

Luxman

USB D/A CONVERTER

DA-250

Owner's Manual

Contents

Precautions	1
Features of This Unit.....	3
Names and Functions.....	5
Connections	15
Operations.....	18
Block Diagram.....	20
Specifications	21
Before Asking for Repair Services.....	23

Precautions

Installation place

- Choose a stable place near the devices that are to be used in combination with this unit.
- Do not install this unit near a television or color monitor. Keep this unit away from such devices as cassette decks that are susceptible to magnetic.

Avoid the following locations for installation.

- Locations exposed to direct sunlight
- Places subject to humidity and with less ventilation
- Places where it is extremely hot or cold
- Places subject to strong vibration
- Places subject to dust
- Places subject to oil, steam, and heat (such as kitchens)

To avoid heat emission

Do not place this unit on such device as an amplifier that may emit heat. If the unit is installed on a rack, install the unit as distantly as possible from where the amplifier is installed so as to avoid heat emission from the amplifier and other audio devices.

Turn off this unit when it is not used.

Depending on the condition of radio waves emitted during television broadcasting, interference fringes may appear on the television monitor, but that is not a malfunction. In such a case, turn off the unit. There may also be a case where noises are heard on the radio due to radio wave interference.

Notice when handling optical digital cables

- Do not fold the cables. For storage, wind each cable to make a coil whose diameter is approx. 15 cm or larger.
- For connection, insert the cable connectors firmly into the terminals of this unit and the other device.
- Use the cables whose each length is 3 m or less.
- When the cable connectors get dusty, wipe the dust away with a dry soft cloth before inserting into the terminals.

Batteries

Caution:

Batteries used for remote controller shall not be exposed to excessive heat such as sunshine, fire or the like.

Safety caution: Lithium battery

Warning

- Put the lithium battery out of baby's reach.
- In case that the battery is swallowed, consult a doctor immediately.
- Do not disassemble, throw in a fire, recharge, heat, solder, or short-circuit the battery.
- Do not use or leave the battery in a hot place such as under strong direct sunlight, in a car under the blazing sun, and in front of a heater. Failure to observe this may cause battery liquid leakage, heat generation, rupture, or ignition. This may also degrade the performance or shorten the life of the battery.

Caution

- **Danger of explosion if battery is incorrectly replaced.**
 - **Replace only with the same or equivalent type.**
 - If the battery is not used for a long time (1 month or more), the battery shall be removed from the case to prevent battery liquid leakage. If the liquid leaks from the battery, wipe the liquid off inside the case completely and load a new lithium battery.
 - To discard a used lithium battery, follow the instructions of each local authority.
-

Cleaning

- Usually, wipe the unit with a dry soft cloth. When the dirt is hard to remove, dip soft cloth in detergent diluted 5 or 6 times with water, wring it well, and remove contaminants. Then, remove the moisture with dry cloth.
- Do not use a solvent like alcohol, benzine, thinner, or pesticide because such a substance can damage the exterior. In addition, do not let this unit contact a rubber or plastic form for a long time. That may damage the cabinet surface of the unit.
- When using a chemical cloth for cleaning, read the caution provided with the chemical cloth product.
- Before cleaning, unplug the power cord from the AC outlet.

Precautions in connecting with other components

When connecting this unit to input/output devices other than a PC/Mac such as a CD player, an SACD player, a DVD player, a tuner, and a power amplifier, be sure to turn off the power of this unit and all other connected devices. Failure to observe this may generate a strong noise resulting in speaker damage or cause a malfunction.

The pin-plug to be inserted in each input terminal of this unit shall be pushed in firmly. If the grounding terminal is inadequately connected, noises including hum may be generated, resulting in an adverse S/N ratio.

Protection circuit

This unit is equipped with a protection circuit that is activated upon the detection of overcurrent to protect the headphones. When the protection circuit is activated, the output to the headphones is shut off and the operation indicator blinks to show that this unit is in the muting state. When the cause to activate the protection circuit is eliminated, the blue operation indicator light comes back on and the operating state resumes. If the protection circuit is frequently activated, please consult your dealer.

Insertion and extraction of headphone plug

When the headphone (unbalanced) plug is inserted or extracted, a short circuit occurs between the L ch output and R ch output because of the structure of the headphone jack (unbalanced).

