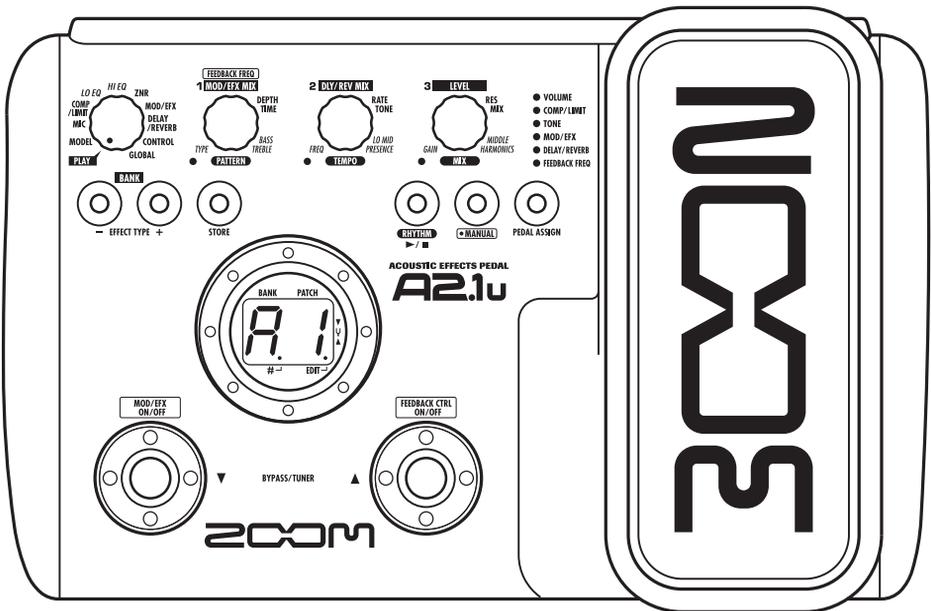


ACOUSTIC EFFECTS PEDAL

A2.1u

Operation Manual



ZOOM

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SAFETY PRECAUTIONS Usage Precautions

SAFETY PRECAUTIONS

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



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



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

Please observe the following safety tips and precautions to ensure hazard-free use of the A2.1u.



Power requirements

Since power consumption of this unit is fairly high, we recommend the use of an AC adapter whenever possible. When powering the unit from batteries, use only alkaline types.

[AC adapter operation]

- Be sure to use only an AC adapter which supplies 9 V DC, 300 mA and is equipped with a "center minus" plug (Zoom AD-0006). The use of an adapter other than the specified type may damage the unit and pose a safety hazard.
- Connect the AC adapter only to an AC outlet that supplies the rated voltage required by the adapter.
- When disconnecting the AC adapter from the AC outlet, always grasp the adapter itself and do not pull at the cable.
- During lightning or when not using the unit for an extended period, disconnect the AC adapter from the AC outlet.

[Battery operation]

- Use four conventional IEC R6 (size AA) batteries (alkaline).
- The A2.1u cannot be used for recharging.
- Pay close attention to the labelling of the battery to make sure you choose the correct type.
- When not using the unit for an extended period, remove the batteries from the unit.
- If battery leakage has occurred, wipe the battery compartment and the battery terminals carefully to remove all remnants of battery fluid.
- While using the unit, the battery compartment cover should be closed.



Environment

To prevent the risk of fire, electric shock or malfunction, avoid using your A2.1u in environments where it will be exposed to:

- Extreme temperatures
- Heat sources such as radiators or stoves
- High humidity or moisture
- Excessive dust or sand
- Excessive vibration or shock



Handling

- Never place objects filled with liquids, such as vases, on the A2.1u since this can cause electric shock.
- Do not place naked flame sources, such as lighted candles, on the A2.1u since this can cause fire.
- The A2.1u is a precision instrument. Do not exert undue pressure on the keys and other controls. Also take care not to drop the unit, and do not subject it to shock or excessive pressure.
- Take care that no foreign objects (coins or pins etc.) or liquids can enter the unit.



Connecting cables and input and output jacks

You should always turn off the power to the A2.1u and all other equipment before connecting or disconnecting any cables. Also make sure to disconnect all connection cables and the power cord before moving the A2.1u.



Alterations

Never open the case of the A2.1u or attempt to modify the product in any way since this can result in damage to the unit.



Volume

Do not use the A2.1u at a loud volume for a long time since this can cause hearing impairment.

Usage Precautions

Electrical interference

For safety considerations, the A2.1u has been designed to provide maximum protection against the emission of electromagnetic radiation from inside the device, and protection from external interference. However, equipment that is very susceptible to interference or that emits powerful electromagnetic waves should not be placed near the A2.1u, as the possibility of interference cannot be ruled out entirely.

With any type of digital control device, the A2.1u included, electromagnetic interference can cause malfunctioning and can corrupt or destroy data. Care should be taken to minimize the risk of damage.

Cleaning

Use a soft, dry cloth to clean the A2.1u. If necessary, slightly moisten the cloth. Do not use abrasive cleanser, wax, or solvents (such as paint thinner or cleaning alcohol), since these may dull the finish or damage the surface.

Please keep this manual in a convenient place for future reference.

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- * All other product names, trademarks, and company names mentioned in this manual are the property of their respective owners.

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Features

Thank you for selecting the **ZOOM A2.1u** (simply called the "**A2.1u**" in this manual). The A2.1u is a sophisticated effect processor for acoustic guitar with the following features.

● Latest technology for top performance

Excellent sound quality is assured by signal processing circuitry featuring 96 kHz/24 bit sampling and internal 32-bit processing. Frequency response remains flat to 40 kHz, and signal-to-noise ratio is an amazing 100 dB or better. A built-in USB port serves for direct connection to a computer. You can use the A2.1u as audio interface for the computer, allowing direct recording with the supplied DAW software.

● Full array of effects optimized for acoustic guitar

Out of a versatile palette of 47 effects, up to eight (including ZNR) can be used simultaneously. The A2.1u offers effects which simulate the sound of famous acoustic guitars, a mic simulator that creates the ambience of microphone recording, and other specialized acoustic guitar effects.

● Select optimum characteristics for pickups and amps

The A2.1u allows you to select the best frequency response for your pickup and amp. This is great for eliminating sonic problems that can occur when playing an acoustic guitar through a guitar amplifier.

● Automatic suppression of acoustic feedback

The feedback control feature pinpoints the frequency where acoustic feedback (howling) occurs and provides an efficient cure. The function can be activated by foot switch during a performance.

● XLR connector for direct output

In addition to the regular output jack, the A2.1u features an XLR connector for sending a balanced line-level signal to equipment such as a PA mixer or recording console. The signal can be derived from a point before or after effect processing. A ground lift switch is also provided, which is useful to prevent hum in the direct output caused by ground loops.

● Advanced interface

Rotary selectors and three parameter knobs make operation extremely quick and intuitive. The muting interval when switching patches has been reduced to less than 8 milliseconds, allowing virtually seamless patch changes.

● Rhythm function and auto-chromatic tuner

Rhythm patterns created from highly realistic PCM sources are built in. The auto-chromatic tuner designed for guitar makes tuning easy and quick.

● Support for foot switch and expression pedal operation

Adjust effect parameters or volume in real time with the expression pedal that is built right into the unit. In addition, the CONTROL IN jack on the rear panel lets you connect an optional external pedal (FP01/FP02) or a foot switch (FS01).

● Dual power supply principle allows use anywhere

The A2.1u can be powered from four IEC R6 (size AA) batteries or an AC adapter. Continuous operating time is approximately 6 hours with alkaline batteries.

Please take the time to read this manual carefully, in order to get the most out of your A2.1u and to ensure optimum performance and reliability.

Terms Used in This Manual

This section explains some important terms that are used throughout the A2.1u documentation.



■ Effect module

As shown in the illustration above, the A2.1u can be thought of as a combination of several single effects. Each of these is referred to as an effect module. Among others, there is a module for ZNR (ZOOM Noise Reduction), as well as a modeling (sound simulation) module (MODEL), compressor/limiter module (COMP/LIMIT), modulation/special effects module (MOD/EFX). Parameters such as effect intensity can be adjusted for each module individually, and modules can be switched on and off.

■ Effect type

Most effect modules comprise several different effects which are referred to as effect types. For example, the MOD/EFX module comprises chorus, flanger, delay, phaser, and other effect types. Only one of these can be selected at any time.

■ Effect parameter

All effect modules have various parameters that can be adjusted. These are called effect parameters.

In the A2.1u, effect parameters are adjusted with the parameter knobs 1 – 3. Similar to the knobs on a compact effect, these change aspects such as tonal character and effect intensity. Which parameter is assigned to each knob depends on the currently selected effect module and effect type.

■ Patch

In the A2.1u, effect module combinations are stored and called up in units referred to as patches. A patch

comprises information about the on/off status of each effect module, about the effect type used in each module, and about effect parameter settings. The internal memory of the A2.1u holds 80 patches (40 of these can be rewritten by the user).

● Bank and area

A group of ten patches is called a bank. The memory of the A2.1u comprises a total of eight banks, labelled A to d and 0 to 3. Banks A – d form the user area which allows read/write patches. Banks 0 to 3 are the preset area of read-only.

The patches within each bank are numbered 0 through 9. To specify a patch, you use the format "A1" (patch number 1 from bank A), "06" (patch number 6 from bank 0), etc.

■ Modes

The A2.1u has the following operation modes.

● Play mode

In this mode, patches can be selected and played.

● Manual mode

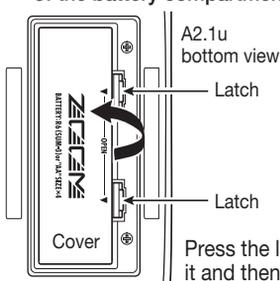
In this mode, you play your instrument while using the foot switches to turn the MOD/EFX module or the feedback control function on and off. The mode also is used for automatic detection of acoustic feedback frequency.

● Edit mode

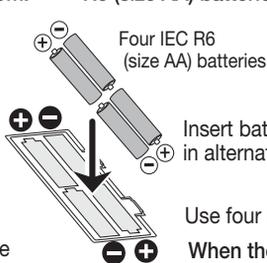
In this mode, the effect parameters of a patch can be edited (changed).

Operating the A2.1u on batteries

1. Turn the A2.1u over and open the cover of the battery compartment on the bottom.



2. Insert four fresh IEC R6 (size AA) batteries.



3. Close the cover of the battery compartment.

Push the cover in until the latch audibly snaps into place.

Use four IEC R6 (size AA) batteries.

When the batteries are getting low, the indication "bt" appears on the display.

Controls and Functions / Connections

Module selector

Switches between play/manual mode and edit mode. In edit mode, the knob selects the module for operation.

BANK [-]/[+] keys

In play mode and manual mode, the keys serve for directly switching to the next lower or higher bank. In edit mode, the keys switch the effect type for the currently selected module.

[STORE] key

Serves for storing edited patches in memory.

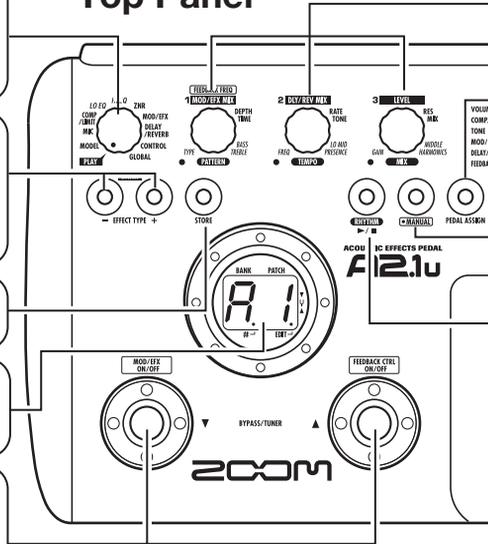
Display

Shows patch numbers, setting values, and other information about operating the A2.1u.

[▼]/[▲] foot switches

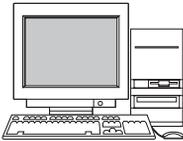
These switches serve for selecting patches, turning effect modules on and off, controlling the tuner, and other functions.

Top Panel



Rear Panel

Computer



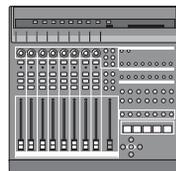
[USB] connector

Allows you to connect the A2.1u to a computer, for use as an audio interface.

[BALANCED OUT] connector

This XLR connector can be used to send a balanced line-level signal to PA equipment, recording devices, or similar.

Mixer

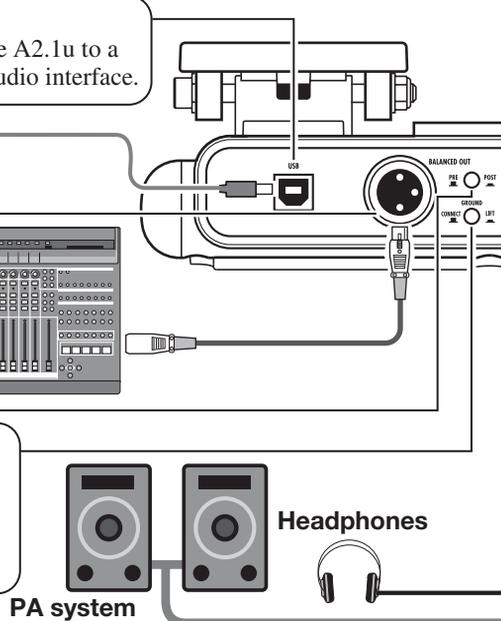


[PRE/POST] switch

Selects the point where the signal supplied at the [BALANCED OUT] connector is branched off.

[GROUND] switch

Determines whether the [BALANCED OUT] connector is grounded or not.



Parameter knobs 1 - 3

These knobs allow changing the value of effect parameters or the level of the overall patch. During rhythm playback, the knobs let you select a pattern, set the tempo, and adjust the rhythm volume.

[PEDAL ASSIGN] key

This key lets you select the function of the built-in expression pedal. The currently selected function is shown by a lit LED.

[MANUAL] key

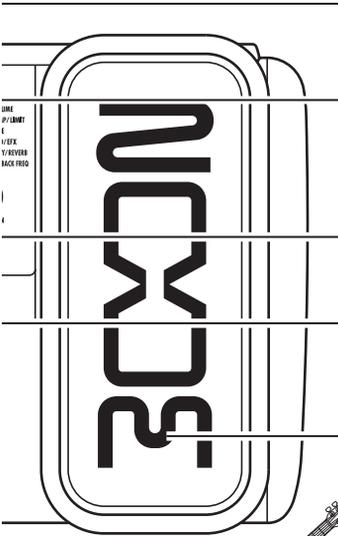
Switches between play mode and manual mode. The key is lit when the A2.1u is in manual mode.

RHYTHM [▶/■] key

Serves to start and stop rhythm playback.

Expression pedal

Lets you adjust the volume or various effect parameters in real time during play.

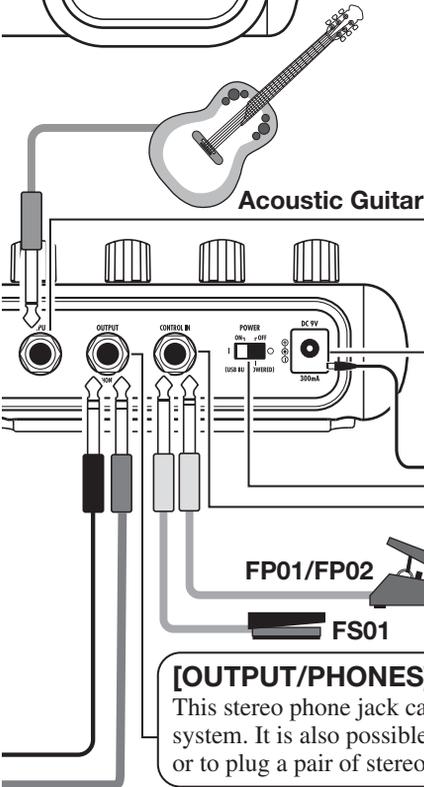


[INPUT] jack

Serves for connecting an acoustic guitar with a pickup, an electroacoustic guitar, or an electric guitar.

NOTE

When using a guitar with low output level, the input gain of the A2.1u can be increased by selecting the HI-GAIN mode (→ p. 28).



