of 16 or 24.
- File names should use only capital letters, numbers and the "_" (underscore). They should be 8 or fewer characters plus the ".WAV" extension.
- You can connect the R16 and a computer by USB when the power is on. If you connect the R16 by USB when its [POWER] switch is OFF, you can start it up with power supplied over USB.
- When you are using the R16 as a card reader or as an audio interface, you cannot use it as a recorder.

HINT

- Card reader OS compatibility
  Windows: Windows XP and later
  Macintosh: Mac OS x 10.2 and later
- Project data is saved to the ROOT DIRECTORY of the SD card as PROJxxx (xxx is the project number) and audio data is saved as "WAV" files inside "AUDIO" in the project directory.
- The MASTER track and stereo tracks are stereo WAV files.

For details about use with a computer, refer to the detailed manual.
Card reader

You can access the R16 SD card through a computer to backup, read and import various data, projects and files.

Using as an SD card reader

USB > CARD READER

1. Connect the R16 with a computer by USB (DEVICE JACK).
2. Press [USB].
3. Select > CARD READER.
4. Execute.

Disconnecting

1. To properly disconnect the R16 from your computer, follow your operating system’s procedure for removing hardware.
2. Press to disconnect the R16 as a card reader.

NOTE

- To import an audio file into the R16, its format must be WAV with a sampling frequency of 44.1 kHz and a bit rate of 16 or 24.
- File names should use only capital letters, numbers and the "_" (underscore). They should be 8 or fewer characters plus the "_.WAV" extension.

HINT

- Card reader OS compatibility
  - Windows: Windows XP and later
  - Macintosh: Mac OS x 10.2 and later
- Project data is saved to the ROOT DIRECTORY of the SD card as PROJxxx (xxx is the project number) and audio data is saved as “WAV” files inside “AUDIO” in the project directory.
- The MASTER track and stereo tracks are stereo WAV files.
- To import WAV files from a computer, copy them to the “AUDIO” folder in the “PROxxx” project folder (xxx=project number) where you want to use them. Use the R16 to assign the files to tracks.
- You can connect the R16 to a computer by USB when the power is on.
- If you connect the R16 by USB when its [POWER] switch is OFF, you can start it up with power supplied over USB.

For details about use with a computer, refer to the detailed manual.
Using USB memory to save and import data

By connecting USB memory directly to the R16, you can save and import files. This is convenient for exchanging files with band members.

### Saving to USB memory

**USB>USB STRAGE>SAVE**

1. Connect the USB memory to the USB Host Jack of the R16.
2. Press [USB].
3. Select >USB STRAGE .
4. Select >SAVE .
5. Select project with data to save.
7. Select the data to save.
8. Save the file.

### Importing from USB MEMORY

**USB>USB STRAGE>LOAD**

1. Connect USB MEMORY to the USB Host Jack of the R16.
2. Press [USB].
3. Select >USB STRAGE .
4. Select >LOAD .
5. Select the folder.
7. Select a file.
8. Load the file.

### NOTE

- Never remove the USB memory when sending and receiving data. Disconnect after the “Saving” or “Loading” display is gone.
- During USB storage use, no recording is possible.
- When saving on USB memory, the saved data is stored at the top level of the file structure.
Connect the R16 by USB to a computer to use it as a controller and as an audio interface with DAW software.

### Connecting the R16 as an audio interface/control surface

1. **Audio interface mode**
   - By using the R16 as an interface between a computer and other audio equipment and instruments, you can record and edit audio signals with DAW software.
   - You can also connect instruments that require Hi-Z or phantom power.

2. **Control surface mode**
   - Using the faders and keys on the R16, you can control transport and mixer operations in your DAW software.

### Connecting and setting the R16

1. **Press [USB].**
2. **Select AUDIO INTERFACE.**
3. **Press [ENTER].**
4. **Set and connect the R16.**
5. **Set DAW software.**
6. **Connect USB cable to the computer.**

### Disconnecting

1. **Press [USB].**
2. **Connect USB cable to the computer.**
3. **Unplug the USB cable.**

---

**NOTE**

- To use the R16 as an audio interface for DAW software (for example, Cubase LE), it is necessary to install the ZOOM R16/R24 Audio drivers on the computer.
- Please download the latest version of the ZOOM R16 USB audio driver from our home page, [http://www.zoom.co.jp](http://www.zoom.co.jp).
- Before you unplug the USB cable when disconnecting from a computer, follow the proper procedures for the computer OS to disconnect the device first.
- After step 2 of “Disconnecting” above, unplug the USB cable only after “AUDIO INTERFACE” disappears from the R16 display.
- Even without power from the R16 (adapter or batteries), you can start-up with just USB bus power when using the audio interface/control surface functions.
- We strongly recommend that you always keep the R16 system software up-to-date. If you use an R16 running an old system, a computer might not recognize it.
Audio interface/control surface

Connect the R16 by USB to a computer to use it as a controller and as an audio interface with DAW software.

Connecting the R16 as an audio interface/control surface

1. Audio interface mode
   By using the R16 as an interface between a computer and other audio equipment and instruments, you can record and edit audio signals with DAW software. You can also connect instruments that require Hi-Z or phantom power.

2. Control surface mode
   Using the faders and keys on the R16, you can control transport and mixer operations in your DAW software.

Connecting and setting the R16

Follow these procedures from the second time connecting.

1. Press [USB].
2. Select [AUDIO INTERFACE].
3. Press [ENTER].
4. Select whether to use previous settings.
5. Connect USB cable to R16.
6. Connect USB cable to the computer.

NOTE

You can use the settings and values of the last project in a new one or reset them to the defaults.

Data transferred with CONTINUE
• INSERT EFFECT settings
• SEND RETURN EFFECT settings
• Track parameter settings
• TUNER settings

RESET
Default settings for each item

Disconnecting

1. Press [USB].
2. Disconnect.
3. Unplug the USB cable.

NOTE

• Before you unplug the USB cable when disconnecting from a computer, follow the proper procedures for the computer OS to disconnect the device first.
• After step 2 of “Disconnecting” above, unplug the USB cable only after “AUDIO INTERFACE” disappears from the R16 display.
• Even without power from the R16 (adapter or batteries), you can start-up with just USB bus power when using the audio interface/control surface functions.
• We strongly recommend that you always keep the R16 system software up-to-date. If you use an R16 running an old system, a computer might not recognize it.

Connecting the R16 with a computer for the first time

1. Install ZOOM R16/R24 Audio drivers on the computer.
2. Connect the R16 to the computer.
3. Set and connect the R16.
4. Set DAW software.

NOTE

• To use the R16 as an audio interface for DAW software (for example, Cubase LE) it is necessary to install the ZOOM R16/R24 audio driver. Install it correctly according to the included installation guide.
• Please download the latest version of the ZOOM R16 USB audio driver from our home page, http://www.zoom.co.jp.
### R16 effect types and parameters

#### Effect parameters

**Insert effect**

| CLEAN, DISTORTION, ACO/BASS SIM algorithms |

#### COMP/LIMITER module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressor</td>
<td>MXR Dynacomp type compressor.</td>
</tr>
<tr>
<td>Rack Comp</td>
<td>Compressor with more detailed adjustments.</td>
</tr>
<tr>
<td>Limiter</td>
<td>Limiter for suppressing signal peaks above a certain level.</td>
</tr>
</tbody>
</table>

#### Parameter descriptions

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

#### EFX module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Wah</td>
<td>Position</td>
</tr>
<tr>
<td>Tremolo</td>
<td>Position</td>
</tr>
<tr>
<td>Phaser</td>
<td>Position</td>
</tr>
<tr>
<td>Ring Modulator</td>
<td>Position</td>
</tr>
<tr>
<td>Slow Attack</td>
<td>Position</td>
</tr>
<tr>
<td>Fix-Wah</td>
<td>Position</td>
</tr>
</tbody>
</table>

#### Parameter descriptions

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Before, After</td>
<td>Sets connection position of EFX module to “before” or “after” preamp.</td>
</tr>
<tr>
<td>Sense</td>
<td>–10<del>1, 1</del>10</td>
<td>Adjusts auto wah sensitivity.</td>
</tr>
<tr>
<td>Resonance</td>
<td>0~10</td>
<td>Adjusts resonance intensity.</td>
</tr>
<tr>
<td>Level</td>
<td>2~100</td>
<td>Adjusts signal level after passing module.</td>
</tr>
<tr>
<td>Depth</td>
<td>0~100</td>
<td>Adjusts modulation depth.</td>
</tr>
<tr>
<td>Rate</td>
<td>0~50</td>
<td>Adjusts modulation rate. Can be set in rhythm tempo note units.</td>
</tr>
<tr>
<td>Wave</td>
<td>Up 0<del>9, Down 0</del>9, Tri 0~9</td>
<td>Sets modulation waveform to “Up” (rising sawtooth), “Down” (falling sawtooth), or “Tri” (triangular). Higher values result in stronger clipping, emphasizing the effect.</td>
</tr>
<tr>
<td>Color</td>
<td>4Stage, 8State, Invert4, Invert8</td>
<td>Selects sound type.</td>
</tr>
<tr>
<td>Frequency</td>
<td>Ring Modulator: 1~50</td>
<td>Adjusts frequency used for modulation.</td>
</tr>
<tr>
<td>Balance</td>
<td>0~100</td>
<td>Adjusts balance between original sound and effect sound.</td>
</tr>
<tr>
<td>Time</td>
<td>1~50</td>
<td>Adjusts rise time for sound.</td>
</tr>
<tr>
<td>Curve</td>
<td>0~10</td>
<td>Adjusts volume rise curve.</td>
</tr>
<tr>
<td>Dry Mix</td>
<td>0~10</td>
<td>Adjusts original sound mix ratio.</td>
</tr>
<tr>
<td>RTM Mode</td>
<td>P86 Table 2</td>
<td>Adjusts change range and direction.</td>
</tr>
<tr>
<td>RTM Wave</td>
<td>P86 Table 3</td>
<td>Selects control waveform.</td>
</tr>
<tr>
<td>RTM Sync</td>
<td>(P86 Table 4)</td>
<td>Adjusts control frequency.</td>
</tr>
</tbody>
</table>
R16 effect types and parameters 2