If the volume of this unit is turned up at this moment, an overcurrent flows to the headphone amplifier output and the overcurrent detection circuit becomes activated, which sets this unit to the muting state and may also cause a malfunction. Therefore, the insertion and extraction of the headphone plug shall be performed when the volume is turned down to the minimum or when there is no signal after shutting off input signals.

Repair and adjustment

When repairs or adjustments are needed, please ask the dealer where you bought the unit.

Caution in using headphones

If the headphones are used for a long time at a high sound volume level, your hearing may be damaged.

Features of This Unit

Compact chassis design

This unit is a D/A converter that has a compact body as small as B4-paper size.

PCM1795 manufactured by Burr-Brown

For the DAC chip, this unit uses PCM1795 manufactured by Burr-Brown that is used for the LUXMAN SACD player, D-05u.

USB input supports 192 kHz / 32 bit

B-type USB input terminal is installed and makes it possible to input USB digital audio signal from a PC/Mac.

The sampling frequency of up to 192 kHz and 32-bit quantization are supported.

USB input supports DSD

DSD format data can be entered from PC/Mac, or the like. Sampling frequencies of 2.8224 MHz/5.6448 MHz is supported.

Asynchronous communication supported

The USB input with low jitter has been achieved with USB dedicated IC by asynchronous communication and PLL.

DD converter function

All the digital inputs including USB can be digitally output in the S/PDIF format.

AD converter function

Analog line inputs can be converted into digital signals in the S/PDIF format and output with coaxial or optical terminal. Signals can be output as analog signals by the internal DAC. (sampling frequency 96 kHz/24-bit)

LECUA (LUXMAN Electric Controlled Ultimate Attenuator)

An electrically controlled attenuator LECUA, in which attenuation is obtained by combining resistances, is used in the headphone amplifier unit and analog output unit independently to achieve fresh sound.

Built-in headphone amplifier

A high-grade headphone amplifier circuit with discrete circuit configuration is equipped. The output level can be selected from 2 stages in accordance with the sensitivity of headphones.

Built-in pre-amplifier circuit

A pre-amplifier circuit equipped with LECUA is embedded in the analog output.

It is possible to connect the unbalanced or balanced outputs to the power amplifier and other directly, so that sound volume can be controlled.

7-segment LED

The sampling frequency of the digital input and the selected input can be displayed on the monitor with 7-segment LEDs with a high level of visibility. The attenuation amount is displayed during sound volume adjustment. The dimmer function allows the brightness of the LEDs to be selected from 4 levels.

Original technologies

Our traditional round pattern board, OFC internal wiring, and original custom-made parts are fully and luxuriously used.

Remote control (RD-24)

Operations can be performed with a compact card-type remote control.

*1 Mac and Mac OS are trademarks of Apple Inc., registered in the U.S. and other countries.

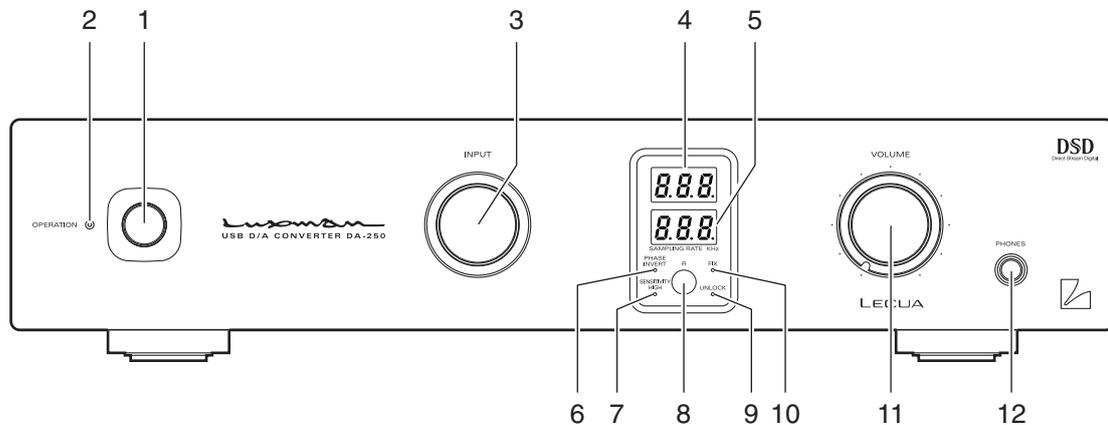
*2 Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries.