[DC 9V] jack

An AC adapter (ZOOM AD-0006) with a rated output of 9 volts DC, 300 mA (center minus plug) can be plugged into this jack.

[POWER] switch

Turns the unit on and off.

[CONTROL IN] jack

Serves for connection of an optional foot switch (FS01) or expression pedal (FP01/FP02).

[OUTPUT/PHONES] jack

This stereo phone jack can be used for connection to a guitar amplifier or hi-fi system. It is also possible to use a Y cable for sending the output to two amplifiers, or to plug a pair of stereo headphones into this jack.

Selecting a Patch

While playing your instrument, try out various patches to see what the A2.1u can do.

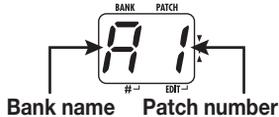
1 Turn power on

- Use a shielded cable with mono phone plug to connect your guitar to the [INPUT] jack of the A2.1u.
- To power the A2.1u from the AC adapter, plug the adapter into a wall outlet and plug the cable from the adapter into the [DC 9V] jack on the A2.1u.
- Set the [POWER] switch on the rear panel of the A2.1u to ON.
- Turn the playback system on and adjust the volume to a suitable position.

2 Set the A2.1u to play mode

- If the Module selector is set to a position other than "PLAY", set it to "PLAY".

The bank and patch that were selected when the power was last turned off will appear on the display.



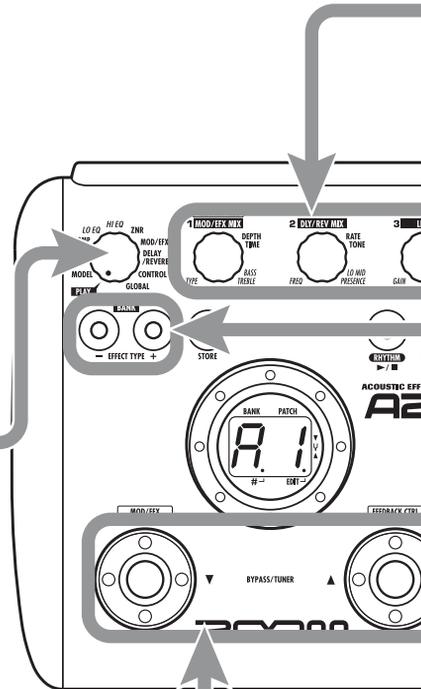
HINT Immediately after turning the A2.1u on, the unit will be in play mode, even if the Module selector is set to a position other than "PLAY".

3 Select a patch

- To switch the patch, press one of the [▼]/[▲] foot switches.

Pressing the [▼] foot switch calls up the next lower patch, and pressing the [▲] foot switch calls up the next higher patch.

Repeatedly pressing one foot switch cycles through patches in the order A0 – A9 ... d0 – d9 → 00 – 09 ... 30 – 39 → A0, or the reverse order.



5 Adjust tone and volume

- To adjust the effect sound and volume levels in play mode, the Parameter knobs 1 – 3 can be used. Each knob controls a specific parameter.

Parameter knob 1

Mainly adjusts the MIX parameter of the MOD/EFX module (the level of the effect sound mixed to the original sound).

Parameter knob 3

Adjusts the PATCH LEVEL parameter (output level of the entire patch).



Parameter knob 2

Adjusts the MIX parameter of the DELAY/REVERB module (the level of the effect sound mixed to the original sound).

When you turn a Parameter knob, the corresponding LED lights up and the display briefly shows the current value of the respective parameter.

NOTE

- If the MOD/EFX module or DELAY/REVERB module is set to off for the currently selected patch (display shows "oF"), the respective parameter knobs (1 or 2) have no effect.
- Changes made here are temporary and will be lost when you select another patch. To retain the changes, store the patch (→ p. 16).
- Besides the individual patch levels, the A2.1u also allows adjusting the master level. This setting affects all patches (→ p. 37).

4 Directly selecting a bank

- To select the banks A – d, 0 – 3 directly, use the BANK [-]/[+] keys.

Pressing the BANK [-] key calls up the next lower bank, and pressing the BANK [+] key calls up the next higher bank.

Using the Tuner

The A2.1u incorporates an auto-chromatic tuner. To use the tuner function, the built-in effects must be bypassed (temporarily turned off) or muted (original sound and effect sound turned off).

1 Switch to bypass or mute

• Setting the A2.1u to the bypass condition

In play mode (or manual mode), press both [▼]/[▲] foot switches together briefly and release.



• Setting the A2.1u to the mute condition

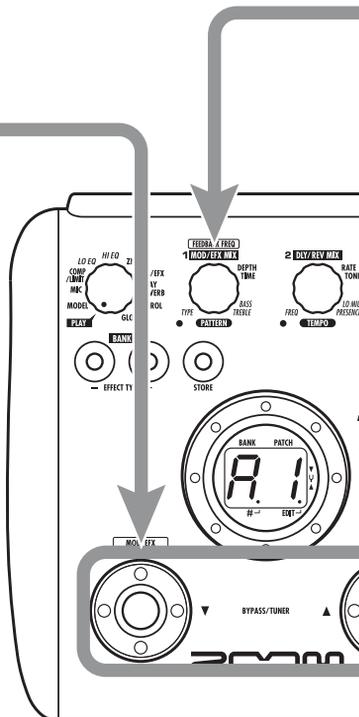
In play mode (or manual mode), press both [▼]/[▲] foot switches together and hold for at least 1 second.



Patch change at bypass/mute

When you press both [▼]/[▲] foot switches together while playing your instrument, the bypass/mute condition is activated. However, the sound may change momentarily just before the condition is activated. This is because the A2.1u switches to the next higher or lower patch when one of the foot switches is pressed slightly earlier. (When you cancel the bypass/mute condition, the original patch number will be active again.)

This kind of behavior is not a defect. It is due to the very high speed at which the A2.1u responds to patch switching. To prevent the sound change caused by the above condition, do not produce sound with your instrument until the bypass/mute condition is fully established.



2 Play the string to tune

• Play the open string to tune, and adjust the pitch.



The left side of the display shows the note which is closest to the current pitch.

A = A	D = d	G = G
A# = A.	D# = d.	G# = G.
B = b	E = E	
C = C	F = F	
C# = C.	F# = F.	

3 Adjusting the reference pitch of the tuner

If required, you can fine-adjust the reference pitch of the A2.1u tuner. The default setting after power-on is center A = 440 Hz.

- **Turn parameter knob 1.**

The current reference pitch is shown.

The adjustment range is 35 – 45 (center A = 435 to 445 Hz).



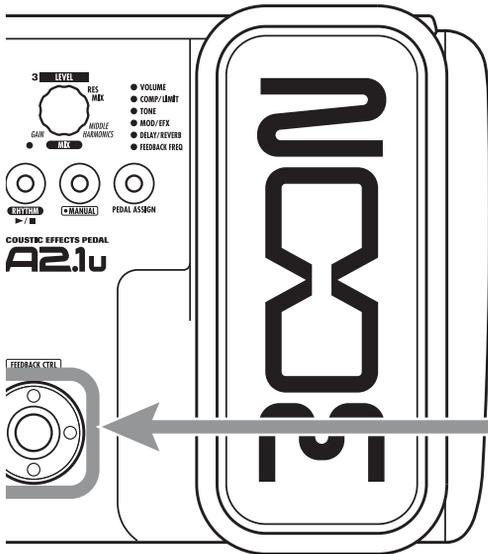
- **While the reference pitch value is shown, turn parameter knob 1 to adjust it.**



When you release the parameter knob, the display indication will return to the previous condition after a while.

NOTE

When you turn the A2.1u off and on again, the reference pitch setting will be reset to 40 (center A = 440 Hz).



4 Return to play mode

- Press one of the [▼]/[▲] foot switches.

The right side of the display shows a symbol that indicates by how much the tuning is off.



Tune other strings in the same way.

Pitch is high Pitch is correct Pitch is low



Indication turns faster the more the pitch is off.

Using the Rhythm Function

The A2.1u has a built-in rhythm function that plays realistic drum sounds in various patterns. The rhythm function is available in play mode or in the bypass/mute condition.

1 Set the A2.1u to play mode (or manual mode)

- If the Module selector is set to a position other than "PLAY", set it to "PLAY".

HINT The rhythm function can be used both in play mode and manual mode.

2 Start the rhythm function

- To start the rhythm function, press the RHYTHM [▶/■] key.

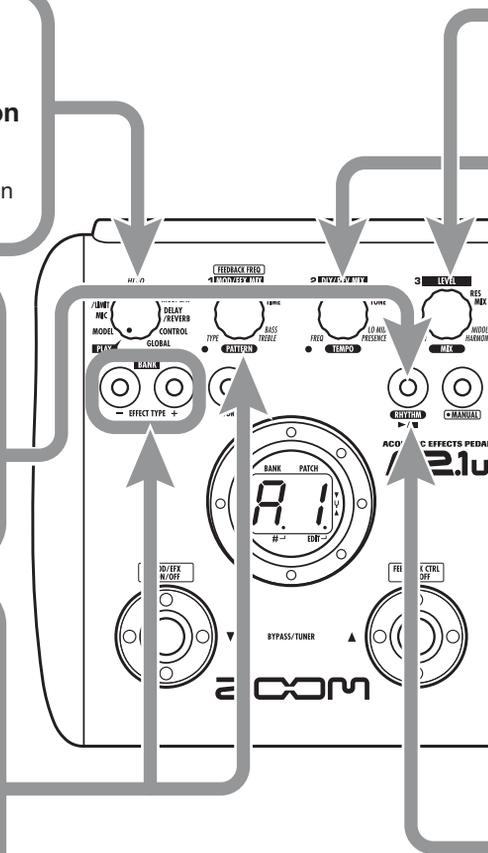
NOTE While the rhythm is playing, the DELAY/REVERB module is set to off.

3 Select a rhythm pattern

The A2.1u has 40 built-in rhythm patterns. For more information on the pattern contents, see the back cover of this manual.

- To continuously switch rhythm patterns, turn parameter knob 1.
- To select the next higher or next lower rhythm pattern, press one of the BANK [-]/[+] keys.

When the above steps are carried out, the current rhythm pattern number (01 – 40) is briefly shown on the display.



4 Adjust the rhythm volume

- To adjust the rhythm volume, turn parameter knob 3.



When you turn the parameter knob, the current setting (0 – 30) is shown on the display.

5 Adjust the tempo

The rhythm pattern tempo can be adjusted in the range of 40 – 250 BPM (beats per minute).

- To continuously change the rhythm tempo, turn parameter knob 2.
- By connecting a foot switch (FS01) to the [CONTROL IN] jack and assigning the "tap tempo" function to it, you can specify the tempo by tapping the foot switch in the desired interval (→ p 25).

When you tap the foot switch the first time, the current tempo setting is shown. The setting is then adjusted automatically at the second and subsequent taps.

While the above steps are carried out, the current tempo value (40 - 250) is shown on the display. For values in the range from 100 to 199, a dot is shown in the center. For values of 200 and above, dots are shown in the center and at right.



Dot is shown
Tempo = 120 BPM

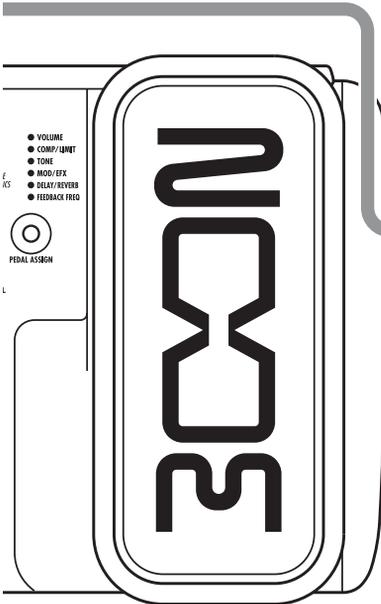


Dots are shown
Tempo = 240 BPM

6 Stop the rhythm

- To stop the rhythm, press the RHYTHM [▶/■] key.

The A2.1u returns to the previous condition.



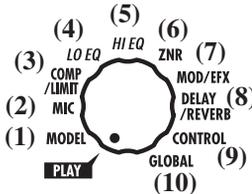
Editing a Patch

The patches of the A2.1u can be freely edited by changing the effect parameter settings. Try editing the currently selected patch to create your own sound.

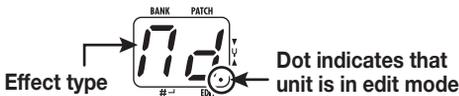
1 Select the effect module

- Turn the Module selector to select the effect module to edit. The following settings are available.

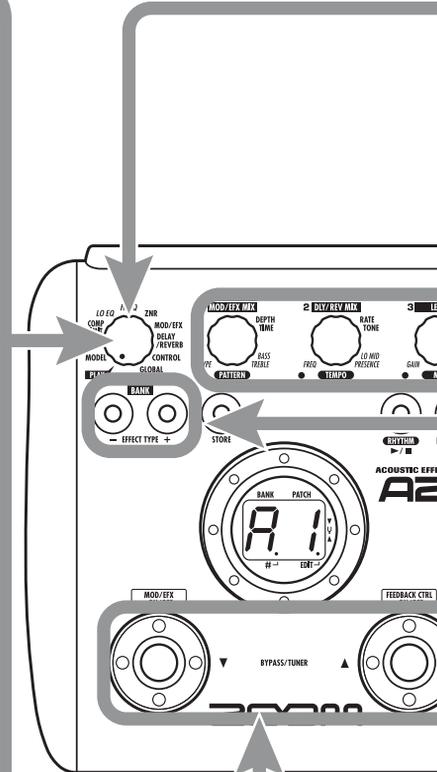
- (1) MODEL module
- (2) MIC module
- (3) COMP/LIMIT module
- (4) LO EQ module
- (5) HI EQ module
- (6) ZNR module
- (7) MOD/EFX module
- (8) DELAY/REVERB module
- (9) CONTROL module
- (10) GLOBAL module



When you set the Module selector to a position other than "PLAY", the A2.1u switches to edit mode, and the effect type currently selected for the respective module is shown. In edit mode, a dot appears in the bottom right of the display.



HINT You can switch to edit mode from play mode or manual mode.



2 To switch an effect module on and off

- To switch the selected effect module between on and off, press one of the [▼]/[▲] foot switches.

When the module is off, the indication "oF" appears on the display.

HINT

CONTROL and GLOBAL are special modules that serve for making settings that affect the entire unit, such as selection of pedal operation. These modules cannot be switched on/off.



5 Terminate the edit mode

- To terminate the edit mode and return to the play mode, set the Module selector to the "PLAY" position.

A2.1u returns to play mode (or manual mode).

NOTE

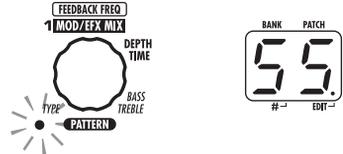
When you select another patch after editing, the changes you have made in edit mode will be lost unless you store the patch first. To retain the changes, store the patch as described on page 16.

4 Change the parameter value

- To change the setting value of effect parameters, use the parameter knobs 1 – 3.

Which parameter is assigned to a knob depends on which effect module/effect type is selected (→ p. 30 – 38).

When you turn a parameter knob, the corresponding LED lights up and the display briefly shows the current value of the respective parameter.



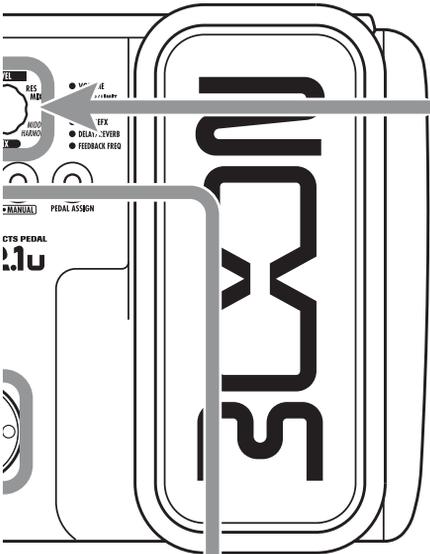
NOTE When a module that is set to off is selected, the display shows "oF".

