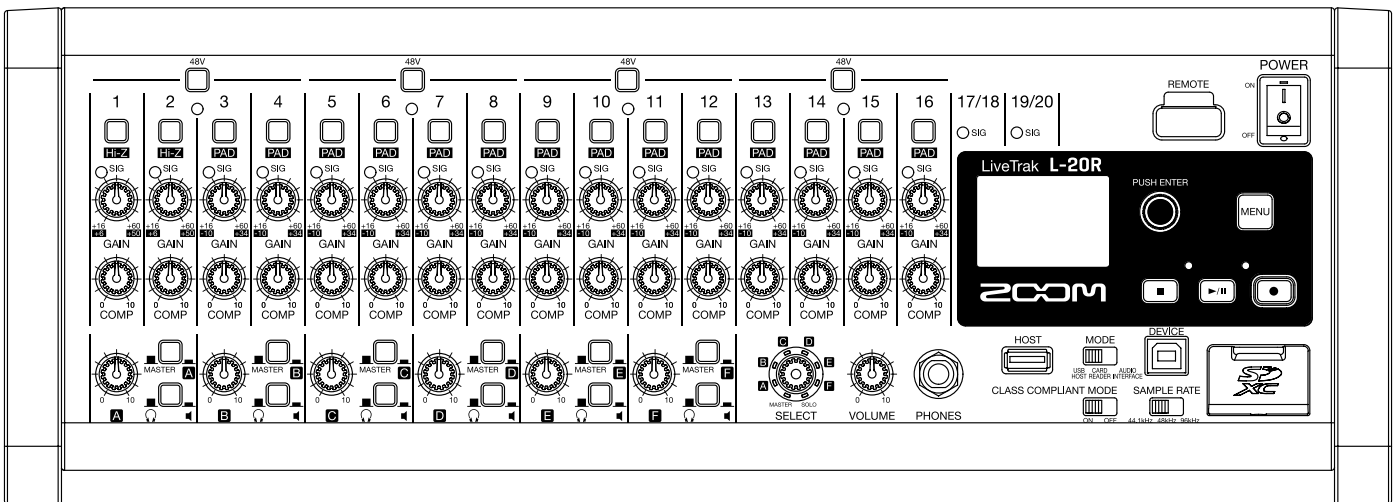


# L-20R

## LiveTrak



## Operation Manual

You must read the Usage and Safety Precautions before use.

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Proper display is not possible on grayscale devices.

## ■ Operation Manual overview

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# Introduction

Thank you very much for purchasing a ZOOM LiveTrak **L-20R**.

The **L-20R** fuses the features of a digital mixer, a multitrack recorder and a USB audio interface to provide a powerful tool for both live performance and studio production. The smart and compact **L-20R** is designed especially to be controlled from an iOS device and a single unit can simultaneously mix, monitor and record live performances.

## Main features of the L-20R

### Remote control using iOS devices

---

Set up the **L-20R** in the best location for connecting with other equipment and then use the L-20 Control iOS app to mix wirelessly while listening from anywhere in the venue, including from audience seats and in front of monitor speakers.

### 20-channel digital mixer & multitrack recorder

---

The **L-20R** combines a digital mixer with 20 total input channels (16 mono and 2 stereo), a multitrack recorder that can simultaneously record up to 22 tracks, and a 22-in/4-out USB audio interface. Compact and lightweight, this digital mixer is easy to transport and can even be used with PA systems for live performances in rehearsal studios, cafés and other small venues.

### High-quality mic preamps

---

The **L-20R** has high-quality mic preamps built-in for 16 channels. The high-quality analog inputs, which can provide +48 V phantom power, have a -128 dBu EIN rating and +60 dB maximum input gain. In addition, channels 1 and 2 also support Hi-Z input, while channels 3 to 16 have PAD functions (26 dB attenuation), enabling them to accept high levels of input.

### 6 monitor output channels

---

In addition to the MASTER OUT, the **L-20R** also has 6 MONITOR OUT channels. The MONITOR OUT mixes can be set separately for each output, enabling different mixes to be sent to individual performers. Moreover, they support output to both headphones and monitor speakers.

### Recorder can simultaneously record 22 tracks and play 20 tracks

---

The **L-20R** can simultaneously record every channel and the master fader stereo signal output for a total of 22 tracks. Since the recorded data is saved in 16/24-bit, 44.1/48/96 kHz WAV format, the files can easily be copied to a computer and used in a DAW. In addition, overdubbing and punching in/out can be done as expected with a multitrack recorder.

### 22-in/4-out USB audio interface

---

The **L-20R** can be used as a 22-in/4-out USB audio interface. The signals from each input and the master fader output can be recorded in a DAW. In addition, signals output from a computer can also be assigned to a stereo channel. Class compliant mode, which enables connection with iOS devices, is also supported.

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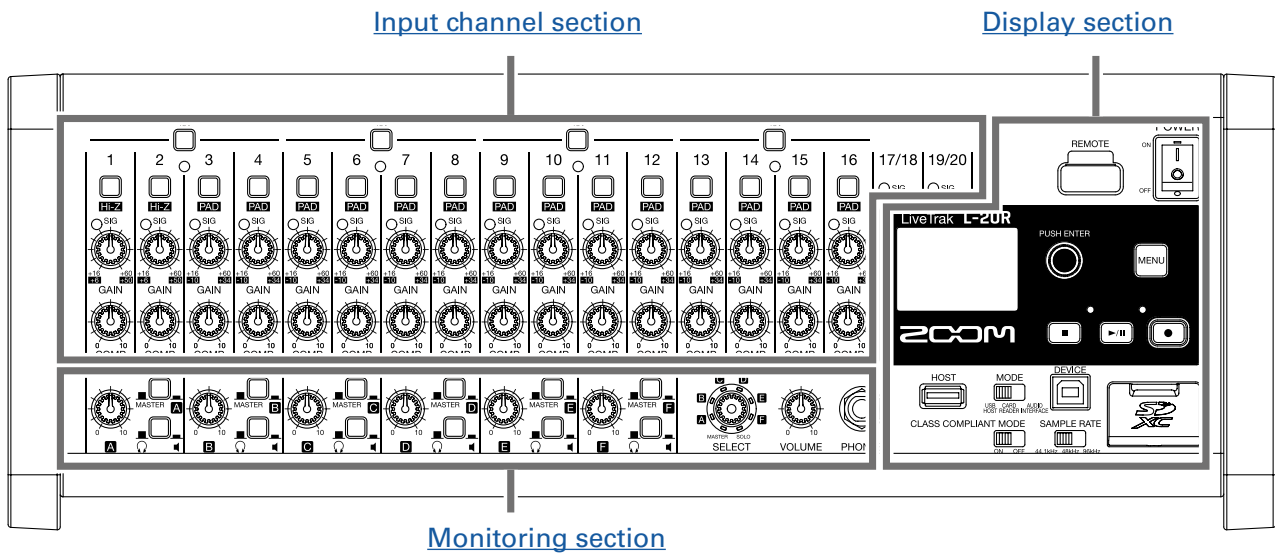
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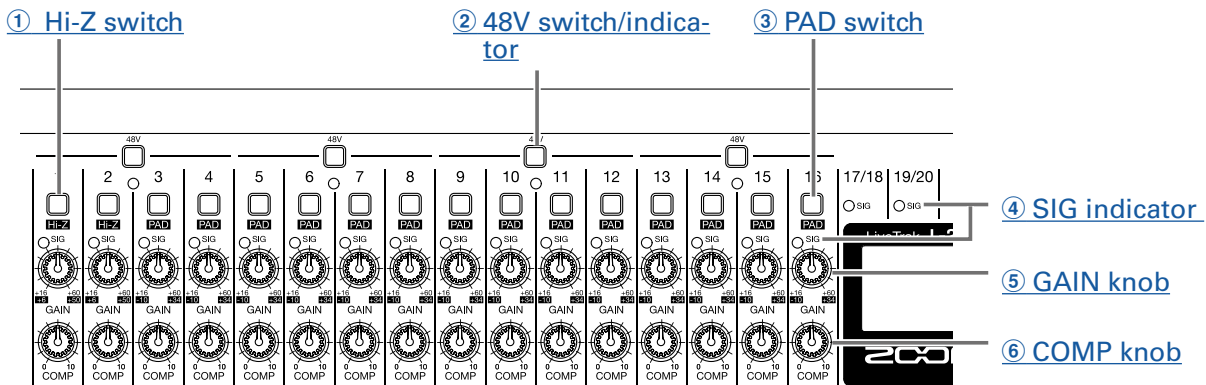
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# Names and functions of parts

## Front



## Input channel section



### ① Hi-Z switch

Use to switch the input impedance of MIC/LINE input jack 1 (or 2).

### ② 48V switch/indicator

This turns +48V phantom power on/off.

Turn this on (  ) to supply phantom power to MIC/LINE input jacks 1–4, 5–8, 9–12 or 13–16. The indicator lights when the switch is on.

### ③ PAD switch

This attenuates (reduces) the input signal of the equipment connected to MIC/LINE input jacks 3–16 by 26 dB.

Turn this on (  ) when connecting line level equipment.

### ④ SIG indicator

This shows the signal level after adjustment by the GAIN knob.

The indicator color changes according to the signal level. Adjust so that it does not light red.

Lit red: input signal level is close ( $-3$  dBFS or higher) to the clipping level (0 dBFS)

Lit green: input signal level is between  $-48$  and  $-3$  dBFS compared to the clipping level (0 dBFS)

#### ⑤ **GAIN knob**

Use to adjust the input gain of the mic preamp.

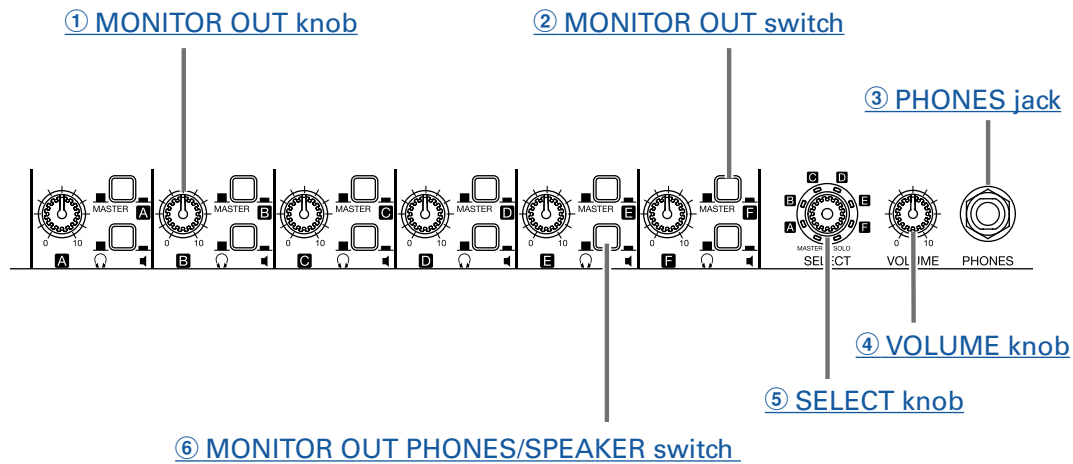
The range of adjustment depends on the on/off status of the MIC/LINE input jack switch (Hi-Z on channels 1–2 or PAD on channels 3–16).

Jack	Adjustment range	
MIC/LINE input jack 1–2 (XLR)	+16 – +60 dB	
MIC/LINE input jack 1–2 (TRS)	Hi-Z off	+16 – +60 dB
	Hi-Z on (TS)	+6 – +50 dB
MIC/LINE input jack 3–16	PAD off	+16 – +60 dB
	PAD on	-10 – +34 dB

#### ⑥ **COMP knob**

Use to adjust the amount of compression.

# Monitoring section



## ① MONITOR OUT knob

Use to adjust the volume of the signals output from the MONITOR OUT jacks.

## ② MONITOR OUT switch

This switches the signal output from the MONITOR OUT jacks.

MASTER (  ): The signal after adjustment by the master fader is output.

A–F (  ): The signal set by the fader mode is output.

## ③ PHONES jack

Connect headphones here.

## ④ VOLUME knob

Use this to adjust the volume of the PHONES jack.

## ⑤ SELECT knob

Use this to select the signal output from the PHONES jack.

The options are MASTER, SOLO and MONITOR OUT A–F


MASTER: The signal after adjustment by the master fader is output.


A–F: The signal set by the fader mode is output.

SOLO: The signals of soloed channels are output.

## ⑥ MONITOR OUT PHONES/SPEAKER switch

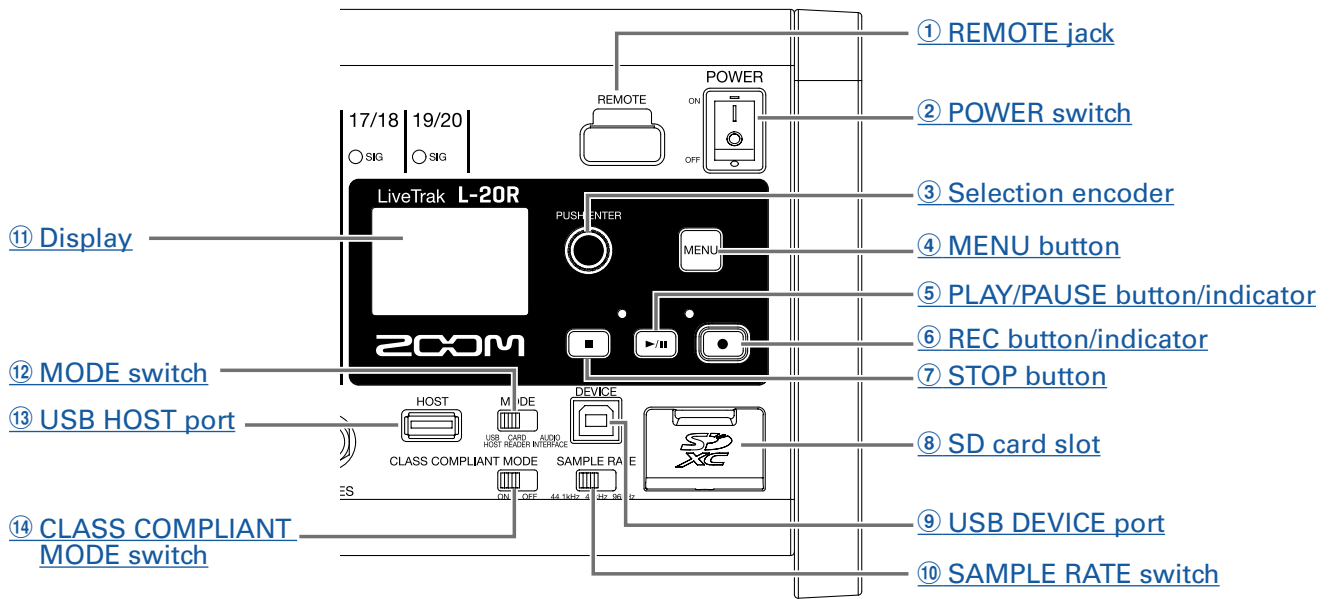
Use this to select the type of equipment connected to the MONITOR OUT jack.

 (  ): Select this when headphones are connected. The signal output from the MONITOR OUT jack will be stereo.

 (  ): Select this when speakers are connected. The signal output from the MONITOR OUT jack will be balanced mono.



# Display section



## ① REMOTE jack

A ZOOM wireless adapter (e.g. BTA-1), can be connected here.

## ② POWER switch

This turns the unit on and off.

Switch to | to turn the power on. Switch to ○ to turn the power off.

When the POWER switch setting is changed to OFF, the current mixer settings are automatically saved in the unit and in the settings file in the project folder on the SD card.

## ③ Selection encoder

Use this to change menus and values and to move between items.

Operation	Result
Turn when Home Screen open	Search forward or backward in one-second increments.
Press when Home Screen open	Set a mark.
Turn when menu open	Move between parameters and change values.
Press when menu open	Confirm parameter value.

## ④ MENU button

This opens the menu.

## ⑤ PLAY/PAUSE button/indicator

This starts and pauses recorder playback, and the indicator shows the playback status.

Status	Explanation
Lit green	The recorder is playing back.
Blinking green	Playback is paused.

## ⑥ REC button/indicator

This puts the recorder into standby, and the indicator shows the recording status.

Status	Explanation
Lit red	The recorder is recording or in recording standby.
Blinking red	Recording is paused.

## ⑦ STOP button

This stops the recorder.

## ⑧ SD card slot

This slot is for SD cards.

The **L-20R** supports SD, SDHC and SDXC card specifications.

---

### HINT

SD cards can be tested for usability with the **L-20R**. (→ ["Testing SD card performance" on page 102](#))

---

## ⑨ USB DEVICE port

This USB 2.0 port is for connecting with a computer.

It will start up as a card reader or audio interface, depending on the MODE switch selection.

### Card reader mode

Operating as an SD card reader, data can be exchanged with a computer.

### Audio interface mode

Operating as an audio interface, audio data can be exchanged with a computer.

Inputs: The signals from channels 1–20 after they pass through their compressors and the master fader output signals are input to the computer.

## ⑩ SAMPLE RATE switch

Set the sampling rate used by the unit.

This cannot be changed after starting up.

## ⑪ Display

This shows the recorder status and MENU screen.

## ⑫ MODE switch

Set whether to use as a USB HOST, card reader or audio interface. This cannot be changed after starting up.

## ⑬ USB HOST port

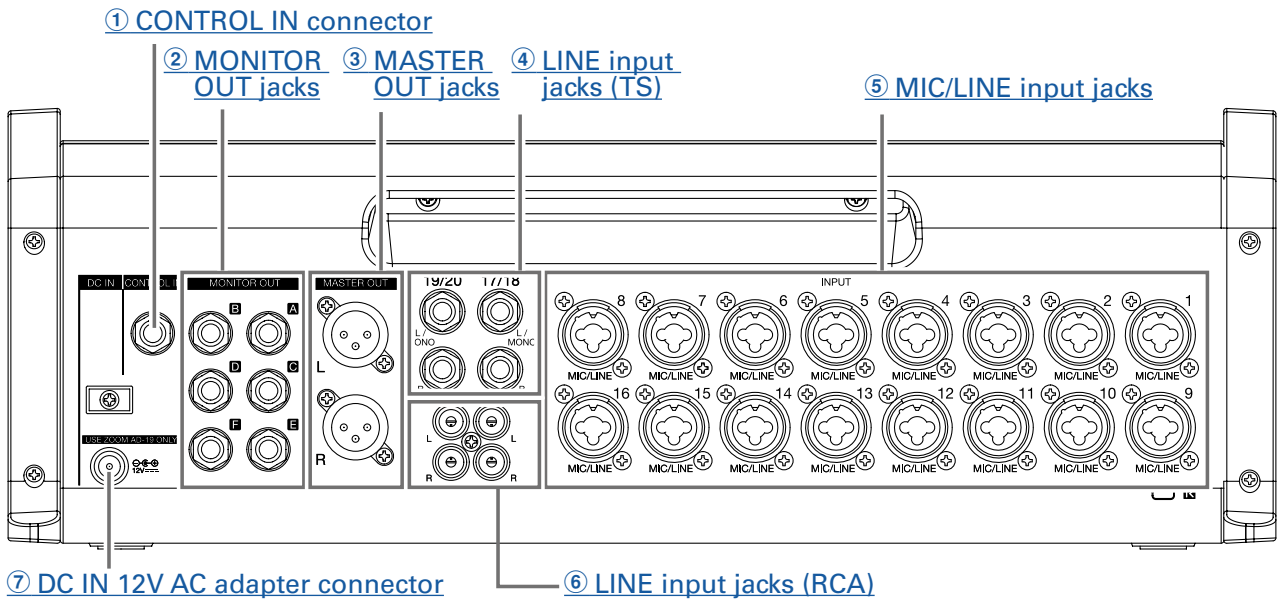
This USB 2.0 HOST port is for connecting USB flash drives.

Projects and audio files can be saved on and loaded from connected USB flash drives.

## ⑭ CLASS COMPLIANT MODE switch

Use this to turn Class Compliant Mode ON/OFF. This cannot be changed after starting up.

Set it to ON when connected to an iOS device.



## ① CONTROL IN connector

A footswitch (ZOOM FS01) can be connected here.

The footswitch can be assigned to one function: starting/stopping recorder playback, manually punching in/out or muting/unmuting the built-in effect. (→ ["Setting the footswitch" on page 106](#))

## ② MONITOR OUT jacks

These jacks output signals after volume adjustment by the MONITOR OUT knob.

Connect monitor speakers or headphones for performers here.

These support balanced 1/4-inch phone output.

### NOTE

- The MONITOR OUT jacks can be set to output the same signals as the MASTER OUT jacks or signals set separately by the fader mode. (→ ["Setting signals output from MONITOR OUT A-F" on page 49](#))
- Set the MONITOR OUT PHONES/SPEAKER switches according to the type of connected equipment.

## ③ MASTER OUT jacks

These jacks output signals after volume adjustment by the master fader.

Connect them to a power amplifier, a PA system or speakers with built-in amplifiers, for example.

These support balanced output with XLR connectors (2 HOT).

## ④ LINE input jacks (TS)

Use these input jacks to connect line level equipment.

For example, connect keyboards or audio devices. These can be used with 1/4-inch (unbalanced) phone plugs.

### NOTE

If only the left LINE input jack (TS) channel is connected, it will be handled as a mono channel.

⑤ **MIC/LINE input jacks**

These input jacks have built-in mic preamps.

Connect mics, keyboards and guitars to them. These can be used with both XLR and 1/4-inch (balanced or unbalanced) phone plugs.

⑥ **LINE input jacks (RCA)**

Use these input jacks to connect line level equipment.

For example, connect audio devices. These can be used with RCA pin connectors.

**NOTE**

If both the RCA and TS LINE input jacks are connected, the TS input jacks will be used.