*3 DSD is a trademark.

*4 The described company names and product names are trademarks or registered trademarks of each company.

Names and Functions

Front panel



1. Operation switch (OPERATION)

This switch turns on and off the power.

When wiring or connection is performed, be sure to turn off this switch.

2. Operation indicator (OPERATION)

Blinks in the time of muting mode when the operation switch is turned on and lights up when the operation state is activated afterward.

3. Input selector (INPUT)

Selects an input device connected to each input terminal.

Input transition goes as follows by clockwise rotation:

USB → COAX → OPT 1 → OPT 2 → LINE → USB ...

Input transition goes as follows by counterclockwise rotation:

USB → LINE → OPT 2 → OPT 1 → COAX → USB ...

Input: Digital output from a PC/Mac, a CD player, an SACD player, a DVD player, and other such devices (USB/COAX/OPT 1/OPT 2)
Analog line output from a CD player, an SACD player, a tuner, a DVD player, a TV, and other such devices (LINE)

4. Input selector display LED

Displays the input terminal selected with the input selector.

The input terminals are shown as follows:

- USB input: USB
- COAX input: COA
- OPT 1 input: OP1
- OPT 2 input: OP2
- LINE input: LIn

5. Sampling frequency/volume level display LED (SAMPLING RATE/VOLUME)

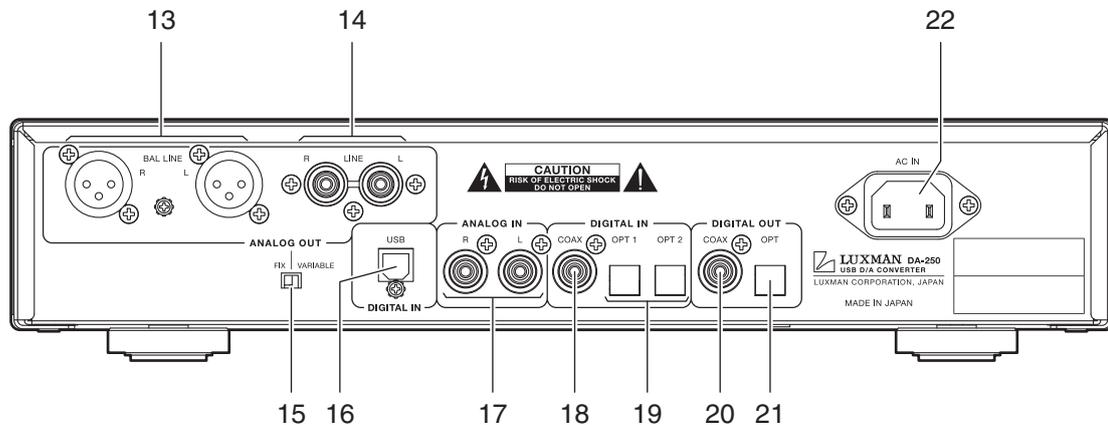
Displays the sampling frequency of the digital signal connected to the input terminal (USB/COAX/OPT 1/OPT 2) selected with the input selector. When a digital input is selected from USB/COAX/OPT 1/OPT 2 with the input selector and the digital input signal from the digital device is synchronized with this unit, the sampling frequency of the digital signal is displayed on this LED.

When no digital signal is input or no synchronization is established even with a digital signal input, the digital signal unlock indicator lights up, and the sampling frequency is not displayed on the LED.

When playback from a PC/Mac is stopped, the sampling frequency disappears and the unlock indicator stays off. This phenomenon indicates that communication with the PC/Mac stays active.

Names and Functions

Rear panel



13. Analog balance output terminals (XLR)

XLR connector terminal to output balanced playback signals from this unit.

The phase can be changed with the analog output phase selection switch (PHASE) on the remote control.

The following are the phases of the output terminals of this unit:

- | | |
|--------|-------------|
| Normal | 1. GROUND |
| | 2. COLD (-) |
| | 3. HOT (+) |
| Invert | 1. GROUND |
| | 2. HOT (+) |
| | 3. COLD (-) |

When the analog output level fix/variable selection switch (FIX/VARIABLE) is set to VARIABLE, the output level varies depending on the state of the volume control (VOLUME) on the front panel.