3 Select the effect type

- To switch the effect type of the selected module, use the BANK [-]/[+] keys.

NOTE

- When you press the BANK [-]/[+] keys while a module is set to off, the module is switched on.
- If you press the BANK [-]/[+] keys for a module that has only one effect type, nothing happens.



Storing/Copying Patches

An edited patch can be stored in a bank of the user area (A – d). It is also possible to store an existing patch in another location to create a copy.

1 In play mode, manual mode, or edit mode, press the [STORE] key.

- The bank and patch number are shown on the display as a flashing indication.



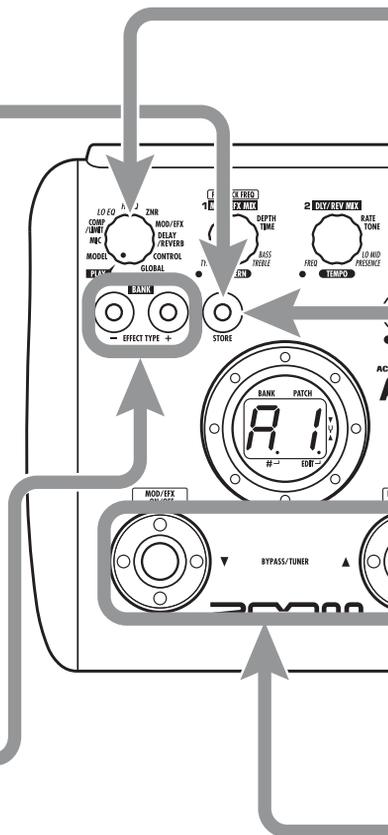
NOTE Patches of banks in the preset area (0 – 3) are read-only. No patches can be stored or copied into these locations. If you press the [STORE] key while a patch from the preset area is selected, the patch "A0" (bank A, patch number 0) will be selected automatically as default store/copy target.

2 Select the store/copy target bank

- To select the store/copy target bank, use the BANK [-]/[+] keys.



NOTE Only a bank of the user area (A – d) can be selected as store/copy target bank.



5 To cancel the store process

- To cancel the store process, operate the Module selector before pressing the [STORE] key again (step 4).

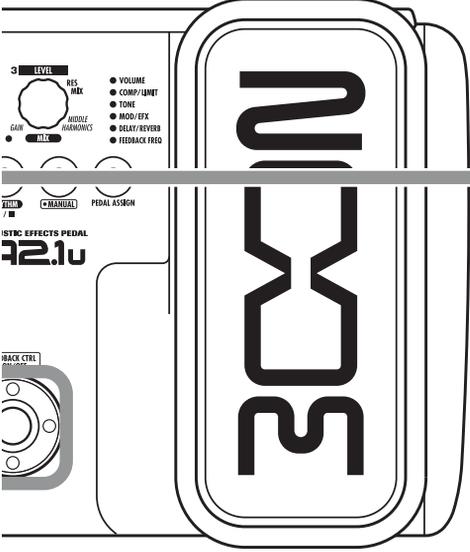
4 Press the [STORE] key once more

- When the store/copy process is completed, the unit returns to the previous mode, with the target patch being selected.



3 Specify the store/copy target patch number

- To specify the store/copy target patch number, use the [▼]/[▲] foot switches.



Using the Built-in Expression Pedal

The expression pedal on the top panel of the A2.1u lets you adjust effect parameters or the volume in real time during play, or alter the feedback control frequency. Which element is controlled by the pedal can be selected for each patch individually.

1 Select the patch for which the expression pedal is to be used

2 Select the element to be controlled by the expression pedal

- Press the [PEDAL ASSIGN] key to select the element to be controlled by the expression pedal. The row of LEDs above the key shows which element is currently selected.
- VOLUME
 - COMP/LIMIT
 - TONE
 - MOD/EFX
 - DELAY/REVERB
 - FEEDBACK FREQ

The respective selection is indicated as follows.

- All LEDs are out

The expression pedal has no effect.

- VOLUME

The expression pedal controls the volume for the entire patch.

- TONE

The expression pedal controls the TONE parameter of the MODEL module.

- COMP/LIMIT, MOD/EFX, DELAY/REVERB

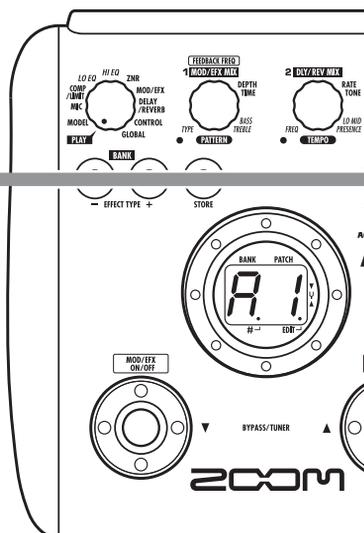
The expression pedal controls a parameter from the respective module.

- FEEDBACK FREQ

The expression pedal controls the feedback control frequency.

HINT • Which parameter will be changed by the expression pedal depends on the effect type selected for the respective module. For details, see pages 30 – 38.

- You can select the pattern in which the parameter changes when COMP/LIMIT, TONE, MOD/EFX, or DELAY/REVERB is selected and the expression pedal is operated. For details, see page 37.
- If the parameter or module assigned to the expression pedal is currently off, the LED flashes. In this case, operating the pedal has no effect.



3 Operate the pedal

- While playing your instrument, move the expression pedal up or down.

Move up or down



4 To switch a module on or off

- When you push the expression pedal fully down, the parameter or module selected with the [PEDAL ASSIGN] key will be switched between on and off.



Push fully down

HINT

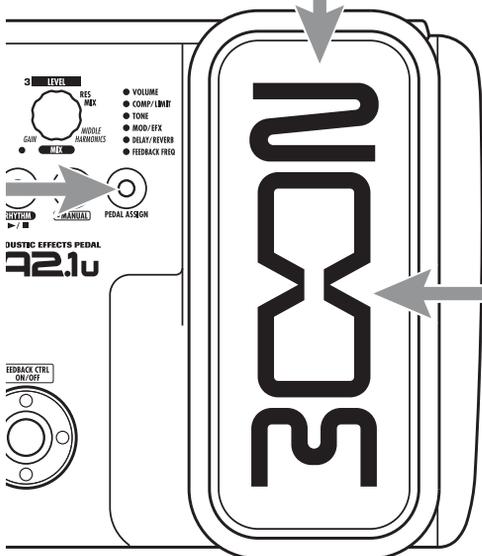
- When the expression pedal is assigned to the TONE parameter, the MODEL module can be switched on and off.
- When the expression pedal is assigned to FEEDBACK FREQ, the feedback control function will be switched on and off.

5 Store the patch as necessary

- The expression pedal setting can be stored for each patch individually.

NOTE

If you select another patch in play mode without storing the patch, any changes that you have made to the settings will be lost.



Using the Feedback Control

The feedback control function of the A2.1u allows automatic or manual detection of the frequency range where acoustic feedback occurs. This frequency range is then attenuated to eliminate feedback. The feedback control function can be set in edit mode and can also be operated by foot switch or the built-in expression pedal.

Manual operation of feedback control

This section describes how to detect the feedback frequency manually.

1. Set the Module selector to "GLOBAL".



When the GLOBAL module is selected, parameter knob 2 can be used to adjust the feedback control parameter (FEEDBACK FREQ). The following settings are available.

● oF

This turns the feedback control function off. When this setting is selected, the foot switch can be used in play mode or manual mode to turn the function on and perform automatic detection of feedback frequency. When you assign Feedback Freq to the built-in expression pedal and press it fully down, the feedback control function will be activated, using a setting of "30".

● At

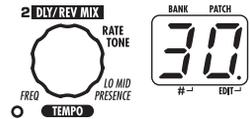
Feedback frequency is detected automatically, and the respective range is attenuated.

● 1 – 30

This allows you to manually set the feedback frequency. Higher setting values correspond to higher frequency.

2. Turn parameter knob 2 to set the feedback frequency, using the setting range from 1 – 30.

The frequency range corresponding to the selected value will be cut. Select the value that yields best reduction of acoustic feedback (howling).



3. When the setting is complete, return the Module selector to the "PLAY" position.



HINT

- If you select "At" in step 2, the automatic feedback frequency detection starts. During the process, the indication "SC" (Scan) is shown on the display.
- The feedback control setting applies to all patches, and the most recent value is always active. There is no need to store the setting.

Automatic detection of feedback frequency

The A2.1u can automatically detect the frequency range where acoustic feedback is occurring. If acoustic feedback should suddenly develop during a performance, you can simply hit the foot switch to turn the function on and suppress the feedback sound. This is possible both in play mode and manual mode.

1. Refer to the section "Manual operation of feedback control" and set the FEEDBACK FREQ value to "oF" or "At".



When you select the "oF" setting for the FEEDBACK FREQ value, the feedback control function is off, but it can be turned on by pressing the [▲] foot switch (in manual mode only) or an external foot switch. The setting will change to "At" and feedback frequency detection starts automatically.

When you select the "At" setting, the feedback control function is on. In this condition, pressing the foot switch twice initiates automatic detection of feedback frequency.

HINT

In manual mode, you can change the FEEDBACK FREQ value by turning parameter knob 1.

2. To automatically detect the feedback frequency while playing your guitar, proceed as follows.

■ In play mode

Use an external foot switch (FS01) connected to the [CONTROL IN] jack. Set the function to be controlled by the foot switch to "Fb" (feedback control on/off) (→ p. 25). Press the

foot switch to turn feedback control on.

NOTE

If no external foot switch is connected, automatic detection of feedback frequency in play mode is not possible.

■ In manual mode

Press the [▲] foot switch to turn feedback control on.

In either case, automatic feedback frequency detection starts when the function is turned on. The indication "SC" appears on the display.

To repeat the automatic detection process, press the [▲] foot switch (in manual mode) or the external foot switch twice to turn the feedback control function first off and then on again. Automatic detection will then be performed once more.



HINT

- You can use built-in expression pedal to adjust the feedback control frequency with your foot (setting range 1 – 30). For details, see the following section.
- For information about making foot switch or pedal settings, see pages 30 – 38.

Using the built-in expression pedal to operate the feedback control function

The built-in expression pedal of the A2.1u can be used to switch the feedback control function on and off, and to adjust the feedback frequency. This is possible both in play mode and manual mode.

1. Refer to the section "Manual operation of feedback control" and set the FEEDBACK FREQ value to "oF".



2. Repeatedly press the [PEDAL ASSIGN] key until "FEEDBACK FREQ" is shown as control target for the built-in expression pedal.

- VOLUME
- COMP/LIMIT
- TONE
- MOD/EFX
- DELAY/REVERB
- FEEDBACK FREQ



In this condition, the built-in expression pedal can be used to switch the feedback control function on and off, and to adjust the feedback frequency.

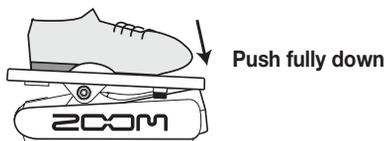
3. Store the patch if necessary.

The expression pedal setting can be stored for each patch individually.

4. If acoustic feedback occurs while you are playing your instrument, push the built-in expression pedal fully down.

When the built-in expression pedal is pushed fully down while the FEEDBACK FREQ parameter setting is "oF", the feedback control function will be turned on. The feedback frequency setting in

this condition is "30".



5. Operate the built-in expression pedal until you have found the position where feedback is suppressed most effectively.

NOTE

- The built-in expression pedal cannot be used to perform automatic detection of feedback frequency.
- The above operation is possible only with the built-in expression pedal. The external expression pedal (FP01/FP02) can only be used as a volume pedal (→ p. 25).

Using Manual Mode

The condition where the foot switches are used to switch the MOD/EFX module or the feedback control function on and off during play is called "manual mode".

1. In play mode, select a patch.

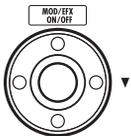
When you enter manual mode, the [▼]/[▲] foot switches are assigned different functions and cannot be used to select patches. Therefore you should select the patch to use before entering manual mode.

2. Press the [MANUAL] key.

The [MANUAL] key lights up, and the A2.1u switches to manual mode.



In manual mode, the switches and knobs on the panel function as follows.



[▼] foot switch
Switches the MOD/EFX module on and off.



[▲] foot switch
Switches the feedback control function on and off.



Parameter knob 1
Switches the feedback control function on/off and allows manual setting of feedback frequency.

3. To switch feedback control between on and off, press the [▲] foot switch.

The operation of the unit when the [▲] foot switch is pressed depends on feedback control setting value.

● oF

When you press the foot switch, the unit automatically detects the feedback frequency and attenuates it. Pressing the foot switch once more turns feedback control off.

● At

When you press the foot switch, the feedback control function is turned off. When you press the foot switch once more, the function is turned on again, the unit automatically detects the feedback frequency and attenuates it.

● 1 - 30

Each time you press the foot switch, the feedback control is switched back and forth between on and off. When it is on, the feedback frequency as specified by this numeric setting will be attenuated.

4. To switch the MOD/EFX module between on and off, press the [▼] foot switch.

5. To return to play mode, press the [MANUAL] key.

The [MANUAL] key goes out and the A2.1u returns to play mode.



HINT

- The other controls of the unit operate in the same way as in play mode.
- In manual mode, you can also activate edit mode by turning the Module selector.

Other Functions

This section describes how to use the internal expression pedal as well as an external pedal or foot switch. Use of the A2.1u as an audio interface or direct box is also explained.

Making settings for the built-in expression pedal

The expression pedal on the top panel of the A2.1u lets you adjust effect parameters or the volume in real time during play. It also can serve to adjust the feedback control frequency with your foot. Which element is controlled by the pedal can be selected for each patch individually.

For information about parameters that can be controlled by expression pedal, see pages 30 – 38.

1. Select the patch for which the expression pedal is to be used.
2. Set the Module selector to "CONTROL".



The A2.1u switches to edit mode, allowing you to make expression pedal and foot switch settings.

3. Turn parameter knob 1 to select one of the following modules or parameters to be controlled by the expression pedal.

- **oF**
Pedal is inactive.
- **vL**
Volume
- **CU, Cd, CH, CL**
COMP/LIMIT module
- **tU, td, tH, tL**
TONE parameter (MODEL module)

- **EU, Ed, EH, EL**
MOD/EFX module
- **dU, dd, dH, dL**
DELAY/REVERB module
- **Fb**
Feedback control frequency

HINT

- The module to be controlled can also be selected with the [PEDAL ASSIGN] key (→ p. 18).
- Which parameter changes when the expression pedal is operated depends on the effect type selected for the module. For details, see pages 30 – 38.
- When the COMP/LIMIT, TONE, MOD/EFX, or DELAY/REVERB module is selected, the pattern in which the parameter changes when the expression pedal is operated can be selected. For details, see page 37.

4. If necessary, store the patch.

The expression pedal setting is stored as part of the patch.

5. Select the patch in play mode and operate the expression pedal.

The selected function will be activated.

When the A2.1u is in the bypass condition, the expression pedal always functions as a volume pedal, regardless of the setting made in step 3.

Adjusting the sensitivity of the built-in expression pedal

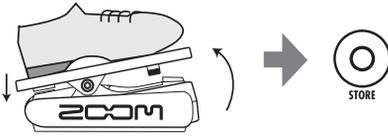
The expression pedal of the A2.1u is adjusted for optimum operation at the factory, but sometimes, readjustment may be necessary. If the volume or sound does not change much also when the pedal is fully pushed down, or if it changes excessively even if the pedal is only lightly pushed, adjust the pedal as follows.

1. Turn power to the A2.1u on while keeping the [PEDAL ASSIGN] key depressed.

The indication "dn" appears on the display.

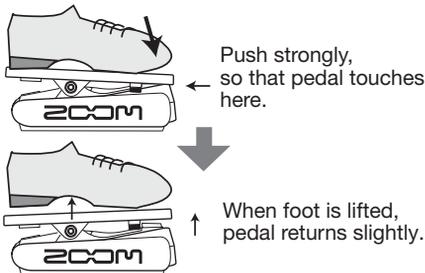


2. With the expression pedal fully raised, press the [STORE] key.



The display indication changes to "UP".