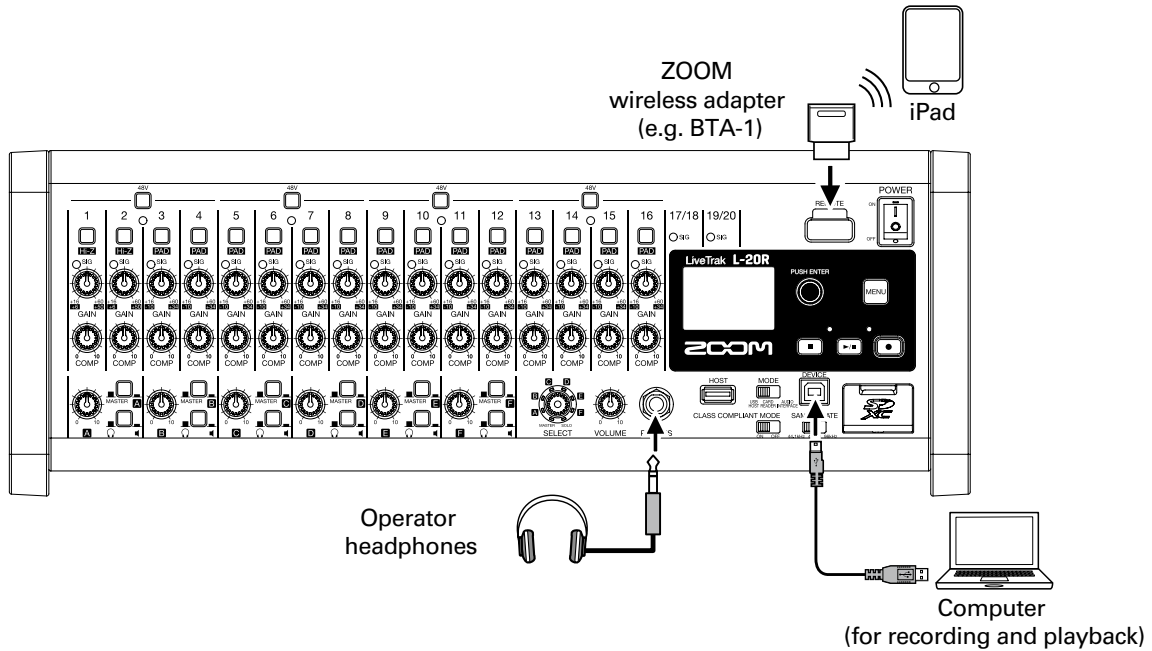
⑦ **DC IN 12V AC adapter connector**

Connect the included AC adapter here.

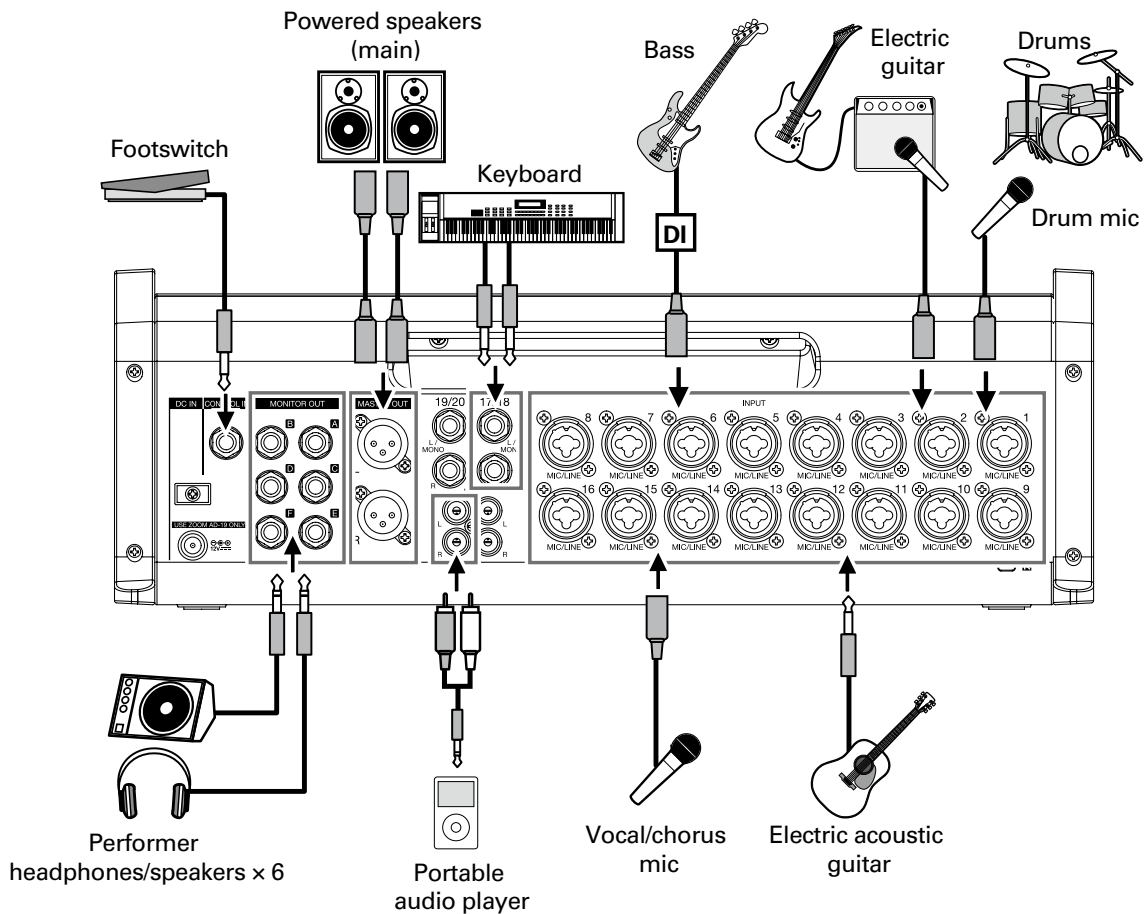
# Equipment connection examples

## Live PA system

### Front

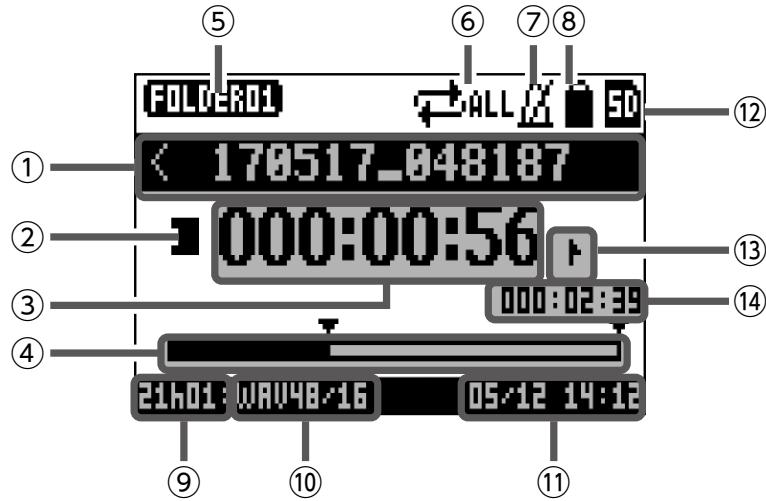


### Back



# Display overview

## Home Screen



No.	Item	Explanation
①	Project name	This shows the project name. " < " appears if there is another project before this one in the folder. " > " appears if there is another project after this one in the folder.
②	Status icon	This shows the status as follows. ■: Stopped ▬▬: Paused ●: Recording ▶: Playing back
③	Counter	This shows the hour: minute: second.
④	Progress bar	The progress bar shows the amount of time from the beginning to the end of the project.
⑤	Folder name	The folder where the project is saved will be shown as FOLDER01 – FOLDER10.
⑥	PLAY MODE icon	This shows the PLAY MODE setting. (→ <a href="#">"Changing the playback mode" on page 100</a> )
⑦	Metronome icon	This is shown when the metronome is enabled. (→ <a href="#">"Enabling the metronome" on page 70</a> )
⑧	Project protection icon	This is shown when project protection is enabled. (→ <a href="#">"Protecting projects" on page 79</a> )
⑨	Remaining recordable time	This shows the remaining recordable time. This will change automatically according to the number of channels that are in recording standby.
⑩	Recording file format	This shows the recording file format used by the recorder.
⑪	Current date and time	This shows the current date and time.
⑫	SD card icon	This is shown when an SD card is detected.
⑬	Mark	This shows the mark number and the status as follows. ■: at mark (mark added at counter location) ┆: not at mark (mark not added at counter location)
⑭	Longest file time in project	This shows the length of the longest file in the project.

# Installing L-20 Control

---

Install the dedicated L-20 Control app on an iPad.

This app can be used to operate the **L-20R**.

1. Use the iPad to scan the following 2D code and install L-20 Control from the App Store.



---

## HINT

If the 2D code cannot be scanned, open the App Store and search for "L-20 Control".

---

## NOTE

- When you launch L-20 Control, you must pair it with the **L-20R** that it will operate. (→ "[Pairing \(connecting\) with the L-20R](#)" on page 33)
- A Zoom wireless adapter (e.g. BTA-1) must be installed in the **L-20R** to remotely control it from an iPad. With L-20 Control, transmission up to 10 m is possible when used indoors without obstacles.

# L-20 Control operation screen

## Main sections of screen



### 1 Input channels

This section shows the settings of the input channels and effects. On this screen, the pan, fader and effect parameters for each channel can be adjusted precisely. The REC/PLAY, MUTE and SOLO settings can also be changed.

### 2 Toolbar

Tap buttons on the toolbar to access screens including the device list, settings, channel strip, effect, graphic equalizer and recorder panel screens.

### 3 Master section

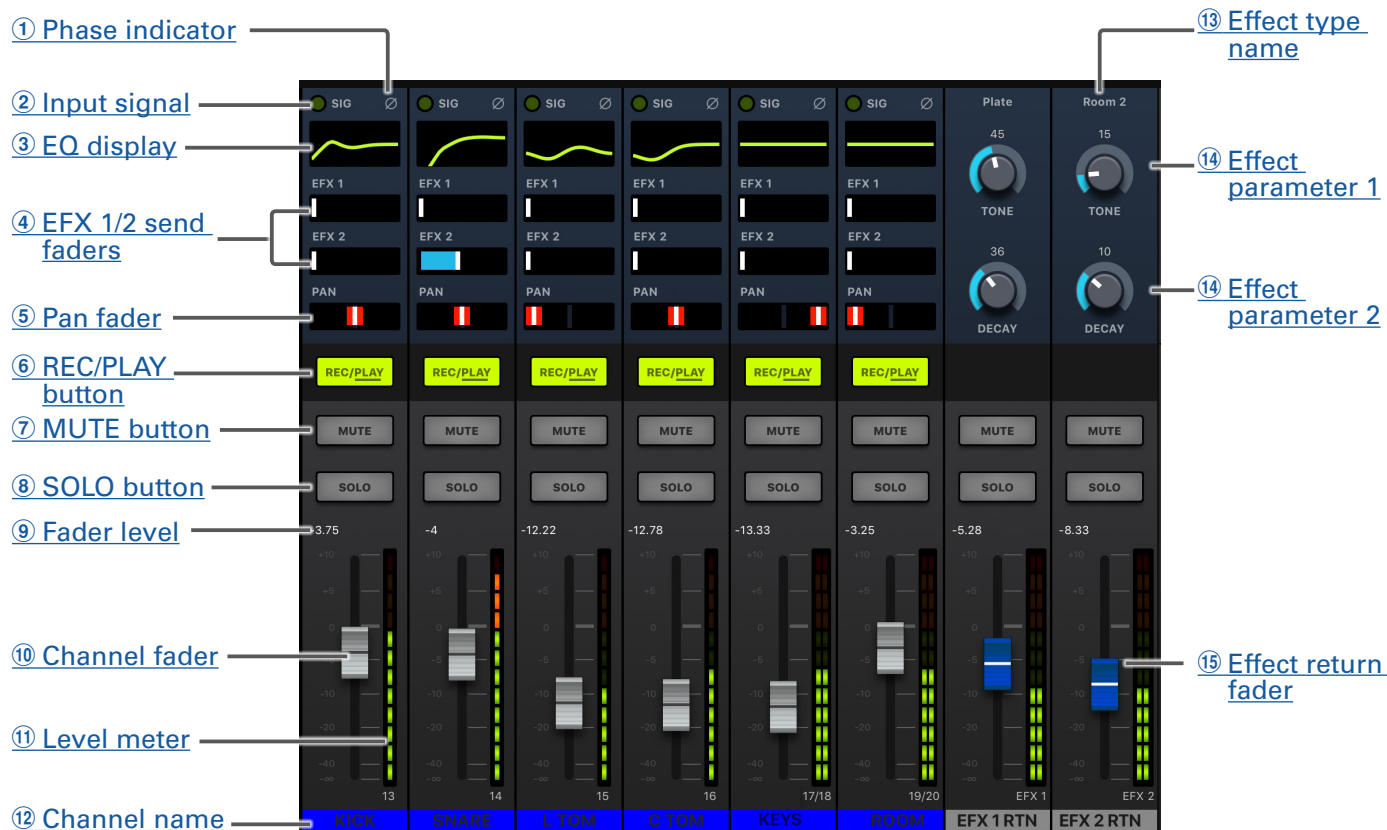
The master section shows settings, including for the master fader, the scene, the fader mode and monitor output. On this screen, the master fader and monitor output parameters can be adjusted precisely. Scene and fader mode settings can also be changed.

### 4 Meter bridge

For each channel, the meter bridge shows the pre-fader level or the selected FADER MODE post-fader level. The pre/post setting can be changed on the Settings Screen.



# Input channel section



## ① Phase indicator

Tapping the PHASE button in the channel strip will light this indicator.

## ② Input signal

This indicator shows the signal level after adjustment by the GAIN knob.

The indicator color changes according to the signal level. Adjust so that it does not light red.

Lit red: input signal level is close ( $-3$  dBFS or higher) to the clipping level (0 dBFS)

Lit green: input signal level is between  $-48$  and  $-3$  dBFS compared to the clipping level (0 dBFS)

## ③ EQ display

This shows the equalizer curve for the channel.

This to open the channel strip (→ ["Channel strip" on page 26](#)).

## ④ EFX 1/2 send faders

The amount that can be sent to the SEND EFX 1 and 2 buses can be set from  $-\infty$  to  $+10$  dB.

## ⑤ Pan fader

This adjusts the position in the stereo output bus.

On a stereo input channel, this adjusts the volume balance between the left and right channels.

### NOTE

Double-tap a pan fader to reset it to its default value.

## ⑥ REC/PLAY button

Use this button to switch between recording input signals to the SD card and playing back an already

recorded file from the SD card.

Status	Explanation
Lit red	Input signals will be recorded to the SD card.
Lit green	An already recorded file will be played back. Playback signals are input before the equalizer. In this state, only files are played back. Signals from input jacks are disabled.
Unlit	Files will neither be recorded nor played back.

**NOTE**

Recorded signals can be set to either before or after the compressor. (→ ["Changing the input signal recording source" on page 100](#))

**⑦ MUTE button**

This mutes or unmutes the signal.

To mute the signal, tap this button to light it.

**HINT**

This has no effect on recording to the SD card.

**⑧ SOLO button**

When a SOLO button is ON, the pre-fader signal can be heard from the PHONES jack.

At such times, the SELECT knob will automatically select SOLO.

**⑨ Fader level**

This adjusts the channel signal level in a range from  $-\infty$  to +10 dB.

**⑩ Channel fader**

This adjusts the channel signal level in a range from  $-\infty$  to +10 dB.

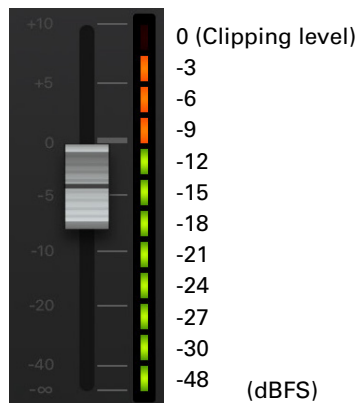
**NOTE**

To make precise adjustments, tap the fader cap, slide your finger right or left and then up and down.

**⑪ Level meter**

This shows the signal level after adjustment by the channel fader.

Range shown:  $-48$  dB – 0 dB



**⑫ Channel name**

This shows the set channel name. (→ ["Channel strip" on page 26](#))

**⑬ Effect type name**

This shows the name of the selected effect type.

⑭ **Effect parameters 1 and 2**

Use these to adjust the parameters of the selected effect.

See "[Send effect specifications](#)" on [page 117](#) for the parameters of each effect.

⑮ **Effect return fader**

This adjusts the levels of the signals sent from the built-in effect to the master bus in a range from  $-\infty$  dB to +10 dB.

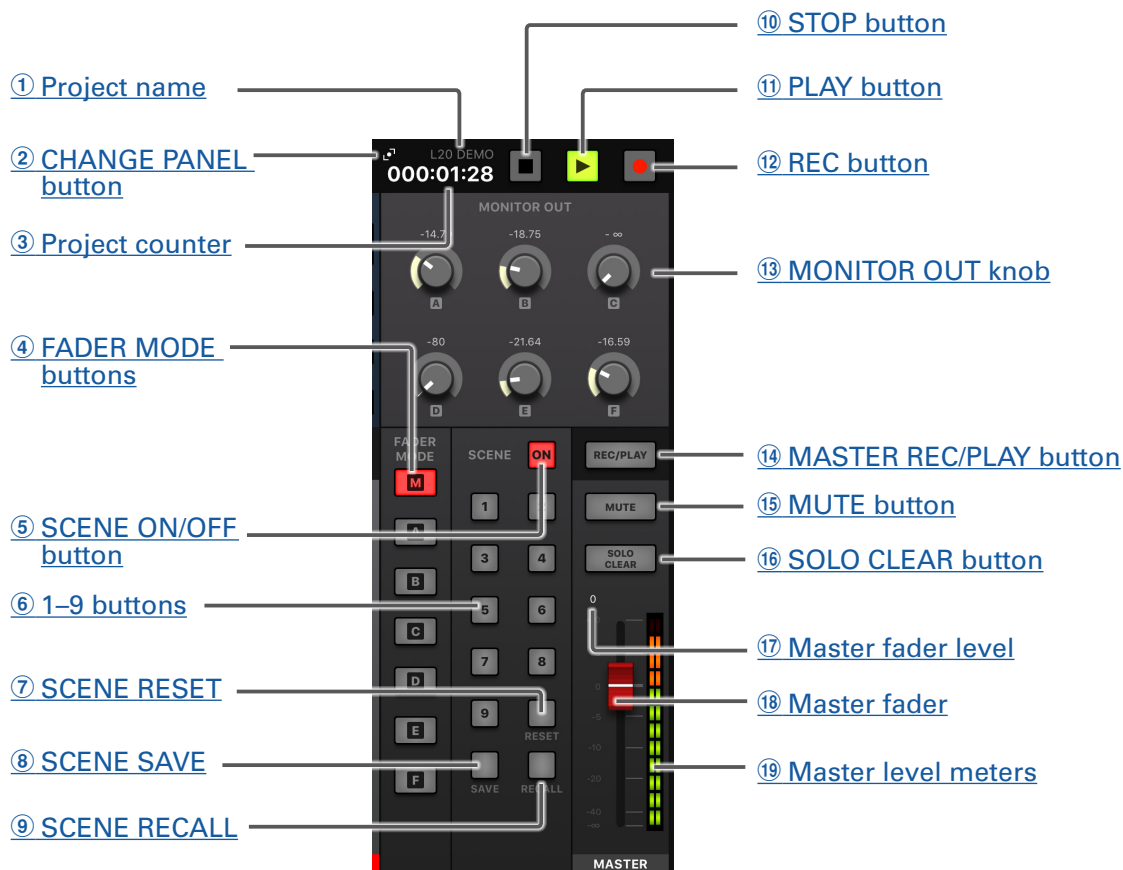
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**HINT**

To show the effect operation section for the input channels, swipe to reveal the right edge of the screen.

---

# Master section



## ① Project name

This shows the name of the project.

## ② CHANGE PANEL button

Tap this to open the recorder panel.

## ③ Project counter

This shows the hour: minute: second.

## ④ FADER MODE buttons

These switch the mixes output from the MASTER OUT and MONITOR OUT A–F jacks.

M button: Use to show and adjust the mix output from the MASTER OUT jacks.

A–F buttons: Use to show and adjust the mixes output from the MONITOR OUT A–F jacks.

### NOTE

The following parameters can have separate settings for the MASTER and A–F mixes.

- Fader positions (each channel)
- EFX1/2 RTN positions

## ⑤ SCENE ON/OFF button

Tap this button, lighting it, to use the scene function.

## ⑥ 1–9 buttons

Use these buttons to select the scene to use to save the current mixer settings and to load saved scenes.

If the current mixer settings match the settings of a scene, the corresponding number button will light. This unit can save up to 9 scenes.

**⑦ SCENE RESET**

Tap this button to reset the current mixer settings to the factory defaults.

**⑧ SCENE SAVE**

Use this button when saving the current mixer settings to a scene.

When this button is tapped, buttons 1–9 will light if they have saved scenes and blink if they do not. To save a scene, tap a button between 1 and 9 to save it to that number. To cancel saving a scene, tap the SCENE SAVE button again.

**⑨ SCENE RECALL**

Use this button when loading scenes saved to buttons 1–9.

When this button is tapped, buttons 1–9 will blink if they have saved scenes and be unlit if they do not. To recall a saved scene, tap a blinking button between 1 and 9. To cancel loading a scene, tap the SCENE RECALL button again.

**⑩ STOP button**

This stops the recorder.

**⑪ PLAY button**

This start recorder playback. The PLAY button color shows the playback status as follows.

Status	Explanation
Lit green	The recorder is playing back.
Blinking green	Playback is paused.

**⑫ REC button**

This puts the recorder in recording standby. The REC button color shows the recording status as follows.

Status	Explanation
Lit red	The recorder is recording or in recording standby.
Blinking red	Recording is paused.

**⑬ MONITOR OUT knob**

Use to adjust the volumes of the signals output from the MONITOR OUT A–F jacks.

**⑭ MASTER REC/PLAY button**

Use this button to switch between recording the signal input on the master bus to the SD card and playing back an already recorded file from the SD card.

Status	Explanation
Lit red	The signal will be recorded to the SD card after adjustment by the master fader.
Lit green	The playback signal of a file is inserted on the master bus. The REC/PLAY buttons of other channels will become unlit at this time.
Unlit	Files will neither be recorded nor played back.

**⑮ MUTE button**

This mutes or unmutes the MASTER OUT jacks. To mute the output, tap this button so that it lights.

**⑯ SOLO CLEAR button**

Tap to cancel the SOLO function on all channels.

⑰ **Master fader level**

This adjusts the master fader signal level in a range from  $-\infty$  to +10 dB.