14. Analog unbalance output terminals (RCA)

RCA terminal to output unbalanced playback signals from this unit.

The phase can be changed with the analog output phase selection switch (PHASE) on the remote control.

When the analog output level fix/variable selection switch (FIX/VARIABLE) is set to VARIABLE, the output level varies depending on the state of the volume control (VOLUME) on the front panel.

15. Analog output level fix/variable selection switch (FIX/VARIABLE)

Sets the level of the playback signals from the analog output terminal to FIX or VARIABLE.

When this switch is set to FIX, the analog output level fix indicator (FIX) lights up to indicate that the output level from the analog output terminal (RCA, XLR) is fixed and cannot be adjusted with the volume control.

When the switch is set to VARIABLE, the output level of the analog output terminal (RCA, XLR) can be adjusted with the the volume control on the front panel or the remote control. The sound volume of the headphones can be adjusted regardless of the status of the selection switch.

When the selection switch is switched, the output level may change greatly.

Be careful of the sudden change of the sound volume.

16. USB digital input terminal (USB)

USB (B-type) input terminal used for the digital input signal from such device as a PC/Mac to be connected with a USB cable.

The terminal supports the following signals.

- PCM signal
Sampling frequency: 32 kHz, 44.1 kHz, 48 kHz,
88.2 kHz, 96 kHz,
176.4 kHz, 192 kHz
Number of quantization bits: 16 bit, 24 bit, 32 bit

- DSD signal
Sampling frequency: 2.8224 MHz, 5.6448 MHz
Number of quantization bits: 1 bit

When the OS is Windows, the dedicated driver software needs to be downloaded from LUXMAN website and installed.

Refer to "Driver Installation Manual" on the LUXMAN website for detailed information.

With Mac, this unit is automatically recognized.

Caution:

Connection between a PC and this unit with use of a USB cable shall not be performed before the installation of this driver software is completed. Failure to observe this may cause a malfunction.

17. Analog input terminals (ANALOG IN)

RCA input terminals used for the line level input signals from a CD player, an SACD player, a tuner, a DVD player, a TV, and other such devices.

18. Digital input terminal (COAX)

RCA input terminal used for the digital input signals from such device as a CD player equipped with digital output terminals using a coaxial digital cable.

The terminal supports the following data.

- Sampling frequency: 32 kHz, 44.1 kHz, 48 kHz,
88.2 kHz, 96 kHz,
176.4 kHz, 192 kHz
Number of quantization bits: 16 bit, 20 bit, 24 bit

19. Digital input terminal (OPT 1/OPT 2)

TOS-LINK input terminal used for the digital input signals from such device as a CD player equipped with digital output terminals using an optical digital cable.

The terminal supports the following data.

- Sampling frequency: 32 kHz, 44.1 kHz, 48 kHz,
88.2 kHz, 96 kHz,
176.4 kHz, 192 kHz
Number of quantization bits: 16 bit, 20 bit, 24 bit

20. Digital output terminal (COAX)

RCA output terminal used to output digital signals input to the digital input terminal (USB/COAX/OPT 1/OPT 2) and digital signals converted from analog input signals.

The input signals selected with the input selector are output. The sampling frequency and the number of quantization bits of the digital output signal are the same as those of the input signals. The frequency for an analog input is 96 kHz.

When a DSD file or the PCM data of 32 kHz sampling frequency is played back, a digital audio output cannot be provided.

21. Digital output terminal (OPT)

TOS-LINK output terminal used to output digital signals input to the digital input terminal (USB/COAX/OPT 1/OPT 2) and digital signals converted from analog input signals.

The input signals selected with the input selector are output. When a DSD file or the PCM data of 32 kHz sampling frequency is played back, a digital audio output cannot be provided.