3. Push the expression pedal fully down and then lift your foot off the pedal.



4. Press the [STORE] key once more.

The expression pedal adjustment is completed, and the unit returns to play mode.

HINT

- The point where the module is switched on or off when the pedal is depressed is always the same, regardless of the action taken in step 3.
- If "Er" appears on the display, repeat the procedure from step 2.

Using an external expression pedal (FP01/FP02)

When you connect an optional expression pedal (FP01/FP02) to the [CONTROL IN] jack of the A2.1u, you can use that pedal as a volume pedal, separately from the built-in expression pedal.

1. Plug the cable from the external expression pedal into the [CONTROL IN] jack, and then turn the A2.1u on.

2. Operate the external expression pedal in play mode or edit mode.

The volume changes.

HINT

The external expression pedal always functions as a volume pedal.

Using a foot switch (FS01)

Connecting an optional foot switch (FS01) to the [CONTROL IN] jack of the A2.1u allows bank switching in play mode. It is also possible to switch bypass/mute on and off, control the tap tempo function, or perform other functions with the foot switch.

1. Plug the cable from the FS01 into the [CONTROL IN] jack, and then turn the A2.1u on.

2. Set the Module selector to the "CONTROL" position.



The A2.1u goes into edit mode. You can now make settings for the expression pedal or foot switch.

3. Turn parameter knob 2 to select one of the following functions for the foot switch.

● bP (bypass/mute)

The foot switch controls bypass or mute on/off. This has the same effect as pressing both [▼]/[▲] foot switches at the same time in play mode or manual mode.

● tP (tap tempo)

Pressing the foot switch repeatedly can be used to set the interval for the rhythm function or to make settings for effect parameters supporting the tap function.

● bU (bank up)

Each push of the foot switch switches to the next higher bank. This has the same effect as pressing the BANK [+] key.

● rH (rhythm on/off)

The foot switch controls start/stop of the rhythm function. This has the same effect as pressing the RHYTHM [▶/■] key.

● dH (delay hold)

The foot switch controls on/off of the delay hold function. When a patch using the hold function is selected, pressing the foot switch will activate hold, causing the current delay sound to be repeated (see illustration below). Pressing the foot switch once more cancels the hold condition, and the delay sound will decay normally.

● dM (delay input mute)

The foot switch controls muting on/off for the DELAY input of the DELAY/REVERB module.

● Mn (Manual mode)

The foot switch toggles between play mode and manual mode. This has the same effect as pressing the [MANUAL] key.

● Fb (Feedback control)

The foot switch toggles the feedback control function between on and off. This has the same effect as pressing the [▲] foot switch in manual mode. For details on the feedback control function, see page 20.

HINT

- For information on effect parameters supporting the tap function, see pages 30 – 38.
- To use the hold function, an effect type that supports the hold function must be selected in the patch. For details, see pages 30 – 38.
- While the DELAY/REVERB module is set to hold or mute, the dot in the center of the display flashes.

4. Select the patch in play mode and operate the foot switch.

The selected function will be activated.

This setting applies to all patches, and the most recent value is always active. There is no need to store the setting.

Using the A2.1u as audio interface for a computer

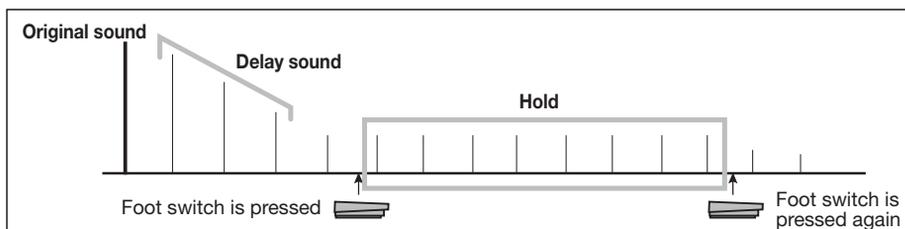
By connecting the [USB] connector of the A2.1u to a computer, the A2.1u can be used as an audio interface with integrated AD/DA converter and effects. The operating environment conditions for this type of use are as follows.

■ Compatible operating systems

- Windows XP
- Mac OS X (10.2 and later)

■ Quantization

16-bit



■ Sampling frequencies

32 kHz / 44.1 kHz / 48 kHz

HINT

With the operating systems listed above, the A2.1u will function as an audio interface simply by connecting the USB cable. There is no need to install any special driver software.

To use the A2.1u as an audio interface for the computer, connect the USB port of the A2.1u to a USB port on the computer. The A2.1u will be recognized as an audio interface.

HINT

- If the [POWER] switch of the A2.1u is set to OFF, power will be supplied via the USB connection.
- If the [POWER] switch of the A2.1u is set to ON, power will be supplied from the batteries in the A2.1u or the AC adapter. Care should be taken especially when running on battery power, because setting the switch to ON may result in faster depletion of the batteries.

In this condition, the sound of a guitar connected to the [INPUT] jack of the A2.1u can be processed with the effects of the A2.1u and then be recorded on the audio tracks of a DAW (Digital Audio Workstation) software application on the computer.

At the same time, the [OUTPUT/PHONES] jack of the A2.1u carries the playback sound from the audio tracks of the DAW application, mixed with the guitar sound processed by the effects of the A2.1u (see illustration below).

For details on recording and playback, refer to the documentation of the DAW application.

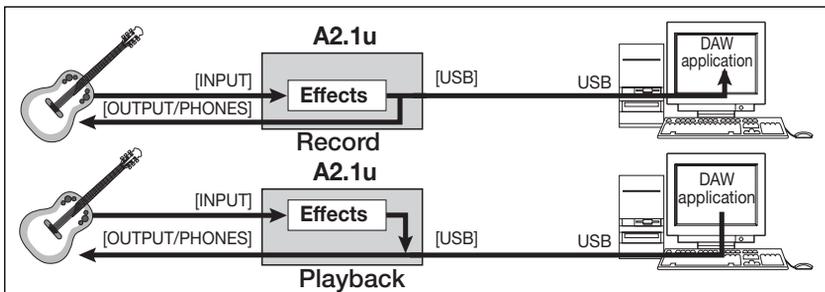
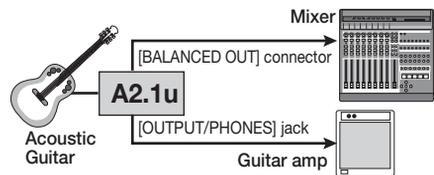
NOTE

- Also when using the A2.1u as an audio interface, the signal after effect processing is always available directly at the [OUTPUT/PHONES] jack.
- If the DAW application has an echo back function (input signal during recording is supplied directly to an output), this must be disabled when using the A2.1u. If recording is carried out with this function enabled, the output signal will sound as if processed by a flanger effect.
- Use a high-quality USB cable and keep the connection as short as possible. If power is supplied to the A2.1u via a USB cable that is more than 3 meters in length, the low voltage warning indication may appear.

Use as a direct box

The [BALANCED OUT] connector on the rear panel lets you use the A2.1u as a direct box for sending the guitar signal directly to a PA mixer or recording console. (Gain: 0 dB, output impedance: 200 ohms, HOT-COLD)

To use this function, connect the [BALANCED OUT] connector of the A2.1u to the PA mixer or recording console, using XLR balanced cable. At the same time, you can also connect the [OUTPUT/PHONES] jack to a guitar amplifier for monitoring.



The [PRE/POST] switch lets you control the position where the signal supplied at the [BALANCED OUT] connector is branched off. To use the signal after effect processing, select the "POST" position (switch engaged). To use the signal before effect processing, select the "PRE" position (switch disengaged).



HINT

When the [PRE/POST] switch is set to "POST", the signal at the [BALANCED OUT] connector reflects the setting of the AMP SELECT parameter (→ p. 29). If the [OUTPUT/PHONES] jack is not connected directly to a guitar amplifier and only the [BALANCED OUT] connector is used, setting the AMP SELECT parameter to "oF" may be preferable.

In certain configurations, a ground loop (electrical signal loop created because devices within the same system are connected to a separate ground) may occur, leading to noise problems (audible hum). In such a case, try setting the [GROUND] switch to "LIFT". This may help to eliminate or reduce the noise.

HINT

The [GROUND] switch controls the [BALANCED OUT] connector ground connection. In the "LIFT" position (switch engaged), the ground pin of the [BALANCED OUT] connector is uncoupled from the signal path. This can be effective in eliminating or reducing hum noise caused by a ground loop.

Starting the A2.1u in HI-GAIN mode

When using a magnetic pickup, an electric guitar with a single-coil pickup, or any other guitar with low output level, the input gain of the A2.1u may have to be increased by starting it in HI-GAIN mode, as explained below.

■ To start the A2.1u in HI-GAIN mode

Turn power on while holding down the [▼]

foot switch. The indication "Hi-GAIN" scrolls on the display, and input gain will be set to a higher value.

NOTE

The input gain setting is not stored in memory and will be canceled when the unit is turned off. Perform the above procedure every time at power-on, as needed.

Restoring Factory Defaults

In the factory default condition, the patches of the user area (A0 – d9) contain the same settings as the patches of the preset area (00 – 39). Even after overwriting the user patches, their original content can be restored in a single operation ("All Initialize" function).

1. Turn the A2.1u on while holding down the [STORE] key.

The indication "AL" appears on the display.



2. To carry out the All Initialize function, press the [STORE] key once more.

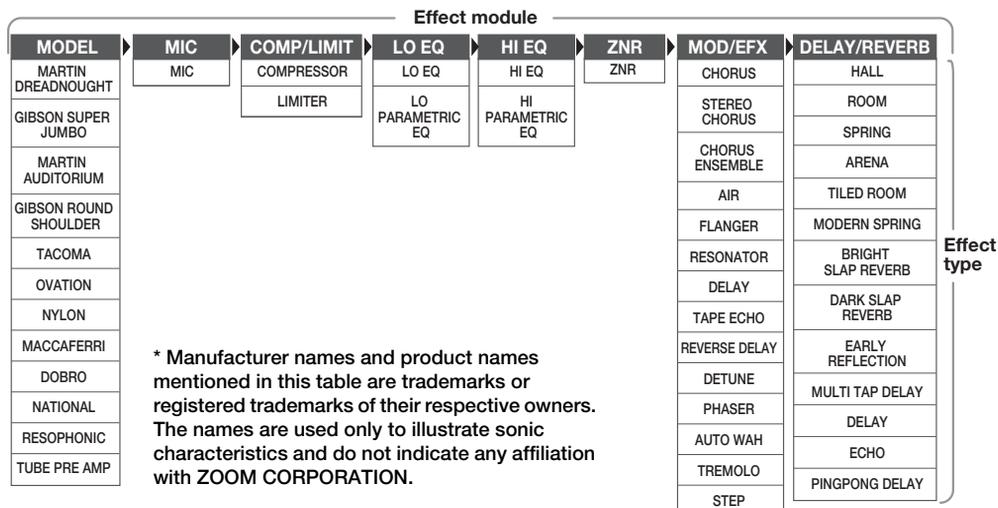
All patch settings are returned to the factory default condition, and the unit switches to play mode. To cancel All Initialize, press the RHYTHM [▶/■] key instead of the [STORE] key.

NOTE

When you carry out All Initialize, any newly created patches that were stored in the user area will be deleted (overwritten). Perform this operation with care to prevent losing any patches that you want to keep.

Linking Effects

The patches of the A2.1u can be thought of as eight serially linked effect modules, as shown in the illustration below. You can use all effect modules together or selectively set certain modules to off to use just specific effect modules.



For some effect modules, you can select an effect type from several possible choices. For example, the MOD/EFX module comprises CHORUS, FLANGER, and other effect types from which you can choose one. The MODEL module is an effect for simulating the sound of various types of acoustic guitars. Switching effect types here means selecting different guitar body sounds.

CONTROL module and GLOBAL module

Besides the above modules, the A2.1u also incorporates a CONTROL module and GLOBAL module. The CONTROL module comprises settings such as expression pedal and foot switch function allocation, as well as the master level that applies to all patches.

The GLOBAL module lets you optimize the A2.1u characteristics to fit the requirements of

pickup and guitar amp. It contains the following settings.

● AMP SELECT

This parameter serves to optimize the frequency response of the A2.1u to fit the type of amplifier. It can be helpful to reduce the trebly sound that can be a problem when playing an acoustic guitar with a pickup through an amplifier. Settings with different effect depth are available for Combo, Stack, and other amp types.

● PICKUP SELECT

This parameter serves to optimize the frequency response of the A2.1u to fit the type of pickup. It can also be used as a simulator for turning the sound of an electric guitar into that of an acoustic guitar.

Effect Types and Parameters

How to read the parameter table

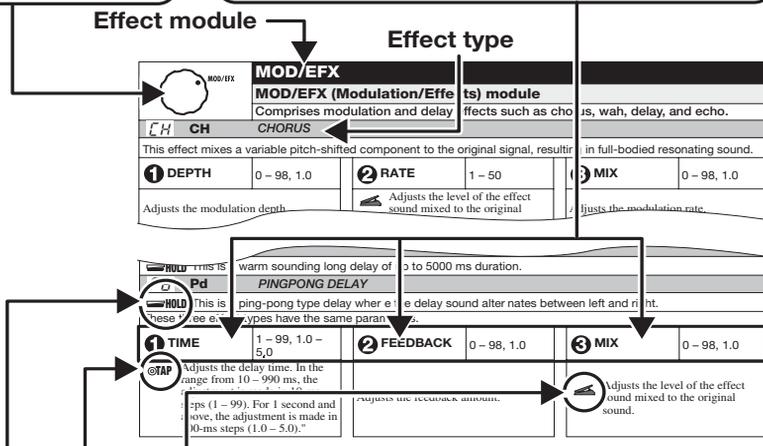
Module selector

The Module selector symbol shows the position of the selector knob at which this module/parameter is called up.

Effect parameters 1 – 3

These are the parameters that can be adjusted with parameter knobs 1 - 3 when the effect type is selected. The setting range for each parameter is shown. Three-digit setting values are shown with a dot between the two numerals.

Example: 0 - 98, 1.0 = 0 - 98, 100



Expression pedal

A pedal icon () in the listing indicates a parameter that can be controlled with the built-in expression pedal.

To control a parameter with the expression pedal, specify the respective module (or parameter) as control target for the pedal (→ p. 24), and then select the respective effect type of the module.

Tap

A tap icon () in the listing indicates a parameter that can be set by repeatedly hitting (tapping) the foot switch (FS01). The tap function must have been assigned to the foot switch beforehand (→ p. 25), and a module that includes this parameter must be on.

In edit mode, tapping the foot switch will cause the respective parameter to be set according to the tapping interval (modulation cycle, delay time, etc.).

In play mode and manual mode, tapping the foot switch will cause the TIME parameter of the delay effect type in the DELAY/REVERB module to be temporarily changed. (In play mode and manual mode, only the delay effect in the DELAY/REVERB module can be controlled by tap input.)

Hold

A hold icon () in the listing indicates an effect type for which hold can be turned on and off with the foot switch (FS01).

Set the foot switch function to "dH" (delay hold) (→ p. 25) for the respective patch. When this patch is then selected in play mode or manual mode, the hold function can be switched on and off by pressing the foot switch.