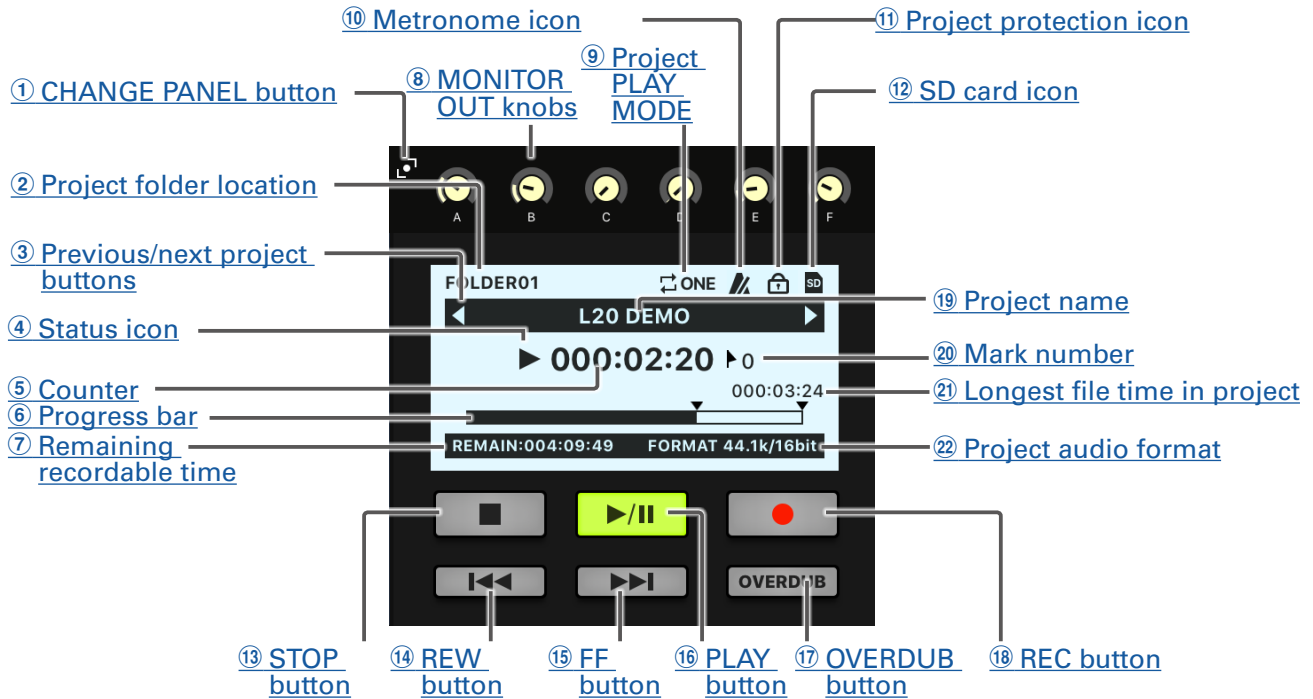
⑱ **Master fader**

This adjusts the signal levels output from the MASTER OUT jacks in a range from  $-\infty$  to +10 dB.

⑲ **Master level meters**

These show the signal levels output from the MASTER OUT jacks in a range from -48 dB to 0 dB.

# Recorder panel



## ① CHANGE PANEL button

Tap this to open the MONITOR OUT panel.

## ② Project folder location

The folder where the project is saved will be shown as FOLDER01 – FOLDER10.

## ③ Previous/next project buttons

"◀" appears if there is another project before this one in the folder.

"▶" appears if there is another project after this one in the folder.

## ④ Status icon

This shows the status as follows.

■: Stopped

⏸: Paused

●: Recording

▶: Playing back

## ⑤ Counter

This shows the hour: minute: second.

## ⑥ Progress bar

The progress bar shows the amount of time from the beginning to the end of the project.

## ⑦ Remaining recordable time

This shows the remaining recordable time.

This will change automatically according to the number of channels that are in recording standby.

### ⑧ MONITOR OUT knobs

Use to adjust the volumes of the signals output from the MONITOR OUT A–F jacks.

### ⑨ Project PLAY MODE

This shows the PLAY MODE setting. (→ ["Changing the playback mode" on page 100](#))

### ⑩ Metronome icon

This is shown when the metronome is enabled. (→ ["Enabling the metronome" on page 70](#))

### ⑪ Project protection icon

This is shown when project protection is enabled. (→ ["Protecting projects" on page 79](#))

### ⑫ SD card icon

This is shown when an SD card is detected.

### ⑬ STOP button

This stops the recorder.

### ⑭ REW button

Tap to move to the previous mark.

If no mark is set, this moves to the beginning. Tap this button when at the beginning to move to the previous project.

Press and hold to search backward. (The longer pressed, the faster the speed becomes.)

### ⑮ FF button

Tap to move to the next mark.

If it is the last mark, this moves to the end of the file. Tap this button again to move to the next project.

Press and hold to search forward. (The longer pressed, the faster the speed becomes.)

### ⑯ PLAY button

This starts and pauses recorder playback. The PLAY button color shows the playback status as follows.

Status	Explanation
Lit green	The recorder is playing back.
Blinking green	Playback is paused.

### ⑰ OVERDUB button

Status	Explanation
Lit (ON)	Record by overwriting into the current project folder.
Unlit (OFF)	Create a new project folder and make a new recording.

### ⑱ REC button

This puts the recorder in recording standby. The REC button color shows the recording status as follows.

Status	Explanation
Lit red	The recorder is recording or in recording standby.
Blinking red	Recording is paused.

### ⑲ Project name

This shows the project name.



**20 Mark number**

This shows the mark number and the status as follows.

■: at mark (mark added at counter location)

▲: not at mark (mark not added at counter location)

**21 Longest file time in project**

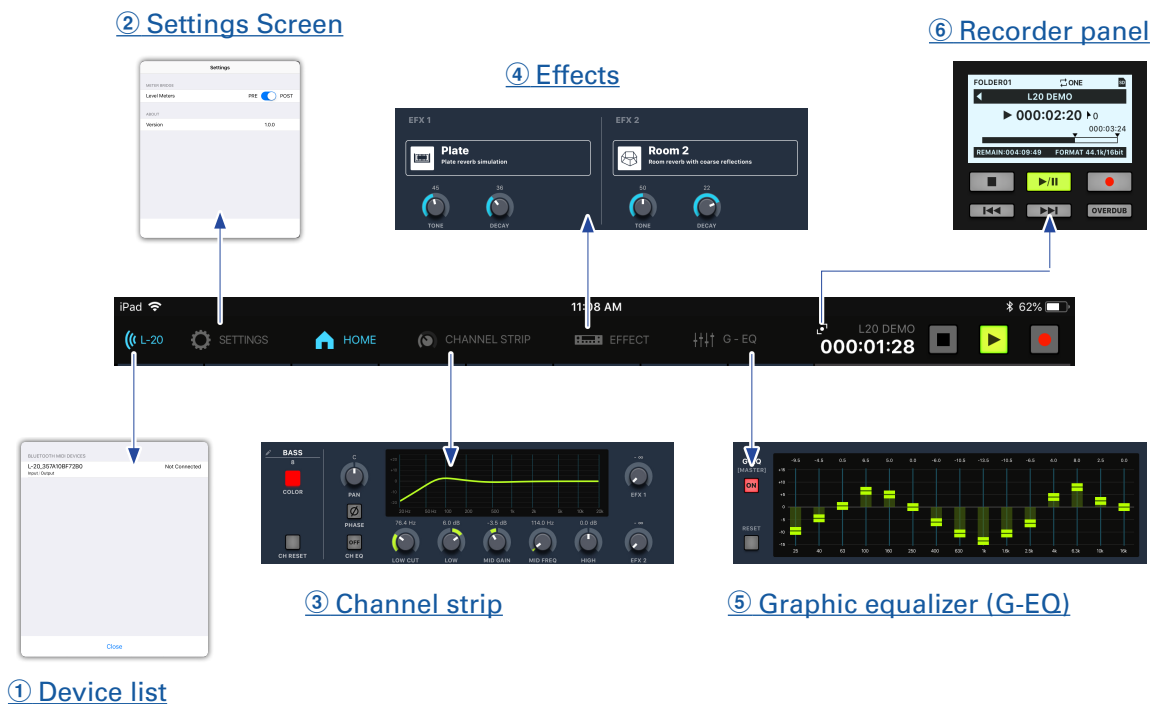
This shows the length of the longest file in the project.

**22 Project audio format**

This shows the recording file format used by the recorder.

# Toolbar (access to all screens)

Tap a button on the toolbar to open that screen.



## ① Device list

This shows device connection status.

## ② Settings Screen

This shows the app version and the meter bridge setting.

Use the meter bridge setting to set whether the channel level meters on the meter bridge show PRE or POST signals.

PRE: pre-fader level (signal level before fader)

POST: post-fader level (signal level after fader)

## ③ Channel strip

This shows the settings of the selected channel. Parameters can be adjusted precisely on this screen. The channel name, channel color, PAN and PHASE settings, the EQ LOW CUT, LOW, MID GAIN, MID FREQ and HIGH settings, as well as the SEND EFX 1 and 2 levels are shown.

## ④ Effects

Check and change the selected effects and adjust their parameters on this screen.

## ⑤ Graphic equalizer (G-EQ)

Use the 15-band graphic equalizer to adjust the MASTER OUT tone.

## ⑥ Recorder panel

This shows information related to the project. Buttons related to playback and recording can be operated on this screen.

# Channel strip



## ① Channel name

Tap the channel name to change it.

## ② Channel color

Tap the channel color to change it.

## ③ USB button

This switches the signals input to channels 17/18 (or 19/20).

Lit: audio return signal output from the computer

Unlit: LINE input jacks

### NOTE

Connect the **L-20R** to a computer to use it as an audio interface. (→ ["Connecting to a computer" on page 93](#))

## ④ Channel Reset

This resets the channel.

## ⑤ PAN knob

This adjusts the position in the stereo output bus.

On a stereo input channel, this adjusts the volume balance between the left and right channels.

## ⑥ EQ curve

This graph shows the EQ curve.

## ⑦ PHASE button

This reverses the polarity of the selected channel.

## ⑧ CH EQ OFF

When this button is lit, HIGH, MID, LOW and LOW CUT are bypassed.

## ⑨ EQ knobs

LOW CUT knob

This adjusts the high-pass filter, which cuts low frequencies. Signals below the set frequency are attenuated 12 dB/octave.

Frequency: OFF, 40–600 Hz

#### LOW knob

This adjusts the boost/cut of low-frequency equalization.

Type: shelving

Gain range:  $-15 - +15$  dB

Frequency: 100 Hz

#### MID GAIN knob

This adjusts the boost/cut of mid-frequency equalization.

Type: peaking

Gain range:  $-15 - +15$  dB

#### MID FREQ knob

This adjusts the central frequency of the mid frequency equalization.

Frequency: 100 Hz–8 kHz

#### HIGH knob

This adjusts the boost/cut of high-frequency equalization.

Type: shelving

Gain range:  $-15 - +15$  dB

Frequency: 10 kHz

#### ⑩ SEND EFX knobs

##### SEND EFX 1 knob

The amount that can be sent to the SEND EFX 1 bus can be set from  $-\infty$  to +10 dB.

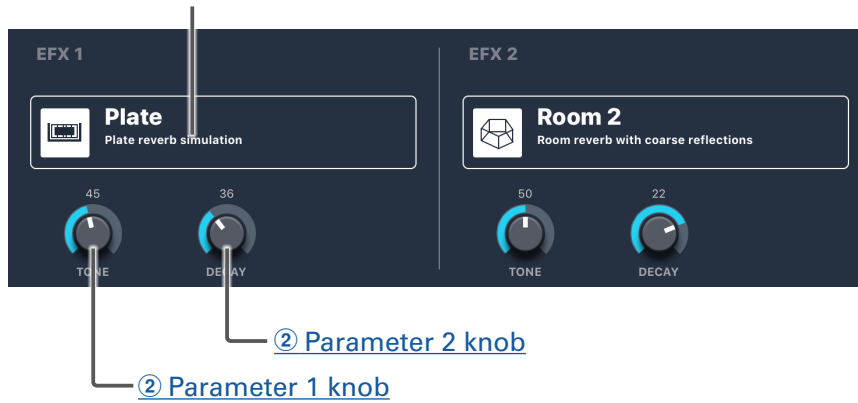
##### SEND EFX 2 knob

The amount that can be sent to the SEND EFX 2 bus can be set from  $-\infty$  to +10 dB.

# Effects

---

## ① Effect name and description



## ① Effect name and description

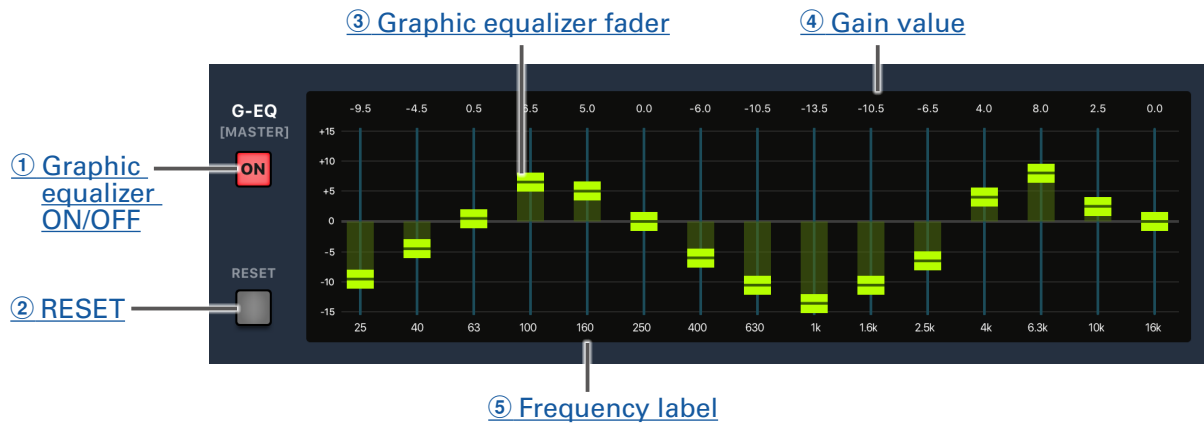
This shows the selected effects type and a description. Tap it to change it.

## ② Parameter knobs

The effect parameters can be adjusted.

See "[Send effect specifications](#)" on [page 117](#) for the parameters of each effect.

# Graphic equalizer (G-EQ)



## ① Graphic equalizer ON/OFF

This turns the graphic equalizer (G-EQ) on/off.

## ② RESET

This sets all the graphic equalizer faders to 0 dB.

## ③ Graphic equalizer fader

Use to adjust the gain.

## ④ Gain value

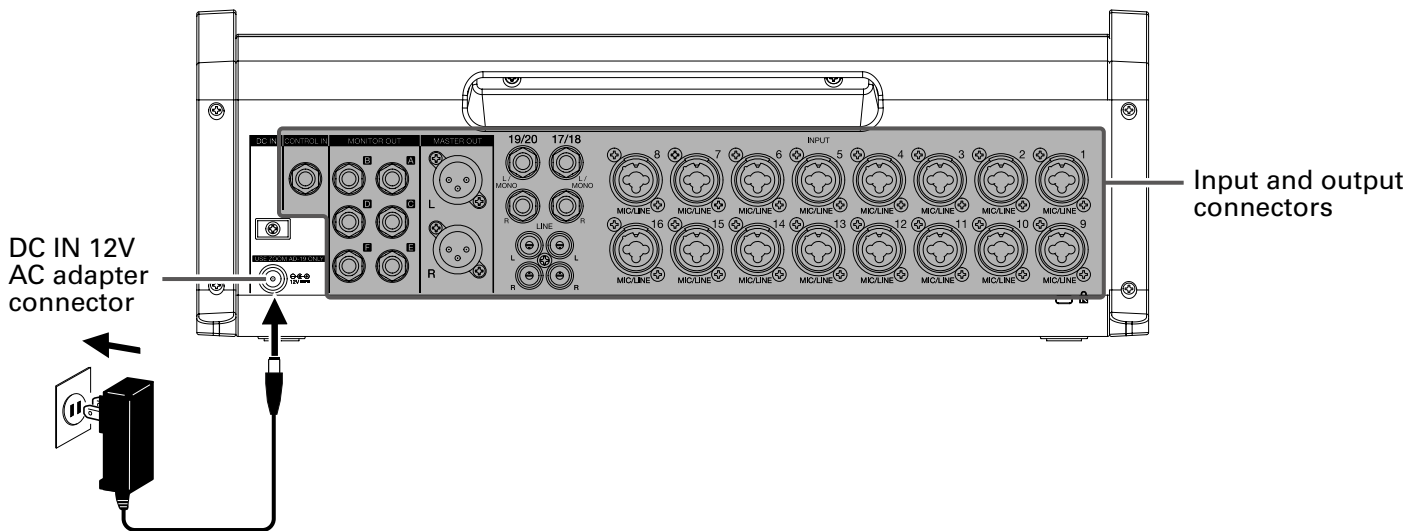
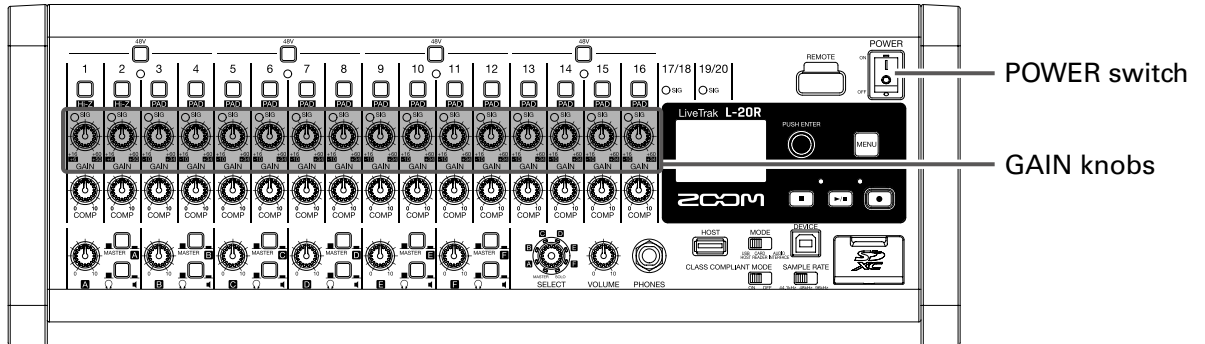
This shows the gain value.

## ⑤ Frequency label

This shows the equalizer frequency band.

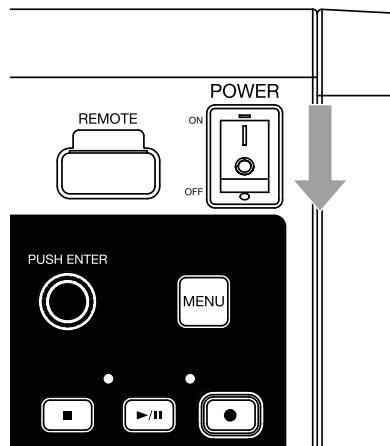
# Turning the power on and off

## Turning the power on




1. Confirm that the output devices connected to the **L-20R** are turned off.

2. Confirm that  is set to OFF.



3. Plug the specified adapter (AD-19) into an outlet.

---

4. Set all  to their minimum values.

---

5. Connect instruments, mics, speakers and other equipment.

---

**HINT**

Equipment connection example (→ ["Equipment connection examples" on page 12](#))



---

6. Set  to ON.

---

7. Turn on the output devices connected to the **L-20R**.

**NOTE**

- When using a passive guitar or bass guitar, connect it to channel 1 or 2, and turn  on. (→ ["Front" on page 5](#))
- When using a condenser mic, turn  on. (→ ["Front" on page 5](#))
- The power will automatically turn off if the **L-20R** is unused for 10 hours. To keep the power on at all times, disable the automatic power saving function. (→ ["Disabling the automatic power saving function" on page 108](#))



## Turning the power off

1. Minimize the volume of output devices connected to the **L-20R**.

2. Turn off the power of output devices connected to the **L-20R**.

3. Set  to OFF.

The following screen appears and the power turns off.



### NOTE

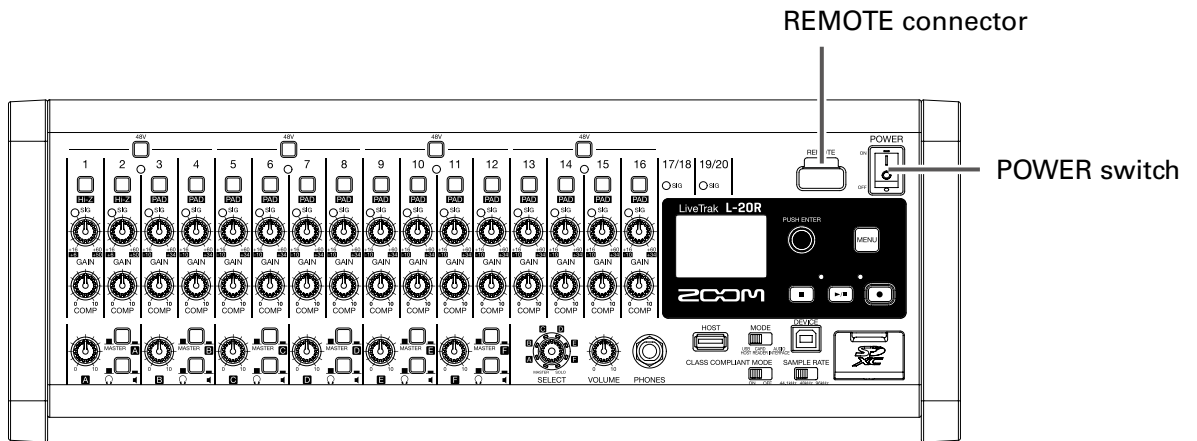
When the power is turned off, the current mixer settings are saved in the project on the SD card. If they cannot be saved to the SD card, they will be saved in the unit.

# Pairing (connecting) with the L-20R

Pairing beforehand is necessary to use an iPad for control.

## NOTE

Install the dedicated L-20 Control app on the iPad before connecting. (→ ["Installing L-20 Control" on page 14](#))



## Device list




1. While the **L-20R** is off, connect a ZOOM wireless adapter (e.g. BTA-1) to the REMOTE connector.
2. Turn the **L-20R** power on (→ ["Turning the power on" on page 30](#)).

## NOTE

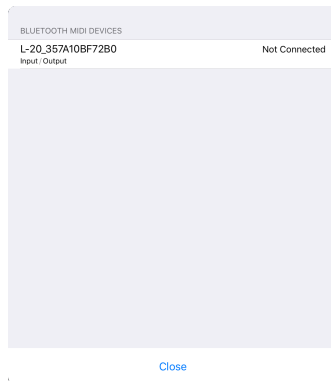
Confirm that the output devices connected to the **L-20R** are turned off.

3. Tap the L-20 Control app icon on the iPad.  
This launches L-20 Control.



4. The device list appears the first time it is launched.  
Tap  in the toolbar to open the device list.

5. Tap a device name/ID to connect it.



When the app connects to a **L-20R**, the  in the toolbar turns blue. The curves show the signal strength.




**NOTE**

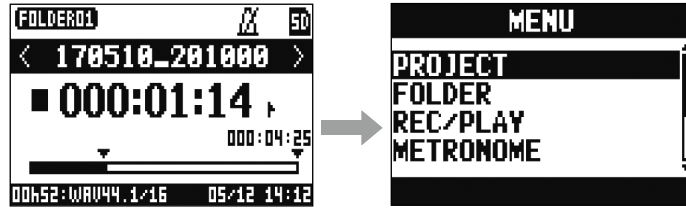
If pairing is not successful, move the iPad and the **L-20R** closer together or move both to a place where nothing interferes with the signal and try connecting again. Confirm also that the Bluetooth function of the iPad is enabled.