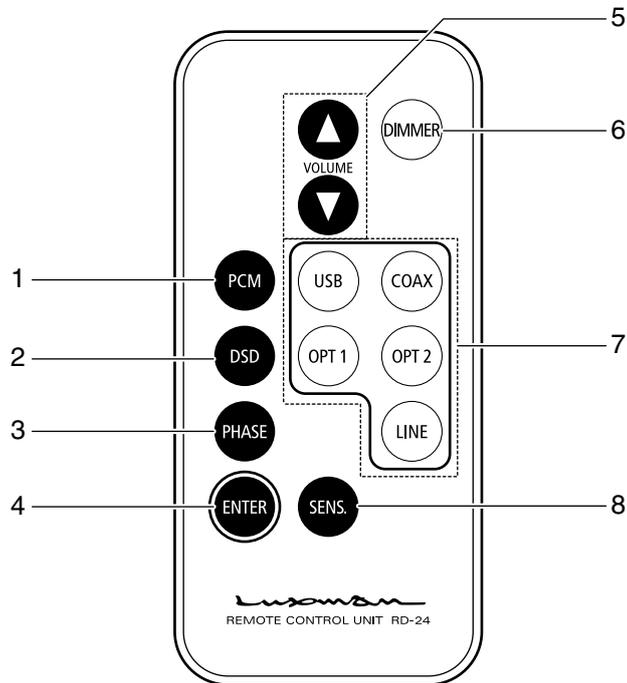
This terminal is a shutter-type. Direct the cable connector correctly when inserting the cable into the terminal. If the cable connector is inserted forcedly to the wrong direction, the terminal may be deformed, and the shutter may not be able to close even after cable disconnection.

22. AC inlet (AC IN)

Connects the accessory power cable to supply the power from the AC outlet on the wall.

Names and Functions

Remote control



1. Digital filter selection switch (PCM)

This switch changes the interpolation function of the 32-bit digital filter while the PCM data is played back.

Select a filter depending on your taste. The sound quality can be changed.

There are 2 types of filters, P-1 and P-2

Pressing this switch displays the current setting data (P-1, P-2) on the display window.

When pressing this switch again while the setting data is displayed, the next setting data will be displayed.

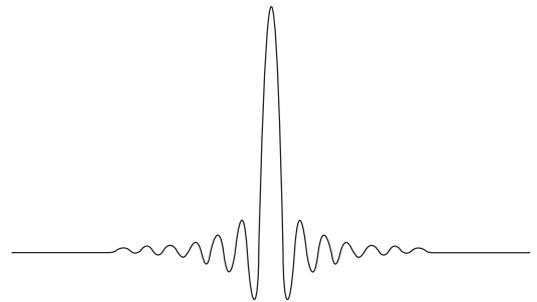
Pressing the enter switch (ENTER) while the setting data is displayed determines the setting data.

If the enter switch is not pressed, the digital filter is not changed.

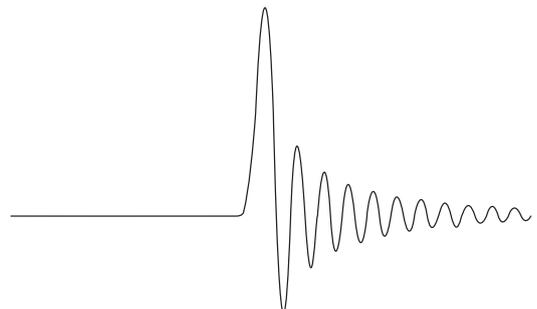
The impulse response of the interpolation function shows the waveform shown on this page.

This setting is stored on the flash memory even when the power is turned off.

P-1 (normal FIR filter)



P-2 (low latency IIR filter)



2. Analog FIR filter selection switch (DSD)

This switch changes the analog FIR filter while the DSD file is played back.

Select a filter depending on your taste. The sound quality can be changed.

There are 2 types of filters, d-1 and d-2.

Pressing this switch displays the current setting data (d-1, d-2) on the display window.

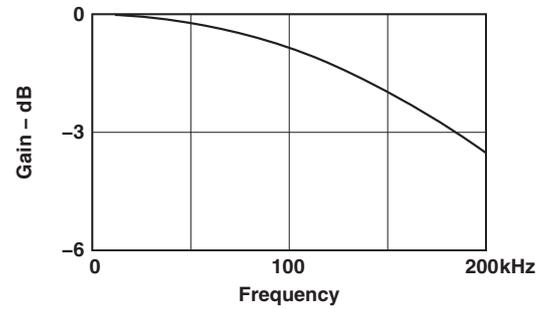
When pressing this switch again while the setting data is displayed, the next setting data will be displayed.