### PREAMP module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD Clean</td>
<td>Clean sound of Fender Twin Reverb (’65 model) favored by guitarists of many music styles.</td>
</tr>
<tr>
<td>VX Clean</td>
<td>Clean sound of combo amp VOX AC-30 operating in class A.</td>
</tr>
<tr>
<td>JC Clean</td>
<td>Clean sound of Roland JC series with built-in chorus which gives a broad, clear tone.</td>
</tr>
<tr>
<td>HW Clean</td>
<td>Clean sound of legendary all-tube Hiwatt Custom 100 from Britain.</td>
</tr>
<tr>
<td>US Blues</td>
<td>Crunch sound of Fender Tweed Deluxe ’53.</td>
</tr>
<tr>
<td>TweedBass</td>
<td>Crunch sound of Fender Bassman, a bass amp with a strong presence.</td>
</tr>
<tr>
<td>BG Crunch</td>
<td>Crunch sound of Mesa Boogie MkIII combo amp.</td>
</tr>
<tr>
<td>MS Drive</td>
<td>High gain sound of Marshall JCM2000 stack amp.</td>
</tr>
<tr>
<td>Rect Vnt</td>
<td>High gain sound of Mesa Boogie Dual Rectifier red channel (vintage mode).</td>
</tr>
<tr>
<td>HK Drive</td>
<td>High gain sound of Hughes &amp; Kettner flagship model Triamp MKII.</td>
</tr>
<tr>
<td>DZ Drive</td>
<td>High gain sound of the Diezel Herbert hand-made German guitar amp with three separately controllable channels.</td>
</tr>
<tr>
<td>ENGL Drive</td>
<td>Drive sound of ENGL Ritchie Blackmore Signature 100.</td>
</tr>
<tr>
<td>PV Drive</td>
<td>High gain sound of Peavey 5150 developed in cooperation with a world-famous hard rock guitarist.</td>
</tr>
<tr>
<td>TS+FD CMB</td>
<td>Combination of Fender combo amp and Ibanez TS-9 sound.</td>
</tr>
<tr>
<td>SD+MS STK</td>
<td>Combination of Marshall stack amp and Boss SD-1 sound.</td>
</tr>
<tr>
<td>FZ+MS STK</td>
<td>Combination of Fuzz Face and Marshall stack amp sound.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain</td>
<td>0–100</td>
<td>Adjusts preamp gain (distortion intensity).</td>
</tr>
<tr>
<td>Tone</td>
<td>0–30</td>
<td>Adjusts tonal quality.</td>
</tr>
<tr>
<td>Cabinet</td>
<td>0–2</td>
<td>Adjusts speaker cabinet sound intensity.</td>
</tr>
<tr>
<td>Level</td>
<td>1–100</td>
<td>Adjusts signal level after passing module.</td>
</tr>
<tr>
<td>Top</td>
<td>0–10</td>
<td>Adjusts characteristic acoustic guitar string resonance.</td>
</tr>
<tr>
<td>Body</td>
<td>0–10</td>
<td>Adjusts characteristic acoustic guitar body resonance.</td>
</tr>
<tr>
<td>Color</td>
<td>1–4</td>
<td>Adjusts characteristics of dedicated electroacoustic guitar preamp.</td>
</tr>
</tbody>
</table>

### 3Band EQ module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameter/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Band EQ</td>
<td>This is a 3-band equalizer.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bass</td>
<td>−12dB–12dB</td>
<td>Adjusts low frequency boost/cut.</td>
</tr>
<tr>
<td>Middle</td>
<td>−12dB–12dB</td>
<td>Adjusts mid frequency boost/cut.</td>
</tr>
<tr>
<td>Treble</td>
<td>−12dB–12dB</td>
<td>Adjusts high frequency boost/cut.</td>
</tr>
<tr>
<td>Level</td>
<td>2–100</td>
<td>Adjusts signal level after passing module.</td>
</tr>
</tbody>
</table>

### MOD/Delay module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chorus</td>
<td>Mixes a variable pitch-shifted component with the original signal, resulting in a full-bodied resonating sound.</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Chorus ensemble with three-dimensional movement.</td>
</tr>
<tr>
<td>Flanger</td>
<td>Produces a resonating and strongly undulating sound.</td>
</tr>
<tr>
<td>Pitch</td>
<td>Shifts the pitch up or down.</td>
</tr>
</tbody>
</table>

Parameter description

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bass</td>
<td>−12dB–12dB</td>
<td>Adjusts low frequency boost/cut.</td>
</tr>
<tr>
<td>Middle</td>
<td>−12dB–12dB</td>
<td>Adjusts mid frequency boost/cut.</td>
</tr>
<tr>
<td>Treble</td>
<td>−12dB–12dB</td>
<td>Adjusts high frequency boost/cut.</td>
</tr>
<tr>
<td>Level</td>
<td>2–100</td>
<td>Adjusts signal level after passing module.</td>
</tr>
</tbody>
</table>
R16 effect types and parameters 3

<table>
<thead>
<tr>
<th>Effect Type</th>
<th>Parameter</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vibe</td>
<td>Depth</td>
<td>0–30</td>
<td>Adjusts effect depth.</td>
</tr>
<tr>
<td></td>
<td>Rate</td>
<td>0–100</td>
<td>Adjusts modulation depth.</td>
</tr>
<tr>
<td></td>
<td>Tone</td>
<td>0–100</td>
<td>Adjusts modulation rate.</td>
</tr>
<tr>
<td></td>
<td>Balance</td>
<td>-10–10</td>
<td>Adjusts resonance intensity. Negative values result in reversed phase of effect sound.</td>
</tr>
<tr>
<td>Step</td>
<td>Depth</td>
<td>0–100</td>
<td>Adjusts frequency range of effect.</td>
</tr>
<tr>
<td></td>
<td>Rate</td>
<td>-12–12, 24</td>
<td>Adjusts pitch shift amount in semitone units.</td>
</tr>
<tr>
<td></td>
<td>Tone</td>
<td>0–100</td>
<td>Adjusts balance between original sound and effect sound.</td>
</tr>
<tr>
<td></td>
<td>Balance</td>
<td>0–10</td>
<td>Adjusts effect sound envelope.</td>
</tr>
<tr>
<td></td>
<td>Size</td>
<td>1–100</td>
<td>Adjusts size of simulated space.</td>
</tr>
<tr>
<td></td>
<td>Reflex</td>
<td>0–10</td>
<td>Adjusts amount of wall reflections.</td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>Wide: 1–64</td>
<td>Adjusts delay time.</td>
</tr>
<tr>
<td></td>
<td>Wet Level</td>
<td>0–30</td>
<td>Adjusts effect sound level.</td>
</tr>
<tr>
<td></td>
<td>Dry Level</td>
<td>0–30</td>
<td>Adjusts original sound level.</td>
</tr>
<tr>
<td></td>
<td>Feedback</td>
<td>0–100</td>
<td>Adjusts feedback amount.</td>
</tr>
<tr>
<td></td>
<td>Hi Damp</td>
<td>0–10</td>
<td>Adjusts intensity of delay sound high range damping.</td>
</tr>
<tr>
<td></td>
<td>Type</td>
<td>P.86 Table 5</td>
<td>Selects pitch change type.</td>
</tr>
<tr>
<td></td>
<td>RTM Wave</td>
<td>P.86 Table 3</td>
<td>Selects control waveform.</td>
</tr>
<tr>
<td></td>
<td>RTM Sync</td>
<td>P.86 Table 4</td>
<td>Selects control waveform cycle.</td>
</tr>
</tbody>
</table>

**Parameter descriptions**

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth</td>
<td>Exciter: 0–30, All others: 0–100</td>
<td>Adjusts effect depth.</td>
</tr>
<tr>
<td></td>
<td>Chorus, Ensemble: 1–50</td>
<td>Adjusts modulation depth.</td>
</tr>
<tr>
<td>Rate</td>
<td>Flanger, Vibe, Step: 0–50</td>
<td>Adjusts modulation rate. Using a rhythm tempo as reference, setting in note units is also possible.</td>
</tr>
<tr>
<td></td>
<td>Manual</td>
<td>0–100</td>
</tr>
<tr>
<td></td>
<td>Shift</td>
<td>-12–12, 24</td>
</tr>
<tr>
<td></td>
<td>Fine</td>
<td>-25–25</td>
</tr>
<tr>
<td></td>
<td>Balance</td>
<td>0–100</td>
</tr>
<tr>
<td></td>
<td>Shape</td>
<td>0–10</td>
</tr>
<tr>
<td></td>
<td>Range</td>
<td>1–10</td>
</tr>
<tr>
<td></td>
<td>Sense</td>
<td>-10–1–1, 1–10</td>
</tr>
<tr>
<td></td>
<td>Frequency</td>
<td>1–5</td>
</tr>
<tr>
<td></td>
<td>Low Boost</td>
<td>0–10</td>
</tr>
<tr>
<td></td>
<td>Size</td>
<td>1–100</td>
</tr>
<tr>
<td></td>
<td>Reflex</td>
<td>0–10</td>
</tr>
<tr>
<td></td>
<td>Wet Level</td>
<td>0–30</td>
</tr>
<tr>
<td></td>
<td>Dry Level</td>
<td>0–30</td>
</tr>
<tr>
<td></td>
<td>Feedback</td>
<td>0–100</td>
</tr>
<tr>
<td></td>
<td>Hi Damp</td>
<td>0–10</td>
</tr>
<tr>
<td></td>
<td>Type</td>
<td>P.86 Table 5</td>
</tr>
<tr>
<td></td>
<td>RTM Wave</td>
<td>P.86 Table 3</td>
</tr>
<tr>
<td></td>
<td>RTM Sync</td>
<td>P.86 Table 4</td>
</tr>
</tbody>
</table>

---

**ZNR module**

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameter/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZNR</td>
<td>ZOOM original noise reduction for reducing noise during playing pauses without affecting the overall tone.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold</td>
<td>Off, 1–30</td>
<td>Adjusts ZNR sensitivity. For maximum noise reduction, set value as high as possible without causing the sound to decay unnaturally.</td>
</tr>
</tbody>
</table>
## R16 effect types and parameters 4

### BASS algorithm

#### COMP/LIMITER module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rack Comp</td>
<td>For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.</td>
</tr>
<tr>
<td>Limiter</td>
<td></td>
</tr>
</tbody>
</table>

#### EFX module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Wah</td>
<td></td>
</tr>
<tr>
<td>Tremolo</td>
<td></td>
</tr>
<tr>
<td>Phaser</td>
<td></td>
</tr>
<tr>
<td>Ring Modulator</td>
<td></td>
</tr>
<tr>
<td>Slow Attack</td>
<td></td>
</tr>
<tr>
<td>Fix-Wah</td>
<td></td>
</tr>
</tbody>
</table>