# Using the MENU screen

Recorder function settings, for example, are made for the **L-20R** using the MENU screen. This is an explanation of the basic menu operations.

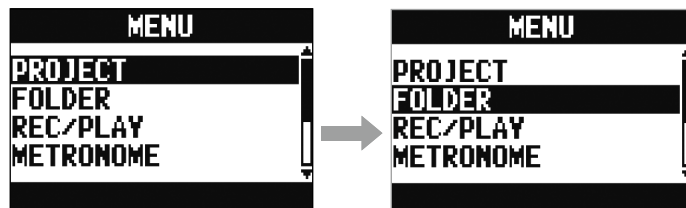
Open the menu: Tap 


This opens the MENU screen.



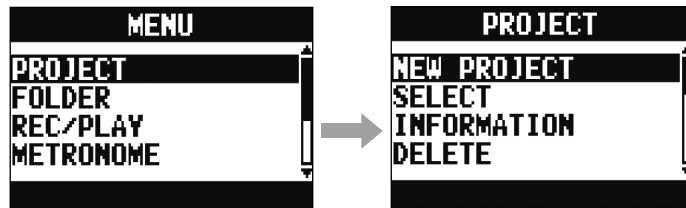
Select menu items and parameters: Turn 


This moves the cursor.



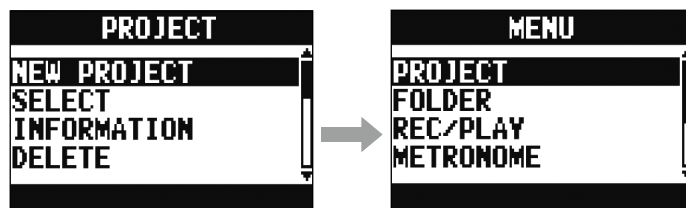
Confirm menu items and parameters: Tap 

This opens the selected MENU screen or parameter setting screen.



Return to previous screen: Tap 

This opens the selected MENU screen or parameter setting screen.

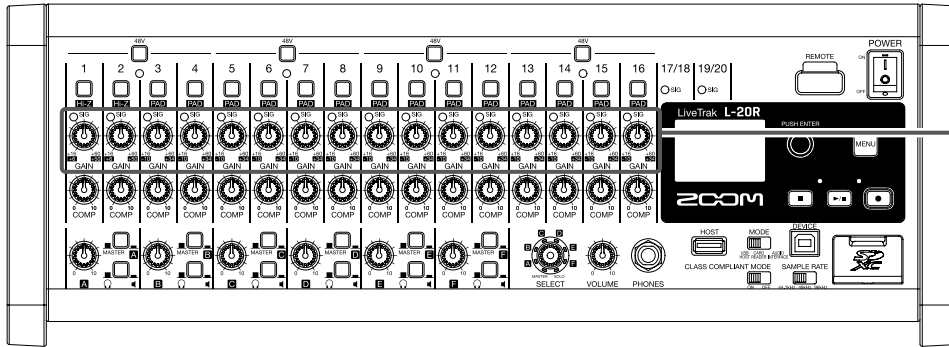


On the following pages, MENU screen operations are shown in the following way. For example, "After selecting 'METRONOME' on the MENU screen, select 'CLICK'" becomes "Select MENU > METRONOME > CLICK."

# Mixer

## Outputting input sounds from output devices

### Outputting sound from speakers



GAIN knobs




MUTE button

MUTE buttons

Master fader

Channel faders

1. Use  to adjust the input signals while inputting sound from instruments and mics.

#### NOTE

Set them so that the SIG indicators do not light red.



**2.** Tap  for the MASTER and the channels with sound to be output to turn muting off (unlit).

---

**3.** Set the MASTER fader to 0.

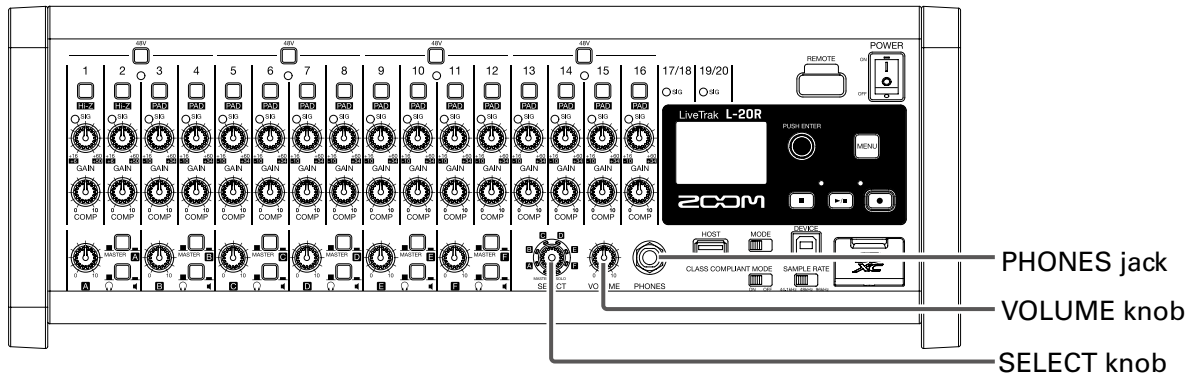
---

**4.** To adjust the volume of a channel, tap it and use the channel fader.



---

**5.** Use the MASTER fader to adjust the overall volume.

# Outputting sound from headphones




**1.** Connect headphones to the PHONES jack.

**2.** Turn  to select the bus to be output from the PHONES jack, and tap .

The options are MASTER, SOLO and MONITOR OUT A–F.

Status	Explanation
MASTER	Signals are output after adjustment by the master fader.
A–F	Signals set in the FADER MODE section are output.
SOLO	The signals of soloed channels are output.

**3.** Use  to adjust the volume.


# Adjusting the tone and panning




1. Tap a channel to select it for adjusting tone and panning.


2. Tap **CHANNEL STRIP** in the toolbar to open the channel strip.

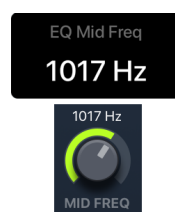
3. Use the knobs and buttons in the channel strip section to adjust the tone and panning.

To control a , slide it left and right (or up and down) to change its value. A pop-up for the parameter being adjusted will appear.


Adjusting the tone:  ,  ,  ,  , 

Adjusting the panning: 

Reversing the polarity: 



## NOTE

- To turn off all equalization at once, tap  to light it. This will bypass the HIGH, MID FREQ, MID GAIN, LOW and LOW CUT.
- Using the compressor (→ ["Input channel section" on page 5](#))



---

## HINT

- Details about each knob and button (→ ["Channel strip" on page 26](#))
  - Double-tap the following knobs to reset them to their default values.
    - PAN
    - LOW
    - MID GAIN
    - HIGH
-

# Changing channel colors

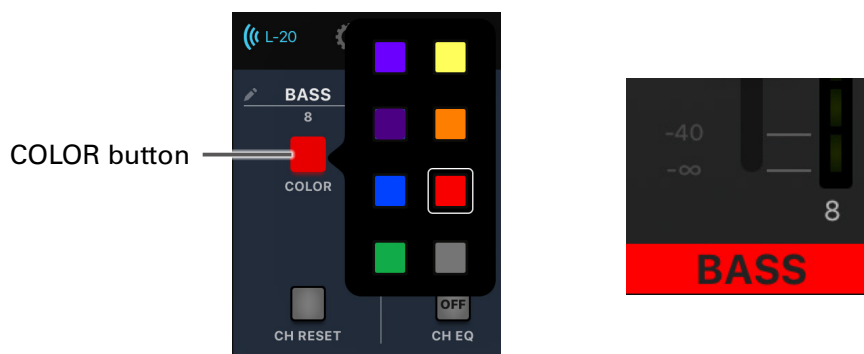


1. Tap the channel to change to select it.

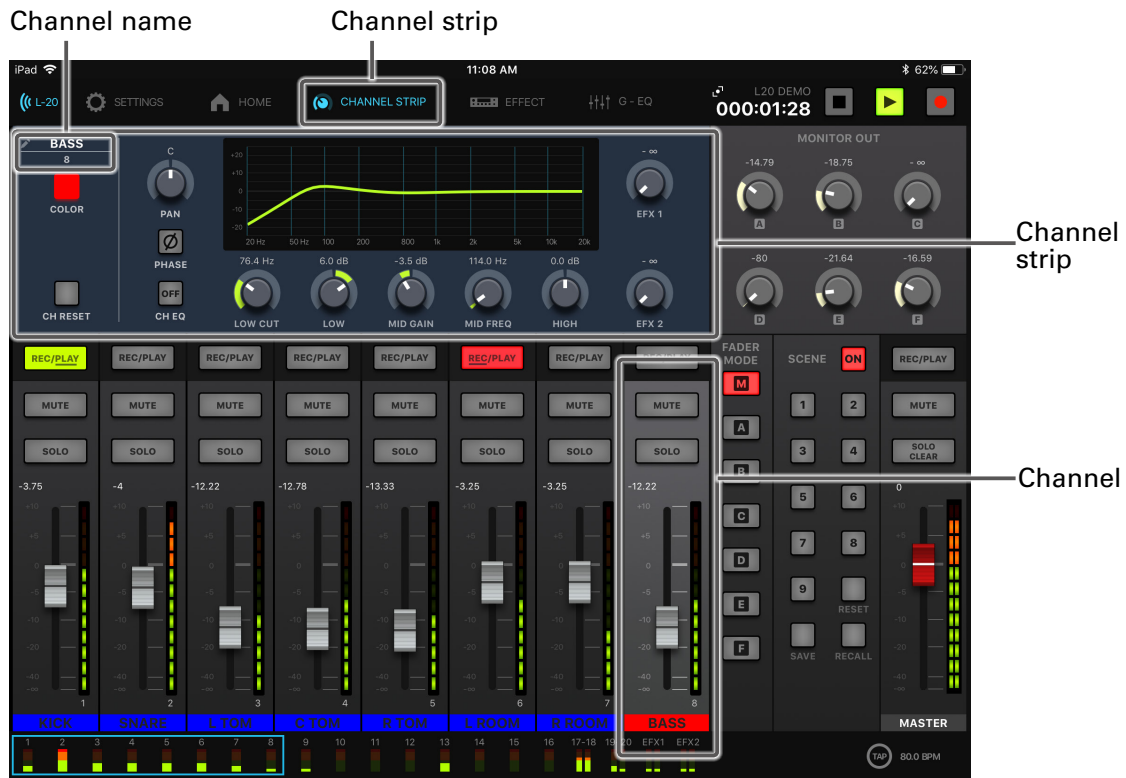
2. Tap **CHANNEL STRIP** in the toolbar to open the channel strip.

3. Tap **COLOR** and select a color from the pop-up.

The channel name label will change to the selected color.



# Changing channel names



1. Tap the channel to change to select it.
2. Tap **CHANNEL STRIP** in the toolbar to open the channel strip.
3. Tap the channel name, and use the on-screen keyboard to edit it.  
Tap Done to show the edited channel name.




## NOTE

- Channel names can have a maximum of 8 characters.
- The following characters can be used in channel names.
- (space)!#\$%&(')+,-0123456789;=@ABCDEFGHIJKLMN OPQRSTUVWXYZ  
[]^\_`abcdefghijklmnopqrstuvwxyz{~}

# Resetting channels

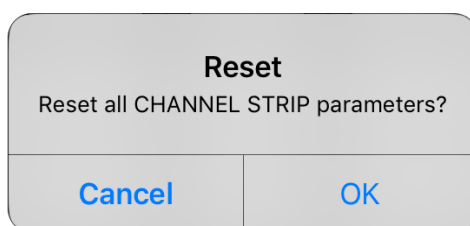


1. Tap the channel to change to select it.

2. Tap  in the toolbar to open the channel strip.

3. Tap .

This opens a confirmation pop-up.



# Using the built-in effects

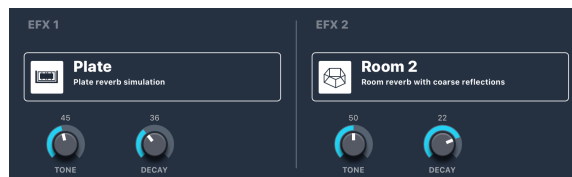
The **L-20R** has 20 types of send effects that can be used in 2 effect channels.

## Using built-in effects

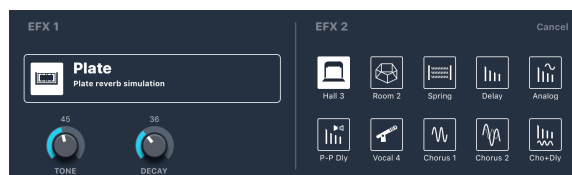


1. Tap **EFFECT** in the toolbar.

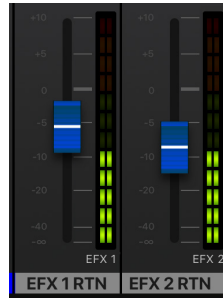
2. Tap the current effect name.  
This opens the effect selection screen.



3. Tap the icon for an effect to select it.  
This closes the selection screen.



4. Tap **MUTE** for EFX 1 RTN or EFX 2 RTN to turn it off.



5. Set the EFX 1 and EFX 2 RTN faders to 0.

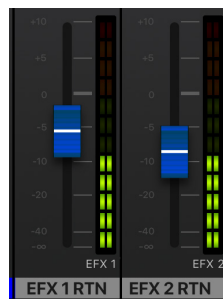
6. Tap a channel to use the effect on to select it.

7. Tap **CHANNEL STRIP** in the toolbar.

8. Use **EFX 1** and **EFX 2** to adjust the amounts of EFX 1 and EFX 2 effects.



9. Use the EFX 1 and EFX 2 faders to adjust the overall effect amounts.



10. Tap **EFFECT** in the toolbar.

11. Slide EFX 1 and EFX 2 **45** **TONE** and **36** **DECAY** to adjust the effects.

#### NOTE

Effect parameters that can be adjusted by **EFX 1** and **EFX 2** (→ ["Send effect specifications" on page 117](#)).

# Using scene functions

The scene function can be used to save up to nine sets of current mixer settings as scenes and to recall these saved settings at any time.

## Saving scenes



1. Tap **SCENE ON** to light it.

This enables the scene function.

2. Tap **SAVE**.

Buttons **1** – **9** will light if they have saved scenes and blink if they do not.

Tap **SAVE** again to not save a scene.

3. Tap the **1** – **9** button to select the scene where the settings will be saved.

## NOTE

- Nine scenes are saved in the unit.
- If a button that already has a scene saved is selected, that scene will be overwritten.
- The following items are saved with scenes.
  - Fader positions (each channel, EFX 1/2 RTN and MASTER)
  - MUTE ON/OFF (each channel, EFX 1/2 RTN and MASTER)
  - EQ OFF
  - LOW CUT
  - EQ HIGH
  - EQ MID GAIN
  - EQ MID FREQ
  - EQ LOW
  - SEND EFX 1/2
  - PAN
  - PHASE
  - EFX 1/2 TYPE
  - EFX 1/2 parameters
  - USB button setting

## Recalling scenes



1. Tap **SCENE ON** to light it.

This enables the scene function.

2. Tap **RECALL**.

Buttons **1** – **9** will blink if they have saved scenes and be unlit if they do not.

Tap **RECALL** again to not recall a scene.



3. Tap the button for a scene to recall it  
The scene for the selected number is recalled.

## Resetting mixer settings



1. Tap **SCENE ON** so that it lights.  
This enables the scene function.

2. Tap **RECALL**.  
Buttons **1** – **9** will blink if they have saved scenes and be unlit if they do not.

Tap **RECALL** again to not reset the settings.

3. Tap **RESET**.  
The current mixer settings are reset to their factory defaults.

# Setting signals output from MONITOR OUT A–F

The MONITOR OUT A–F jacks can be set to output the same mix as the MASTER OUT or different mixes.

## Adjusting the MONITOR OUT A–F mixes



FADER MODE buttons

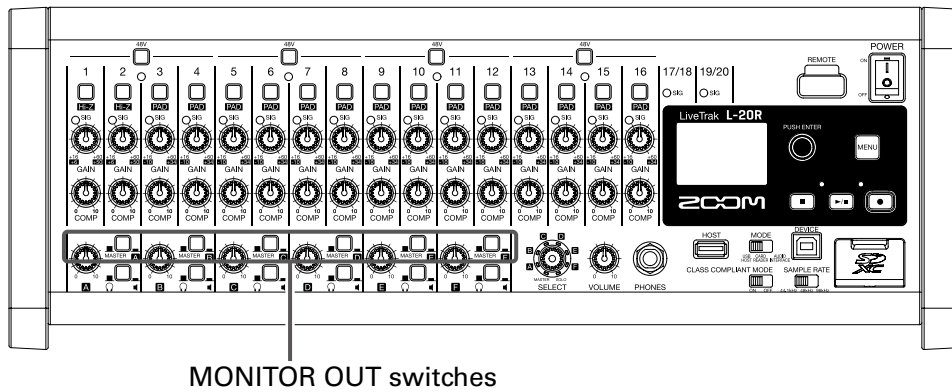
Channel faders

1. Tap **A** – **F** to select the output to mix.

The selected output button lights and operation of all the channel faders is enabled.

2. Use the channel faders to adjust the volumes.

# Selecting MONITOR OUT A–F output signals



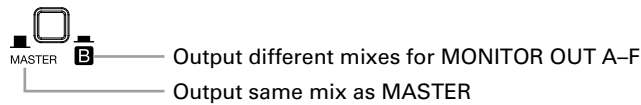
1. Use the MONITOR OUT switch for an output to select its output signal.

To output a mix set using MONITOR OUT A–F:

Set the MONITOR OUT switch to A–F (■)

To output the same mix as the MASTER:

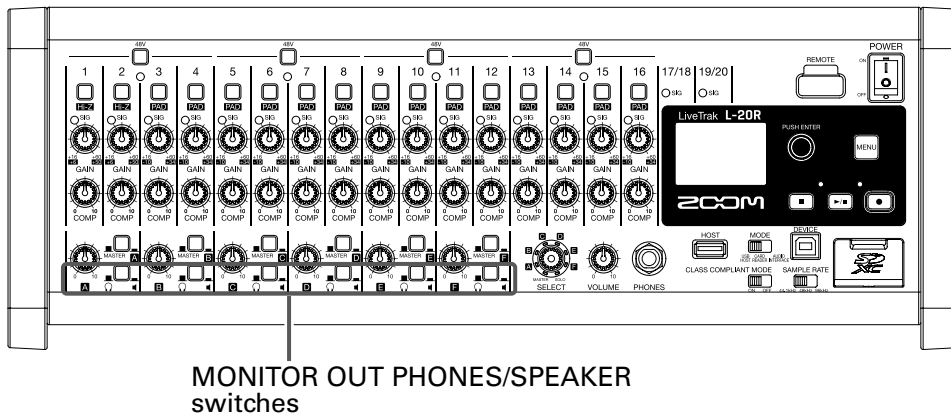
Set the MONITOR OUT switch to MASTER (■)



## NOTE

- Each output mix is saved with the scene and project.
- The parameters that can have separate settings for the MASTER and MONITOR OUT A–F are as follows.
  - Fader positions (each channel)
  - EFX 1/2 RTN positions

# Selecting the equipment types connected to MONITOR OUT A–F



1. Set the MONITOR OUT PHONES/SPEAKER switches for the outputs according to the types of equipment connected.

To connect headphones to a MONITOR OUT A–F jack:

Set the MONITOR OUT PHONES/SPEAKER switch to  (  ).

A stereo signal will be output from the jack.

To connect a speaker to a MONITOR OUT A–F jack:

Set the MONITOR OUT PHONES/SPEAKER switch to  (  ).

A mono balanced signal will be output from the jack.

# Copying a mix



FADER MODE buttons

1. While pressing **M**, **A** – **F** for the output to copy, tap a blinking copy destination (**M**, **A** – **F**).

This copies the mix from the source to the destination.

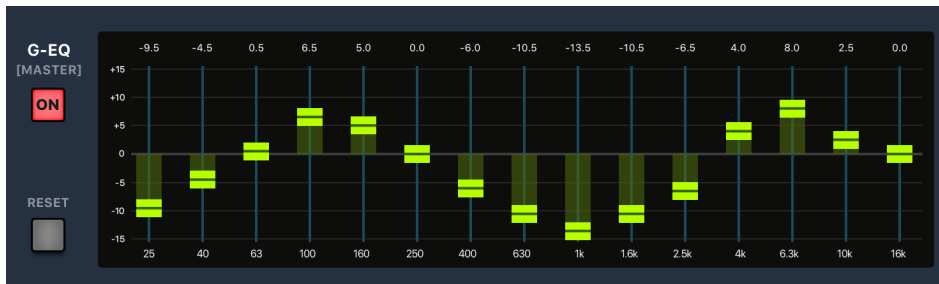
# Graphic equalizer (G-EQ)

The graphic equalizer can be used to adjust the MASTER OUT tone.

1. Tap  in the toolbar.

2. Tap  to light it.


This enables the graphic equalizer.



3. Slide the graphic equalizer fader for a frequency band up or down to adjust its gain.



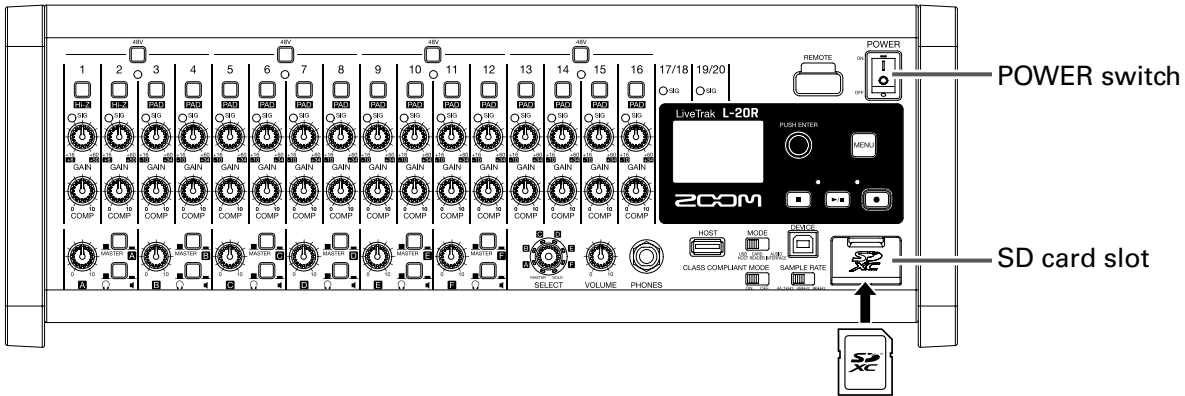
## HINT

- To make precise adjustments, tap the fader cap and slide it left/right to raise/lower the fader.
- Double-tap a fader to reset it to its default value.
- Tap  to reset all faders to 0 dB.
- When the **L-20R** is turned off and on again, the graphic equalizer will be set to off.