Pressing the enter switch (ENTER) while the setting data is displayed determines the setting data.

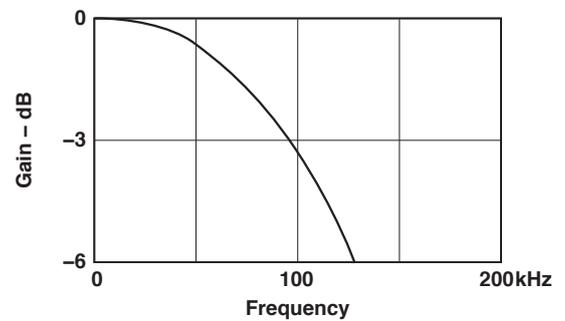
If the enter switch is not pressed, the filter is not changed.

The analog FIR filter features the following:

d-1 (normal analog FIR filter)

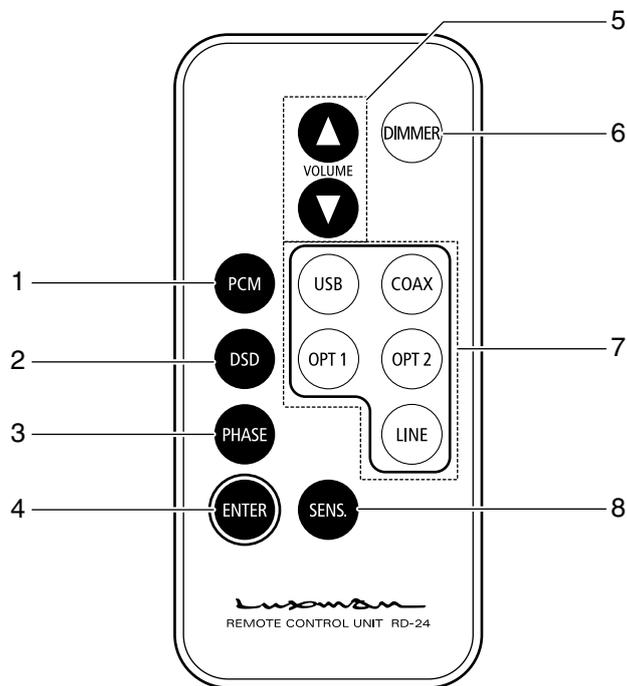


d-2 (high attenuation analog FIR filter)



Depending on the filter selection, there is a difference in sound volume. When d-1 is selected, the output voltage is 1.2 Vrms. When d-2 is selected, the output voltage is 1.7 Vrms.

Names and Functions



3. Analog output phase selection switch (PHASE)

The phases of the analog output on the rear panel and the headphone output are inverted.

The balanced output, unbalanced output, and headphone output are inverted together.

Pressing this switch displays the current setting data (3-P, 2-P) on the display LED.

When pressing this switch again while the setting data is displayed, the next setting data will be displayed.

Pressing the enter switch (ENTER) while the setting data is displayed determines the setting data.

If the enter switch is not pressed, the setting data will not be changed.

This setting is stored on the flash memory even when the power is turned off.

[Normal Position]

Indicates that the 3-Pin of the balanced output is positive.

1. GROUND
2. COLD (-) $\left(\begin{matrix} \text{PH} \\ \text{3-P} \end{matrix} \right)$ Set as PH, 3-P
3. HOT (+)

[Invert Position]

Indicates that the 2-Pin of the balanced output is positive.

1. GROUND
2. HOT (+) $\left(\begin{matrix} \text{PH} \\ \text{2-P} \end{matrix} \right)$ Set as PH, 2-P
3. COLD (-)

4. Enter switch (ENTER)

This switch is pressed to execute the set or selected items.

5. Volume control switches (VOLUME)

Adjust the output level of this unit.

Pressing these switches change the output level.

- Pressing ▲ increase the sound volume.
- Pressing ▼ decrease the sound volume.

When FIX is selected, the volume control cannot work because the analog output level is set to the maximum.

6. Dimmer switch (DIMMER)

Adjusts the brightness of the input selector and sampling frequency display LEDs. The brightness can be adjusted in 4 stages from normal to light off.