#### Parameter descriptions

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Before, After</td>
<td>Sets insert position of EFX module to “Before” (before PREAMP) or “After” (after PREAMP).</td>
</tr>
<tr>
<td>Sense</td>
<td>–10~+1.1~10</td>
<td>Adjusts auto wah sensitivity.</td>
</tr>
<tr>
<td>Resonance</td>
<td>0~10</td>
<td>Adjusts resonance intensity.</td>
</tr>
<tr>
<td>Dry Mix</td>
<td>0~10</td>
<td>Adjusts original sound mix ratio.</td>
</tr>
<tr>
<td>Level</td>
<td>2~100</td>
<td>Adjusts signal level after passing module.</td>
</tr>
</tbody>
</table>

#### PREAMP module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVT</td>
<td>Simulation of Ampeg SVT sound.</td>
</tr>
<tr>
<td>Bassman</td>
<td>Simulation of Fender Bassman sound.</td>
</tr>
<tr>
<td>Hartke</td>
<td>Simulation of Hartke HA3500 sound.</td>
</tr>
<tr>
<td>SANSAMP</td>
<td>Simulation of Sansamp Bass Driver DI sound.</td>
</tr>
<tr>
<td>Tube Preamp</td>
<td>ZOOM original tube preamplifier sound.</td>
</tr>
</tbody>
</table>

#### Parameter descriptions

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain</td>
<td>0~100</td>
<td>Adjusts preamp gain (distortion depth).</td>
</tr>
<tr>
<td>Tone</td>
<td>0~30</td>
<td>Adjusts tonal quality.</td>
</tr>
<tr>
<td>Cabinet</td>
<td>0~2</td>
<td>Adjusts intensity of speaker cabinet sound.</td>
</tr>
<tr>
<td>Balance</td>
<td>0~100</td>
<td>Adjusts mix balance of signal before and after module.</td>
</tr>
<tr>
<td>Level</td>
<td>1~100</td>
<td>Adjusts signal level after passing module.</td>
</tr>
</tbody>
</table>

#### 3Band EQ module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Band EQ</td>
<td>For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.</td>
</tr>
</tbody>
</table>

#### MOD/DELAY module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chorus</td>
<td></td>
</tr>
<tr>
<td>Ensemble</td>
<td></td>
</tr>
<tr>
<td>Flanger</td>
<td></td>
</tr>
<tr>
<td>Pitch</td>
<td></td>
</tr>
<tr>
<td>Vibe</td>
<td></td>
</tr>
<tr>
<td>Step</td>
<td></td>
</tr>
<tr>
<td>Cry</td>
<td></td>
</tr>
<tr>
<td>Exciter</td>
<td></td>
</tr>
<tr>
<td>Air</td>
<td></td>
</tr>
<tr>
<td>Delay</td>
<td></td>
</tr>
<tr>
<td>Analog Delay</td>
<td></td>
</tr>
<tr>
<td>Reverse Delay</td>
<td></td>
</tr>
<tr>
<td>ARRM Pitch</td>
<td></td>
</tr>
</tbody>
</table>

#### ZNR module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZNR</td>
<td>For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.</td>
</tr>
</tbody>
</table>
### MIC algorithm

#### COMP/LIMITER module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rack Comp</td>
<td>For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.</td>
</tr>
<tr>
<td>Limiter</td>
<td></td>
</tr>
</tbody>
</table>

#### EFX module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tremolo</td>
<td></td>
</tr>
<tr>
<td>Phaser</td>
<td></td>
</tr>
<tr>
<td>Ring Modulator</td>
<td>For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.</td>
</tr>
<tr>
<td>Slow Attack</td>
<td></td>
</tr>
<tr>
<td>Fix-Wah</td>
<td></td>
</tr>
</tbody>
</table>

#### MIC PRE module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mic Pre</td>
<td>This is a preamplifier for using an external microphone.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Vocal, AcousticGt, Flat</td>
<td>Selects preamp characteristics.</td>
</tr>
<tr>
<td>Tone</td>
<td>0–10</td>
<td>Adjusts tonal quality.</td>
</tr>
<tr>
<td>Level</td>
<td>1–100</td>
<td>Adjusts signal level after passing module.</td>
</tr>
<tr>
<td>De-Esser</td>
<td>Off, 1–10</td>
<td>Controls the de-esser setting.</td>
</tr>
<tr>
<td>Low Cut</td>
<td>Off, 80–240Hz</td>
<td>Controls a filter for reducing low frequency noise often picked up during mic recording.</td>
</tr>
</tbody>
</table>

#### 3BAND EQ module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3Band EQ</td>
<td>For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithm</td>
</tr>
</tbody>
</table>

#### MOD/Delay module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chorus</td>
<td></td>
</tr>
<tr>
<td>Ensemble</td>
<td></td>
</tr>
<tr>
<td>Flanger</td>
<td></td>
</tr>
<tr>
<td>Pitch</td>
<td></td>
</tr>
<tr>
<td>Vibe</td>
<td></td>
</tr>
<tr>
<td>Step</td>
<td></td>
</tr>
<tr>
<td>Cry</td>
<td></td>
</tr>
<tr>
<td>Exciter</td>
<td></td>
</tr>
<tr>
<td>Air</td>
<td></td>
</tr>
<tr>
<td>Delay</td>
<td></td>
</tr>
<tr>
<td>Analog Delay</td>
<td>For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.</td>
</tr>
<tr>
<td>Reverse Delay</td>
<td></td>
</tr>
<tr>
<td>ARRM Pitch</td>
<td></td>
</tr>
</tbody>
</table>

#### ZNR module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZNR</td>
<td>For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.</td>
</tr>
</tbody>
</table>

#### DUAL MIC algorithm

#### COMP/LIMITER L module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold</td>
<td>–24–0</td>
<td>Adjusts threshold level of compressor/limiter.</td>
</tr>
<tr>
<td>Ratio</td>
<td>Compressor: 1–26, Limiter: 1–54, =</td>
<td>Adjusts compression ratio of compressor/limiter.</td>
</tr>
</tbody>
</table>
R16 effect types and parameters 6

<table>
<thead>
<tr>
<th>Attack</th>
<th>0–10</th>
<th>Adjusts attack rate of compressor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>2–100</td>
<td>Adjusts module output level.</td>
</tr>
<tr>
<td>Release</td>
<td>0–10</td>
<td>Adjusts speed of limiter release after signal falls below threshold level.</td>
</tr>
</tbody>
</table>

- **MIC PREAMP L module**
  - **Type**
    - Mic Pre L
  - **Parameters/Description**
    - For an explanation of types and parameters, see MIC algorithm.

- **3BAND EQ L module**
  - **Type**
    - 3Band EQ L
  - **Parameters/Description**
    - For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

- **DELAY L module**
  - **Type**
    - Delay L
    - Echo L
    - Doubling L
  - **Parameters/Description**
    - Delay effect with a maximum setting of 2000 ms.
    - Warm delay effect with a maximum setting of 2000 ms.
    - Doubling effect which creates body by adding a short delay.

- **Parameter descriptions**
  - **Parameter name**
    - Time
    - Feedback
    - Tone
    - Mix
  - **Setting range**
    - Delay L, Echo L: 1–2000ms
    - Doubling L: 1–100ms
    - 0–100
    - 0–10
  - **Description**
    - Adjusts delay time.
    - Adjusts feedback amount.
    - Adjusts tonal quality.
    - Adjusts mix ratio of effect sound to original sound.

- **COMP/LIMITER R module**
  - **Type**
    - Compressor R
    - Limiter R
  - **Parameters/Description**
    - For an explanation of types and parameters, see COMP LIMITER L module.

- **MIC PREAMP R module**
  - **Type**
    - Mic Pre R
  - **Parameters/Description**
    - For an explanation of types and parameters, see MIC algorithm.

- **3BAND EQ R module**
  - **Type**
    - 3Band EQ R
  - **Parameters/Description**
    - For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.

- **DELAY R module**
  - **Type**
    - Delay R
    - Echo R
    - Doubling R
  - **Parameters/Description**
    - For an explanation of types and parameters, see DELAY L module.

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

- **STEREO algorithm**
  - **COMP/LIMITER module**
    - **Type**
      - Compressor R
      - Limiter R
      - Lo-Fi
    - **Parameters/Description**
      - For an explanation of types and parameters, see DUAL MIC algorithm.
      - Character
      - Color
      - Distortion
      - Tone
      - EFX Level
      - Dry Level
      - Lo-fi effect purposely degrades sound quality.
    - **Parameter description**
      - **Parameter name**
        - Character
        - Color
        - Distortion
      - **Setting range**
        - 0–10
        - 1–10
        - 0–10
      - **Description**
        - Adjusts filter characteristics.
        - Adjusts sound color.
        - Adjusts distortion.
### R16 effect types and parameters

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tone</td>
<td>0–10</td>
</tr>
<tr>
<td>EFX Level</td>
<td>0–100</td>
</tr>
<tr>
<td>Dry Level</td>
<td>0–100</td>
</tr>
</tbody>
</table>

#### ISO/MIC MODEL module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isolator</td>
<td>Xover Lo 50Hz–16kHz, Xover Hi 50Hz–16kHz, Mix High Off, –24–6, Mix Mid Off, –24–6, Mix Low Off, –24–6</td>
</tr>
<tr>
<td>Mic Type</td>
<td>SM57, MD421, U87, C414</td>
</tr>
</tbody>
</table>

#### 3BAND EQ module

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xover Lo</td>
<td>50Hz–16kHz</td>
<td>Adjusts low-to-mid crossover frequency.</td>
</tr>
<tr>
<td>Xover Hi</td>
<td>50Hz–16kHz</td>
<td>Adjusts mid-to-high crossover frequency.</td>
</tr>
<tr>
<td>Mix High</td>
<td>Off, –24–6</td>
<td>Adjusts high range mix level.</td>
</tr>
<tr>
<td>Mix Mid</td>
<td>Off, –24–6</td>
<td>Adjusts mid range mix level.</td>
</tr>
<tr>
<td>Mix Low</td>
<td>Off, –24–6</td>
<td>Adjusts low range mix level.</td>
</tr>
</tbody>
</table>