# Recording and playback

## Preparing to record


### Inserting SD cards



1. Set  to OFF.

2. Open the SD card slot cover, and insert an SD card all the way into the slot.  
To remove an SD card, push it further into the slot and then pull it out.

#### NOTE

- Disable write-protection on the SD card before inserting it.
- Always set  to OFF before inserting or removing an SD card.  
Inserting or removing a card while the power is on could result in data loss.
- When inserting an SD card, be sure to insert the correct end with the top side up as shown.
- If an SD card is not loaded, recording and playback are not possible.
- To format an SD card, see ["Formatting SD cards" on page 101](#).
- Use an SD card that is Class 10 or higher.
- Format an SD card before recording to it at 96 kHz. Without formatting first, skipping could occur when recording.


## Creating new projects

---

The **L-20R** manages recording and playback data in units called projects.

1. Select **MENU** > **PROJECT** > **NEW PROJECT**.

---

2. Use  to select YES, and tap .



### NOTE

- See "[Projects](#)" on page 76 for information about projects.
- When a new project is created, it will start with the current mixer settings.

---

### HINT

When the **L-20R** power is turned on, it will automatically load the last used project.

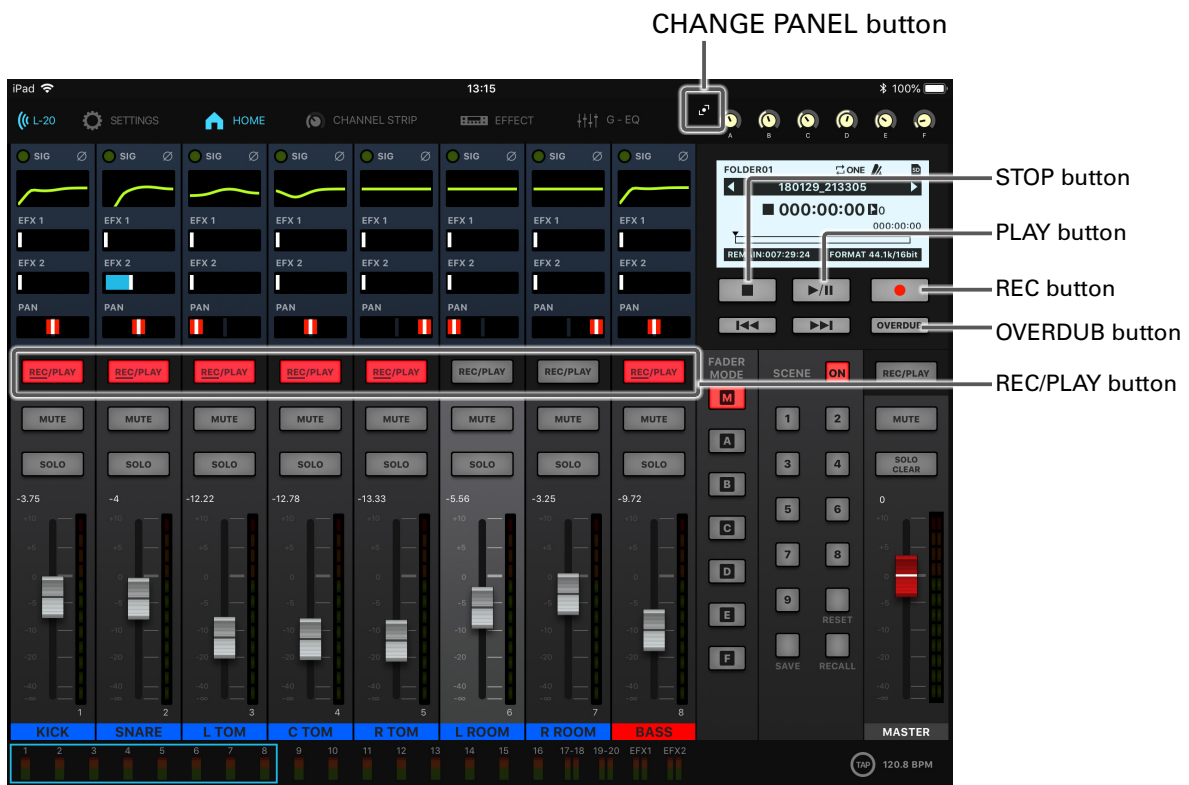
---



# Recording/overdubbing and playing recordings

The **L-20R** has recorder functions that enable simultaneous recording of up to 22 tracks and simultaneous playback of up to 20 tracks. The input signals of every channel and from the master fader output can be recorded. These recordings can also be played back.

## Recording



1. Tap to open the recorder panel.

2. Tap to turn overdubbing on or off.

Lit (ON): Overwrite the current project  
Unlit (OFF): Create a new project and record in it


3. Tap for the channels to record, lighting their buttons red.

4. Tap to start recording standby.

### HINT

If a recorded file already exists, and is off, tapping will create a new project and then start recording standby.

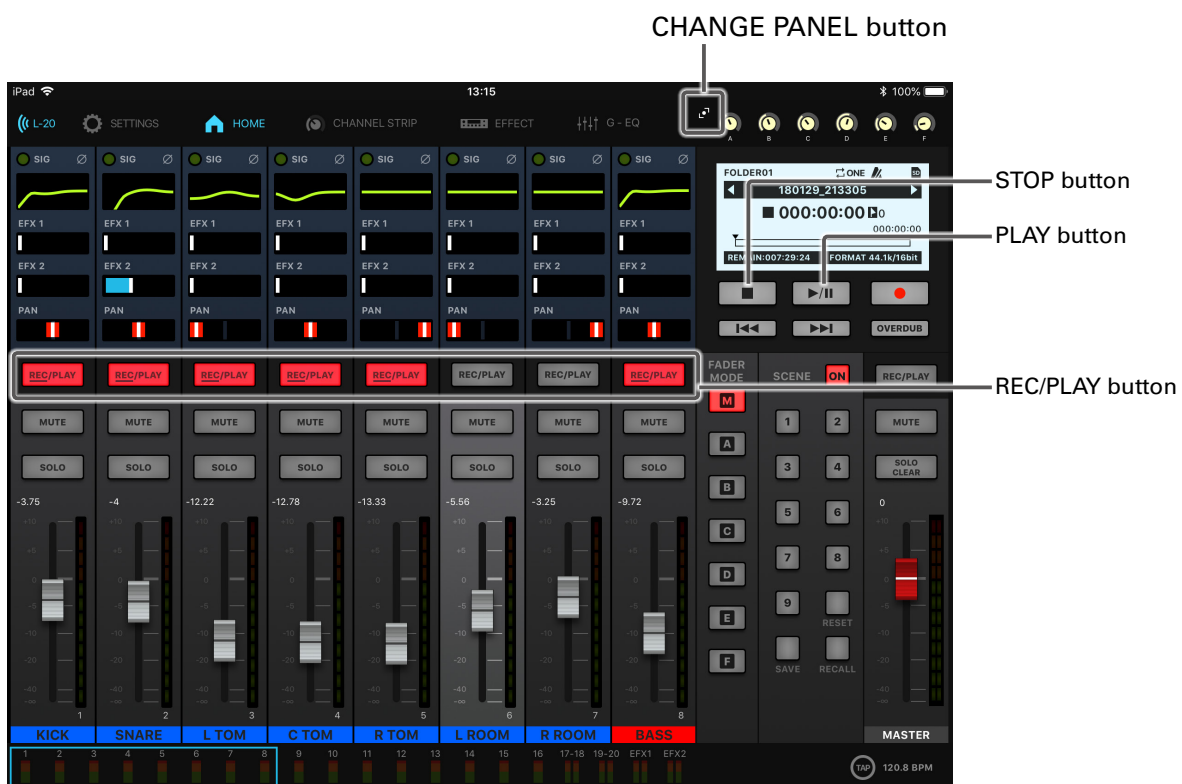
5. Tap to start recording.


6. Tap  to stop recording.


#### NOTE

- Starting and stopping recording and playback can also be done from the unit itself.
- The signals recorded on each channel can be set to either before or after the compressor. (→ ["Changing the input signal recording source" on page 100](#))
- Rerecording parts of recordings (→ ["Redoing parts of recordings \(punching in/out\)" on page 61](#))
- Starting recording automatically (→ ["Starting recording automatically" on page 65](#))
- Capturing audio before recording starts (→ ["Pre-recording before recording starts" on page 67](#))
- When recording stops, "Please Wait" appears on the display. Do not turn the power off or remove the SD card while this message appears. Doing so could cause data loss or malfunction.

## Playing recordings



1. Tap  to open the recorder panel.

2. Tap  repeatedly on the channels to be played until their buttons light green.

3. Tap  to start playback.



Lit: Playing back  
Blinking: Paused

4. Tap  to stop playback.

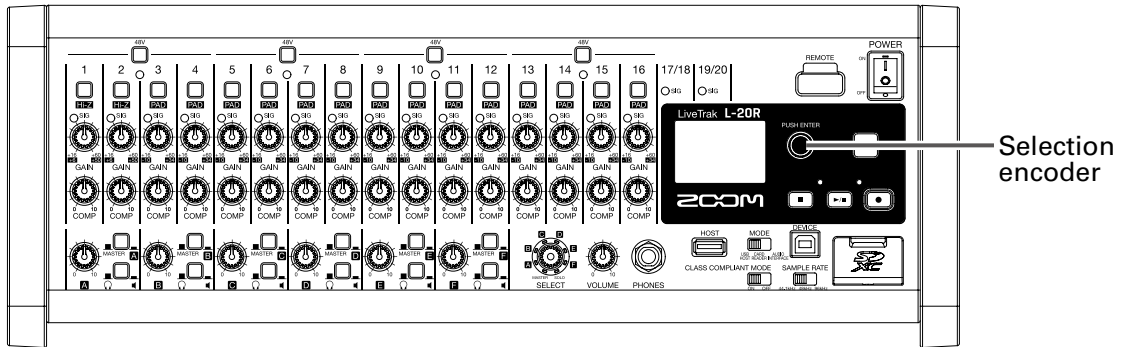
#### NOTE


- Starting and stopping recording and playback can also be done from the unit itself.
- Playback signals are inserted before the equalizer section, so their EQ and panning settings can be adjusted during playback. (→ ["Mixer block diagram" on page 118](#))
- If recorded signals are pre-compressor, playback signals will be inserted before the compressor. (→ ["Changing the input signal recording source" on page 100](#))
- Selecting projects for playback (→ ["Selecting projects for playback" on page 69](#))
- Changing the playback mode (→ ["Changing the playback mode" on page 100](#))
- Other channels cannot be played back when the MASTER channel is playing back.

# Adding marks

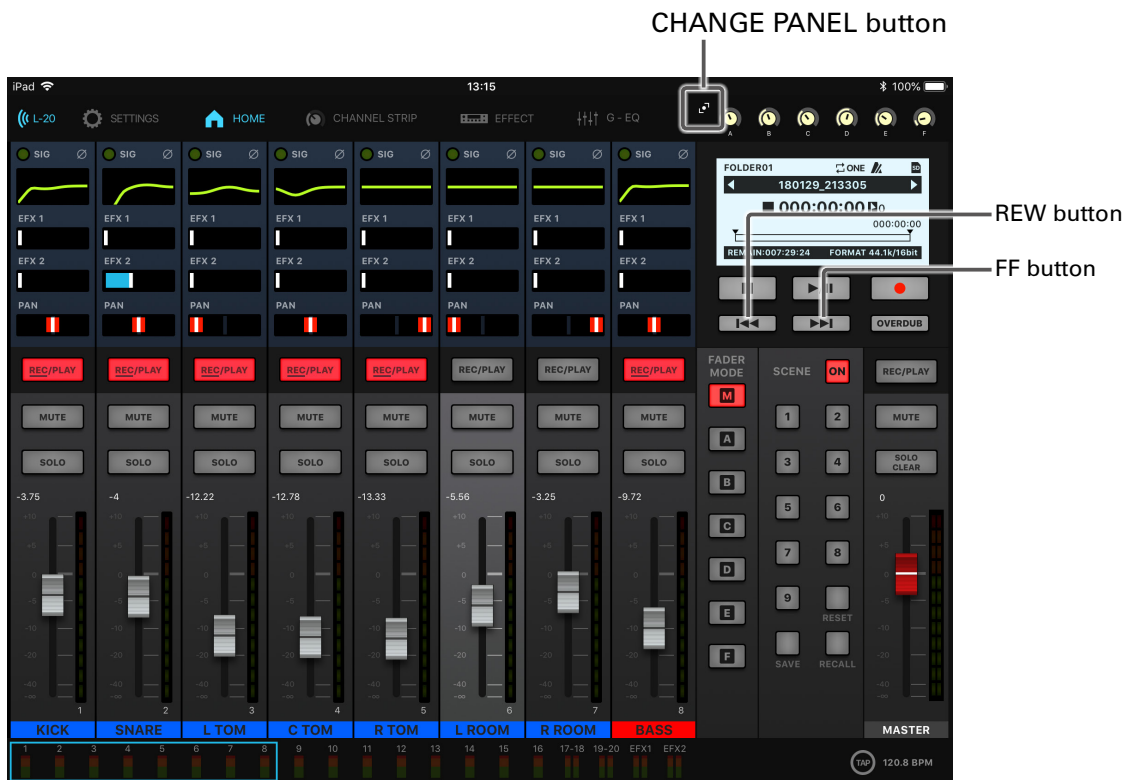
Adding marks at desired positions with the recorder makes moving to those positions easy.


## Adding marks during recording and playback





1. Press  during recording/playback.

## Moving in mark order



1. Tap  to open the recorder panel.
2. Use these buttons to move in mark order.

Move to next mark: Tap 


Move to previous mark: Tap 

**NOTE**

Checking and deleting marks in projects (→ ["Checking, deleting and moving to marks" on page 85](#))

---

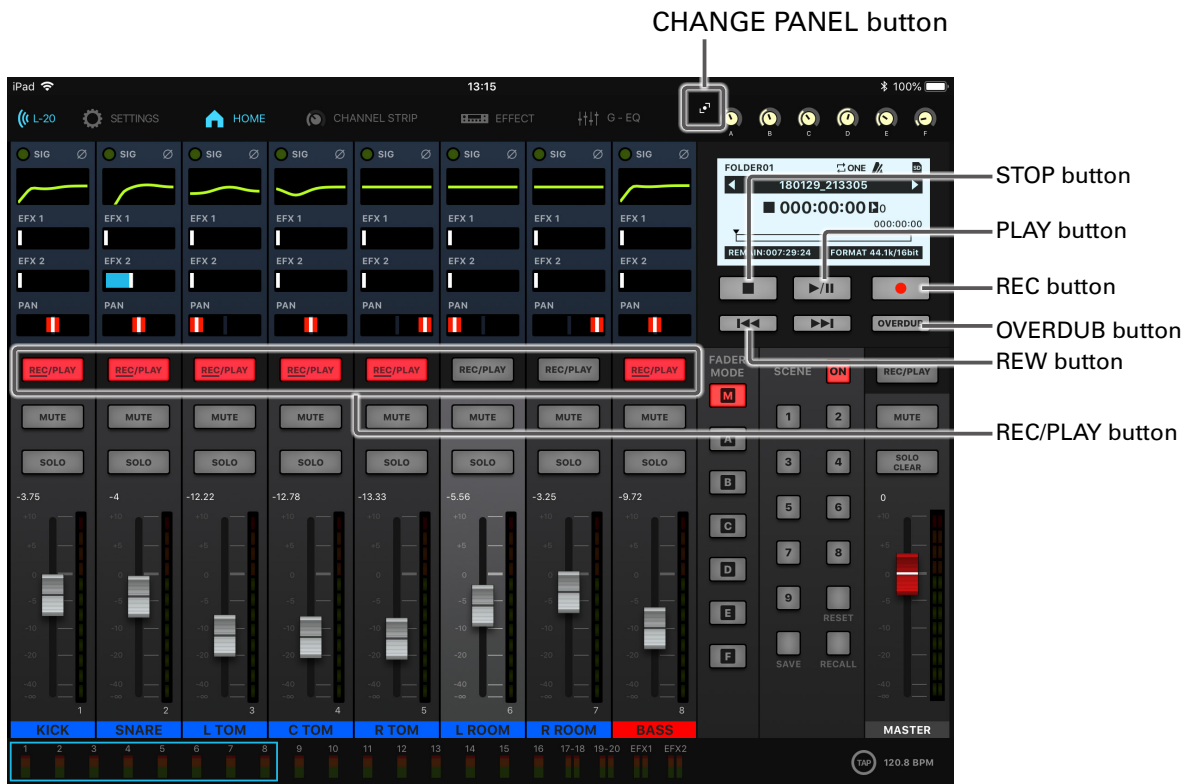
**HINT**







- A maximum of 99 marks can be added to one project.
  - A mark can be deleted by pressing  when at the mark position.
-


# Redoing parts of recordings (punching in/out)

Punching in/out is a function that can be used to rerecord parts of already recorded tracks. "Punching in" is switching track status from playback to recording. "Punching out" is switching track status from recording to playback.

With the **L-20R**, punching in/out can be conducted using L-20 Control or a ZOOM FS01 footswitch.



1. Tap  to open the recorder panel.
2. Tap  to turn it on (lit red).
3. Tap  repeatedly for the channels to redo until their buttons light red.
4. Tap  to move to before the part to be rerecorded.
5. Tap  to start playback.
6. Tap  at the position where rerecording should start (punch in).

7. Tap  to end rerecording (punch out).

**NOTE**

- Punching in/out using a footswitch (ZOOM FS01) (→ ["Setting the footswitch" on page 106](#))
- Punching in/out overwrites recordings.
- Punching in/out can be done up to 99 times each time playback is started.

---

8. Tap  to stop playback.

**NOTE**

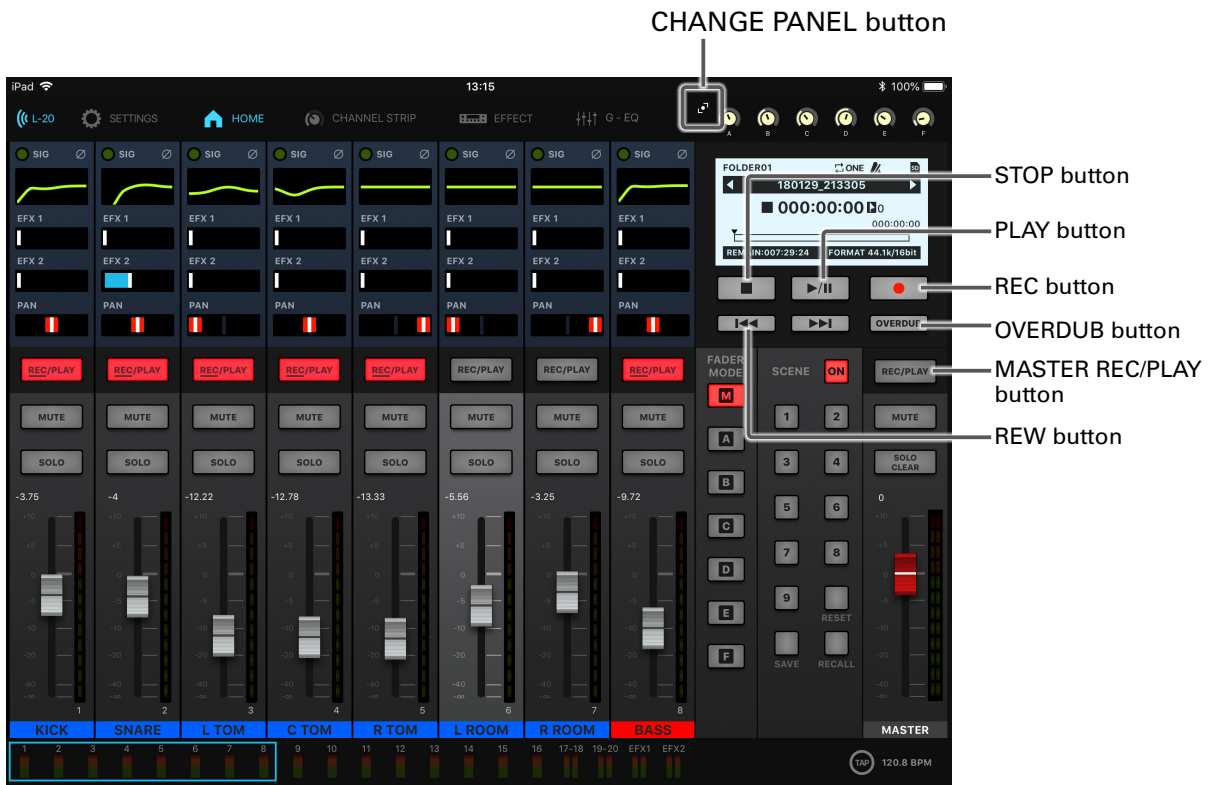
Starting and stopping recording and playback can also be done from the unit itself.

# Mixing down tracks

A final stereo mix can be recorded to the master track.

Signals are sent to the master track after passing through the master fader.

## Mixing down to the master track



1. Tap to open the recorder panel.

2. Tap **OVERDUB** to turn it on (lit red).

### NOTE

- Adjust the volume and panning of each recorded track before starting.
- When mixing down, set the sampling rate to 44.1 kHz or 48 kHz.  
If the sampling rate is 96 kHz, **OVERDUB** cannot be set to ON.