Every time the switch is pressed, the transition goes as follows: normal (HI) → dim (L01) → very dim (L02) → light off (OFF) → normal (HI)

The setting is determined by pressing the ENTER key (ENTER) while the selected brightness is flashing on the display LED, or after approximately 5 seconds with nothing done.

7. Input selector (USB, COAX, OPT 1, OPT 2, LINE)

Selects an input terminal on the rear panel.

During input selecting operation, muting circuit is in operation and the unit will be on mute.

The display LEDs of the main unit are shown as follows:

USB: USb
COAX: COA
OPT 1: OP1
OPT 2: OP2
LINE: LIn

8. Headphone terminal sensitivity selector (SENS.)

Selects between HIGH and NORMAL in accordance to the efficiency of the headphones to be used.

If the efficiency of the headphones is low and the sound volume is not sufficient even if the volume control is rotated to turn up the sound volume, select HIGH.

If the efficiency of the headphones is high and controlling the sound volume is difficult, select NORMAL.

The sensitivity of this unit is set to the following:

HIGH: +9 dB

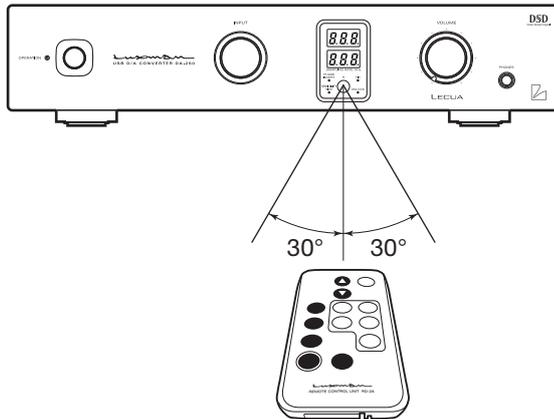
NORMAL: 0 dB

When this selector is set to HIGH, the headphone terminal sensitivity indicator, SENSITIVITY HIGH, of the main unit lights up.

Names and Functions

Remote control

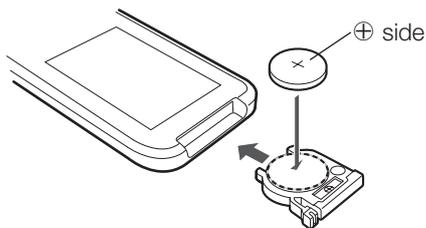
The remote control shall be aimed at the remote control infrared receiver (R) of this unit within the specified angle range shown in the illustration below when used.



Effective distance: approx. 5 meters

Battery

1. Put your finger on the battery cover claw on the rear of the remote control, and slide the cover downward to open it.
2. Put a coin-type lithium battery (CR2025) in the battery case as shown in the illustration.



3. Close the battery cover.

* When the batteries start to lose power, the effective distance becomes shorter or the unit does not function even though the switch is pressed. In such a case, replace the existing battery with new one.

* If the remote control is not used for a long time (1 month or more), the battery shall be removed from the case.