 MODEL		
MODEL module		
This module provides 12 types of acoustic guitar and mic preamp simulations. * Manufacturer names and product names mentioned in this table are trademarks or registered trademarks of their respective owners. The names are used only to illustrate sonic characteristics and do not indicate any affiliation with ZOOM CORPORATION.		
md Md	MARTIN DREADNOUGHT	
Simulation of the MARTIN D-28, one of the most popular acoustic guitar.		
gj GJ	GIBSON SUPER JUMBO	
Simulation of the GIBSON SJ-200, known as the "King of Flat-Tops".		
ma MA	MARTIN AUDITORIUM	
Simulation of the MARTIN 000-18 with a small-sized body and clear sound.		
gr Gr	GIBSON ROUND SHOULDER	
Simulation of the GIBSON J-45 that has a warm and rich sound.		
tc tC	TACOMA	
Simulation of the TACOMA C3C that has a unique body and sound.		
ov ov	OVATION	
Simulation of the OVATION ADAMAS that has a unique round backed body.		
ny ny	NYLON	
Simulation of the NYLON guitar sound that is suitable for Bossa Nova music.		
mc MC	MACCAFERRI	
Simulation of the SELMER MACCAFERRI that is known for its gypsy jazz sound.		
db db	DOBRO	
Simulation of the DOBRO MODEL 27 with a wood body and metal resonator.		
nt nt	NATIONAL	
Simulation of the NATIONAL RESO-PHONIC STYLE O with a brass body and metal resonator.		
re rE	RESOPHONIC	
ZOOM original resonator guitar sound with strong character.		
All above effect types have the same parameters.		
1 DEPTH 0 – 98, 1.0 Adjusts the simulation intensity.	2 TONE 0 – 10  Adjusts the sound quality.	3 LEVEL 2 – 98, 1.0 Adjusts the signal level after passing the module.
tp TUBE PRE AMP		
ZOOM original tube preamplifier sound that allows adjusting the balance from an all solid-state path to a tube-based preamp.		
1 TUBE BLEND 0 – 98, 1.0  Adjusts the amount of tube sound blended into the signal.	2 TONE 0 – 10 Adjusts the sound quality.	3 LEVEL 2 – 98, 1.0 Adjusts the signal level after passing the module.

Effect Types and Parameters

	MIC	
	MIC module	
This module simulates mic directional characteristics when recording the acoustic guitar type selected with the MODEL module by microphone.		
MC	MIC	
Simulates the sound that is recorded by microphone. You can select the mic type and position.		
1 MIC TYPE	dy, Co	2 POSITION 0 – 2
Selects the mic type. "dy" simulates the frequency response of a dynamic mic and "Co" simulates the frequency response of a condenser mic.	Lets you select different microphone characteristics according to sound pickup position. The following settings are available. 0: Mic in front of soundhole 1: Mic near the 15th fret 2: Mic near the 12th fret	
	3 MIC DISTANCE 0 – 2	
Lets you select different microphone characteristics according to sound pickup distance. The following settings are available. 0: Mic near the guitar 1: Mic about 50cm away 2: Mic about 1m away		

	COMP/LIMIT	
	COMP/LIMIT (Compressor/Limiter) module	
This module includes a compressor that keeps the overall signal level within a certain range by attenuating high-level signal components or boosting low-level signal components, and a limiter that suppresses peak components.		
CP	COMPRESSOR	
The compressor attenuates high-level signal components and boosts low-level signal components to keep the overall signal level within a certain range.		
1 SENSE	0 – 10	2 ATTACK 1 – 10
 Adjusts the compressor sensitivity. Higher setting values result in higher sensitivity.	Adjusts the time between the sound attack point and the start of compression. Higher setting values result in faster compression action.	
	3 LEVEL 2 – 98, 1.0	
Adjusts the signal level after passing the module.		

	LM	
	LIMITER	
This is a limiter that suppresses signal peaks above a certain reference level.		
1 THRESHOLD	0 – 10	2 RATIO 1 – 10
 Adjusts the reference signal level for the limiter action.	Adjusts the limiter intensity. Higher setting values result in stronger compression of the input signal.	
	3 LEVEL 2 – 98, 1.0	
Adjusts the signal level after passing the module.		

	LO EQ	
	LO EQ module	
This is an equalizer for the low frequency range. You can select either a 3-band equalizer or parametric equalizer.		
LE	LO EQ (Low EQ)	
This is a 3-band equalizer that adjusts the frequency range below 500 Hz.		
1 60Hz	±12	2 320Hz ±12
60 Hz, shelving type equalizer.	320 Hz, peaking type equalizer.	
3 500Hz ±12		500 Hz, peaking type equalizer.

	LP	
	LO PARAMETRIC EQ (Low Parametric EQ)	
This is a parametric equalizer that adjusts the frequency range below 600 Hz.		
1 TYPE	1, 2, SH	2 FREQUENCY See Table 1
Selects the type of filter. "1" gives a peaking type filter with narrow Q, "2" gives a peaking type filter with wide Q, and "SH" produces a shelving type LO EQ.	Selects a frequency within the range of 50 – 600 Hz.	
	3 GAIN ±12	
Adjusts the gain.		

[Table 1]

Display	5	10	20	40	60
Frequency	50Hz	100Hz	200Hz	400Hz	600Hz

	HI EQ		
	HI EQ module		
This is an equalizer for the high frequency range. You can select either a 3-band equalizer or parametric equalizer.			
HE	HE	<i>HI EQ (High EQ)</i>	
This is a 3-band equalizer that adjusts the frequency range above 1.2 kHz.			
1 1.2kHz	±12	2 6.3kHz	
1.2 kHz, peaking type equalizer.		3 12kHz	
		±12	
6.3 kHz, peaking type equalizer.		12 kHz, shelving type equalizer.	

HP	HP	<i>HI PARAMETRIC EQ (High Parametric EQ)</i>	
This is a parametric equalizer for the frequency range above 800 Hz.			
1 TYPE	1, 2, SH	2 FREQUENCY	See Table 2
Selects the type of filter. "1" gives a peaking type filter with narrow Q, "2" gives a peaking type filter with wide Q, and "SH" produces a shelving type HI EQ.		Selects a frequency within the range of 800 Hz – 10 kHz.	
		3 GAIN	±12
		Adjusts the gain.	

[Table 2]

Display	80	2 . 0	4 . 0	8 . 0	10
Frequency	800Hz	2kHz	4kHz	8kHz	10kHz

	ZNR	
	ZNR (ZOOM Noise Reduction) module	
This module serves for reducing noise during playing pauses.		
nr	<i>ZNR (ZOOM Noise Reduction)</i>	
ZOOM original noise reduction which reduces noise in playing pauses without affecting the overall tone.		
1 THRESHOLD	1 – 16	
Adjusts the sensitivity. For maximum noise reduction, set the value as high as possible without causing the sound to decay unnaturally.		

	MOD/EFX		
	MOD/EFX (Modulation/Effects) module		
Comprises modulation and delay effects such as chorus, wah, delay, and echo.			
CH	CH		
<i>CHORUS</i>			
This effect mixes a variable detuned component to the original signal, resulting in full-bodied resonating sound.			
1 DEPTH	0 – 98, 1.0	2 RATE	1 – 50
Adjusts the modulation depth.		Adjusts the modulation rate.	
		3 MIX	0 – 98, 1.0
		Adjusts the level of the effect sound mixed to the original sound.	
SC	SC		
<i>STEREO CHORUS</i>			
This is a stereo chorus with clear sound.			
CE	CE		
<i>CHORUS ENSEMBLE</i>			
This is a chorus ensemble with complex undulation.			

Effect Types and Parameters

The two effect types on the preceding page have the same parameters.

1 DEPTH	0 – 98, 1.0	2 RATE	1 – 50	3 MIX	0 – 98, 1.0
Adjusts the modulation depth.		Adjusts the modulation rate.		 Adjusts the level of the effect sound mixed to the original sound.	

Ar **Ar** AIR

Simulates the ambience of a room, giving the sound spatial depth.

1 SIZE	2 – 98, 1.0	2 TONE	0 – 10	3 MIX	0 – 98, 1.0
Adjusts the spatial width.		Adjusts the sound quality.		 Adjusts the level of the effect sound mixed to the original sound.	

FL **FL** FLANGER

This effect produces a resonating and strongly undulating sound.

1 DEPTH	0 – 98, 1.0	2 RATE	0 – 50	3 RESONANCE	-10 – -1, 0, 1 – 10
Adjusts the modulation depth.		 Adjusts the modulation rate.		Adjusts the modulation resonance intensity.	

rS **rS** RESONATOR

Emphasizes a specific frequency, and produces an undulating sound such as from a resonator guitar. It is possible to use this effect as pedal wah too.

1 FREQUENCY	1 – 50	2 RESONATOR LEVEL	0 – 98, 1.0	3 DIRECT LEVEL	0 – 98, 1.0
 Adjusts the frequency that is emphasized. When an expression pedal is used, the effect is the same as pedal wah.		Adjusts the mixing balance of the effect sound.		Adjusts the mixing balance of the original sound.	

dL **dL** DELAY

This is a delay with a maximum setting of 5000 ms.

tE **tE** TAPE ECHO

This effect simulates a tape echo.

The above two effect types have the same parameters.

1 TIME	1-99, 1.0-5.0	2 FEEDBACK	0 – 98, 1.0	3 MIX	0 – 98, 1.0
 Adjusts the delay time. In the range from 10 – 990 ms, the adjustment is made in 10-ms steps (1 – 99). For 1 second and above, the adjustment is made in 100-ms steps (1.0 – 5.0).		Adjusts the feedback amount.		 Adjusts the level of the effect sound mixed to the original sound.	

rd **rd** REVERSE DELAY

Produces a sound like a tape played in reverse.

1 TIME	1 – 99, 1.0 – 2.5	2 FEEDBACK	0 – 98, 1.0	3 BALANCE	0 – 98, 1.0
 Adjusts the delay time. In the range from 10 – 990 ms, the adjustment is made in 10-ms steps (1 – 99). For 1 second and above, the adjustment is made in 100-ms steps (1.0 – 2.5).		Adjusts the feedback amount.		 Adjusts the balance between original sound and effect sound.	

dt dt DETUNE			
This effect mixes a pitch-shifted component to the original signal, resulting in resonating sound such as from a 12-string guitar.			
1 DEPTH	-15 – -1, 0, 1 – 15	2 TONE	0 – 10
Adjusts the modulation depth.		Adjusts the sound quality.	
		3 MIX	0 – 98, 1.0
		Adjusts the level of the effect sound mixed to the original sound.	

PH PH PHASER			
This effect produces sound with a pulsating character.			
1 COLOR	1 – 4	2 RATE	0 – 50
Adjusts the type of sound.		Adjusts the modulation rate.	
		3 RESONANCE	0 – 10
		Adjusts the modulation resonance intensity.	

AW AW AUTO WAH			
This effect varies wah in accordance with playing intensity.			
1 SENSE	-10 – -1, 1 – 10	2 RESONANCE	0 – 10
Adjusts the effect sensitivity.		Adjusts the resonance of the sound.	
		3 DIRECT MIX	0 – 98, 1.0
		Adjusts the level of the original sound mixed to the effect sound.	

tr tr TREMOLO			
This effect periodically varies the volume.			
1 DEPTH	0 – 98, 1.0	2 RATE	0 – 50
Adjusts the modulation depth.		Adjusts the effect rate.	
		3 WAVE	u0 – u9, d0 – d9, t0 – t9
		Allows selection of the modulation waveform. Available settings are "u" (rising sawtooth), "d" (falling sawtooth), and "t" (triangular). Higher setting values result in more clipping of wave peaks, which reinforces the effect.	

St St STEP			
Special effect for acoustic guitar that changes the sound in a staircase pattern.			
1 DEPTH	0 – 98, 1.0	2 RATE	0 – 50
Adjusts the modulation depth.		Adjusts the modulation rate.	
		3 MIX	0 – 98, 1.0
		Adjusts the level of the effect sound mixed to the original sound.	

	DELAY/REVERB
	DELAY/REVERB module
This module comprises various reverb and delay functions. Delay effect allows use of the hold function.	

HL HL HALL	
Simulates the acoustics of a concert hall.	

rM rM ROOM	
Simulates the acoustics of a room.	

SP SP SPRING	
Simulates a spring-type reverb.	

Ar Ar ARENA	
Simulates the acoustics of a big concert hall such as an arena.	

tr tr TILED ROOM	
Simulates the acoustics of a tiled room.	

Effect Types and Parameters

ms MS MODERN SPRING

This effect simulates a spring-type reverb with bright sound.

The above six effect types have the same parameters.

1 DECAY	1 – 30	2 TONE	0 – 10	3 MIX	0 – 98, 1.0
Adjusts the duration of the reverb.		Adjusts the sound quality.		 Adjusts the level of the effect sound mixed to the original sound.	

bs bS BRIGHT SLAP REVERB

This is a reverb with bright sound which allows adjusting the pre-delay parameter.

ds dS DARK SLAP REVERB

This is a reverb with dark sound which allows adjusting the pre-delay parameter.

The above two effect types have the same parameters.

1 DECAY	1 – 30	2 PRE DELAY	0 – 30	3 MIX	0 – 98, 1.0
Adjusts the duration of the reverb.		Adjusts the pre-delay time. The adjustment is made in 10-ms steps in the range of 0-300 ms.		 Adjusts the level of the effect sound mixed to the original sound.	

er Er EARLY REFLECTION

This effect isolates only the early reflection components of the reverb.

1 DECAY	1 – 30	2 SHAPE	-10 – -1, 0, 1 – 10	3 MIX	0 – 98, 1.0
Adjusts the duration of the reverb.		Adjusts the envelope of the effect sound. In the negative range, the envelope is reversed. At 0, the effect is a gate reverb. In the positive range, the envelope is a decay-type envelope.		 Adjusts the level of the effect sound mixed to the original sound.	

md md MULTI TAP DELAY

This effect produces several delay components with different delay times.

1 TIME	1 – 99, 1.0 – 5.0	2 PATTERN	1 – 8	3 MIX	0 – 98, 1.0
 Adjusts the delay time. In the range from 10 – 990 ms, the adjustment is made in 10-ms steps (1 – 99). For 1 second and above, the adjustment is made in 100-ms steps (1.0 – 5.0).		Selects the combination pattern for the taps. The selection ranges from rhythmical to random patterns.		 Adjusts the level of the effect sound mixed to the original sound.	

dl dL DELAY

 This is a delay with a maximum setting of 5000 ms.

ec EC ECHO

 This is a warm sounding long delay of up to 5000 ms duration.

pd Pd PINGPONG DELAY

 This is a ping-pong type delay where the delay sound alternates between left and right.

These three effect types have the same parameters.

1 TIME	1 – 99, 1.0 – 5.0	2 FEEDBACK	0 – 98, 1.0	3 MIX	0 – 98, 1.0
 Adjusts the delay time. In the range from 10 – 990 ms, the adjustment is made in 10-ms steps (1 – 99). For 1 second and above, the adjustment is made in 100-ms steps (1.0 – 5.0).		Adjusts the feedback amount.		 Adjusts the level of the effect sound mixed to the original sound.	

		CONTROL	
		CONTROL module	
Serves for making built-in expression pedal settings and lets you control the foot switch function and master level setting applying to all patches.			
[Ct] Ct		CONTROL	
1 RTM DESTINATION	See Table 3	2 FS	See Table 4
Selects the modulation target module that is controlled with the built-in expression pedal (see Table 3).		When a foot switch (FS01) is connected to the [CONTROL IN] jack, this selects the function that can be operated with the foot switch (see Table 4). The function selected here applies to all patches.	
		3 MASTER LEVEL	0 – 98, 1.0
		Adjusts the master level for all patches.	

[Table 3]

Setting	Modulation target
oF	OFF
vL	Volume
CU, Cd, CH, CL	COMP/LIMIT module (*)
tU, td, tH, tL	TONE parameter of MODEL module (*)
EU, Ed, EH, EL	MOD/EFX module (*)
dU, dd, dH, dL	DELAY/REVERB module (*)
Fb	Frequency of feedback control function.

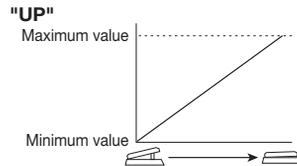
[Table 4]

Setting	Function
bP	Bypass/Mute
tP	Tap tempo
bU	Bank up
rH	Rhythm function on/off
dH	Delay hold
dM	Delay input mute
Mn	Manual mode on/off
Fb	Feedback control function on/off

The operation of modules denoted by (*) changes as follows, according to the letter at right.

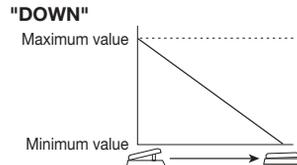
 **UP**

The parameter is at minimum when the pedal is fully raised and at maximum when the pedal is fully pushed down.



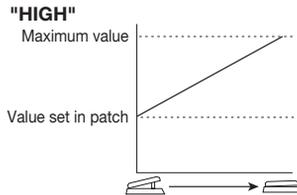
 **DOWN**

The parameter is at maximum when the pedal is fully raised and at minimum when the pedal is fully pushed down.