#### MOD/DELAY module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chorus</td>
<td>Depth Depth, Rate, Mix</td>
</tr>
<tr>
<td></td>
<td>Mixes a variable pitch-shifted component with the original sound, resulting in full-bodied resonating tone.</td>
</tr>
<tr>
<td>Flanger</td>
<td>Depth Depth, Rate, Resonance</td>
</tr>
<tr>
<td></td>
<td>Produces a resonating and strongly undulating sound.</td>
</tr>
<tr>
<td>Phaser</td>
<td>Rate Rate, Color, LFO Shift</td>
</tr>
<tr>
<td></td>
<td>Produces a swooshing sound.</td>
</tr>
<tr>
<td>Tremolo</td>
<td>Depth Rate, Clip</td>
</tr>
<tr>
<td></td>
<td>Periodically varies the volume level.</td>
</tr>
<tr>
<td>Auto Pan</td>
<td>Width Rate, Clip</td>
</tr>
<tr>
<td></td>
<td>Shifts the panning position of the sound between left and right.</td>
</tr>
<tr>
<td>Pitch</td>
<td>Shift Tone, Fine, Balance</td>
</tr>
<tr>
<td></td>
<td>This effect shifts the pitch up or down.</td>
</tr>
<tr>
<td>Ring Modulator</td>
<td>Time Time, Feedback, Mix</td>
</tr>
<tr>
<td></td>
<td>Delay effect with a maximum setting of 2000 ms.</td>
</tr>
<tr>
<td>Echo</td>
<td>Time Time, Feedback, Mix</td>
</tr>
<tr>
<td></td>
<td>Warm delay effect with a maximum setting of 2000 ms.</td>
</tr>
<tr>
<td>Doubling</td>
<td>Time Tone, Mix</td>
</tr>
<tr>
<td></td>
<td>Doubling effect which creates body by adding a short delay.</td>
</tr>
<tr>
<td>Dimension</td>
<td>Rise1 Rise2</td>
</tr>
<tr>
<td></td>
<td>Effect producing spatial expansion.</td>
</tr>
<tr>
<td>Resonance</td>
<td>Depth Freq Offset, Rate, Filter Type, Resonance, EFX Level, Dry Level</td>
</tr>
<tr>
<td></td>
<td>Resonance filter with LFO.</td>
</tr>
</tbody>
</table>

#### Parameter descriptions

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth</td>
<td>0–100</td>
<td>Adjusts modulation depth.</td>
</tr>
<tr>
<td>Resonance</td>
<td>~10–10</td>
<td>Adjusts resonance intensity. Negative values result in reversed phase for the effect sound.</td>
</tr>
<tr>
<td>Color</td>
<td>4Stage, 8Stage, Invert4, Invert8</td>
<td></td>
</tr>
<tr>
<td>LFO Shift</td>
<td>0–180</td>
<td>Adjusts left/right phase shift.</td>
</tr>
<tr>
<td>Width</td>
<td>0–10</td>
<td>Adjusts auto pan width.</td>
</tr>
</tbody>
</table>
### R16 effect types and parameters

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Description</th>
<th>Setting value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>0–50 Hz (P.86 Table 1)</td>
<td>Clip</td>
<td>0–10</td>
</tr>
<tr>
<td>Delay, Echo: 1–2000ms</td>
<td>Adjusts modulation rate. Using the rhythm tempo as reference, setting in note units is also possible.</td>
<td>Adds emphasis by clipping the modulation waveform.</td>
<td></td>
</tr>
<tr>
<td>Feedback</td>
<td>0–100</td>
<td>Mix</td>
<td>0–100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tone</td>
<td>0–10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rise1</td>
<td>0–30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rise2</td>
<td>0–30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freq Offset</td>
<td>1–30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Filter Type</td>
<td>HPF, LPF, BPF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resonance</td>
<td>1–30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EFX Level</td>
<td>0–100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dry Level</td>
<td>0–100</td>
</tr>
</tbody>
</table>

#### ZNR module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZNR</td>
<td>For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.</td>
</tr>
</tbody>
</table>

Table 1 Parameters marked with ♫ allow selection of a setting value in note units, using the song/pattern tempo as reference. The note durations for the setting values are shown below.

<table>
<thead>
<tr>
<th>♫ Thirty-second note</th>
<th>♫ Dotted sixteenth note</th>
<th>♫ Eighth note</th>
<th>♫ Dotted eighth note</th>
<th>♫ Quarter note</th>
<th>♫×2 Quarter note x 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>♫ Sixteenth note</td>
<td>♫ Triangular wave</td>
<td>♫ TrixTri</td>
<td>♫ Squared triangular wave</td>
<td></td>
<td></td>
</tr>
<tr>
<td>♫ Quarter triplet note</td>
<td>♫ Half triplet note</td>
<td>♫ Dotted quarter note</td>
<td>♫×20 Quarter note x 20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE**
- The note range actually available depends on the parameter.
- Depending on the combination of tempo setting and selected note symbol, the parameter setting 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

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Frequency does not change.</td>
</tr>
<tr>
<td>Up</td>
<td>Frequency changes from minimum to maximum according to the controlling waveform.</td>
</tr>
<tr>
<td>Down</td>
<td>Frequency changes from maximum to minimum according to the controlling waveform.</td>
</tr>
<tr>
<td>Hi</td>
<td>Frequency changes from patch setting to maximum according to the controlling waveform.</td>
</tr>
<tr>
<td>Lo</td>
<td>Frequency changes from minimum to patch setting according to the controlling waveform.</td>
</tr>
</tbody>
</table>

Table 3

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up Saw</td>
<td>Rising sawtooth wave</td>
</tr>
<tr>
<td>Up Fin</td>
<td>Rising fin wave</td>
</tr>
<tr>
<td>Down Saw</td>
<td>Falling sawtooth wave</td>
</tr>
<tr>
<td>Down Fin</td>
<td>Falling fin wave</td>
</tr>
</tbody>
</table>

Table 4

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eighth note</td>
<td>♫</td>
</tr>
<tr>
<td>Quarter note</td>
<td>♫×2</td>
</tr>
<tr>
<td>Half note</td>
<td>♫×3</td>
</tr>
<tr>
<td>Dotted half note</td>
<td>♫×4</td>
</tr>
</tbody>
</table>

Table 5

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 semitone lower — original sound</td>
</tr>
<tr>
<td>2</td>
<td>Original sound — 1 semitone lower</td>
</tr>
<tr>
<td>3</td>
<td>Doubling — detune + original sound</td>
</tr>
<tr>
<td>4</td>
<td>Detune + original sound — doubling</td>
</tr>
<tr>
<td>5</td>
<td>Original sound — 1 octave higher</td>
</tr>
<tr>
<td>6</td>
<td>1 octave higher — original sound</td>
</tr>
<tr>
<td>7</td>
<td>Original sound — 2 octaves lower</td>
</tr>
<tr>
<td>8</td>
<td>2 octaves lower — original sound</td>
</tr>
<tr>
<td>9</td>
<td>1 octaves lower + original sound — 1 octave higher + original sound</td>
</tr>
</tbody>
</table>
R16 effect types and parameters

---

## 8x Comp EQ algorithm

### Parameter description

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>80–240Hz</td>
<td>Adjusts cutoff frequency.</td>
</tr>
</tbody>
</table>

---

## COMP/Lo-Fi module

### Description

Compressor that divides the signal into three frequency bands and allows individual adjustment of compressor sensitivity and mixing ratio for each band.

### Parameter descriptions

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xover Lo</td>
<td>50Hz–16kHz</td>
<td>Adjusts low-to-mid crossover frequency.</td>
</tr>
<tr>
<td>Xover Hi</td>
<td>50Hz–16kHz</td>
<td>Adjusts mid-to-high crossover frequency.</td>
</tr>
<tr>
<td>Sense Hi</td>
<td>0–24</td>
<td>Adjusts high range compressor sensitivity.</td>
</tr>
<tr>
<td>Sense Mid</td>
<td>0–24</td>
<td>Adjusts mid range compressor sensitivity.</td>
</tr>
<tr>
<td>Sense Low</td>
<td>0–24</td>
<td>Adjusts low range compressor sensitivity.</td>
</tr>
<tr>
<td>Mix High</td>
<td>Off, –24–6</td>
<td>Adjusts high range mixing ratio.</td>
</tr>
<tr>
<td>Mix Mid</td>
<td>Off, –24–6</td>
<td>Adjusts mid range mixing ratio.</td>
</tr>
<tr>
<td>Mix Low</td>
<td>Off, –24–6</td>
<td>Adjusts low range mixing ratio.</td>
</tr>
</tbody>
</table>

---

## NORMALIZER module

### Description

Adjusts COMP/Lo-Fi module input level.

### Parameter description

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain</td>
<td>–12–12</td>
<td>Adjusts level.</td>
</tr>
</tbody>
</table>

---

## 3BAND EQ module

### Parameters/Description

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

---

## DIMENSION/RESO module

### Parameters/Descriptions

For an explanation of types and parameters, see STEREO algorithms.

---

## ZNR module

### Parameters/Description

For an explanation of types and parameters, see CLEAN, DISTORTION, ACO/BASS SIM algorithms.
### CHORUS/DELAY module

<table>
<thead>
<tr>
<th>Type</th>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chorus</td>
<td>Mixes a variable pitch-shifted component with the original sound, resulting in full-bodied resonating tone.</td>
</tr>
<tr>
<td>Delay</td>
<td>Delay effect with a maximum setting of 2000 ms.</td>
</tr>
</tbody>
</table>

#### Parameter descriptions

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFO Type</td>
<td>Mono, Stereo</td>
<td>Sets LFO phase to mono or stereo.</td>
</tr>
<tr>
<td>Depth</td>
<td>0–100</td>
<td>Adjusts effect depth.</td>
</tr>
<tr>
<td>Rate</td>
<td>1–50</td>
<td>Adjusts modulation rate.</td>
</tr>
<tr>
<td>Pre Delay</td>
<td>1–30</td>
<td>Adjusts pre-delay time.</td>
</tr>
<tr>
<td>EFX Level</td>
<td>0–100</td>
<td>Adjusts effect sound level.</td>
</tr>
<tr>
<td>Rev Send</td>
<td>0–30</td>
<td>Adjusts delay sound reverb send level.</td>
</tr>
<tr>
<td>Time</td>
<td>1–2000ms</td>
<td>Adjusts delay time.</td>
</tr>
<tr>
<td>Feedback</td>
<td>0–100</td>
<td>Adjusts feedback amount.</td>
</tr>
<tr>
<td>Hi Damp</td>
<td>0–10</td>
<td>Adjusts intensity of delay sound high range damping.</td>
</tr>
<tr>
<td>Pan</td>
<td>Left10–Left1, Center, Right1–Right10</td>
<td>Adjusts delay sound panning.</td>
</tr>
</tbody>
</table>

### REVERB module

<table>
<thead>
<tr>
<th>Parameters/Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hall</td>
</tr>
<tr>
<td>Room</td>
</tr>
</tbody>
</table>