3. Tap the MASTER **REC/PLAY** repeatedly until the button lights red.




4. Tap to return to the beginning.

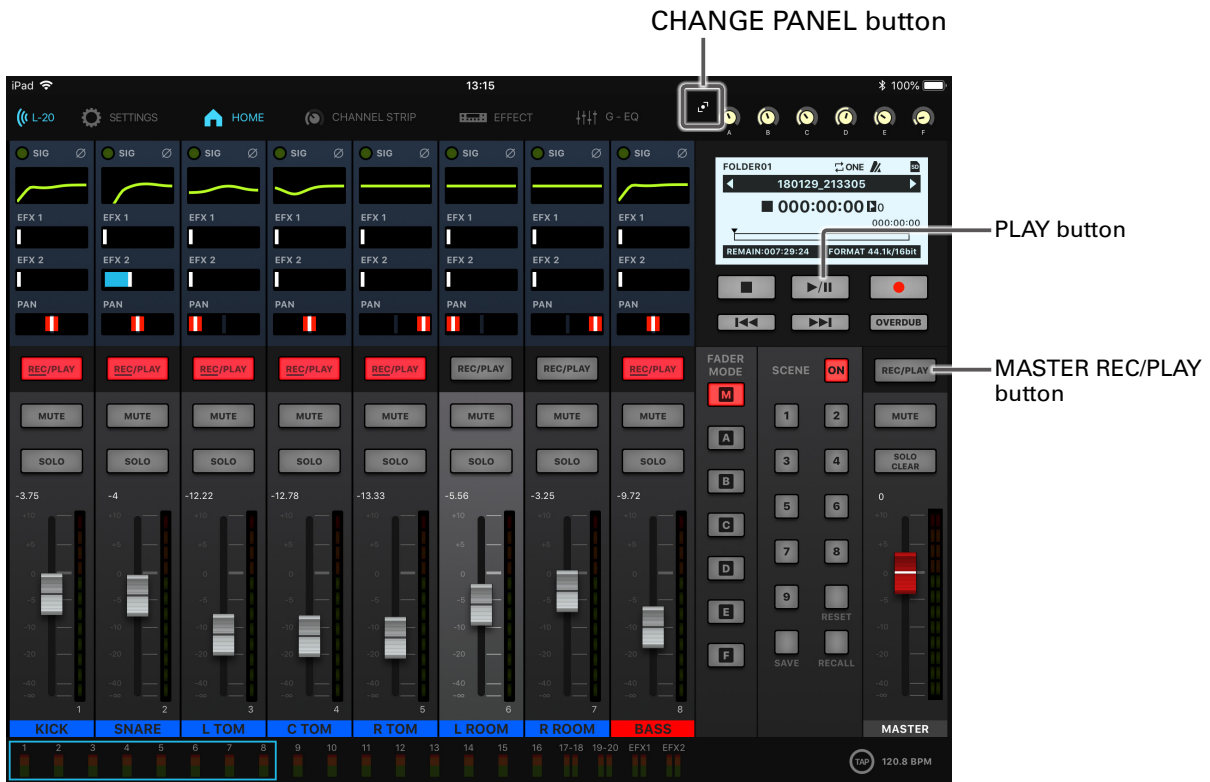
5. Tap to start recording standby.





6. Tap  to start recording.

7. Tap  to end mixing down.

## Playing the master track




1. Tap  to open the recorder panel.

2. Tap the MASTER  repeatedly until the button lights green.



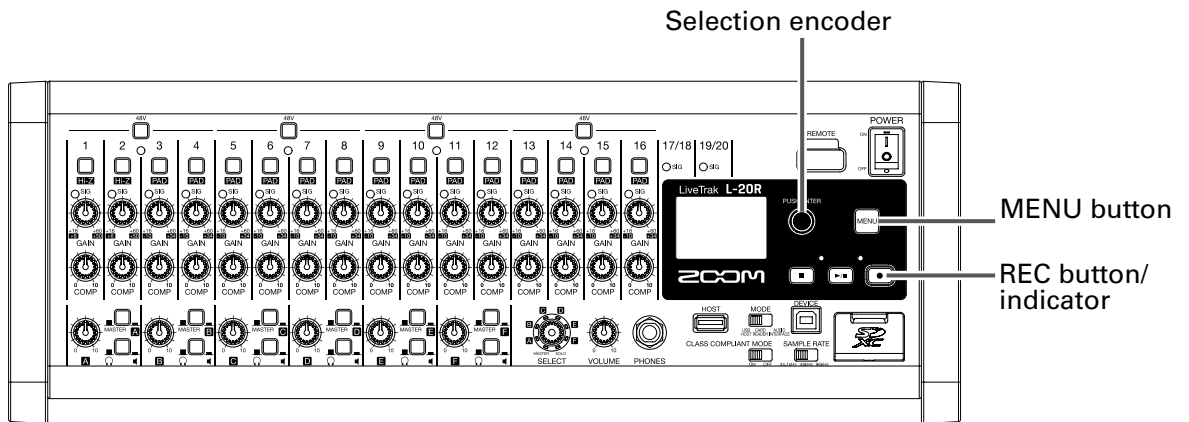
3. Tap .

### NOTE



- Starting and stopping recording and playback can also be done from the unit itself.
- To stop master track playback, tap MASTER  repeatedly until it becomes unlit.
- When the master track is playing, other tracks will not be played back.
- To listen to master track playback from a MONITOR OUT, set the MONITOR OUT A–F switch to MASTER (■).
- To listen to master track playback from the main headphone jack for the mixer operator, set the SELECT knob to MASTER.

# Starting recording automatically

Recording can be started and stopped automatically in response to the level after passing through the master fader.



1. Select **MENU** > **REC/PLAY** > **AUTO REC** > **ON/OFF**.


2. Use  to select **ON**, and press .



**NOTE**

Making additional settings for automatic recording (→ ["Changing automatic recording settings" on page 97](#))

---

3. Press  repeatedly to return to the Home Screen.

---

4. Tap .

It lights red, showing that recording standby has started.



---

**HINT**

Recording starts automatically when the input exceeds the set level.

Recording can be set to stop automatically when the input goes below a set level. (→ ["Setting automatic stopping" on page 98](#))

---

---

5. Tap  to end recording standby or stop recording.

**NOTE**



- This function cannot be used with the PRE REC, METRONOME or PRE COUNT functions. When AUTO REC is turned on, these other functions will be disabled.
- When the OVER DUB function is enabled, the AUTO REC function will be disabled.

## Pre-recording before recording starts

The input signal can be captured for up to 2 seconds before recording is started (pre-recording). Setting this in advance can be useful when a performance starts suddenly, for example.

1. Select **MENU** > **REC/PLAY** > **PRE REC**.

---

2. Use  to select **ON**, and press .





### NOTE

- This function cannot be used with the AUTO REC, METRONOME, PRE COUNT or OVERDUB functions.
- When AUTO REC or PRE COUNT is turned on, PRE REC will be disabled.
- The PRE REC function continues to be enabled even when recording is paused.

## Selecting the folder where projects are saved

Choose one of ten folders as the folder where recorded projects will be saved.

1. Select MENU > FOLDER.

2. Use  to select the folder to use for saving recordings, and press .



### NOTE

- Up to 1000 projects can be saved in a single folder.
- If a folder that does not have a project is selected, a new project will be created automatically.

## Selecting projects for playback

Projects saved on SD cards can be loaded.

1. Select MENU > PROJECT > SELECT.

2. Use  to select the project to load, and press .



### NOTE



- Projects in different folders cannot be selected. To select a project that is saved in a different folder, select that folder first. (→ "[Selecting the folder where projects are saved](#)" on page 68)
- When a project is loaded, the mixer settings saved in that project are also loaded.
- When switching to a different project, the project mixer settings of the current project are saved to the settings file in the project folder.

# Using the metronome

The **L-20R** metronome has adjustable volume, a selectable sound, and a precount function. The volume can also be adjusted separately for each output. Metronome settings are saved separately with each project.

## Enabling the metronome

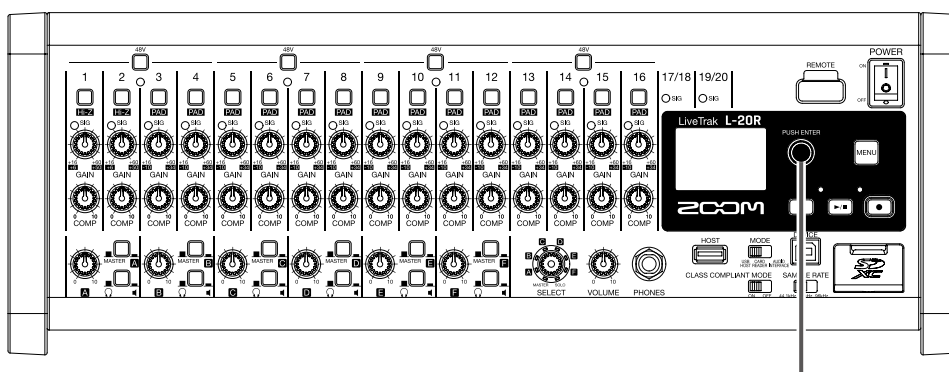
1. Select **MENU** > **METRONOME** > **CLICK**.

2. Use  to select when the metronome makes sound, and press .



Setting	Explanation
OFF	The metronome does not make sound.
REC AND PLAY	The metronome sounds during recording and playback.
REC ONLY	The metronome sounds only during recording.
PLAY ONLY	The metronome sounds only during playback.

# Changing metronome settings

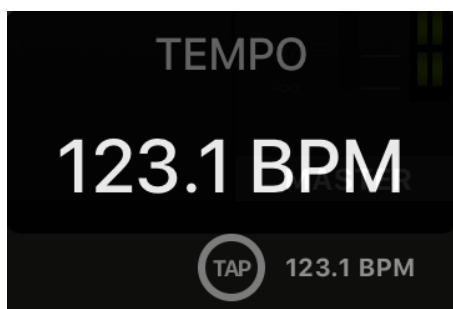


Selection encoder



## Changing the metronome tempo

1. Tap .




The current tempo is shown on the display.



2. Tap  at the desired tempo to set it.

**NOTE**



The tempo will be shown on the hardware while it is being set on the app.

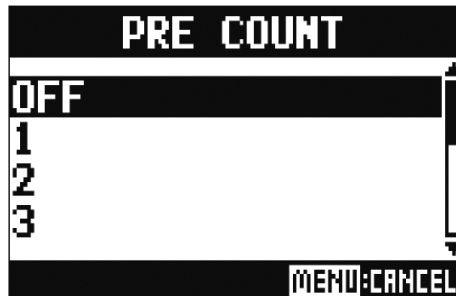
At this time,  on the hardware can also be turned to change the tempo.

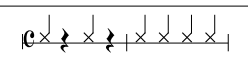
## Setting the precount

A metronome count can be sounded before starting recording/playback.

1. Select MENU > METRONOME > PRE COUNT.

2. Use  to select the precount behavior, and press .



Setting	Explanation
OFF	No precount will sound.
1-8	Before recording/playback, the precount will sound for the set number of times (1-8).
SPECIAL	Before recording/playback, the precount will sound as shown below. 

### NOTE



- The precount is enabled even during playback.
- This function cannot be used with the AUTO REC function. When AUTO REC is turned on, PRE COUNT will be disabled.
- This function cannot be used with the PRE REC function. When PRE COUNT is turned on, PRE REC will be disabled.

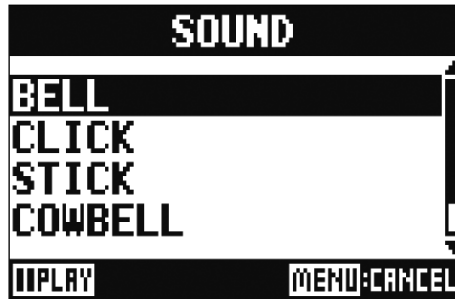
## Changing the metronome sound

---

1. Select **MENU** > **METRONOME** > **SOUND**.

---

2. Use  to select the sound, and press .




### HINT

The options are BELL, CLICK, STICK, COWBELL and HI-O.

---

### NOTE



Use  to play the metronome and check the sound.

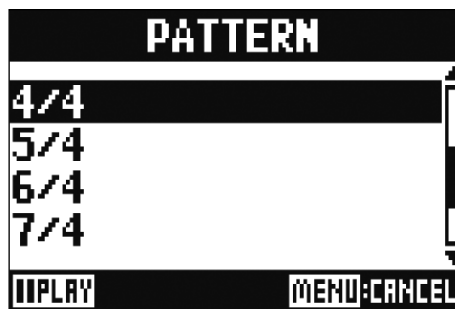
## Changing the metronome pattern

---

1. Select **MENU** > **METRONOME** > **PATTERN**.

---

2. Use  to select the pattern, and press .




### HINT

The options are 1/4 – 8/4 and 6/8.

---

### NOTE

Press  to play the metronome and check the pattern.



## Changing the metronome volume

---

The metronome volume can be adjusted separately for the MASTER OUT and the MONITOR OUT A–F outputs.

1. Select **MENU** > **METRONOME** > **LEVEL** > **MASTER** or **MONITOR OUT A – F**.

---

2. Turn  to adjust the volume, and press .




---

### HINT

This can be set from 0 to 100.

---

### NOTE

Press  to play the metronome and check the volume.

# Projects

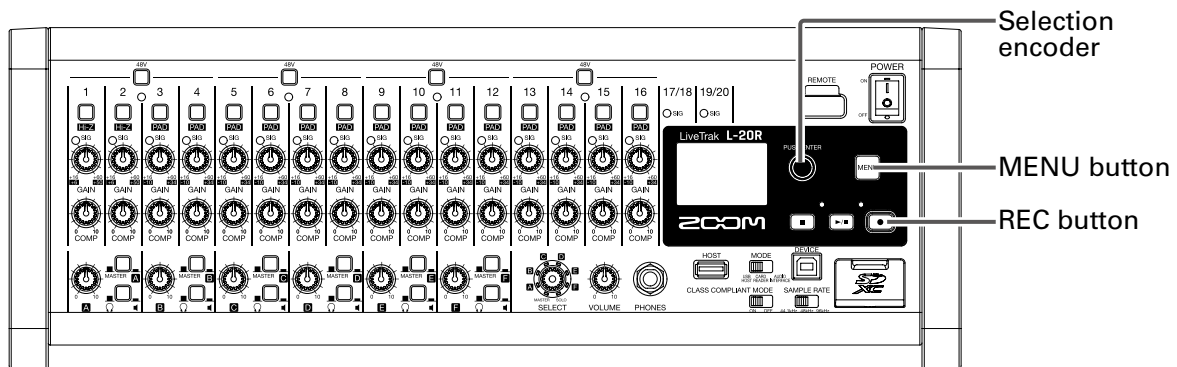
The **L-20R** manages recording and playback data in units called projects.

The following data is saved in projects.

- Audio data
- Mixer settings
- Send return effect settings
- Mark information
- Metronome settings


## Changing project names

The name of the currently loaded project can be changed.

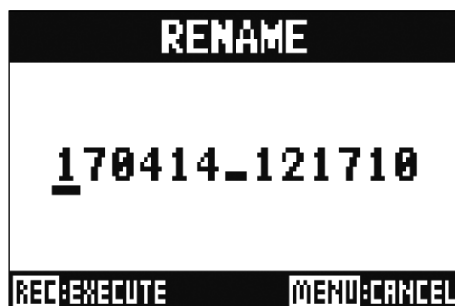


**1.** Select **MENU** > **PROJECT** > **RENAME**.

**2.** Edit the name.

Move cursor or change character: Turn 

Select character to change/confirm change: Press 



#### NOTE

- The default project name is the date and time of creation.  
For example, if a project was created at 6:48:20 p.m. on Wednesday, March 14, 2019, the project name would be "190314\_184820" (YYMMDD\_HHMMSS).
- Project names have 13 characters.
- The following characters can be used in project and file names.  
(space) ! # \$ % & ' ( ) + , - 0 1 2 3 4 5 6 7 8 9 ; = @  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ ] ^ \_ `   
a b c d e f g h i j k l m n o p q r s t u v w x y z { ~ }
- Projects can be ordered numerically or alphabetically.
- Project/file names cannot be only spaces.
- The project name is the same as the project folder name on the SD card.

---

3. Press .

## Deleting projects

Projects inside the selected folder can be deleted.

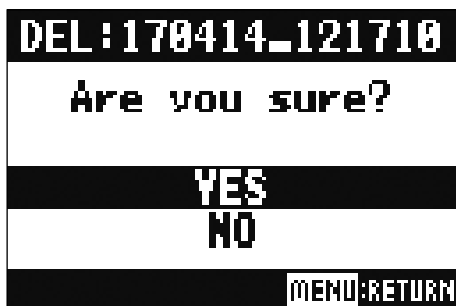
1. Select **MENU** > **PROJECT** > **DELETE**.

---

2. Use  to select the project to delete, and press .

---

3. Use  to select **YES**, and press .



### NOTE



Projects cannot be deleted if protection is ON.

## Protecting projects

The currently loaded project can be write-protected, preventing the project from being saved, deleted or having its content changed.

1. Select **MENU** > **PROJECT** > **PROJECT PROTECT**.

---

2. Use  to select **ON**, and press .



### NOTE

- Projects cannot be used for recording if protection is ON. Turn protection OFF to record.
- When protection is OFF for a project, it will always be saved to the SD card when the power is turned off or another project is loaded. We recommend turning protection ON to prevent accidentally saving changes to a musical project after it has been completed.

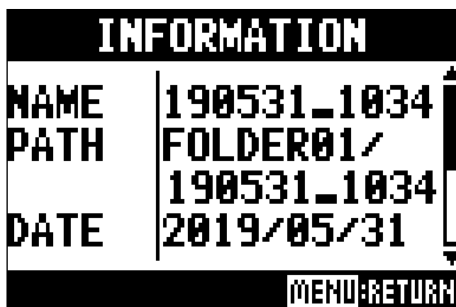


## Checking project information

Various information about the currently loaded project can be viewed.

1. Select **MENU** > **PROJECT**.

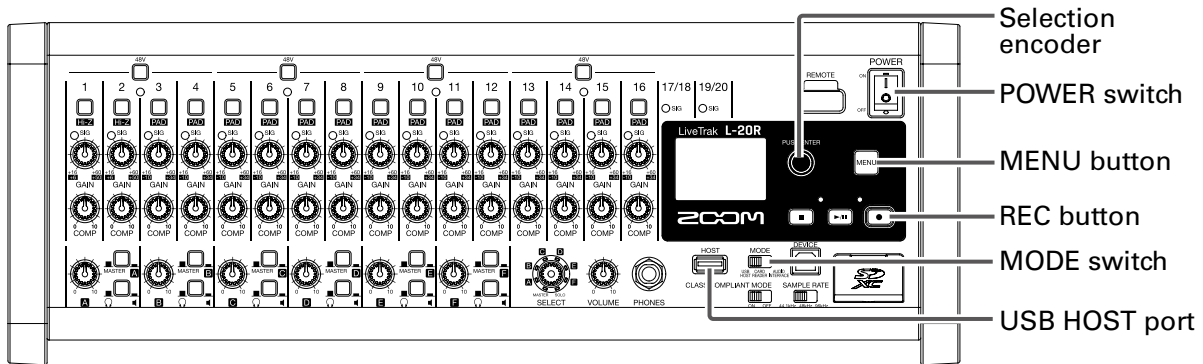
2. Use  to select **INFORMATION**, and press .



Item shown	Explanation
NAME	Project name
PATH	Location where project saved
DATE	Project creation date (YYYY/MM/DD HH:MM:SS)
FORMAT	Recording format
SIZE	Project size
TIME	Project length (HHH: MM: SS)
FILES	Track and file information

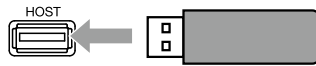
# Saving projects to USB flash drives

A USB flash drive can be connected directly to the **L-20R**, and the currently loaded project can be saved to it.



1. Set  to OFF.

2. Connect the USB flash drive to the USB HOST port.



3. Set  to USB HOST.

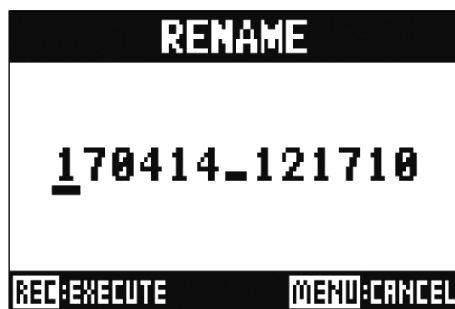
4. Set  to ON.

5. Select **MENU** > **PROJECT** > **PROJECT EXPORT**.

6. Edit the name.

Move cursor or change character: Turn 



Select character to change/confirm change: Press 



**NOTE**

- The default project name is the date and time of creation.  
For example, if a project was created at 6:48:20 p.m. on Wednesday, March 14, 2019, the project name would be "190314\_184820" (YYMMDD\_HHMMSS).
- Project names have 13 characters.
- The following characters can be used in project and file names.  
(space) ! # \$ % & ' ( ) + , - 0 1 2 3 4 5 6 7 8 9 ; = @  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ ] ^ \_ `   
a b c d e f g h i j k l m n o p q r s t u v w x y z { ~ }
- Projects can be ordered numerically or alphabetically.
- Project/file names cannot be only spaces.
- The project name is the same as the project folder name on the SD card.

7. Press .

8. Use  to select YES, and press .



**NOTE**

- The folder structure on USB flash drives is as follows.  
Never change this folder structure.



- Projects will be saved on the USB flash drive in the "PROJECT" subfolder of the "ZOOM\_L-20" folder.
- Never disconnect a USB flash drive when "Please Wait..." appears on the display.

# Importing projects from USB flash drives

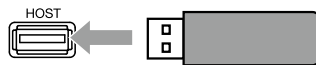
Projects saved on USB flash drives can be copied to SD cards.

## NOTE


Use a computer to create "ZOOM\_L-20" and "PROJECT" folders on the USB flash drive in advance (→ ["Saving projects to USB flash drives" on page 81](#)). Only projects inside the "PROJECT" folder can be imported.

1. Set  to OFF.



2. Connect the USB flash drive to the USB HOST port.



3. Set  to USB HOST.

4. Set  to ON.

5. Select **MENU** > **PROJECT** > **PROJECT IMPORT**.

6. Use  to select the project to load from the USB flash drive, and press .



7. Edit the name.

Move cursor or change character: Turn 



Select character to change/confirm change: Press 



**NOTE**

- The default project name is the date and time of creation.  
For example, if a project was created at 6:48:20 p.m. on Wednesday, March 14, 2019, the project name would be "190314\_184820" (YYMMDD\_HHMMSS).
- Project names have 13 characters.
- The following characters can be used in project and file names.  
(space) ! # \$ % & ' ( ) + , - 0 1 2 3 4 5 6 7 8 9 ; = @  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ ] ^ \_ `  
a b c d e f g h i j k l m n o p q r s t u v w x y z { ~ }
- Projects can be ordered numerically or alphabetically.
- Project/file names cannot be only spaces.
- The project name is the same as the project folder name on the SD card.

8. Press .

9. Use  to select YES, and press .

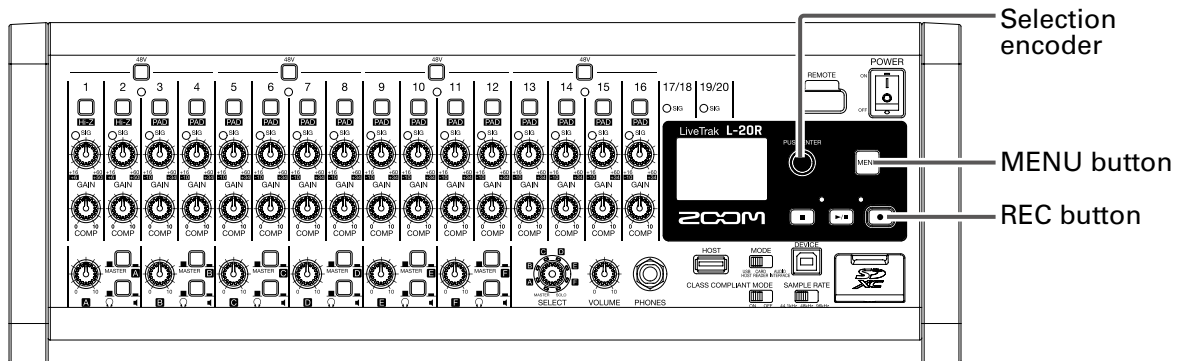


**NOTE**

- Imported projects are saved in the currently selected folder.
- Never disconnect a USB flash drive when "Please Wait..." appears on the display.