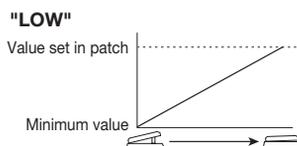
 **HIGH**

When the pedal is fully raised, the parameter is at the value set in the patch. When the pedal is fully pushed down, the parameter is at maximum.



 **LOW**

When the pedal is fully raised, the parameter is at minimum. When the pedal is fully pushed down, the parameter is at the value set in the patch.



		GLOBAL	
		GLOBAL module	
Serves for making settings to match the guitar amplifier and pickup in use and to control the feedback control function. The settings of this module apply to all patches.			
 GL	GLOBAL		
1 PICK UP SELECT	See Table 5	2 FEEDBACK FREQ	oF, At, 1 – 30
Modifies the sound quality depending on the guitar or pickup that is used, to fully bring out the simulation capabilities of the MODEL module (see table 5).		Reduces acoustic feedback by attenuating the frequency band where the feedback occurs. The frequency can be detected automatically or manually. For details on how to use the FEEDBACK CONTROL function, see page 20.	
		3 AMP SELECT	See table 6
		This parameter serves for attenuating frequency band that can sound harsh when an acoustic guitar is reproduced via a guitar amplifier (see table 6). Choose the suitable setting depending on the amplifier that is used, and adjust the value as required.	

[Table 5]

Setting	Content
oF	OFF
bP	Designed for use with a piezo pickup having a bright sound.
dP	Designed for use with a piezo pickup having a dark sound.
bM	Designed for use with a magnetic pickup having a bright sound.
dM	Designed for use with a magnetic pickup having a dark sound.
SE	Designed for use with an electric guitar and single-coil pickup(s).
HE	Designed for use with an electric guitar and humbucker pickup(s).

[Table 6]

Setting	Content
oF	Sets the AMP SELECT parameter to OFF.
b1 – b9	Designed for use with combo type amplifiers having a bright sound. Higher values result in stronger attenuation effect.
C1 – C9	Designed for use with regular combo type amplifiers. Higher values result in stronger attenuation effect.
S1 – S9	Designed for use with stack type amplifiers. Higher values result in stronger attenuation effect.

Troubleshooting

● **Volume is low**

Adjust the patch level (→ p. 9) or master level (→ p. 37). When using a pickup with low output, start the A2.1u in HI-GAIN mode (→ p. 28). Try adjusting the expression pedal.

● **Matching problem with particular pickup or guitar amplifier**

Check the PICKUP SELECT and AMP SELECT settings.

● **Delay/reverb effect does not work**

DELAY/REVERB module is inactive while a rhythm pattern is playing. Stop rhythm playback (→ p. 12).

● **No effect processing (when using [BALANCED OUT] connector)**

Check whether the [PRE/POST] switch is set to

"POST" (effect processing enabled).

● **High level of noise**

Adjust ZNR module. Be sure to use only a ZOOM AC adapter (ZOOM AD-0006).

● **Hum is heard (when using [BALANCED OUT] connector)**

A ground loop has occurred among connected devices. Try setting the [GROUND] switch to "LIFT". This may help to eliminate or reduce the noise.

● **Battery life is short**

Are manganese batteries being used? Continuous operation time is 6 hours with alkaline batteries. The use of alkaline batteries is recommended.

Specifications

Number of effect types	47
Number of effect modules	8 simultaneously usable modules
Patch memory	
User area	10 patches x 4 banks
Preset area	10 patches x 4 banks
Sampling frequency	96 kHz
A/D conversion	24-bit, 64-times oversampling
D/A conversion	24-bit, 128-times oversampling
Signal processing	32-bit
Frequency response	20 Hz – 40 kHz +1 dB, -3 dB (10 kilohm load)
Display	2-digit 7-segment LED display, parameter LEDs, pedal assign LEDs
Input	Standard monaural phone jack
Rated input level:	-20 dBm
Input impedance:	1 megohm
Outputs	Standard stereo phone jack (line/headphones)
	Line output maximum rating: +5 dBm (output impedance 10 kilohms or more)
	Headphone output maximum rating: 20 mW + 20 mW (into 32-ohm load)
XLR connector (balanced output)	
	Input/output gain: 0 dB
	Output impedance: 100 ohms (HOT-GND), (COLD-GND), 200 ohms (HOT-COLD)
Control input	FP02 (FP01)/FS01 input
USB interface	
PC interface	16-bit (record/play, stereo)
Sampling frequencies	32 kHz, 44.1 kHz, 48 kHz
Power requirements	
AC adapter	9 V AC, 300 mA (ZOOM AC adapter AD-0006)
Batteries	Four IEC R6 (size AA) batteries, continuous operating time 6 hours (with alkaline batteries)
Dimensions	165 (D) x 255 (W) x 79 (H) mm
Weight	1200 g (without batteries)
Optional accessory	Expression pedal FP02/Foot switch FS01

* 0 dBm = 0.775 Vrms

* Design and specifications subject to change without notice.

A2.1u Preset Pattern

No	PatternName	TimSig	No	PatternName	TimSig
1	8beat_1	4/4	21	3per4	3/4
2	8beat_2	4/4	22	6per8	3/4
3	8beat_3	4/4	23	5per4_1	5/4
4	8shuffle	4/4	24	5per4_2	5/4
5	16beat_1	4/4	25	COUNTRY	4/4
6	16beat_2	4/4	26	REGGAE	4/4
7	16shufle	4/4	27	LATIN1	4/4
8	ROCK	4/4	28	LATIN2	4/4
9	FUNK_1	4/4	29	LATIN3	4/4
10	FUNK_2	4/4	30	BALLAD_1	4/4
11	HIPHOP	4/4	31	BALLAD_2	3/4
12	R'nR	4/4	32	BLUES_1	4/4
13	POP_1	4/4	33	BLUES_2	3/4
14	POP_2	4/4	34	JAZZ_1	4/4
15	POP_3	4/4	35	JAZZ_2	3/4
16	POP_4	4/4	36	JAZZ_3	4/4
17	DANCE_1	4/4	37	METRO_3	3/4
18	DANCE_2	4/4	38	METRO_4	4/4
19	DANCE_3	4/4	39	METRO_5	5/4
20	DANCE_4	4/4	40	METRO	



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A2.1u Patch List

CATEGORY	No.	NAME	KEY EFFECT	COMMENT	PEDAL SETTING
MODEL	A0	D-28	MARTIN D-28	The sound of a Martin D-28, the "gold standard" of acoustic guitars. Dynamic and gorgeous.	VOLUME
	A1	J-200	GIBSON J-200	Simulation of a Gibson J-200 with its large, impressive body and sound to match.	VOLUME
	A2	TRIPLE 0	MARTIN 000-18	Simulation of the increasingly popular Martin 000-18 with its compact, handy body and finely nuanced sound.	VOLUME
	A3	J-45	GIBSON J-45	The Gibson J-45 is characterized by its warm and rich tone. A true "workhorse" beloved by many guitarists.	VOLUME
	A4	ADAMAS	OVATION	The tone of the Ovation Adamas which has a body made from a special material called Lyrachord and rounded shape to focus the sound.	VOLUME
	A5	TACOMA	TACOMA C3C	Typical midrange oriented sound of a Tacoma C3C with its innovative design and unique soundhole position.	VOLUME
	A6	NYLON	NYLON	Nylon guitar sound great for Bossa Nova and other Latin styles. The trick is to play with your finger cushions.	VOLUME
	A7	DJANGO	SELMER MACCAFERRI	Sound of the Selmer-Maccaferri guitar best known as the favored instrument of Django Reinhardt. The true sound of Gypsy Jazz.	VOLUME
	A8	DOBRO	DOBRO	Sound of the Dobro Model 27 with its square neck and resonator. Indispensable for Bluegrass and Country Blues.	VOLUME
A9	NATIONAL	NATIONAL	The brass body of the National Reso-Phonic Style "O" produces a more metallic sound than a Dobro.	VOLUME	
CHORUS & REVERB	B0	SYMPHONY	CHORUS ENSEMBLE	Beautiful symphonic sound suitable for any playing style.	CHORUS ENSEMBLE MIX
	B1	TUBY	HALL	Straight sound of a tube preamp seasoned with some hall reverb. Really comes into its own when multiple strings resonate together.	HALL MIX
	B2	SLOW CHORUS	CHORUS ENSEMBLE	Slow chorus sound for finger style Jazz. Experience the spatial depth and ambience of a chorus ensemble.	CHORUS ENSEMBLE MIX
	B3	BIG HALL	HALL	Long reverb that brings out the glorious Martin D-28 sound to the max. Let loose with fingerpicking.	HALL MIX
	B4	FLANG	MODERN SPRING	Flanger with a chorus-like feel is great for a wide playing range, from arpeggios to stroking.	FLANGER RATE
	B5	MELODIC	BRIGHT SLAP REVERB	Tube preamp patch for picked solos makes the original sound stand out with a slightly delayed reverb.	BRIGHT SLAP REVERB MIX
	B6	CHORUS WALL	STEREO CHORUS	Select this stereo chorus & doubling patch and feel the sound waves move in like a wall.	STEREO CHORUS MIX
	B7	BRIGHT CHORUS	CHORUS	With a clearly defined effect similar to chorus for electric guitar, this bright and clear sound fits many music genres.	CHORUS RATE
	B8	STUDIO FLANGER	BRIGHT SLAP REVERB	Combination of flanger for chord and arpeggio playing, and reverb for bringing out the original sound. Lends impressive depth to the sound on slow numbers.	BRIGHT SLAP REVERB MIX
B9	12STRINGS	DETUNE	Simulates the sound of chord strokes on a 12-string guitar. Experience that naturally gorgeous tone with your own guitar.	HALL MIX	
ARTIST	C0	PARIS TEXAS	NATIONAL	Slide sound such as played by Ry Cooder on the soundtrack of "Paris, Texas" by Wim Wenders.	VOLUME
	C1	AERIAL BOUNDARIES	CHORUS ENSEMBLE	This patch is inspired by the sound of Michael Hedges on his groundbreaking masterpiece "Aerial Boundaries".	VOLUME
	C2	CROSS ROAD	NYLON	The sound of legendary pre-war Blues guitarist Robert Johnson, spruced up with a simulation of that late 1930s atmosphere.	VOLUME
	C3	SCARBOROUGH	HALL	Reexperience the translucent sound of Scarborough Fair on Simon & Garfunkel's third album.	VOLUME
	C4	TEARS	ROOM	Eric Clapton, MTV Unplugged, say no more. Comfortable, warm sound, yet a clear standout even in a band ensemble.	VOLUME
	C5	INNOCENT	AIR	Whether for slide or fingerpicking, this Ben Harper inspired sound matches various styles.	VOLUME
	C6	HERE COMES	STEREO CHORUS	The acoustic guitar sound plus the entire ambience of the Beatles' Abbey Road album.	VOLUME
	C7	FRIDAY NIGHT	ARENA	Al di Meola's epoch-making performances come to live again. Go for that peerless technique and feel the audience respond.	VOLUME
	C8	ABOUT A GIRL	CHORUS	Simulates the unusual acoustic character of Nirvana Unplugged. Tune your strings lower and turn into Kurt.	VOLUME
C9	ACOUSTIC ELVIS	SPRING	Powerful acoustic sound familiar from Elvis Presley's Country style hits.	VOLUME	
VARIATION	D0	PHASE TOP	PHASER	This solid and compact phase tone is the new "allrounder" for acoustic instruments.	PHASER RATE
	D1	FUNKY FOLK	AUTO WAH & MULTI TAP DELAY	Funky sound with auto wah and multi tap takes acoustic guitar to a new level.	MULTI TAP DELAY MIX
	D2	REAL ACOUSTIC	AIR	Natural acoustic sound modeled on a live J-45. Suitable for finger play, picking, and many other applications.	HALL MIX
	D3	STEPPING STONES	STEP & MULTI TAP DELAY	Brilliant trickster sound using a new step technique specially developed for acoustic guitar use.	MULTI TAP DELAY MIX
	D4	WAH WAH BOX	RESONATOR	Let loose with funky cutting and wild pedal work, using the resonator as a pedal wah effect.	RESONATOR FREQUENCY
	D5	MINOR SWING	NYLON	Classic Bebop Jazz sound for when you just can't stop swinging.	EARLY REFLECTION MIX
	D6	MY BACKWARD FRIENDS	REVERSE DELAY	Psychedelic sound using reverse delay will grow on you. Use it to develop a theme.	REVERSE DELAY BALANCE
	D7	SOFT TREMOLO	TREMOLO	Soft, expressive tremolo sound optimized for acoustic guitar.	TREMOLO RATE
	D8	OVATION SOLO	DELAY	Bright sound with clear delay components and an Ovation style edge for solos.	DELAY MIX
D9	RESOPHONIC	PINGPONG DELAY	Discover new possibilities in bottleneck playing with this combination of ping-pong delay and Zoom original resonator guitar sound.	PINGPONG DELAY MIX	

- The preset area of banks 0 - 3 contains the same patches as A - d.
- The ZNR value may need to be adjusted depending on the guitar and amplifier.

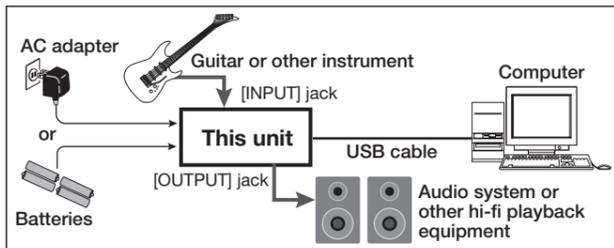
Manufacturer names and product names mentioned in this patch list are trademarks or registered trademarks of their respective owners. These names as well as artist's names are used only to illustrate sonic characteristics and do not indicate any affiliation with ZOOM CORPORATION.

To connect this unit to a computer running Windows XP and to enable audio input/output, proceed as follows.

1 Install Cubase LE on the computer.

When you insert the CD-ROM supplied with this product into the CD-ROM drive of the computer, the installer will start up automatically. Follow the on-screen instructions to install Cubase LE.

2 Connect this unit to the computer using a USB cable.



NOTE

- If you monitor the audio signal during recording via the audio output of the computer, there will be an audible latency. Be sure to use the [OUTPUT] jack of this unit to monitor the signal.
- When a device designed to use USB power is powered via the USB cable, insufficient power may result in unstable operation or error indications appearing on the display. In such a case, power the device from an AC adapter or batteries.
- Use a high-quality USB cable and keep the connection as short as possible. If power is supplied to a device designed to use USB power via a USB cable that is more than 3 meters in length, the low voltage warning indication may appear.

HINT

No special steps are necessary for canceling the USB connection. Simply disconnect the USB cable from the computer.

When you connect this unit for the first time to a computer running Windows XP, a message saying "New Hardware Found" will appear. Before proceeding, wait a while until this message disappears.

3 From the "Start" menu, select "Control Panel" and double-click "Sounds and Audio Devices".

The sounds and audio devices properties screen appears. Click the "Audio" tab and check whether "USB Audio CODEC" is selected as default device for audio playback and recording.



If another device is selected, use the "Default Device" pull-down menu to change the selection to "USB Audio CODEC". When the setting has been made, click the OK button to close the sounds and audio devices properties screen.

4 Start Cubase LE.

A window asking whether to check the audio input/output port appears. Click OK to perform the check.

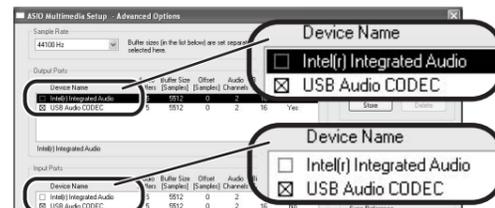
5 After Cubase LE has started up, access the "Devices" menu, select "Device Setup..." and click "VST Multitrack" in the list of devices.



Check whether "ASIO Multimedia Driver" is selected as ASIO driver in the right part of the device setup window.

6 Click the "Control Panel" button in the device setup window. In the window that appears, click the "Advanced Options" button.

In the advanced options window, check whether "USB Audio CODEC" is selected as input port and output port.



If not selected, click the respective box to place a check mark in it. When the setting has been made, click the OK buttons to close the windows and return to the normal post-startup Cubase LE screen.