#### Parameter description

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Setting range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Delay</td>
<td>1–100</td>
<td>Adjusts pre-delay time.</td>
</tr>
<tr>
<td>Decay</td>
<td>1–30</td>
<td>Adjusts reverb time.</td>
</tr>
<tr>
<td>EQ High</td>
<td>−12–6</td>
<td>Adjusts high range effect sound.</td>
</tr>
<tr>
<td>EQ Low</td>
<td>−12–6</td>
<td>Adjusts low range effect sound.</td>
</tr>
<tr>
<td>E.R.Mix</td>
<td>0–30</td>
<td>Adjusts mix ratio of initial reflections.</td>
</tr>
<tr>
<td>EFX Level</td>
<td>0–100</td>
<td>Adjusts effect sound level.</td>
</tr>
</tbody>
</table>
# Effect patch list

## Effect Patch List

**Insert effect**

### CLEAN algorithm

<table>
<thead>
<tr>
<th>No.</th>
<th>Patch name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Standard</td>
<td>Standard clean sound optimized for line-level equipment.</td>
</tr>
<tr>
<td>1</td>
<td>Ensemble</td>
<td>Transparent sound with ensemble effect.</td>
</tr>
<tr>
<td>2</td>
<td>CompPlus</td>
<td>Universal compressor with a wide range of uses.</td>
</tr>
<tr>
<td>3</td>
<td>R&amp;Roll</td>
<td>Sound tailored for vintage genres such as rock’n’roll.</td>
</tr>
<tr>
<td>4</td>
<td>CutPhase</td>
<td>Phase effect for that great cutting style.</td>
</tr>
<tr>
<td>5</td>
<td>Hi-WT</td>
<td>Hiwatt amp tone gets natural distortion from the picking dynamics.</td>
</tr>
<tr>
<td>6</td>
<td>DlyLead</td>
<td>Clean lead patch, characterized by long delays with solid presence.</td>
</tr>
<tr>
<td>7</td>
<td>Blues</td>
<td>Choose this for an orthodox blues feel.</td>
</tr>
<tr>
<td>8</td>
<td>MultiFLG</td>
<td>Flanger suitable for many uses including arpeggio, cutting, and lead guitar.</td>
</tr>
<tr>
<td>9</td>
<td>DaDaFunk</td>
<td>Auto wah brings out picking nuances.</td>
</tr>
<tr>
<td>10</td>
<td>Tremolo</td>
<td>Twin reverb with added tremolo for color.</td>
</tr>
<tr>
<td>11</td>
<td>BeatRock</td>
<td>Get into the Merseybeat for rock bands.</td>
</tr>
<tr>
<td>12</td>
<td>Rockably</td>
<td>Rockabilly sound with effective use of short delay.</td>
</tr>
<tr>
<td>13</td>
<td>WarmCho</td>
<td>Combination of warm tone with deep chorus.</td>
</tr>
<tr>
<td>14</td>
<td>Unison</td>
<td>Unison sound with added bass (-12 shift), good for low range phrasing.</td>
</tr>
<tr>
<td>15</td>
<td>Crunch</td>
<td>Light crunch for rock and pop backing.</td>
</tr>
<tr>
<td>16</td>
<td>CleanArp</td>
<td>Wide ensemble sound that works well with arpeggios and obligato.</td>
</tr>
<tr>
<td>17</td>
<td>CompLead</td>
<td>Streamlined lead sound with effective compressor action.</td>
</tr>
<tr>
<td>18</td>
<td>FastRate</td>
<td>Fast phaser turns full chords into a unique lead sound.</td>
</tr>
<tr>
<td>19</td>
<td>ClubJazz</td>
<td>Simulates the ambience in a jazz club or a similar live venue.</td>
</tr>
<tr>
<td>20</td>
<td>SlowVibe</td>
<td>Slow attack sound for imaginative chord work.</td>
</tr>
<tr>
<td>21</td>
<td>Ethnic</td>
<td>ARRM effect effectively emphasizes open-string phrasing.</td>
</tr>
<tr>
<td>22</td>
<td>Insect</td>
<td>Special effect sound of a small insect buzzing.</td>
</tr>
<tr>
<td>23-29</td>
<td>Empty</td>
<td></td>
</tr>
</tbody>
</table>

### DISTORTION algorithm

<table>
<thead>
<tr>
<th>No.</th>
<th>Patch name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5-1-5-0</td>
<td>5150 simulation, great for hard riffs.</td>
</tr>
<tr>
<td>1</td>
<td>MS#1959</td>
<td>British rock sound with airy distortion that comes alive at high volumes.</td>
</tr>
<tr>
<td>2</td>
<td>AnyOD</td>
<td>Overdrive suitable for both lead and backing.</td>
</tr>
<tr>
<td>3</td>
<td>RectiDRV</td>
<td>Sound modeled on the Boogie Rectifier.</td>
</tr>
<tr>
<td>4</td>
<td>MultiLD</td>
<td>Versatile lead tone for many applications.</td>
</tr>
<tr>
<td>5</td>
<td>Detune</td>
<td>Solid sound with detune effect.</td>
</tr>
<tr>
<td>6</td>
<td>UK Blues</td>
<td>Bluesbreaker with added delay gives fat and smooth sound.</td>
</tr>
<tr>
<td>7</td>
<td>Fusion</td>
<td>Fusion type sound with a surging deep chorus.</td>
</tr>
<tr>
<td>8</td>
<td>AutoWah</td>
<td>Versatile auto wah for lead or backing.</td>
</tr>
<tr>
<td>9</td>
<td>JB Style</td>
<td>Octaver sound made famous by Jeff Beck.</td>
</tr>
<tr>
<td>10</td>
<td>Hvy Riff</td>
<td>Choose this for heavy riffs.</td>
</tr>
<tr>
<td>11</td>
<td>BlueLine</td>
<td>Bluesy sound with a dry character.</td>
</tr>
<tr>
<td>12</td>
<td>Melody</td>
<td>Sustain sound for melodious solos.</td>
</tr>
<tr>
<td>13</td>
<td>TalkTime</td>
<td>Talk sound featuring a cry effect. A sense of persistence makes it easy to play.</td>
</tr>
<tr>
<td>14</td>
<td>ArpenCho</td>
<td>Chorus effect great for arpeggios.</td>
</tr>
<tr>
<td>15</td>
<td>HK Drive</td>
<td>The full-bodied sound of AMP3 high-gain distortion with added delay.</td>
</tr>
<tr>
<td>16</td>
<td>MS Drive</td>
<td>JCM2000 lead channel simulation. Air effect adds the cabinet touch.</td>
</tr>
<tr>
<td>17</td>
<td>Crunch</td>
<td>Crunch sound optimized for cutting.</td>
</tr>
<tr>
<td>18</td>
<td>NuanceOD</td>
<td>Overdrive sound brings out those fine amp details.</td>
</tr>
<tr>
<td>19</td>
<td>Tremolo</td>
<td>Tremolo sound for arpeggio.</td>
</tr>
<tr>
<td>20</td>
<td>ShortDLY</td>
<td>Rock lead sound with short delay.</td>
</tr>
<tr>
<td>21</td>
<td>Half Wah</td>
<td>Midrange-oriented sound with half open wah.</td>
</tr>
<tr>
<td>22</td>
<td>Jet Riff</td>
<td>Flanger jet sound.</td>
</tr>
<tr>
<td>23</td>
<td>SmoothLD</td>
<td>Smooth and glossy distortion sound.</td>
</tr>
<tr>
<td>24</td>
<td>HR Core</td>
<td>Punchy hard rock sound.</td>
</tr>
<tr>
<td>25</td>
<td>ENGL 650</td>
<td>Simulation of the ENGL E650 favored by Ritchie Blackmore.</td>
</tr>
</tbody>
</table>
## Effect patch list 2

<table>
<thead>
<tr>
<th>No.</th>
<th>Patch name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SVT</td>
<td>Walk the high road of rock. Great for finger picking or flatpicking.</td>
</tr>
<tr>
<td>1</td>
<td>BASSMAN</td>
<td>Vintage rock sound for any occasion.</td>
</tr>
<tr>
<td>2</td>
<td>HARTKE</td>
<td>Hartke simulation with all the glitz and glitter.</td>
</tr>
<tr>
<td>3</td>
<td>SUPER-B</td>
<td>Choose this for guitar unison play and solo play.</td>
</tr>
<tr>
<td>4</td>
<td>SANS-A</td>
<td>Edgy sound with a strong core is a good match for flatpicking.</td>
</tr>
<tr>
<td>5</td>
<td>TUBE PRE</td>
<td>All-rounder tube sound always comes in handy.</td>
</tr>
<tr>
<td>6</td>
<td>CompBass</td>
<td>Bass sound comes alive with compressor and exciter.</td>
</tr>
<tr>
<td>7</td>
<td>WarmBass</td>
<td>Bass sound with warm and round feeling.</td>
</tr>
<tr>
<td>8</td>
<td>Flanging</td>
<td>Flanging sound covers a lot of ground from 16-beat phrases to melody playing.</td>
</tr>
<tr>
<td>9</td>
<td>Auto Wah</td>
<td>Funky bass sound that makes good use of auto wah.</td>
</tr>
</tbody>
</table>

### ACO/BASS SIM algorithm

<table>
<thead>
<tr>
<th>No.</th>
<th>Patch name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Ensemble</td>
<td>Gorgeous sound with deep ensemble effect.</td>
</tr>
<tr>
<td>1</td>
<td>Delay LD</td>
<td>Lively acoustic guitar sound for lead playing.</td>
</tr>
<tr>
<td>2</td>
<td>Chorus</td>
<td>Chorus sound suitable for everything from rhythm guitar to lead guitar.</td>
</tr>
<tr>
<td>3</td>
<td>FineTune</td>
<td>Delicate detune creates sonic depth.</td>
</tr>
<tr>
<td>4</td>
<td>Air Aco</td>
<td>Air sound creates a micing effect.</td>
</tr>
<tr>
<td>5</td>
<td>Standard</td>
<td>Standard bass sound with many uses.</td>
</tr>
<tr>
<td>6</td>
<td>CompBass</td>
<td>Bass sound with warm and round feeling.</td>
</tr>
<tr>
<td>7</td>
<td>WarmBass</td>
<td>Bass sound with warm and round feeling.</td>
</tr>
<tr>
<td>8</td>
<td>Flanging</td>
<td>Flanging sound covers a lot of ground from 16-beat phrases to melody playing.</td>
</tr>
<tr>
<td>9</td>
<td>Auto Wah</td>
<td>Funky bass sound that makes good use of auto wah.</td>
</tr>
</tbody>
</table>