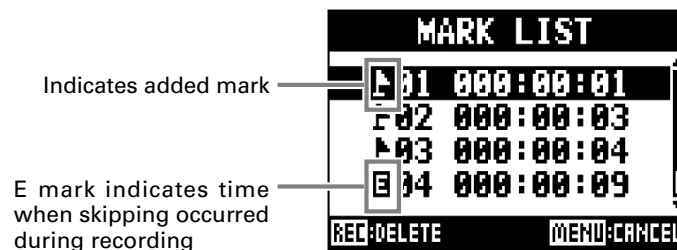
# Checking, deleting and moving to marks


A list of marks in the currently loaded project can be opened, allowing them to be checked, moved to and deleted.




1. Select **MENU** > **PROJECT** > **MARK LIST**.

A list of marks appears.



2. Use  to select a mark, and move to or delete it.

Press  to move to the mark position.

Press  to delete the mark.

# Audio files

The **L-20R** creates the following types of audio files according to the recording channel.

- Channels 1–16: mono WAV files
- Channels 17/18, 19/20 and MASTER: stereo WAV files

The file format depends on the sampling rate (→ "[Changing the sampling rate](#)" on page 107) and quantization bit depth (→ "[Changing the recording format](#)" on page 96) used by the unit.

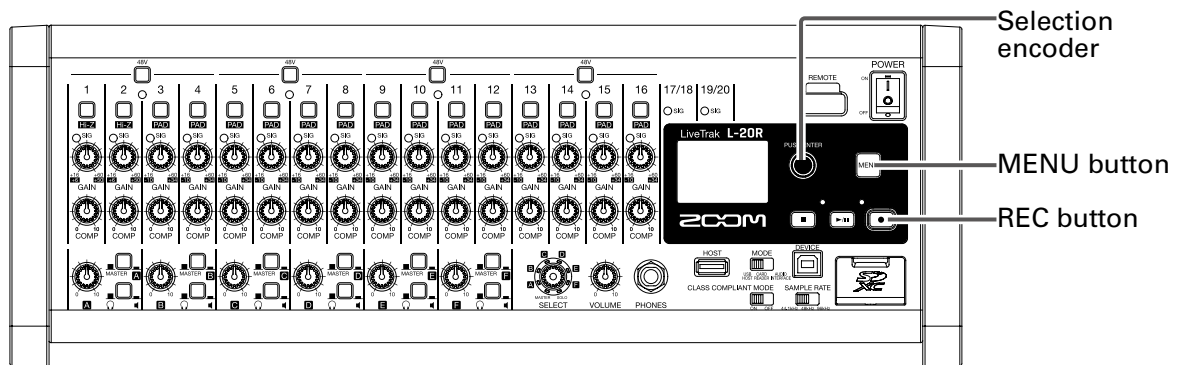
The **L-20R** can also play back audio files created using DAW software (→ "[Importing audio files from USB flash drives](#)" on page 90).

## NOTE



- The names given to audio files depend on their channels.  
Channels 1–16: TRACK01–TRACK16  
Channels 17/18, 19/20: TRACK17\_18, TRACK19\_20  
MASTER: MASTER
- If the file size exceeds 2 GB during recording, a new file will be created automatically in the same project and recording will continue without pause. When this happens, numbers like "-01" and "-02" will be added to the ends of the file names.

## Deleting audio files

Audio files that are not needed can be deleted.



**1.** Select **MENU** > **PROJECT** > **FILE DELETE**.


**2.** Use  to select the file to delete, and press .



**NOTE**

Press  to select/deselect all files.

3. Press .

4. Use  to select YES, and press .



**NOTE**

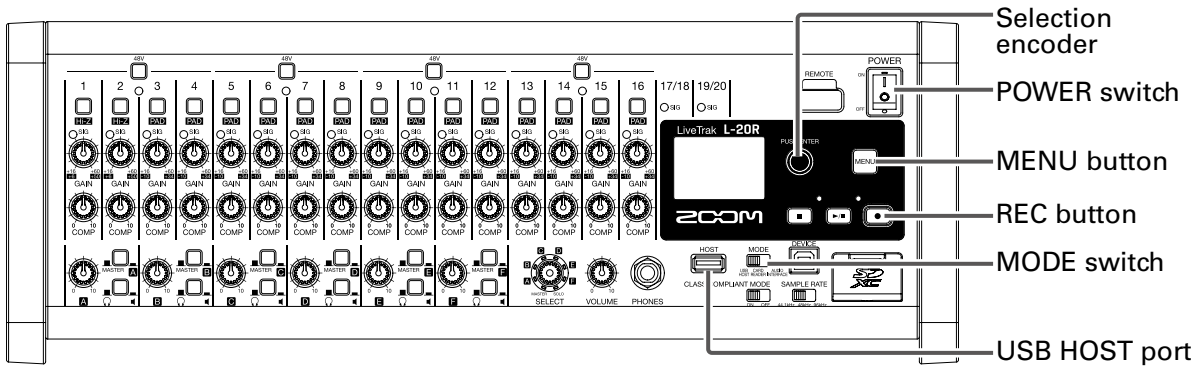
Audio files cannot be deleted if protection is ON for their projects.



# Exporting audio files to USB flash drives

The desired audio files can be exported from projects to USB flash drives.

Exported audio files will be saved on the USB flash drive in the "AUDIO" subfolder of the "ZOOM\_L-20" folder.




1. Set  to OFF.



2. Connect the USB flash drive to the USB HOST port.



3. Set  to USB HOST.


4. Set  to ON.

5. Select **MENU** > **PROJECT** > **FILE EXPORT**.

6. Use  to select a file to load, and press .



7. Edit the name.


Move cursor or change character: Turn 


Select character to change/confirm change: Press 



**NOTE**

- Audio file names have 24 characters.
- The following characters can be used in project and file names.  
(space) ! # \$ % & ' ( ) + , - 0 1 2 3 4 5 6 7 8 9 ; = @  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ ] ^ \_ `   
a b c d e f g h i j k l m n o p q r s t u v w x y z { ~ }  
• Project/file names cannot be only spaces.

8. Press .

9. Use  to select YES, and press .



**NOTE**

- Never disconnect a USB flash drive when "Please Wait..." appears on the display.
- Audio files will be saved on the USB flash drive in the "AUDIO" subfolder of the "ZOOM\_L-20" folder.

# Importing audio files from USB flash drives

The desired audio files can be imported from USB flash drives to existing projects and assigned to channels.

## NOTE

Use a computer to create "ZOOM\_L-20" and "AUDIO" folders on the USB flash drive in advance (→ "[Saving projects to USB flash drives](#)" on page 81). Only audio files inside the "AUDIO" folder can be imported.

1. Set  to OFF.



2. Connect the USB flash drive to the USB HOST port.

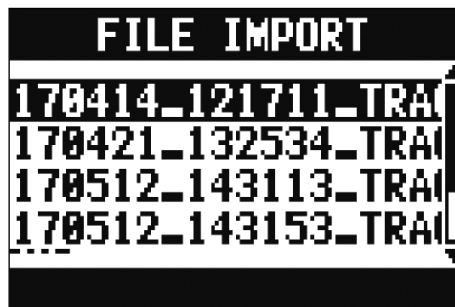


3. Set  to USB HOST.

4. Set  to ON.



5. Select **MENU** > **PROJECT** > **FILE IMPORT**.

6. Use  to select a file to load, and press .



## NOTE

Audio files cannot be imported from USB flash drives into projects that have protection ON.

7. Use  to select the channel where the file is to be assigned, and press .



**NOTE**

- Mono WAV files can be assigned to mono channels and stereo WAV files can be assigned to stereo channels.
- Files cannot be imported to channels that already have files assigned to them.
- When files are imported, their file names will automatically be changed according to their import channels.

8. Use  to select YES, and press .



**NOTE**

Never disconnect a USB flash drive when "Please Wait..." appears on the display.

# Using audio interface functions

---

The **L-20R** can be used as a 22-in/4-out USB audio interface. After applying its compressor, each input channel always outputs its signal to the corresponding USB audio channel. Channels 1–20 and the stereo signal output from the master fader are sent to the computer (22 channels total).

## Installing the driver

1. Download the "ZOOM L-20 Driver" from [www.zoom.co.jp](http://www.zoom.co.jp) to the computer.

### NOTE

- The **L-20R** driver is the same as the **L-20** driver.
- The latest "ZOOM L-20 Driver" can be downloaded from the above website.
- Download the driver for the operating system that you are using.

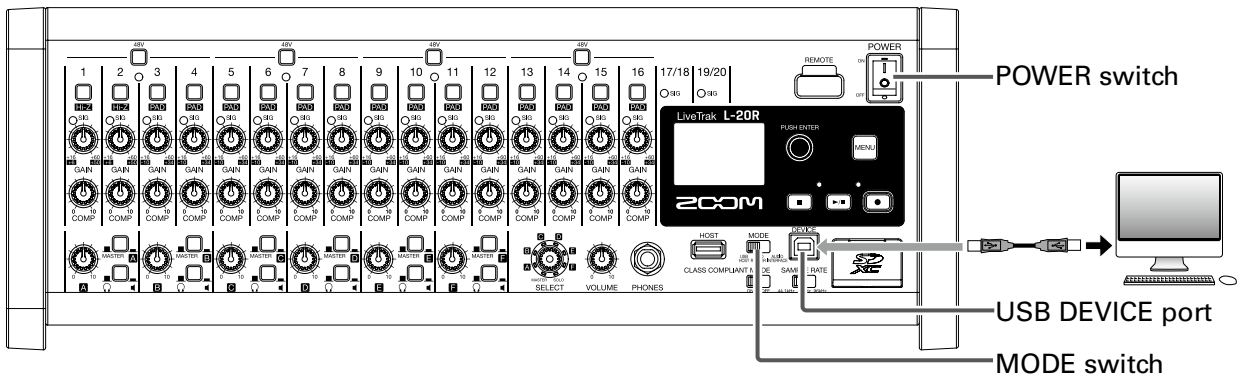
- 
2. Launch the installer and install the driver.

Follow the instructions that appear on screen to install the ZOOM L-20 Driver.

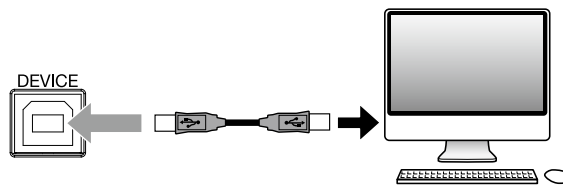
### NOTE

See the Installation Guide included in the driver package for detailed installation procedures.

# Connecting to a computer



1. Use a USB cable to connect the  to the computer.




2. Set  to AUDIO INTERFACE.

3. Set  to ON.

## NOTE

CLASS COMPLIANT MODE

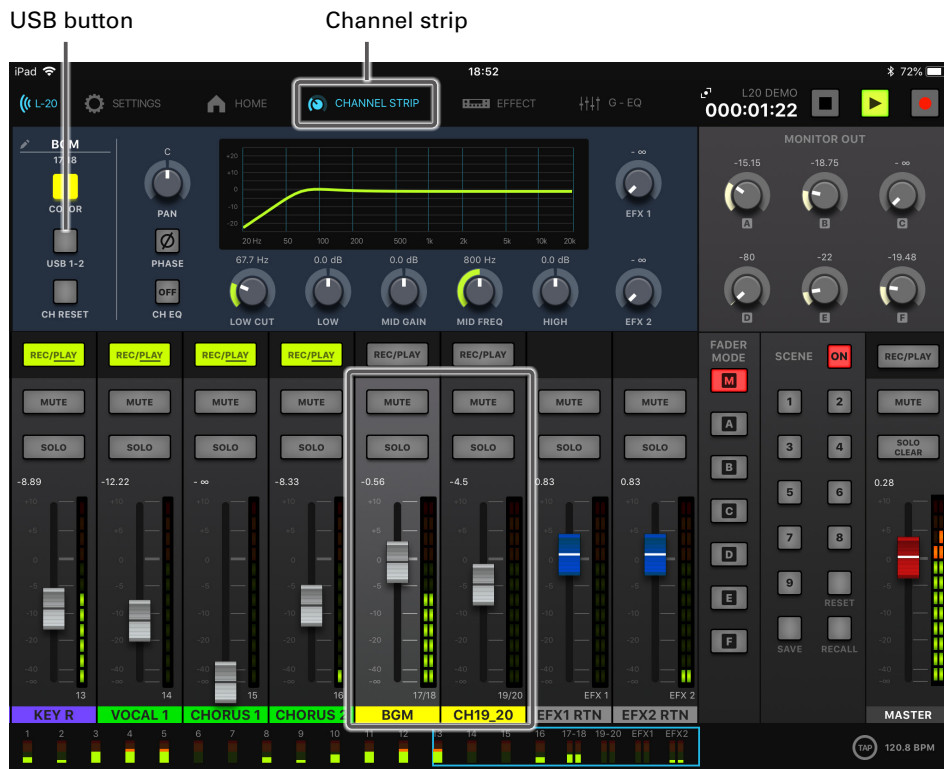
- Set  to ON when connected to an iOS device.
- When connecting to an iOS device, use a Lightning to USB camera adapter (or Lightning to USB 3 camera adapter).

4. Set the **L-20R** as the computer sound device.

## NOTE

- The same driver is used as for the **L-20**, so select the **L-20** driver on the computer.
- Audio interface functions cannot be used when the sampling rate is set to 96 kHz.



# Inputting return signals from the computer to a stereo channel



1. Tap CH17\_18 or CH19\_20.

2. Tap  CHANNEL STRIP in the toolbar.

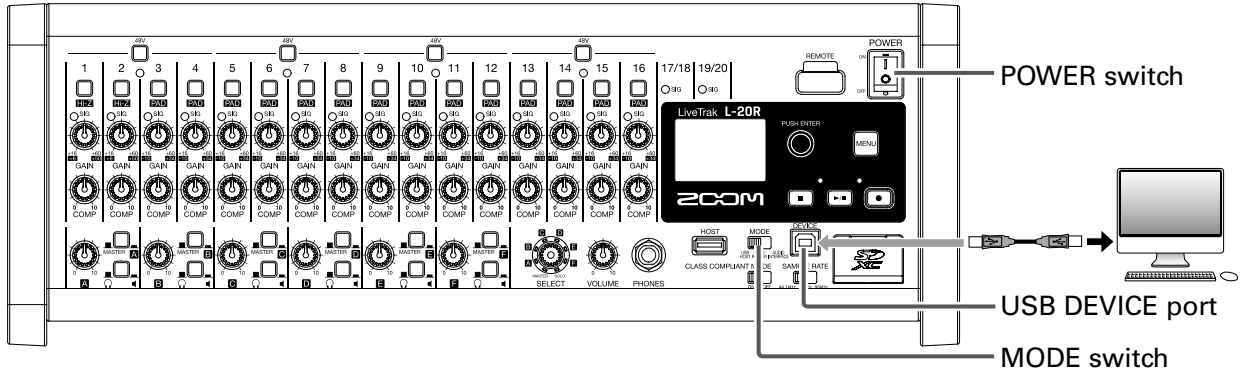



3. Tap   for the stereo channel to use for input to turn it on.

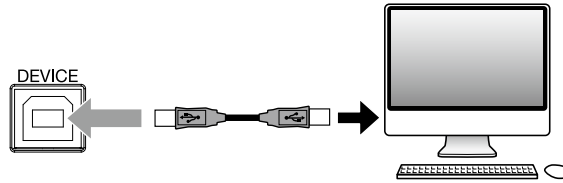
The signal controlled by the channel is switched to the USB audio channel signal (before EQ).

# Using card reader functions

When connected to a computer, data on the SD card can be checked and copied.



1. Use a USB cable to connect the  to the computer.



2. Set  to CARD READER.

3. Set  to ON.

## NOTE

When operating as a CARD READER, other functions and buttons cannot be used. Moreover, connection with L-20 Control is not possible.



# Recording and playback settings



---

## Changing the recording format

The recording format can be changed in consideration of audio quality and file size.

1. Select **MENU** > **REC/PLAY** > **REC FORMAT**.

---

2. Use  to change the format, and press .



---

### HINT

When overwriting a recording, recording will occur at the bit depth of the original file. For example, a file recorded at 16-bit cannot be overwritten with 24-bit recording.

---

# Changing automatic recording settings



The conditions for automatically starting and stopping recording can be set.

## Setting the automatic recording start level

---

1. Select MENU > REC/PLAY > AUTO REC > REC START LEVEL.

---

2. Use  to change the start level, and press .



Recording will start automatically when the level of the MASTER fader output signal exceeds the set level.

---

### HINT

This can be set from -48 to 0 dB.



---

## Setting automatic stopping

---

1. Select **MENU** > **REC/PLAY** > **AUTO REC** > **AUTO STOP**.

---

2. Use  to select the automatic stop time, and press .



---



### HINT

This can be set to OFF or between 0 and 5 seconds.

---

3. Select **MENU** > **REC/PLAY** > **AUTO REC** > **REC STOP LEVEL**.

---

4. Use  to set the stop level, and press .



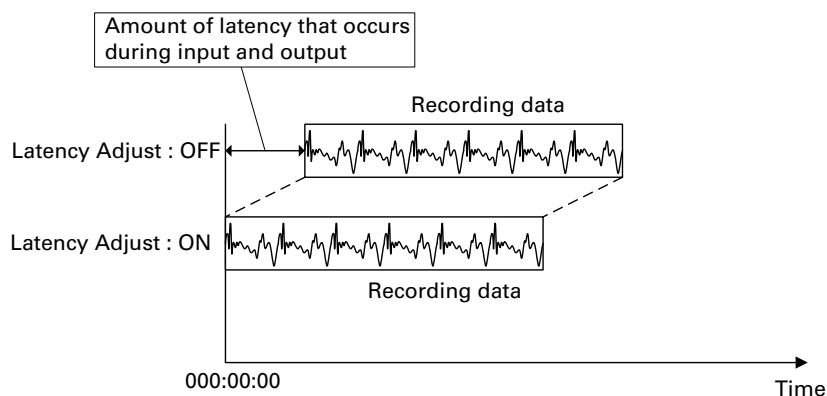
Recording will stop automatically when the level of the MASTER fader output stays below the set level for the amount of time set in step 2.

# Compensating for latency that occurs during input and output



The **L-20R** can compensate for latency that occurs during input and output if you want to listen to its output signal while overdubbing.

Use this menu item to set whether the latency that occurs during input and output is automatically compensated for or not when OVERDUB is ON.

When automatic compensation is enabled, the recording data is shifted by the amount of latency that occurs during input and output.





1. Select **MENU** > **REC/PLAY** > **LATENCY ADJUST**.

2. Use  to select **ON**, and press .



## Changing the playback mode

1. Select **MENU** > **REC/PLAY** > **PLAY MODE**.



2. Use  to select the play mode, and press .



Setting	Explanation
OFF	Only the selected project plays back. Playback continues even when the end of a file is reached.
PLAY ONE → (single song playback)	Only the selected project plays back. Playback stops when the end of a file is reached.
PLAY ALL →ALL (all playback)	Every project from the selected one to the last one will be played back.
REPEAT ONE ↺ (single song repeat playback)	The selected project will be played repeatedly.
REPEAT ALL ↺ALL (all song repeat playback)	All projects in the selected folder will be played repeatedly.

## Changing the input signal recording source

1. Select **MENU** > **REC/PLAY** > **REC SOURCE**.

2. Use  to select the recording source, and press .



Setting	Explanation
PRE COMP	Before compressor applied
POST COMP	After compressor applied

### NOTE

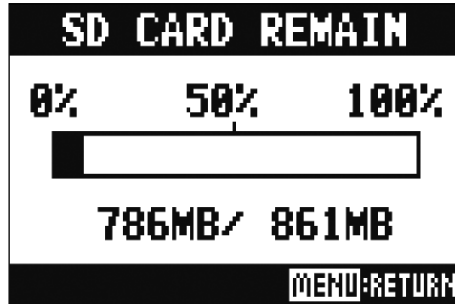
When PRE COMP is selected, the playback signal will be inserted before the compressor.  
When POST COMP is selected, the playback signal will be inserted after the compressor.

# SD card settings

## Checking the open space on SD cards

1. Select **MENU** > **SD CARD** > **SD CARD REMAIN**.

This shows the open space on the card.



### NOTE

The **L-20R** shows less than the actual open space in order to maintain space to prevent SD card writing performance from degrading.

## Formatting SD cards

Formatting SD cards for use with the **L-20R**.

1. Select **MENU** > **SD CARD** > **FORMAT**.

2. Use  to select **YES**, and press .



### NOTE



- Before using SD cards that have just been purchased or that have been formatted on a computer, they must be formatted by the **L-20R**.
- Be aware that all data previously saved on the SD card will be deleted when it is formatted.
- Format an SD card before recording to it at 96 kHz.

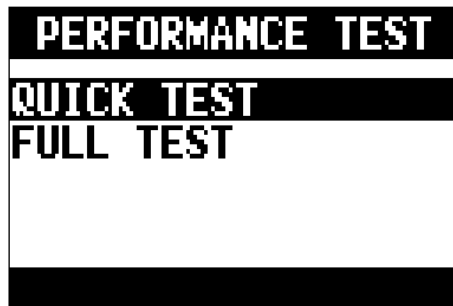
# Testing SD card performance

SD cards can be tested to confirm whether they can be used with the **L-20R**. A basic test can be done quickly, while a full test examines the entire SD card.

## Conducting a quick test

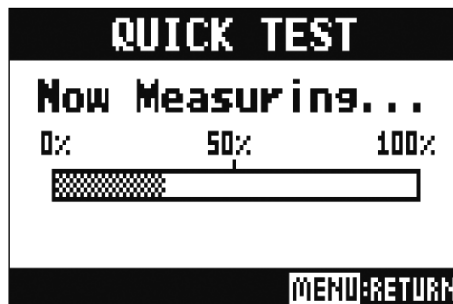
1. Select **MENU** > **SD CARD** > **PERFORMANCE TEST**.

2. Use  to select **QUICK TEST**, and press .

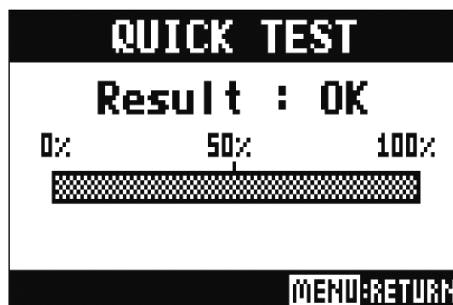


3. Use  to select **YES**, and press .

The card performance test will start. The test should take about 30 seconds.



The result of the test will be shown when it completes.