HINT

- By clicking the Move up/Move down button in the advanced options window, you can change the priority sequence setting of the currently selected port. If you move "USB Audio CODEC" to the top of the list, it will also be at the top in the following VST input window.
- When you edit any of the settings in the advanced settings window, a window asking whether to check the audio input/output port appears. Click OK to perform the check.

7 Access the "Devices" menu and select "VST Inputs". The VST inputs window appears. Check whether the input port is active.



If the Active button is Off (grayed out), click the button to set it to On.

HINT

When multiple input ports are available for selection, you should scroll or enlarge the window and check the enable/disable settings for all ports.

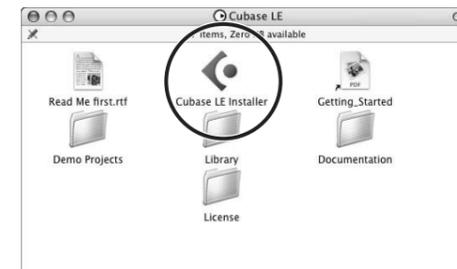


To connect this unit to a computer running MacOS X and enable audio input/output, proceed as follows.

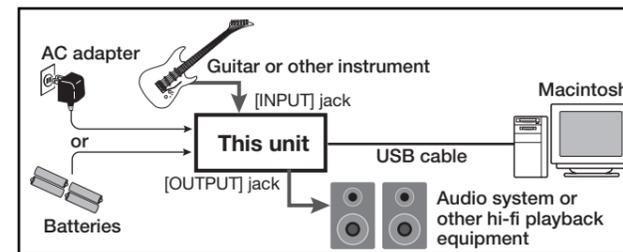
1 Insert the CD-ROM supplied with this product into the CD-ROM drive of the Macintosh computer.

The "Cubase LE" icon appears on the desktop.

2 Double-click the icon to open it, and use the "Cubase LE Installer" to install Cubase LE.



3 Connect this unit to the computer using a USB cable.



NOTE

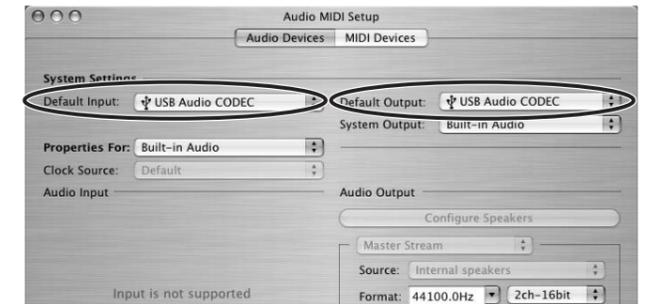
- If you monitor the audio signal during recording via the audio output of the computer, there will be an audible latency. Be sure to use the [OUTPUT] jack of this unit to monitor the signal.
- When a device designed to use USB power is powered via the USB cable, insufficient power may result in unstable operation or error indications appearing on the display. In such a case, power the device from an AC adapter or batteries.
- Use a high-quality USB cable and keep the connection as short as possible. If power is supplied to a device designed to use USB power via a USB cable that is more than 3 meters in length, the low voltage warning indication may appear.

HINT

No special steps are necessary for canceling the USB connection. Simply disconnect the USB cable from the computer.

4 Open the "Applications" folder and then the "Utilities" folder, and double-click "Audio MIDI Setup".

The Audio MIDI Setup screen appears. Click "Audio Devices" and check whether "USB Audio CODEC" is selected as default input/default output.



If another device is selected, use the pull-down menu to change the selection to "USB Audio CODEC". When the setting has been made, close Audio MIDI Setup.

5 Start Cubase LE.

HINT

The Cubase LE program is installed in the "Applications" folder.

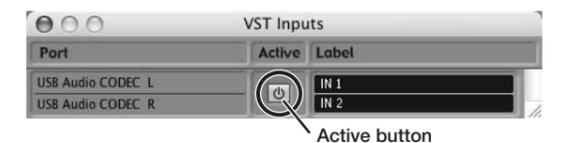
6 When Cubase LE has started up, access the "Devices" menu, select "Device Setup...", and click "VST Multitrack" in the list of devices.

Check whether "USB Audio CODEC(2)" is selected as ASIO driver in the right part of the device setup window.



If another item is selected, use the pull-down menu to change the selection. When the setting has been made, click the OK button to close the window.

7 Access the "Devices" menu and select "VST Inputs". The VST inputs window appears. Check whether the input port is active.

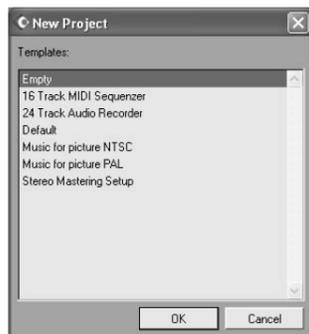


If the Active button is Off (grayed out), click the button to set it to On.



8 Access the "File" menu and select "New Project".

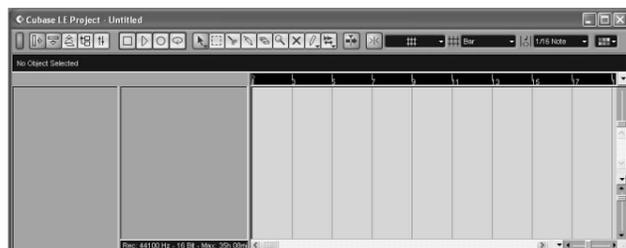
The new project window appears. Here you can select a project template.

**9 Make sure that the "Empty" template is selected, and click the OK button.**

A window for selecting the project file save location appears.

10 After specifying the project file save location (such as the desktop), click the OK button (Choose button in MacOS 10.4).

A new project is created, and the project window for controlling most of the Cubase LE operations appears.



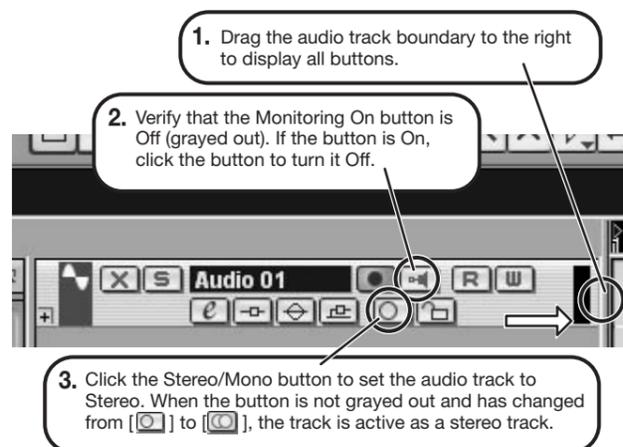
Project window

11 To create a new audio track, access the "Project" menu and select "Add track". In the submenu that appears, select "Audio".

A new audio track is added to the project window.

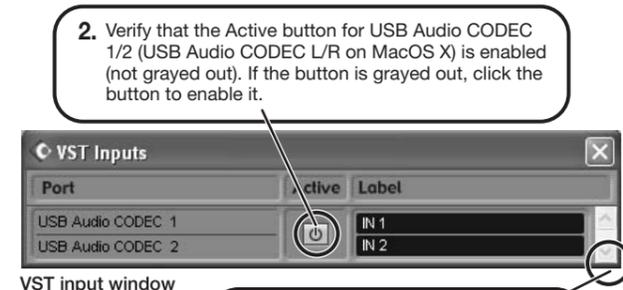
**HINT**

You can add several tracks at once by accessing the "Project" menu, selecting "Add track" and then selecting "Multiple..." in the submenu.

12 Make the following settings for the new audio track.**13 Access the "Devices" menu and select "VST Inputs".**

The VST inputs window appears. This window shows the available input ports and their active/inactive status.

You can perform the following steps here.



VST input window

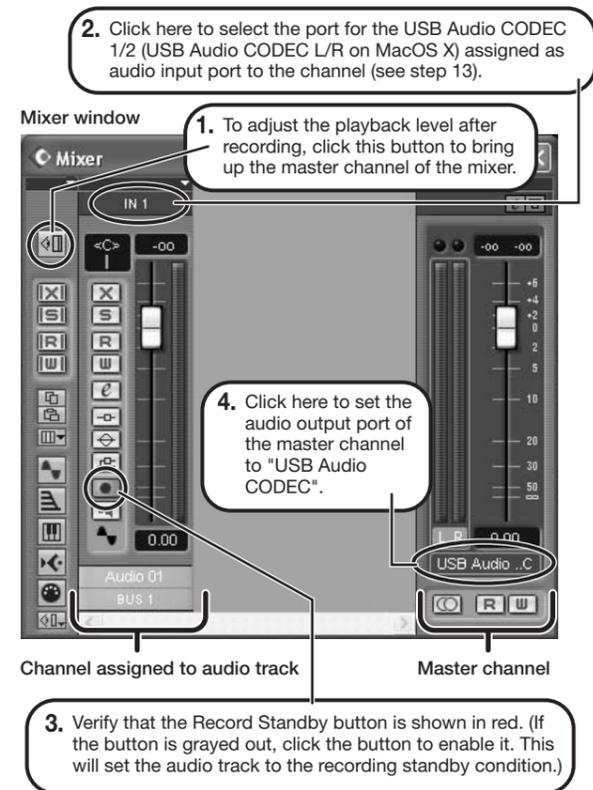
14 Connect the guitar or other instrument to the [INPUT] jack of this unit and select the desired patch.

The sound selected here will be recorded on the computer via the [USB] port.

15 Access the "Devices" menu and select "Mixer".

The mixer window appears. This window shows the channels assigned to created tracks.

You can perform the following steps here.

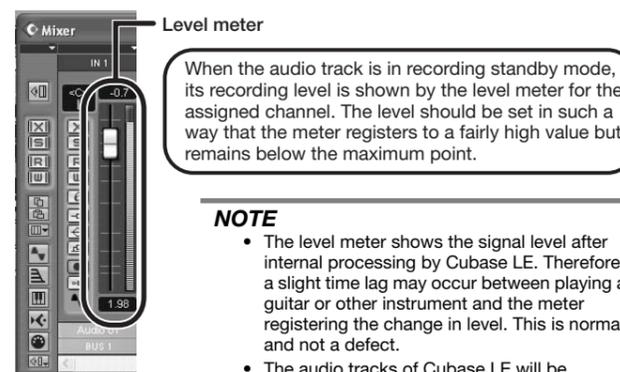


Channel assigned to audio track

Master channel

HINT

When the Record Standby button is enabled, the level meter next to the fader shows the input level for the audio track. When the button is disabled, the output level for the audio track is shown.

16 While playing your instrument, adjust the output level of this unit to achieve a suitable recording level for Cubase LE.**NOTE**

- The level meter shows the signal level after internal processing by Cubase LE. Therefore a slight time lag may occur between playing a guitar or other instrument and the meter registering the change in level. This is normal and not a defect.
- The audio tracks of Cubase LE will be recorded with correct timing exactly matched to your instrument play. There will be no lag between already recorded tracks and newly added tracks.

17 Verify that the transport panel is shown.

Transport panel

If the transport panel is not shown, access the "Transport" menu and select "Transport Panel".

18 To start recording, click the Record button in the transport panel.

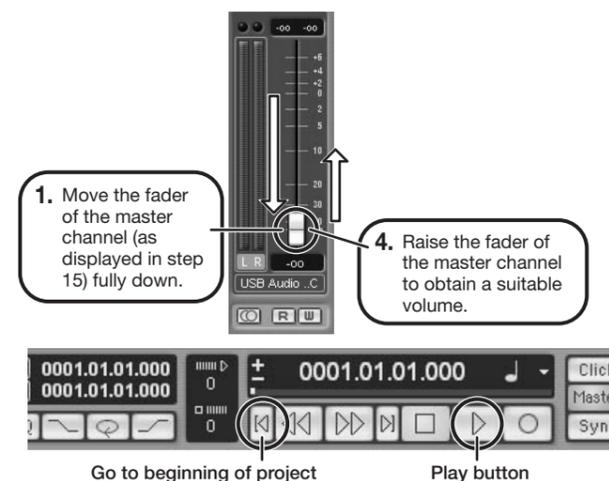
As you play your instrument, the waveform appears in real time in the project window.

19 To stop recording, click the Stop button in the transport panel.

Recording stops.

20 Check the recorded content.

To play the recording, perform the following steps.



Go to beginning of project

Play button

HINT

If no sound is heard when you click the Play button after recording, check the settings in the VST input window (step 13) and the master channel output port setting (step 15) once more.

For optimum enjoyment

While using Cubase LE, other applications may slow down drastically or the message "Cannot synchronize with USB audio interface" may appear. If this happens frequently, consider taking the following steps to optimize the operation conditions for Cubase LE.

- (1) **Shut down other applications besides Cubase LE.**
In particular, check for resident software and utilities.
- (2) **Reduce plug-ins (effects, instruments) used by Cubase LE.**
When there is a high number of plug-ins, the computer's processing power may not be able to keep up. Reducing the number of tracks for simultaneous playback can also be helpful.
- (3) **Power the unit from an AC adapter**
When a device designed to use USB power is powered via the USB port, the current supply may sometimes fluctuate, leading to problems. See if using an AC adapter improves operation.

If applications still run very slowly or the computer itself does not function properly, disconnect this unit from the computer and shut down Cubase LE. Then reconnect the USB cable and start Cubase LE again.

Cubase LE 4 installation | Connections and preparation | Use Cubase LE 4 to record | **Windows Vista / XP**

To connect this unit to a computer running Windows Vista (or Windows XP) and to enable audio input/output, proceed as follows. The installation description uses Windows Vista as an example.

1 Download the latest ASIO driver from the web site of ZOOM Corporation (<http://www.zoom.co.jp>) and install the driver.

The ASIO driver software is required to enable use of Cubase LE 4 for audio input and output with a computer. Refer to the read_me file included in the download package for instructions on how to install the driver correctly.

2 Insert the supplied "Cubase LE 4" DVD-ROM into the DVD drive of the computer, and perform the installation steps.

When you insert the DVD-ROM, a screen asking what you want to do appears. Select "Open folder to view files". When the contents of the DVD-ROM are shown, open the "Cubase LE 4 for Windows" folder by double-clicking on it, and then double-click the executable "Setup" ("Setup.exe") file to start the installation process.



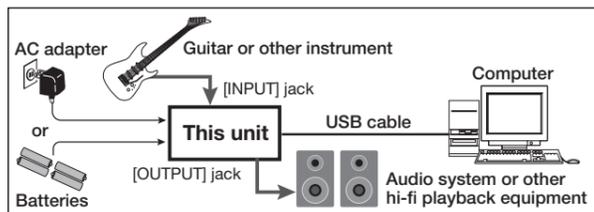
HINT

If nothing happens when you insert the DVD-ROM, open the Start menu and select "Computer" ("My Computer" in Windows XP). Then double-click the "Cubase LE 4" DVD-ROM icon to display the contents of the DVD-ROM.

NOTE

When the installation of Cubase LE 4 is complete, a screen asking about installation of activation (software license authentication) management software appears. Install this software, because it is required for registering Cubase LE 4.

3 Connect this unit to the computer using a USB cable.



NOTE

- If you monitor the audio signal during recording via the audio output of the computer, there will be an audible delay. Be sure to use the [OUTPUT] jack of this unit to monitor the signal.
- When this unit is operated on USB bus power via the USB cable, insufficient power may result in unstable operation or error indications appearing on the display. In such a case, power the device from an AC adapter or batteries.
- Use a high-quality USB cable and keep the connection as short as possible. If USB bus power is supplied to this unit via a USB cable that is more than 3 meters in length, the low voltage warning indication may appear.

HINT

No special steps are necessary for canceling the USB connection. Simply disconnect the USB cable from the computer.

When you connect this unit for the first time to a computer running Windows Vista, a message saying "New Hardware Found" will appear. Before proceeding, wait a while until this message disappears.

4 Bring up the "Sound" window from the Control Panel and make the input device setting for the computer.

To bring up the "Sound" window, select "Control Panel" from the Start menu and click "Hardware and Sound", then click "Sound".