### BASS algorithm

<table>
<thead>
<tr>
<th>No.</th>
<th>Patch name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SVT</td>
<td>Walk the high road of rock. Great for finger picking or flatpicking.</td>
</tr>
<tr>
<td>1</td>
<td>BASSMAN</td>
<td>Vintage rock sound for any occasion.</td>
</tr>
<tr>
<td>2</td>
<td>HARTKE</td>
<td>Hartke simulation with all the glitz and glitter.</td>
</tr>
<tr>
<td>3</td>
<td>SUPER-B</td>
<td>Choose this for guitar unison play and solo play.</td>
</tr>
<tr>
<td>4</td>
<td>SANS-A</td>
<td>Edgy sound with a strong core is a good match for flatpicking.</td>
</tr>
<tr>
<td>5</td>
<td>TUBE PRE</td>
<td>All-rounder tube sound always comes in handy.</td>
</tr>
<tr>
<td>6</td>
<td>Attack</td>
<td>Compression sound effective for slap and flatpick playing.</td>
</tr>
<tr>
<td>7</td>
<td>Wah-Solo</td>
<td>Solo sound with distortion and a touch of wah. Pitch shift is the secret ingredient.</td>
</tr>
<tr>
<td>8</td>
<td>Talk&amp;Cry</td>
<td>Typical special effect that makes a cry sound like a talking modulator.</td>
</tr>
<tr>
<td>9</td>
<td>Melody</td>
<td>Chorus sound for melody, solo, chord playing and harmonics.</td>
</tr>
<tr>
<td>10</td>
<td>SlapJazz</td>
<td>Basic slap sound in the jazz bass style.</td>
</tr>
<tr>
<td>11</td>
<td>Destroy</td>
<td>Smashing sound mixing distortion, pitch shifting and ring modulator.</td>
</tr>
<tr>
<td>12</td>
<td>Tremolo</td>
<td>A great match for a moody bass line and chord playing.</td>
</tr>
<tr>
<td>13</td>
<td>SoftSlow</td>
<td>Melody or solo play tone that is ideal for a fretless bass.</td>
</tr>
<tr>
<td>14</td>
<td>Limiter</td>
<td>Limiter evens out the sound when using a pick.</td>
</tr>
<tr>
<td>15</td>
<td>X'over</td>
<td>Flanger sound for picking, typical of the crossover genre.</td>
</tr>
<tr>
<td>16</td>
<td>CleanWah</td>
<td>Auto wah sound that has a million uses.</td>
</tr>
<tr>
<td>17</td>
<td>Exciter</td>
<td>Universal sound with a fresh and transparent character.</td>
</tr>
<tr>
<td>18</td>
<td>ClubBass</td>
<td>Play those walking phrases with this sound that simulates the ambience of a small club.</td>
</tr>
<tr>
<td>19</td>
<td>DriveWah</td>
<td>Auto wah sound with variable drive that follows picking dynamics.</td>
</tr>
</tbody>
</table>

### MIC algorithm

<table>
<thead>
<tr>
<th>No.</th>
<th>Patch name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Rec Comp</td>
<td>Conventional preamp + compression sound for recording.</td>
</tr>
<tr>
<td>1</td>
<td>RoomAmbi</td>
<td>Simulates the acoustics of a radio station broadcast studio.</td>
</tr>
<tr>
<td>2</td>
<td>VocalDly</td>
<td>Delay effect that works best with wet vocals.</td>
</tr>
<tr>
<td>3</td>
<td>Rock</td>
<td>Massive compression sound for rock vocals.</td>
</tr>
</tbody>
</table>
Effect patch list 3

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Comment</th>
<th>Recommended L/R input</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Vo/Vo 1</td>
<td>For duets</td>
<td>Vocals</td>
</tr>
<tr>
<td>1</td>
<td>Vo/Vo 2</td>
<td>Chorus for main vocal</td>
<td>Vocals</td>
</tr>
<tr>
<td>2</td>
<td>Vo/Vo 3</td>
<td>For harmony</td>
<td>Vocals</td>
</tr>
<tr>
<td>3</td>
<td>AG/VO 1</td>
<td>Creates a story-like character</td>
<td>Acoustic guitar/Vocal</td>
</tr>
<tr>
<td>4</td>
<td>AG/VO 2</td>
<td>Similar to AG/VO 1 but vocal character different</td>
<td>Acoustic guitar/Vocal</td>
</tr>
<tr>
<td>5</td>
<td>AG/VO 3</td>
<td>Aggressively modifies vocal character</td>
<td>Acoustic guitar/Vocal</td>
</tr>
<tr>
<td>6</td>
<td>ShortDLY</td>
<td>Short delay sound with effective doubling</td>
<td>Microphones</td>
</tr>
<tr>
<td>7</td>
<td>FatDrum</td>
<td>For drum recording with single point stereo mic</td>
<td>Microphones</td>
</tr>
<tr>
<td>8</td>
<td>BothTone</td>
<td>Tuned for male on L channel and female on R channel</td>
<td>Vocals</td>
</tr>
<tr>
<td>9</td>
<td>Condenser</td>
<td>Simulates condenser mic sound with dynamic mic input</td>
<td>Vocals</td>
</tr>
<tr>
<td>10</td>
<td>DuoAttack</td>
<td>Chorus for lead vocals with emphasized attack</td>
<td>Vocals</td>
</tr>
<tr>
<td>11</td>
<td>Warmth</td>
<td>Warm sound with prominent midrange</td>
<td>Vocals</td>
</tr>
<tr>
<td>12</td>
<td>AM Radio</td>
<td>Simulates AM monaural radio</td>
<td>Vocals</td>
</tr>
<tr>
<td>13</td>
<td>Pavilion</td>
<td>Narration sound at expo booths</td>
<td>Vocals</td>
</tr>
<tr>
<td>14</td>
<td>TV News</td>
<td>TV newscaster sound</td>
<td>Vocals</td>
</tr>
<tr>
<td>15</td>
<td>F-Vo/Pf1</td>
<td>For female vocal piano ballads</td>
<td>Vocal/Piano</td>
</tr>
<tr>
<td>16</td>
<td>JazzDuo1</td>
<td>Simulates jazz session LP with io-fi sound</td>
<td>Vocal/Piano</td>
</tr>
<tr>
<td>17</td>
<td>Cntmprry</td>
<td>All-round clear sound</td>
<td>Vocal/Piano</td>
</tr>
<tr>
<td>18</td>
<td>JazzDuo2</td>
<td>JazzDuo 1 for male vocal</td>
<td>Vocal/Piano</td>
</tr>
<tr>
<td>19</td>
<td>Ensemble</td>
<td>For guitar with strong attack and mellow piano</td>
<td>Acoustic guitar/Piano</td>
</tr>
<tr>
<td>20</td>
<td>Enhanced</td>
<td>Enhances clear, strong outline for ballads</td>
<td>Acoustic guitar/Vocal</td>
</tr>
<tr>
<td>21</td>
<td>Warmy</td>
<td>Moderates overbright ambience</td>
<td>Acoustic guitar/Vocal</td>
</tr>
<tr>
<td>22</td>
<td>Strum+Vo</td>
<td>Smooth fat sound with midrange compensation</td>
<td>Acoustic guitar/Vocal</td>
</tr>
<tr>
<td>23</td>
<td>FatPlus</td>
<td>Spruces up a thin midrange</td>
<td>Acoustic guitar/Vocal</td>
</tr>
<tr>
<td>24</td>
<td>Arp+Vo</td>
<td>Overall solid sound</td>
<td>Acoustic guitar/Vocal</td>
</tr>
<tr>
<td>25</td>
<td>ClubDuo</td>
<td>Simulates live sound in small club</td>
<td>Acoustic guitars</td>
</tr>
<tr>
<td>26</td>
<td>BigShape</td>
<td>Enhances overall clarity</td>
<td>Acoustic guitars</td>
</tr>
<tr>
<td>27</td>
<td>FolkDuo</td>
<td>Fresh and clean sound</td>
<td>Acoustic guitars</td>
</tr>
<tr>
<td>28</td>
<td>GtrDuo</td>
<td>Suitable for guitar duos</td>
<td>Acoustic guitars</td>
</tr>
<tr>
<td>29</td>
<td>Bright</td>
<td>Bright and sharp global feeling</td>
<td>Acoustic guitars</td>
</tr>
<tr>
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DUAL MIC algorithm