4. Press  to stop the test.

**NOTE**

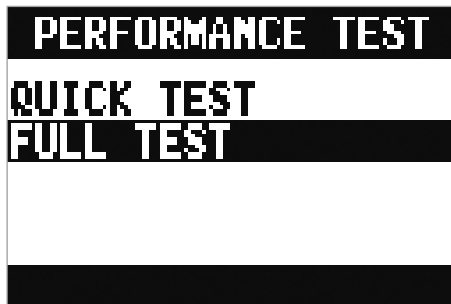
Even if a performance test result is "OK", there is no guarantee that writing errors will not occur. This information is just to provide guidance.

## Conducting a full test

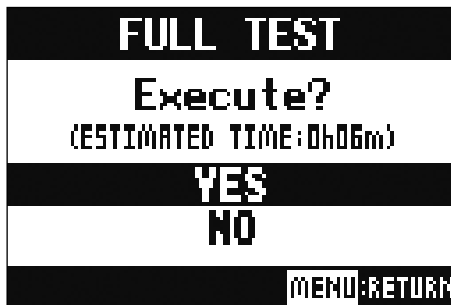
1. Select **MENU** > **SD CARD** > **PERFORMANCE TEST**.

2. Use  to select **FULL TEST**, and press .

The amount of time required will be shown.



3. Use  to select **YES**, and press .



The result of the test will be shown when it completes.

If the access rate MAX reaches 100 %, the card will fail (NG).






4. Press  to stop the test.

---

**HINT**

 can be pressed to pause or resume a test.

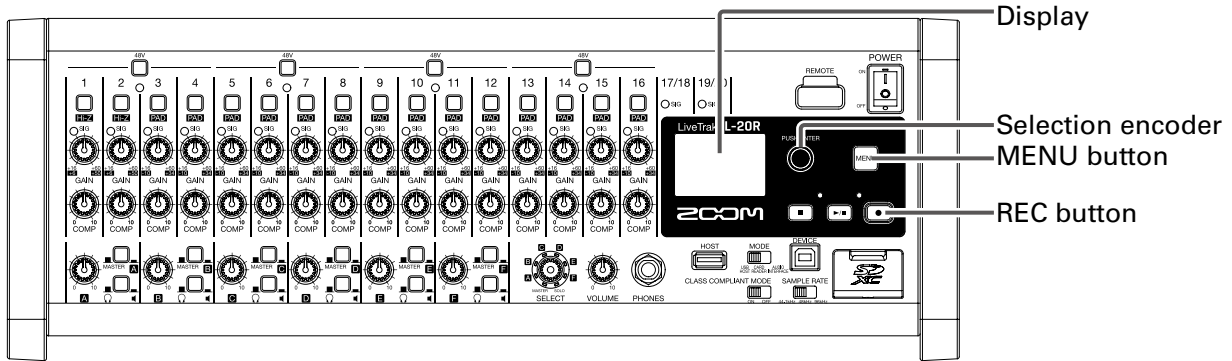
---

**NOTE**

Even if a performance test result is "OK", there is no guarantee that writing errors will not occur. This information is just to provide guidance.


# Making various settings


## Setting the date and time

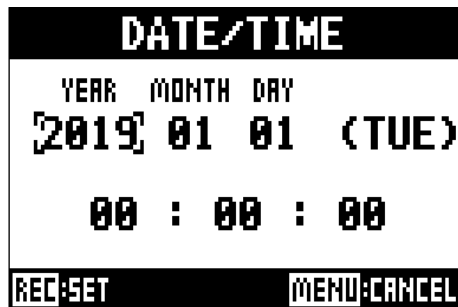


1. Select **MENU** > **SYSTEM** > **DATE/TIME**.

2. Setting the date and time

Move cursor or change value: Turn 

Select item/confirm change: Press 





3. Press .

The first time the power is turned on after purchase, the date/time must be set.



## Setting the footswitch

If a footswitch (ZOOM FS01) is connected to the CONTROL IN jack, it can be used to start/stop recorder playback, punch in/out or mute/unmute the send effect.

1. Select MENU > SYSTEM > CONTROL IN.

2. Use  to select the setting, and press .



Setting	Explanation
PLAY	Press the footswitch to start/stop playback. (Equivalent to  )
PUNCH I/O	Use to control manual punching in/out. (Equivalent to  )
EFX1 MUTE	Mute/unmute send effect 1.
EFX2 MUTE	Mute/unmute send effect 2.
EFX1&2 MUTE	Mute/unmute send effects 1 and 2.

# Changing the sampling rate

The file format used when recording to the recorder depends on this setting.

Before changing the sampling rate, **L-20R** must be set to OFF.

1. Confirm that  is set to OFF.


2. Change the  position.  
44.1kHz 48kHz 96kHz

## HINT

This can be set to 44.1 kHz, 48 kHz or 96 kHz.

## NOTE

- Format an SD card before recording to it at 96 kHz. Without formatting first, skipping could occur when recording.
- When 96 kHz is selected, some unit functions are limited. The limited functions are as follows.
  - SEND EFX 1/2: disabled
  - EQ: disabled
  - OVERDUB: disabled
  - Audio interface: disabled
  - MONITOR OUT: output signal same as MASTER only

3. Set  to ON.



## NOTE

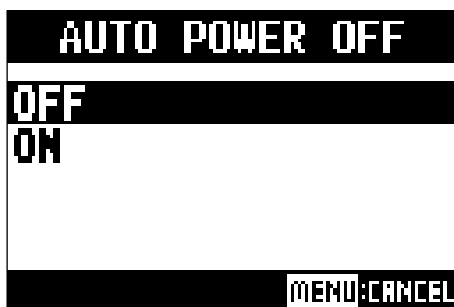
- The sampling rate cannot be changed during operation.
- If a project is loaded that has a different sampling rate than the unit setting, recording and playback will not be possible.

## Disabling the automatic power saving function

The power will automatically turn off if the **L-20R** is unused for 10 hours.  
To keep the power on at all times, disable the automatic power saving function.

1. While pressing , set  to ON.

2. Use  to select **OFF**, and press .





### NOTE

This setting is saved in the unit.

## Adjusting the display contrast

1. Select **MENU > SYSTEM > DISPLAY CONTRAST**.

2. Use  to select the setting, and press .

### HINT

This can be set from 1 to 10.



# Restoring settings to factory defaults

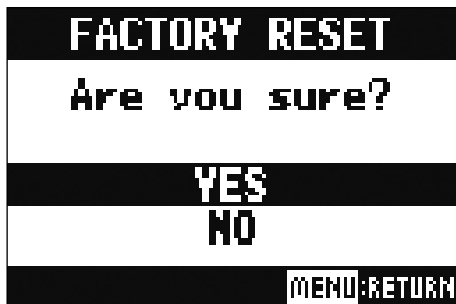
---

The factory default settings can be restored.

1. Select **MENU** > **SYSTEM** > **FACTORY RESET**.

---

2. Use  to select **YES**, and press .



## NOTE

This does not reset mixer settings. (→ ["Resetting mixer settings" on page 48](#))

# Checking the versions

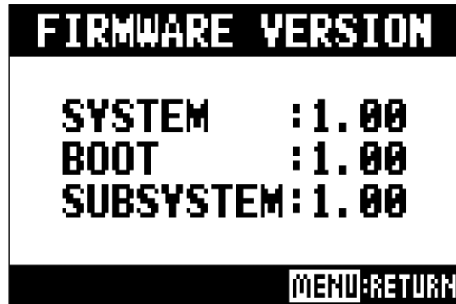
---

## Checking the L-20R firmware versions

The **L-20R** firmware versions can be viewed.

1. Select **MENU** > **SYSTEM** > **FIRMWARE VERSION**.

This shows the firmware versions.



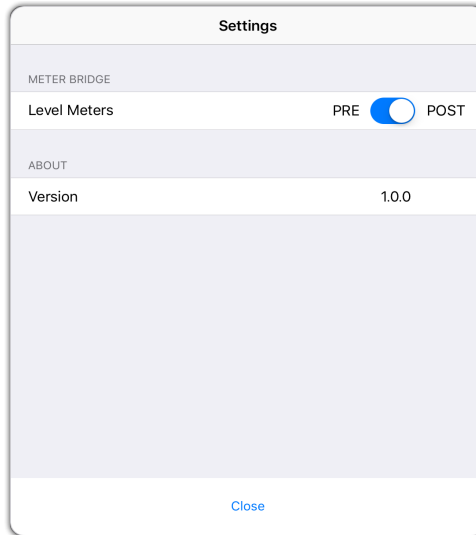
```
FIRMWARE VERSION
SYSTEM      :1.00
BOOT       :1.00
SUBSYSTEM:1.00
MENU:RETURN
```

# Checking the L-20 Control version

The application version can be shown.

1. Tap  SETTINGS.

This shows the application version.





# Updating the firmware


The **L-20R** firmware can be updated to the latest versions.

1. Copy the firmware update file to the root directory on an SD card.

## NOTE

Files for the latest firmware updates can be downloaded from the ZOOM website ([www.zoom.co.jp](http://www.zoom.co.jp)).

2. Insert the SD card into the **L-20R**.


3. While pressing , set  to ON.

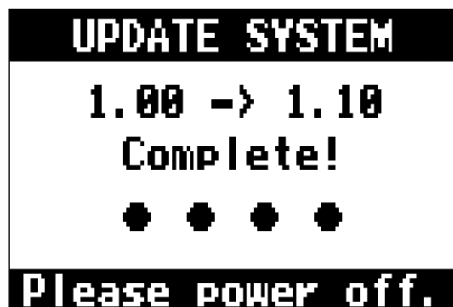
4. Press .



## NOTE

During the firmware update, do not turn the power off or remove the SD card. Doing so could cause the **L-20R** to become unstartable. In the unlikely event that a firmware update should fail while in progress, conduct the procedures from the beginning to update the firmware again.

5. After the firmware update completes, turn the  off.




# Troubleshooting

---

## General




### The unit and L-20 Control are not connecting

---

- Confirm that a ZOOM wireless adapter (e.g. BTA-1) has been installed in the unit.
- Confirm that the ZOOM wireless adapter (e.g. BTA-1) has not become disconnected.
- Confirm that the iPad Bluetooth setting is on.
- Open L-20 Control, tap  in the toolbar, and confirm that **L-20R** is shown.



### There is no sound or output is very quiet

---

- Check the speaker connections and volume settings on the speakers.
- Check instrument and mic connections
- When using a condenser mic, turn  on.
- Confirm that the SIG indicators are lit green.
- Confirm that  is unlit.
- Raise all the channel faders and the master fader, and confirm that the level meters are lit.
- Confirm that the MASTER  is unlit or lit red.


### Recorded audio is too loud, too quiet or silent

---

- Adjust input gains and confirm that SIG indicators are lit green.
- When using a condenser mic, turn  on.
- When recording to an SD card, confirm that  is lit red.

### Recording is not possible

---

- When recording to an SD card, confirm that  is lit red.
- Confirm that the SD card has open space.
- When recording to an SD card, confirm that the project is not protected (to prevent overwriting).

## “Write Error” appears and recording is not possible/stopping recording takes too much time

---

- SD cards can become worn out. Speed can decrease after repeated writing and erasing.
- Formatting the card with the **L-20R** might improve this. (→ ["Formatting SD cards" on page 101](#))
- If formatting an SD card does not improve this, we recommend replacing the card. See the ZOOM website ([www.zoom.co.jp](http://www.zoom.co.jp)) for information about cards that have been confirmed to work with this unit.


### NOTE

This is not a guarantee of specific SD card recording performance for SDHC/SDXC cards that have been confirmed to work.

This list is provided as a guideline to help find suitable cards.


## Playback sound cannot be heard or is quiet

---

- When playing data from an SD card, confirm that  is lit green.
- Raise the faders on the playback channels, and confirm that the level meters are lit.


## The sounds of devices connected to input jacks are distorted

---

- Confirm that the SIG indicators are not lighting red. If one is lighting, lower its input gain.  can also be turned on.
- Confirm that level meters are not lighting to their highest levels. If a level meter is lighting to its highest level, lower its fader.

## A send effect is not working

---

- Confirm that the EFX 1/2 RTN  is unlit.
- Raise the EFX 1/2 RTN fader, and confirm that the EFX 1/2 RTN level meters are lit.
- Check the send amounts of channels that are to have effects used on them.

## There is no sound or output is very quiet from MONITOR OUT A–F


---

- Confirm the mixes of each output.
- Confirm that the output volume of each output is raised (MONITOR OUT A–F knobs).
- Confirm the settings of the MONITOR OUT A–F switches.

# Audio interface

## Cannot select or use the L-20R device

---

- Confirm that the **L-20R** is connected to the computer correctly.
- Confirm that  is set to OFF on the **L-20R**.
- Quit all the software that is using the **L-20R**, and turn the **L-20R** off and on again.
- Reinstall the driver.
- Connect the **L-20R** directly to a USB port on the computer. Do not connect it through a USB hub.



## Sound skips during playback or recording

---

- If the audio buffer size of the software being used can be adjusted, increase the buffer size.
- Connect the **L-20R** directly to a USB port on the computer. Do not connect it through a USB hub.
- Turn the automatic sleep function and other computer power saving settings off.

## Cannot play or record

---

- Confirm that the **L-20R** is connected to the computer correctly.
- Confirm that the Sound setting of the computer being used is set to "ZOOM L-20".
- Confirm that a "ZOOM L-20" is selected for input and output in the software being used.
- Confirm that  for channels 17/18 and  for channels 19/20 are lit red, and that the level meters are lit.
- Quit all the software that is using the **L-20R**, and disconnect and reconnect the USB cable connected to the **L-20R**.

# Specifications

Number of input and output channels	Inputs	Mono (MIC/LINE)	16	
		Stereo (LINE)	2	
	Outputs	MASTER OUT	1	
		MONITOR OUT	6	
Inputs	Mono (MIC/LINE)	Type	XLR/TRS combo jacks (XLR: 2 HOT, TRS: TIP HOT)	
		Input gain	PAD OFF: +16 – +60 dB PAD ON: –10 – +34 dB Hi-Z ON: +6 – +50 dB	
		Input impedance	XLR: 3 k $\Omega$ TRS: 10 k $\Omega$ /1 M $\Omega$ (when Hi-Z ON)	
		Maximum input level	PAD OFF: 0 dBu (at 0 dBFS) PAD ON: +26 dBu (at 0 dBFS)	
		Phantom power	+48 V	
		Stereo (LINE)	Type	TS phone/RCA pin jacks (unbalanced)
	Maximum input level		+14 dBu	
	Outputs	MASTER OUT	Type	XLR jacks (balanced)
			Maximum output level	+14.5 dBu
			Output impedance	100 $\Omega$
		MONITOR OUT A–F (with balanced output) connected to monitor speakers	Type	TRS phone jacks (balanced)
			Maximum output level	+14.5 dBu
MONITOR OUT A–F (with unbalanced output) connected to headphones		Type	Standard stereo phone jacks	
		Maximum output level	42 mW + 42 mW (60 $\Omega$ load)	
		Output impedance	100 $\Omega$	
PHONES		Type	Standard stereo phone jack	
		Maximum output level	42 mW + 42 mW (60 $\Omega$ load)	
	Output impedance	100 $\Omega$		
Buses	MASTER	1		
	MONITOR	6		
	SEND EFX	2		
Channel strip	COMP			
	LOW CUT	40 – 600 Hz, 12 dB/OCT		
	EQ	HIGH: 10 kHz, $\pm$ 15 dB, shelving MID: 100 Hz – 8 kHz, $\pm$ 15 dB, peaking LOW: 100 Hz, $\pm$ 15 dB, shelving		
	PHASE			
Send effects		20 types		
Recorder	Maximum simultaneous recording tracks	22 at 44.1/48/96 kHz		
	Maximum simultaneous playback tracks	20		
	Recording format	WAV 44.1/48/96 kHz, 16/24-bit, mono/stereo WAV format		
	Recording media	4–32GB cards compatible with the SDHC specification (class 10 or higher) 64–512GB cards compatible with the SDXC specification (class 10 or higher)		
Audio interface	44.1/48 kHz	Recording: 22 channels Playback: 4 channels		
	Bit depth	24-bit		
	Interface	USB 2.0		
Card reader	Mass storage class USB 2.0 High Speed			
USB HOST	USB 2.0 High Speed			
Sampling frequency	44.1/48/96 kHz			
Frequency characteristics	44.1 kHz: –1.0 dB, 20 Hz – 20 kHz 96 kHz: –3.0 dB, 20 Hz – 40 kHz			
Equivalent input noise	Actual measurements: –128dB EIN (IHF-A) at +60dB/150 $\Omega$ input			
Display	LCD with backlight (128x64 resolution)			
Power	AD-19 AC adapter (DC12V/2A)			
Power consumption	24 W maximum			
External dimensions	438 mm (W) x 158.2 mm (D) x 151.7 mm (H)			
Weight (main unit only)	2.49 kg			

# Send effect specifications

## EFX 1

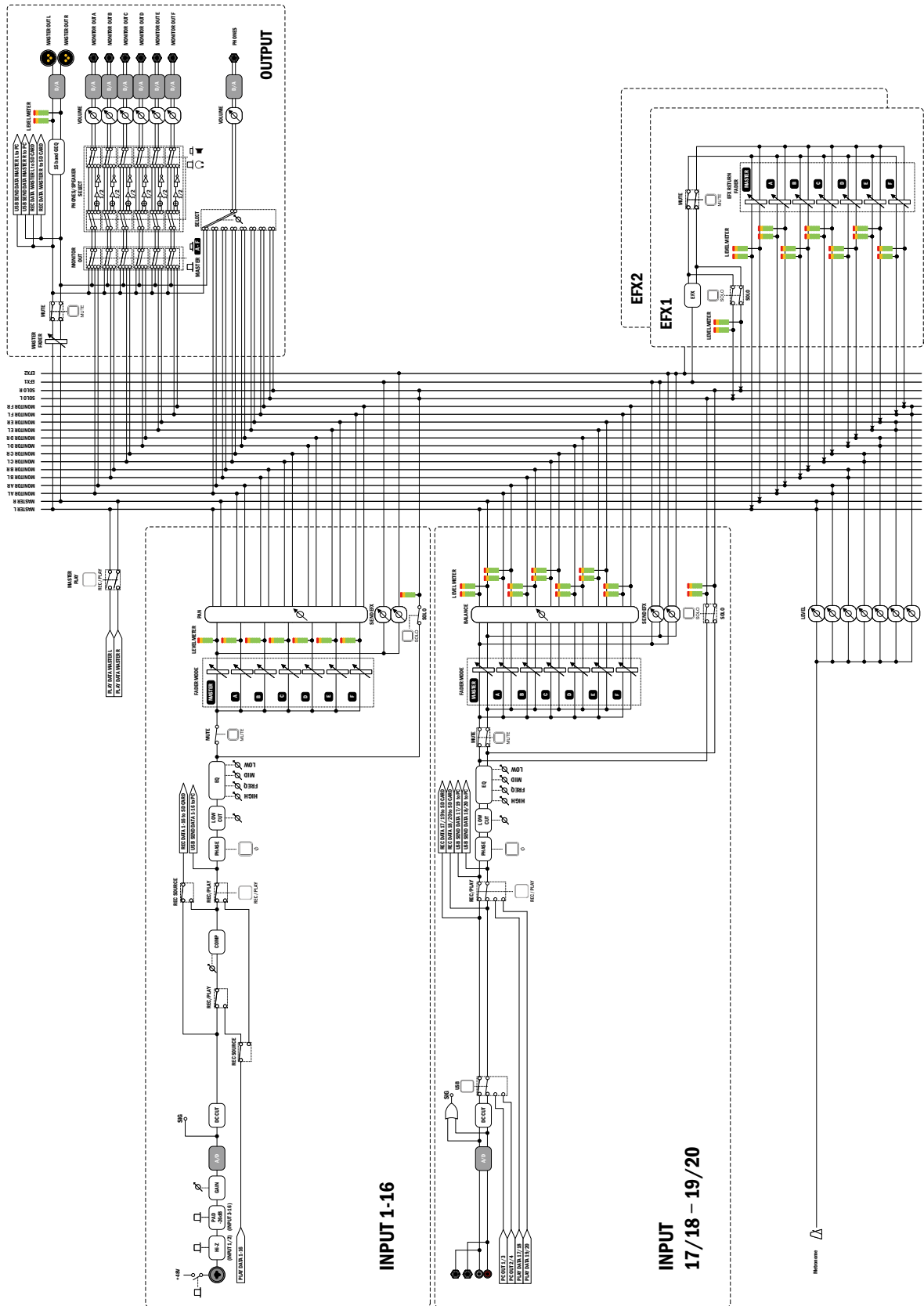
No.	Type	Explanation	Parameter knob 1	Parameter knob 2	Tempo synchronization
1	Hall 1	Hall reverb with a bright tone	TONE	DECAY	
2	Hall 2	Hall reverb with a long time for early reflections	TONE	DECAY	
3	Room 1	Dense room reverb	TONE	DECAY	
4	Plate	Plate reverb simulation	TONE	DECAY	
5	Church	Reverb that simulates the sound of a church	TONE	DECAY	
6	DrumAmb	Reverb that adds a natural ambience (air sound) to drums	TONE	DECAY	
7	GateRev	Special reverb suited to percussive performances	TONE	DECAY	
8	Vocal 1	Effect that combines delay with hall reverb useful in many situations	TIME	DECAY	
9	Vocal 2	Effect that combines delay with mono output reverb	TIME	DECAY	
10	Vocal 3	Effect that combines delay suitable for ballads with plate reverb	TIME	DECAY	

## EFX 2

No.	Type	Explanation	Parameter knob 1	Parameter knob 2	Tempo synchronization
1	Hall 3	Hall reverb that simulates an arena-sized venue	TONE	DECAY	
2	Room 2	Room reverb with coarse reflections	TONE	DECAY	
3	Spring	Spring reverb simulation	TONE	DECAY	
4	Delay	Digital delay with a clear tone	TIME	FEEDBACK	●
5	Analog	Warm analog delay simulation	TIME	FEEDBACK	●
6	P-P Dly	Effect that outputs delay sound alternately left and right	TIME	FEEDBACK	●
7	Vocal 4	Effect suitable for rock that combines delay with room reverb	TIME	DECAY	
8	Chorus 1	Stereo chorus with a clear wide quality	TONE	RATE	
9	Chorus 2	Mono chorus with low variation useful in many situations	TONE	RATE	
10	Cho+Dly	Effect that combines chorus and delay	TIME	RATE	

Note: Delay effects that are tempo synchronized can be synchronized to the project tempo. Set the tempo to synchronize them. Quarter notes will be synchronized to the tempo.

# Mixer block diagram





4-4-3 Kanda-surugadai, Chiyoda-ku, Tokyo 101-0062 Japan  
[www.zoom.co.jp](http://www.zoom.co.jp)