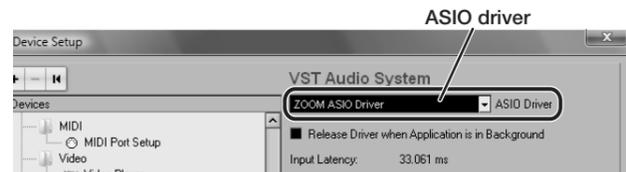


In the "Sound" window, verify that "USB Audio CODEC" is listed under the Play and Record devices and that the device is checked. (To switch between Play and Record, click the tabs at the top of the window.)

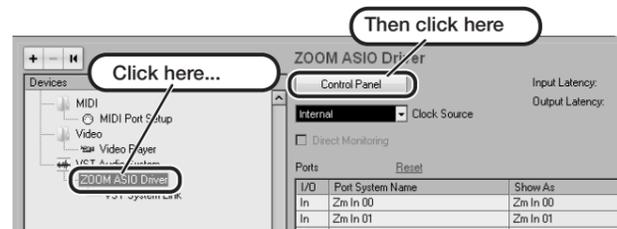
If the device is not checked, right-click on the icon for the device and click "Set as Default Device" so that a check mark appears.

5 Start Cubase LE 4. Then access the "Devices" menu, select "Device Setup..." and click "VST Audio System".

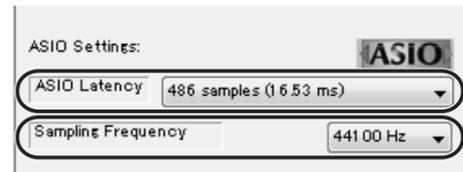
To start Cubase LE 4, double-click the Cubase LE 4 shortcut icon that was created on the desktop. After startup, select "ZOOM ASIO Driver" as the ASIO driver in the right section of the Device Setup window. When you change the ASIO driver selection, a confirmation message appears. Click the "Switch" button.



The device indication in the left section of the window now shows "ZOOM ASIO Driver" as the ASIO driver. Click on this indication to select it, and then click the "Control Panel" button in the right section of the Device Setup window.



The window that appears lets you set the latency and sampling frequency for the ASIO driver. The latency should be set to a value that is as low as possible without causing sound dropouts during recording and playback.



When the setting is complete, click the OK buttons in the respective windows to return to the startup condition of Cubase LE 4.

Continued overleaf

Cubase LE 4 installation | Connections and preparation | Use Cubase LE 4 to record | **MacOS X**

To connect this unit to a computer running MacOS X and enable audio input/output, proceed as follows.

1 Insert the supplied "Cubase LE 4" DVD-ROM into the DVD drive of the Macintosh.

The contents of the DVD-ROM appear automatically. If nothing happens when you insert the DVD-ROM, double-click the "Cubase LE 4" icon shown on the desktop.

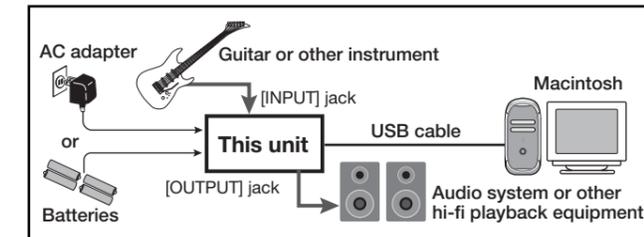
2 Install Cubase LE 4 on the Macintosh.

When the contents of the DVD-ROM appear, open the "Cubase LE 4 for MacOS X" folder by double-clicking it, and then double-click the "Cubase LE 4.mpkg" file to start the installation process.



Cubase LE 4.mpkg

3 Connect this unit to the computer using a USB cable.



NOTE

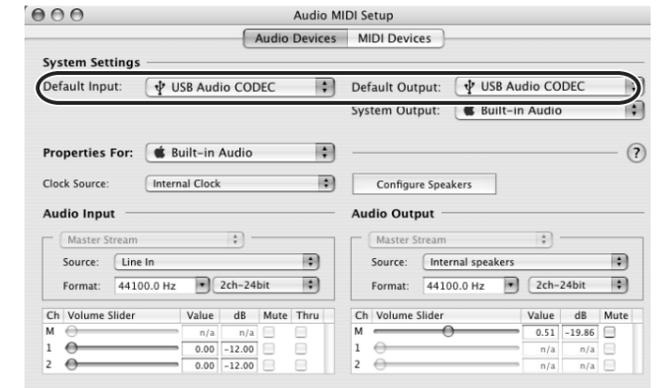
- If you monitor the audio signal during recording via the audio output of the computer, there will be an audible delay. Be sure to use the [OUTPUT] jack of this unit to monitor the signal.
- When this unit is operated on USB bus power via the USB cable, insufficient power may result in unstable operation or error indications appearing on the display. In such a case, power the device from an AC adapter or batteries.
- Use a high-quality USB cable and keep the connection as short as possible. If USB bus power is supplied to this unit via a USB cable that is more than 3 meters in length, the low voltage warning indication may appear.

HINT

No special steps are necessary for canceling the USB connection. Simply disconnect the USB cable from the computer.

4 Open the "Applications" folder and then the "Utilities" folder, and double-click "Audio MIDI Setup".

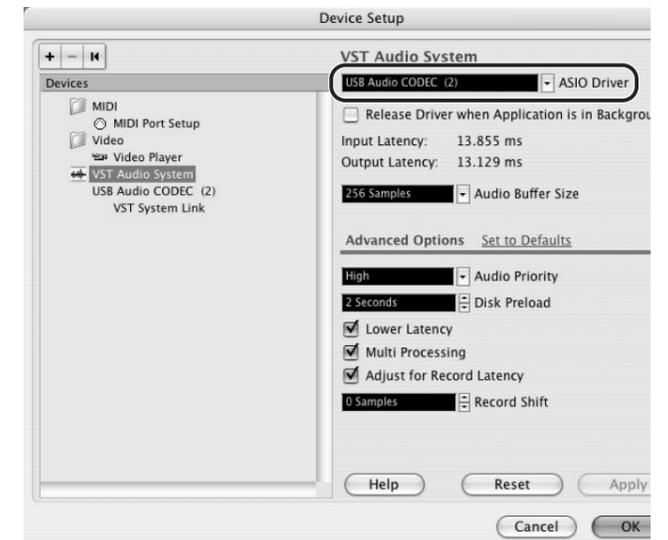
The Audio MIDI Setup screen appears. Click "Audio Devices" and check whether "USB Audio CODEC" is selected as default input/default output.



If another device is selected, use the pull-down menu to change the selection to "USB Audio CODEC". When the setting has been made, close Audio MIDI Setup.

5 Start Cubase LE 4. Then access the "Devices" menu, select "Device Setup..." and click "VST Audio System".

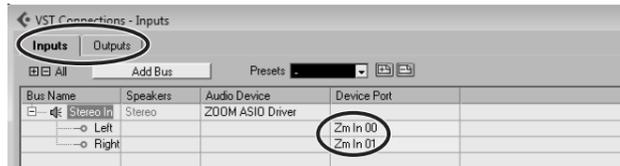
To start Cubase LE 4, double-click on the Cubase LE 4 icon that was placed in the "Applications" folder during installation. After startup, be sure to verify that "USB Audio CODEC (2)" is selected as ASIO driver in the right section of the Device Setup window.



If another item is selected, use the pull-down menu to change the selection to "USB Audio CODEC (2)". When the setting has been made, click the OK button to close the window.

Continued overleaf

- 6** From the "Devices" menu of Cubase LE 4, select "VST Connections" and select the device containing the string "Zm In (Out)" ("USB Audio CODEC" for MacOS X) as input port and output port.



Use the tabs at top (top center for Mac OS X) left to switch between input and output, and verify that "Zm In (Out)" is selected as device port. If another device is selected, click the device port field and change the selection.

- 7** Access the "File" menu and select "New Project".

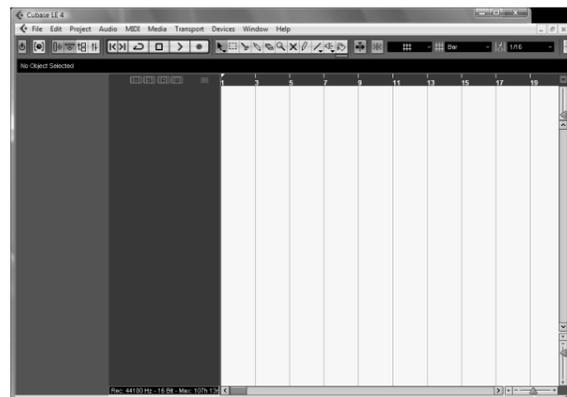
The new project window appears. Here you can select a project template.

- 8** Make sure that the "Empty" template is selected, and click the OK button.

A window for selecting the project file save location appears.

- 9** After specifying a suitable project file save location (such as the desktop), click the OK button (Choose button in MacOS X).

A new project is created, and the project window for controlling most of the Cubase LE 4 operations appears.



Project window

- 10** To create a new audio track, access the "Project" menu and select "Add track". In the submenu that appears, select "Audio".

The Add Track window for specifying the number of audio tracks and the stereo/mono setting appears.

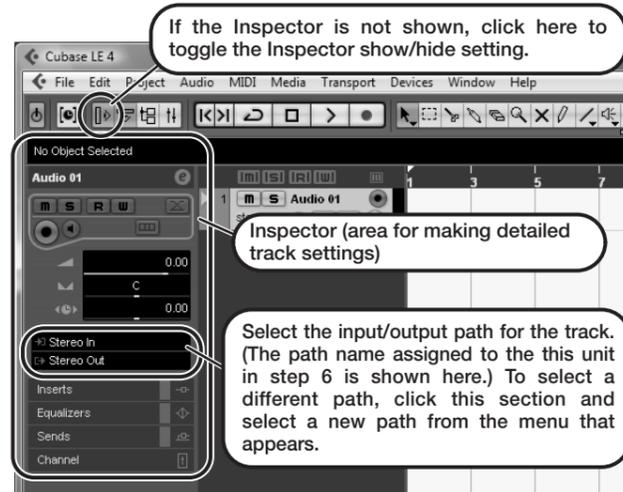


In this example, set the number of tracks to "1" and select stereo, then click the OK button.

A new stereo audio track is added to the project window.



- 11** Make the following settings for the newly created audio track.



HINT

The Inspector shows information about the currently selected track. If nothing is shown, click on the track to select it.

- 12** Connect the guitar or other instrument to the [INPUT] jack of this unit and select the desired patch.

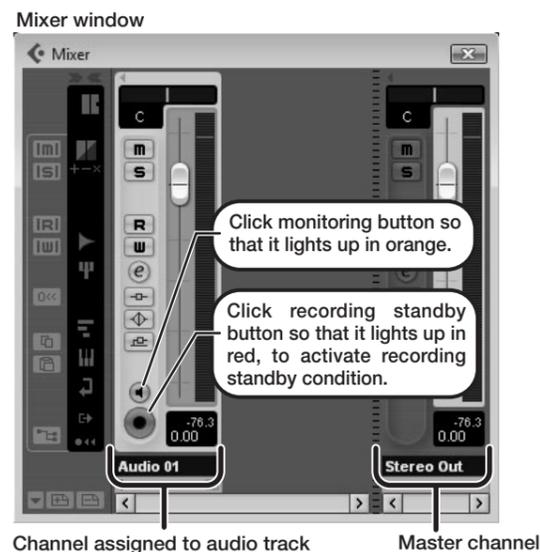
The sound selected here will be recorded on the computer via the [USB] port.

- 13** Access the "Devices" menu of Cubase LE 4 and select "Mixer".

The mixer window appears.

This window shows the channel assigned to the created track, and the master channel.

Perform the following steps here.



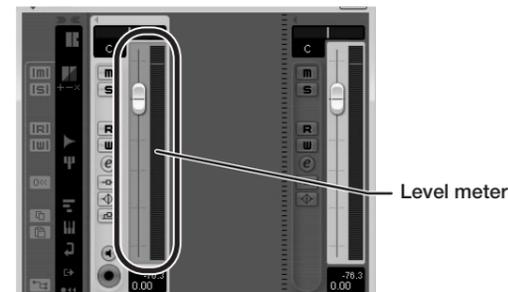
Channel assigned to audio track

Master channel

HINT

When the monitoring button is enabled, the level meter next to the fader shows the input level to the audio track. When the monitoring button is disabled, the meter fader shows the audio track output level.

- 14** While playing your instrument, adjust the output level of this unit to achieve a suitable recording level for Cubase LE 4.



The recording level for Cubase LE 4 can be checked with the level meter for the channel that is assigned to the recording standby track. Set the level as high as possible without causing the meter to reach the end of the scale.

To adjust the level, do not use the fader of Cubase LE 4. Instead change the recording level and gain settings at this unit.

NOTE

- While the monitoring button is enabled, the direct signal input to this unit and the signal routed to the computer and then returned to this unit will be output simultaneously from this unit, causing a flanger-like effect in the sound. To accurately monitor the sound also while adjusting the recording level, temporarily set the output device port for the VST connection (step 6) to "Not Connected".
- The level meter as in the above illustration shows the signal level after processing in this unit. When you pluck a guitar string the meter may register with a slight delay, but this is not a defect.

- 15** When the recording level has been adjusted, click the monitoring button to disable it.

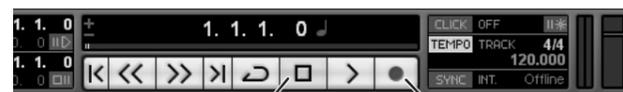
The input level is no longer shown on the meter, and the signal returned to this unit via the computer is muted. In this condition, only the signal before sending to the computer can be monitored via the [OUTPUT] jack of this unit.

- 16** Verify that the transport panel is being shown.



If the transport panel is not shown, access the "Transport" menu and select "Transport Panel".

- 17** To start recording, click the Record button in the transport panel.



Stop button

Record button

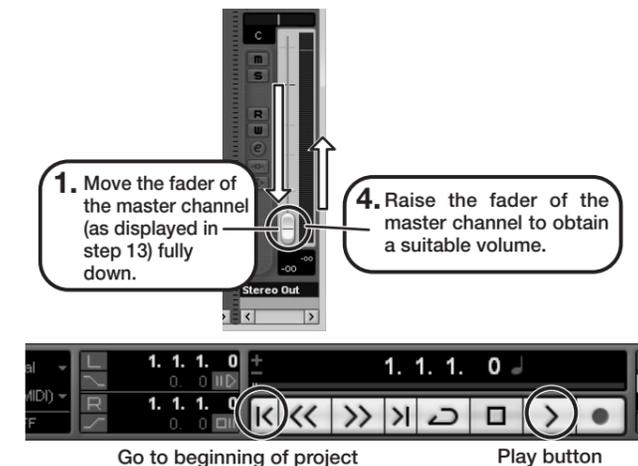
Recording starts.

As you play your instrument, the waveform appears in real time in the project window.

To stop recording, click the Stop button in the transport panel.

- 18** Check the recorded content.

To play the recording, perform the following steps.



1. Move the fader of the master channel (as displayed in step 13) fully down.

4. Raise the fader of the master channel to obtain a suitable volume.

2. Use the button in the transport panel to move to the beginning of the project.

3. Click the Play button in the transport panel to start playback.

HINT

If no sound is heard when you click the Play button after recording, check the VST connection settings (step 6) once more.

NOTE

To continue using Cubase LE 4, a process called activation (license authentication and product registration) is necessary. When you start Cubase LE 4, a screen offering to register the product will appear. Select "Register Now". A web site for registration will open in your Internet browser. Follow the instructions on that page to register and activate the product.

For optimum enjoyment

While using Cubase LE 4, other applications may slow down drastically or a message such as "Cannot synchronize with USB audio interface" may appear. If this happens frequently, consider taking the following steps to optimize the operation conditions for Cubase LE 4.

- Shut down other applications besides Cubase LE 4. In particular, check for resident software and other utilities.
- Reduce plug-ins (effects, instruments) used by Cubase LE 4. When there is a high number of plug-ins, the computer's processing power may not be able to keep up. Reducing the number of tracks for simultaneous playback can also be helpful.
- Power the unit from an AC adapter. When a device designed to use USB power is powered via the USB port, the current supply may sometimes fluctuate, leading to problems. See if using an AC adapter improves operation.

If applications still run very slowly or the computer itself does not function properly, disconnect this unit from the computer and shut down Cubase LE 4. Then reconnect the USB cable and start Cubase LE 4 again.