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

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<td>For synthesizer single note lead</td>
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<tr>
<td>1</td>
<td>OrganPha</td>
<td>Phaser for synthesizer/organ</td>
</tr>
<tr>
<td>2</td>
<td>OrgaRock</td>
<td>Boomy distortion for rock organ</td>
</tr>
<tr>
<td>3</td>
<td>EP-Chor</td>
<td>Beautiful chorus for electric piano</td>
</tr>
<tr>
<td>4</td>
<td>ClavFlg</td>
<td>Wah for clavinet</td>
</tr>
<tr>
<td>5</td>
<td>Concert</td>
<td>Concert hall effect for piano</td>
</tr>
<tr>
<td>6</td>
<td>Honkey</td>
<td>Honky-tonk piano simulation</td>
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<tr>
<td>7</td>
<td>PowerBD</td>
<td>Gives a bass drum more power</td>
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<tr>
<td>8</td>
<td>DrumFlng</td>
<td>Conventional flanger for drum</td>
</tr>
<tr>
<td>9</td>
<td>LiveDrum</td>
<td>Simulates outdoor live doubling</td>
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<tr>
<td>10</td>
<td>JetDrum</td>
<td>Phaser for 16-beat hi-hat</td>
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<tr>
<td>11</td>
<td>AsianKit</td>
<td>Changes a standard kit to an Asian kit</td>
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<tr>
<td>12</td>
<td>BassBost</td>
<td>Emphasizes low range</td>
</tr>
<tr>
<td>13</td>
<td>Mono-&gt;St</td>
<td>Gives spaciousness to a monaural source</td>
</tr>
<tr>
<td>14</td>
<td>AM Radio</td>
<td>AM radio simulation</td>
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<tr>
<td>15</td>
<td>WideDrum</td>
<td>Wide stereo effect for drum machine track</td>
</tr>
<tr>
<td>16</td>
<td>DanceDrm</td>
<td>Reinforces bass for dance rhythms</td>
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<tr>
<td>17</td>
<td>Octaver</td>
<td>Adds one-octave lower sound</td>
</tr>
<tr>
<td>18</td>
<td>Percushn</td>
<td>Gives air, presence, and stereo spread to percussion</td>
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<tr>
<td>19</td>
<td>MoreTone</td>
<td>Distortion with emphasized midrange body</td>
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<td>20</td>
<td>SnrSmack</td>
<td>Emphasizes snappy snare sound</td>
</tr>
<tr>
<td>21</td>
<td>Shudder!</td>
<td>Sliced sound for techno tracks</td>
</tr>
<tr>
<td>22</td>
<td>SwpPhase</td>
<td>Phaser with powerful resonance</td>
</tr>
<tr>
<td>23</td>
<td>DirtyBiz</td>
<td>Lo-fi distortion using ring modulator</td>
</tr>
<tr>
<td>24</td>
<td>Doubler</td>
<td>Doubling for vocal track</td>
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<tr>
<td>25</td>
<td>SFXlab</td>
<td>Forces special effect sound on synthesizer</td>
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<tr>
<td>26</td>
<td>SynLead2</td>
<td>Old-style jet sound for synthesizer lead</td>
</tr>
<tr>
<td>27</td>
<td>Tekepiko</td>
<td>For sequenced phrases or single note muted guitar</td>
</tr>
<tr>
<td>28</td>
<td>Sollner</td>
<td>Simulates analog strings ensemble</td>
</tr>
<tr>
<td>29</td>
<td>HevyDrum</td>
<td>For hard rock drums</td>
</tr>
<tr>
<td>30</td>
<td>SM57Sim</td>
<td>Simulation of SM57 mic suitable for recording of various analog instruments as well as guitars</td>
</tr>
<tr>
<td>31</td>
<td>MD421Sim</td>
<td>Simulation of MD421 professional standard mic indispensable for broadcasting, recording and live applications</td>
</tr>
<tr>
<td>32</td>
<td>U87Sim</td>
<td>Simulation of U87, a standard condenser type microphone used in studios worldwide</td>
</tr>
<tr>
<td>33</td>
<td>C414Sim</td>
<td>Simulation of C414, a famous microphone highly trusted in recording situations</td>
</tr>
<tr>
<td>34</td>
<td>Doubling</td>
<td>Creates doubled sounds as if the entire sound body became thicker</td>
</tr>
<tr>
<td>35</td>
<td>ShortDLY</td>
<td>Delay sound suitable for vocals and field recordings, and also for creating a gimmicky effect</td>
</tr>
<tr>
<td>36</td>
<td>Lo-Fi</td>
<td>Create Lo-Fi sounds with a nostalgic atmosphere as if the sound is coming from a radio</td>
</tr>
<tr>
<td>37</td>
<td>Limiter</td>
<td>A limiter very effective on band rehearsals and live recording</td>
</tr>
<tr>
<td>38</td>
<td>BoostPis</td>
<td>Boosts sound by adding sound pressure during recording</td>
</tr>
<tr>
<td>39</td>
<td>All Comp</td>
<td>Compressor adjusts volume differences of instruments in a band performance, for example, and evens them out</td>
</tr>
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<td>40-59</td>
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### 8x COMP EQ algorithm

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<td>VocalBand</td>
<td>For vocal band</td>
<td>1 Guitar amp</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2 Bass amp</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 Vocal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 Chorus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5-6 Drums</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7-8 Keyboard</td>
</tr>
<tr>
<td>1</td>
<td>Inst</td>
<td>For jazz or fusion band</td>
<td>1-2 Guitar amp</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 Bass amp</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 Piano</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5-6 Drums</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7-8 Keyboard</td>
</tr>
<tr>
<td>2</td>
<td>AcoBand</td>
<td>For acoustic band</td>
<td>1 Acoustic bass</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 Piano</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 Vocal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 Chorus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5-6 Acoustic guitar</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7-8 Percussion</td>
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### Effect patch list 5

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<th>Comment</th>
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<td>0</td>
<td>PlusAlfa</td>
<td>Enhances the overall power</td>
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<tr>
<td>1</td>
<td>All-Pops</td>
<td>Conventional mastering</td>
</tr>
<tr>
<td>2</td>
<td>StWide</td>
<td>Wide-range mastering</td>
</tr>
<tr>
<td>3</td>
<td>DiscoMst</td>
<td>For club sound</td>
</tr>
<tr>
<td>4</td>
<td>Boost</td>
<td>For hi-fi finish</td>
</tr>
<tr>
<td>5</td>
<td>Power</td>
<td>Powerful low range</td>
</tr>
<tr>
<td>6</td>
<td>Live</td>
<td>Adds a live feel</td>
</tr>
<tr>
<td>7</td>
<td>WarmMst</td>
<td>Adds a warm feeling</td>
</tr>
<tr>
<td>8</td>
<td>TightUp</td>
<td>Adds a hard feeling</td>
</tr>
<tr>
<td>9</td>
<td>1930Mst</td>
<td>Mastering with 1930's sound</td>
</tr>
<tr>
<td>10</td>
<td>LoFiMst</td>
<td>Lo-fi mastering</td>
</tr>
<tr>
<td>11</td>
<td>BGM</td>
<td>Mastering for background music</td>
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<tr>
<td>12</td>
<td>RockShow</td>
<td>Gives a rock style mix a live feel</td>
</tr>
<tr>
<td>13</td>
<td>Exciter</td>
<td>Lo-fi mastering with slight distortion in mid and upper range</td>
</tr>
<tr>
<td>14</td>
<td>Clarify</td>
<td>Emphasizes high-end range</td>
</tr>
<tr>
<td>15</td>
<td>VocalMax</td>
<td>Brings vocals to the foreground</td>
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<tr>
<td>16</td>
<td>RaveRez</td>
<td>Special sweep effect using sharp filter</td>
</tr>
<tr>
<td>17</td>
<td>FullComp</td>
<td>Strong compression over full frequency range</td>
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<tr>
<td>18</td>
<td>ClearPWR</td>
<td>Power tuning with emphasized midrange</td>
</tr>
<tr>
<td>19</td>
<td>ClearDMS</td>
<td>Enhances clarity and spaciousness</td>
</tr>
<tr>
<td>20</td>
<td>Maximizr</td>
<td>Boosts overall sound pressure level</td>
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<tr>
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### MASTERING algorithm

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<tr>
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<td>Guitar</td>
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</tr>
<tr>
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<td>Bass</td>
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</tr>
<tr>
<td>4</td>
<td>Keyboard</td>
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</tr>
<tr>
<td>5</td>
<td>Vocal</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Chorus</td>
<td></td>
</tr>
<tr>
<td>7-8</td>
<td>Sequencer</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Bass drum</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Snare drum</td>
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</tr>
<tr>
<td>3</td>
<td>Hi-hat</td>
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</tr>
<tr>
<td>4</td>
<td>High tom</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Mid tom</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Low tom</td>
<td></td>
</tr>
<tr>
<td>7-8</td>
<td>Overhead mics</td>
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</tr>
<tr>
<td>1-2</td>
<td>Various percussion</td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>Cymbal/bell</td>
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</tr>
<tr>
<td>5-6</td>
<td>Drums</td>
<td></td>
</tr>
<tr>
<td>7-8</td>
<td>All percussion together</td>
<td></td>
</tr>
<tr>
<td>1-8</td>
<td>Versatile, mellow sound</td>
<td></td>
</tr>
<tr>
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<td>Female vocals</td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>Male vocals</td>
<td></td>
</tr>
<tr>
<td>5-6</td>
<td>Vocal duo</td>
<td></td>
</tr>
<tr>
<td>7-8</td>
<td>All vocals together</td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>Female vocals</td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>Male vocals</td>
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</tr>
<tr>
<td>5-6</td>
<td>Vocal duo</td>
<td></td>
</tr>
<tr>
<td>7-8</td>
<td>All vocals together</td>
<td></td>
</tr>
<tr>
<td>1-8</td>
<td>Versatile, mellow sound</td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>Female vocals</td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>Male vocals</td>
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</tr>
<tr>
<td>5-6</td>
<td>Vocal duo</td>
<td></td>
</tr>
<tr>
<td>7-8</td>
<td>All vocals together</td>
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### Effect patch list 5

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<td>1ManBand</td>
<td>For private recording studio</td>
</tr>
<tr>
<td>4</td>
<td>StdDrum</td>
<td>Standard sound for recording each sound of a drum kit</td>
</tr>
<tr>
<td>5</td>
<td>VtgDrum</td>
<td>1970s drum sound with enhanced hi-hat</td>
</tr>
<tr>
<td>6</td>
<td>EhcdDrum</td>
<td>Punchy compressed drum sound</td>
</tr>
<tr>
<td>7</td>
<td>Percus</td>
<td>Suitable for recording individual percussion sounds</td>
</tr>
<tr>
<td>8</td>
<td>CompLtr</td>
<td>Versatile, mellow sound</td>
</tr>
<tr>
<td>9</td>
<td>A Capla</td>
<td>For a cappella group</td>
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</table>
### Effect patch list 6

#### Send/return effect

##### CHORUS/Delay

<table>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>Vocal</td>
<td>Chorus for adding color to vocals</td>
</tr>
<tr>
<td>1</td>
<td>GtChorus</td>
<td>Chorus to enhance weak guitar sound</td>
</tr>
<tr>
<td>2</td>
<td>Doubling</td>
<td>Versatile doubling</td>
</tr>
<tr>
<td>3</td>
<td>Echo</td>
<td>Showy analog-style delay</td>
</tr>
<tr>
<td>4</td>
<td>Delay3/4</td>
<td>Dotted-8th-note delay in sync with rhythm tempo</td>
</tr>
<tr>
<td>5</td>
<td>Delay3/2</td>
<td>Dotted-quarter-note delay in sync with rhythm tempo</td>
</tr>
<tr>
<td>6</td>
<td>FastCho</td>
<td>Fast-rate chorus</td>
</tr>
<tr>
<td>7</td>
<td>DeepCho</td>
<td>Versatile deep chorus</td>
</tr>
<tr>
<td>8</td>
<td>ShortDL</td>
<td>Versatile short delay</td>
</tr>
<tr>
<td>9</td>
<td>DeepDBL</td>
<td>Deep doubling</td>
</tr>
<tr>
<td>10</td>
<td>SoloLead</td>
<td>Keeps fast phrases tight</td>
</tr>
<tr>
<td>11</td>
<td>WarmyDly</td>
<td>Simulates warm analog delay</td>
</tr>
<tr>
<td>12</td>
<td>EnhanCho</td>
<td>Enhancer using phase shift doubling</td>
</tr>
<tr>
<td>13</td>
<td>Detune</td>
<td>For instruments with strong harmonics such as an electronic piano or synthesizer</td>
</tr>
<tr>
<td>14</td>
<td>Natural</td>
<td>Chorus with low modulation for backing</td>
</tr>
<tr>
<td>15</td>
<td>Whole</td>
<td>Whole-note delay in sync with rhythm tempo</td>
</tr>
<tr>
<td>16</td>
<td>Delay2/3</td>
<td>Half-triplet-note delay in sync with rhythm tempo</td>
</tr>
<tr>
<td>17</td>
<td>Delay1/4</td>
<td>16th-note delay in sync with rhythm tempo</td>
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##### Reverb

<table>
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<th>Comment</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>TightHal</td>
<td>Hall reverb with a hard tonal quality</td>
</tr>
<tr>
<td>1</td>
<td>BrgtRoom</td>
<td>Room reverb with a hard tonal quality</td>
</tr>
<tr>
<td>2</td>
<td>SoftHall</td>
<td>Hall reverb with a mild tonal quality</td>
</tr>
<tr>
<td>3</td>
<td>LargeHal</td>
<td>Simulates the reverberation of a large hall</td>
</tr>
<tr>
<td>4</td>
<td>SmallHal</td>
<td>Simulates the reverberation of a small hall</td>
</tr>
<tr>
<td>5</td>
<td>LiveHous</td>
<td>Simulates the reverberation of a club</td>
</tr>
<tr>
<td>6</td>
<td>TrStudio</td>
<td>Simulates the reverberation of a rehearsal studio</td>
</tr>
<tr>
<td>7</td>
<td>DarkRoom</td>
<td>Room reverb with a mild tonal quality</td>
</tr>
<tr>
<td>8</td>
<td>VcxRev</td>
<td>Tuned to enhance vocals</td>
</tr>
<tr>
<td>9</td>
<td>Tunnel</td>
<td>Simulates the reverberation of a tunnel</td>
</tr>
<tr>
<td>10</td>
<td>BigRoom</td>
<td>Simulates the reverberation of a gym</td>
</tr>
<tr>
<td>11</td>
<td>PowerSt.</td>
<td>Gate reverb</td>
</tr>
<tr>
<td>12</td>
<td>BritHall</td>
<td>Simulates the bright reverb of a concert hall</td>
</tr>
<tr>
<td>13</td>
<td>BudoKan</td>
<td>Simulates the reverberation at the BudoKan in Tokyo</td>
</tr>
<tr>
<td>14</td>
<td>Ballade</td>
<td>For slow ballads</td>
</tr>
<tr>
<td>15</td>
<td>SecBrass</td>
<td>Reverb for brass section</td>
</tr>
<tr>
<td>16</td>
<td>ShortPla</td>
<td>Short reverb</td>
</tr>
<tr>
<td>17</td>
<td>RealPla</td>
<td>Spring reverb simulation</td>
</tr>
<tr>
<td>18</td>
<td>Dome</td>
<td>Reverb of a domed-stadium</td>
</tr>
<tr>
<td>19</td>
<td>VinSprin</td>
<td>Simulates analog spring reverb</td>
</tr>
<tr>
<td>20</td>
<td>ClearSpr</td>
<td>Clear reverb with short reverb time</td>
</tr>
<tr>
<td>21</td>
<td>Dokan</td>
<td>Simulates the reverberation of a clay pipe</td>
</tr>
<tr>
<td>22-29</td>
<td>Empty</td>
<td></td>
</tr>
</tbody>
</table>
## Specifications

<table>
<thead>
<tr>
<th>Section</th>
<th>R16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recorder</strong></td>
<td></td>
</tr>
<tr>
<td>Track count</td>
<td>16 (monaural)</td>
</tr>
<tr>
<td>Maximum number of simultaneous recording tracks</td>
<td>16</td>
</tr>
<tr>
<td>Maximum number of simultaneous playback tracks</td>
<td>16 audio + metronome</td>
</tr>
<tr>
<td>Recording data format</td>
<td>44.1kHz, 16/24bit</td>
</tr>
<tr>
<td>Maximum recording time</td>
<td>200 minutes/1GB (of mono tracks)</td>
</tr>
<tr>
<td>Projects</td>
<td>1000 maximum per SD Card</td>
</tr>
<tr>
<td>Markers</td>
<td>100/project</td>
</tr>
<tr>
<td>Locator</td>
<td>Minute/second/millisecond or bar/beat/tick</td>
</tr>
<tr>
<td>File editing</td>
<td>Divide</td>
</tr>
<tr>
<td>Other functions</td>
<td>Punch-in/out (manual, automatic), Bounce, A-B repeat, UNDO/REDO</td>
</tr>
<tr>
<td><strong>Audio interface</strong></td>
<td></td>
</tr>
<tr>
<td>Number of input channels</td>
<td>8</td>
</tr>
<tr>
<td>Number of output channels</td>
<td>2</td>
</tr>
<tr>
<td>Quantization</td>
<td>24-bit</td>
</tr>
<tr>
<td>Sampling frequency</td>
<td>44.1, 48, 88.2, 96 kHz</td>
</tr>
<tr>
<td><strong>Mixer</strong></td>
<td></td>
</tr>
<tr>
<td>Faders</td>
<td>9 (monaural x 8, master x 1)</td>
</tr>
<tr>
<td>Level meters</td>
<td>4-segment display</td>
</tr>
<tr>
<td>Track parameters</td>
<td>3-band equalizer, pan (balance), effect send x 2, invert</td>
</tr>
<tr>
<td>Stereo linking</td>
<td>Track pairs 1/2 – 15/16 selectable</td>
</tr>
<tr>
<td><strong>Effects</strong></td>
<td></td>
</tr>
<tr>
<td>Algorithms</td>
<td>9 (CLEAN, DISTORTION, ACO/BASS SIM, BASS, MIC, DUAL MIC, STEREO, 8x COMP EQ, MASTERING)</td>
</tr>
<tr>
<td>Patches</td>
<td>330 insert, 60 send return</td>
</tr>
<tr>
<td>Effect modules</td>
<td>7 insert, 2 send return</td>
</tr>
<tr>
<td>Tuner</td>
<td>Chromatic, guitar, bass, open A/D/E/G, D modal</td>
</tr>
<tr>
<td><strong>Metronome</strong></td>
<td></td>
</tr>
<tr>
<td>Tones</td>
<td>5</td>
</tr>
<tr>
<td>Beat</td>
<td>No accent, 1/4 - 8/4, 6/8</td>
</tr>
<tr>
<td>Tempo</td>
<td>40.0–250.0 BPM</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td></td>
</tr>
<tr>
<td>Other functions</td>
<td>Sequential playback, synchronized recording</td>
</tr>
<tr>
<td><strong>Hardware</strong></td>
<td></td>
</tr>
<tr>
<td>Recording media</td>
<td>SD card (16MB-2GB), SDHC card (4-32GB)</td>
</tr>
<tr>
<td>Analog-digital conversion</td>
<td>96kHz 24bit delta-sigma ADC</td>
</tr>
<tr>
<td>Digital-analog conversion</td>
<td>96kHz 24bit delta-sigma DAC</td>
</tr>
<tr>
<td>Display</td>
<td>20-digit 2-line custom LCD (with backlight)</td>
</tr>
<tr>
<td>Inputs</td>
<td>INPUT 1-8 XLR/standard phone combo jack x8</td>
</tr>
<tr>
<td>Input impedance</td>
<td>(Balanced input) 1KΩ balanced, 2 hot (Unbalanced input) 50KΩ unbalanced</td>
</tr>
<tr>
<td>1 equipped with Hi-Z switch, input impedance 470kΩ (Hi-Z on)</td>
<td>2 equipped with phantom power switches</td>
</tr>
<tr>
<td>Input level</td>
<td>–50dBm &lt; continuous &lt; +4dBm</td>
</tr>
<tr>
<td>Built-in microphones</td>
<td>Omnidirectional condenser microphones</td>
</tr>
<tr>
<td>Gain</td>
<td>-50dBm &lt; continuous &lt; +4dBm</td>
</tr>
<tr>
<td>Phantom power supply</td>
<td>48V</td>
</tr>
<tr>
<td>Output</td>
<td>OUTPUT TRS phone type (balanced)</td>
</tr>
<tr>
<td>Output level</td>
<td>20mW x 2 (32Ω)</td>
</tr>
<tr>
<td>USB</td>
<td>USB 2.0 High Speed (operation as audio interface/control surface or card reader)</td>
</tr>
<tr>
<td>Power supply</td>
<td>DC 5V 1A AC adaptor (ZOOM AD-14)</td>
</tr>
<tr>
<td>Six AA batteries (4.5-hour continuous operation time with backlight on and phantom power off)</td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>376mm (W) x 237.1mm (D) x 52.2mm (H)</td>
</tr>
<tr>
<td>Weight</td>
<td>1.3kg</td>
</tr>
</tbody>
</table>
Troubleshooting

If you have any problems during operation of the R16, check the following points first.

Problems during playback

No sound, or sound is very weak.
- Check the connections to your monitoring system and the volume settings of the system.
- Make sure that status keys in the mixer section are lit green (except the [MASTER] status key) and that faders are raised. If a key is not green, press it 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 (→P.20), or use the fader of the odd-numbered channel in the pair.

No sound from input signal, or sound is very weak.
- Make sure that the [GAIN] control for the respective input is increased.
- Check that the status light is red (record 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 (→P.70).
- Recording is not possible if the project is protected. Either set “PROTECT” to “OFF” (→P.56), or use a different project.

The recorded sound is distorted.
- Make sure that the [GAIN] (input sensitivity) and recording level are not set too high.
- Lower the fader so that the 0 (dB) indicator of the level meter does 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. Set the EQ gain to a lower value.
- When an insert effect is applied to an input, check whether the effect output level (patch level) setting is appropriate.

Problems with effects

Insert effect cannot be inserted.
- When using the 8x COMP EQ algorithm, the selection of insert points is limited (→P.49).

Insert effect does not work.
- Check that the “INSERT EFFECT” icon is shown on the display. If it is not shown, press the [INSERT EFFECT] key and then press [ENTER] to enable it.
- Make sure that the insert effect is inserted in the desired location (→P.49).

Send/return effect does not work.
- Check that the “CHORUS/DELAY” icon is shown on the display. If it is not shown, press the SEND RETURN EFFECT key and then press [ENTER] to enable it.
- Make sure that the send level for the track is raised (→P.37, 48).

Other problems

Cannot save a project.
- The project cannot be saved if the project is protected. Set “PROTECT” to “OFF” (→P.56).

Cannot create a new project or copy a project.
- If “Project Full” appears on the display, all the memory available on the card has been used. Delete unneeded projects to free up memory.

An error message is shown when attempting to execute a command.
- Please check the error message list (→P.44).
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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