Warning

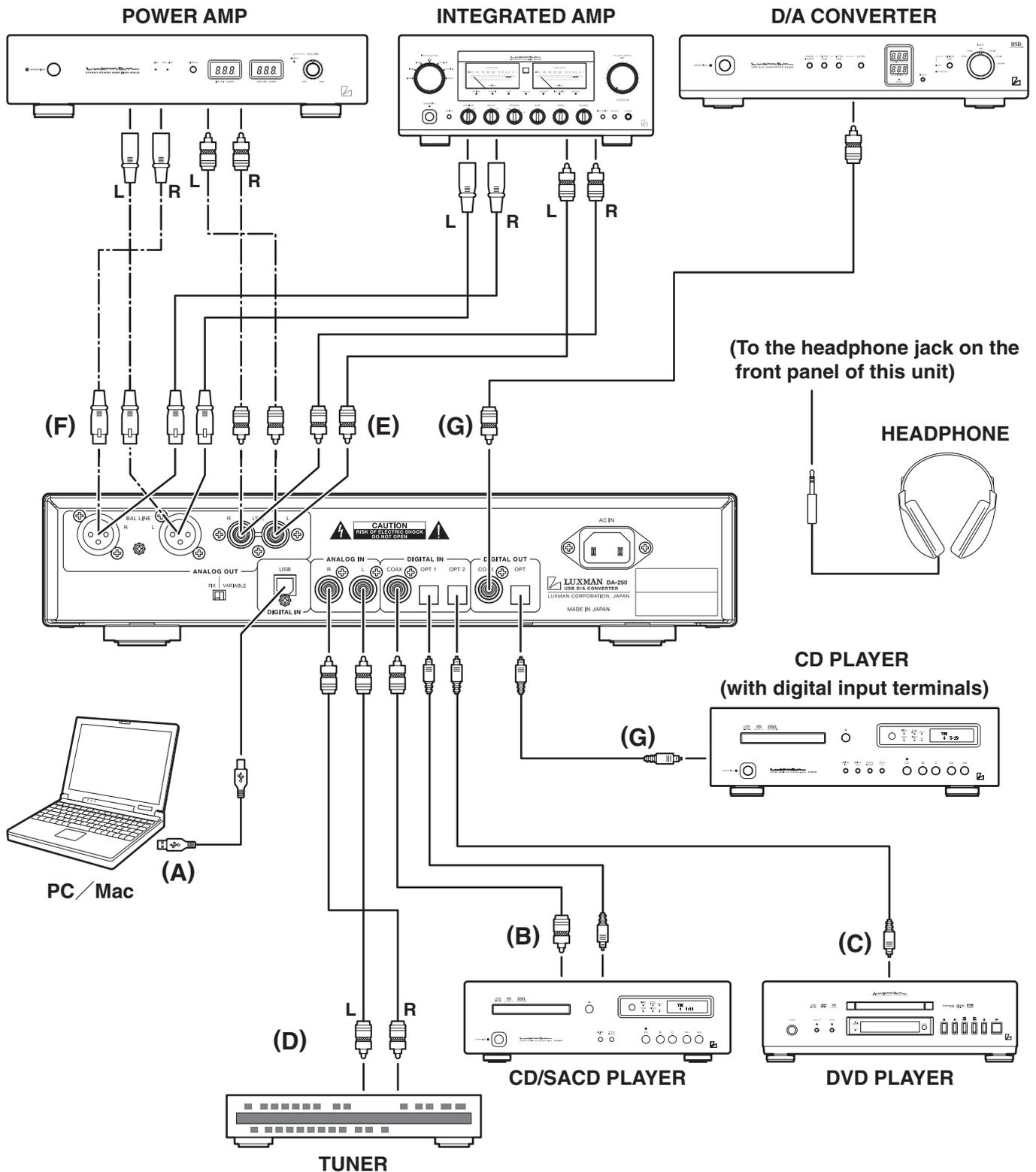
About lithium battery

- Put the lithium battery out of baby's reach.
- In case that the battery is swallowed, consult a doctor immediately.
- Do not disassemble, throw in a fire, recharge, heat, solder, or short-circuit the battery.
- Do not use or leave the battery in a hot place such as under strong direct sunlight, in a car under the blazing sun, and in front of a heater. Failure to observe this may cause battery liquid leakage, heat generation, rupture, or ignition. This may also degrade the performance or shorten the life of the battery.

Caution

- **Danger of explosion if battery is incorrectly replaced.**
- **Replace only with the same or equivalent type.**
- If the battery is not used for a long time (1 month or more), the battery shall be removed from the case to prevent battery liquid leakage. If the liquid leaks from the battery, wipe the liquid off inside the case completely and load a new lithium battery.
- To discard a used lithium battery, follow the instructions of each local authority.

Connections



Before Connecting

Before connecting other devices, connect the jack side of the accessory power cable to the AC inlet of this unit.

When connecting, turn off the power supply of this unit and the power supplies of auxiliary devices to prevent unexpected accidents that may be caused by noise.

How to connect power supply

Use the accessory power cable to insert the AC plug in an outlet on the wall in the listening room.

Connections

How to connect input devices

1. Digital connection from a PC/Mac (Refer to "A" in the connection diagram)

Connect between the USB (A-type) terminal of the PC/Mac and the USB (B-type) terminal of this unit with a USB cable. When the OS is Windows, the dedicated driver software needs to be downloaded from LUXMAN website and installed.

Refer to "Driver Installation Manual" on the LUXMAN website for detailed information.

With Mac, this unit is automatically recognized.

Caution:

Connection between a PC and this unit with use of a USB cable shall not be performed before the installation of this driver software is completed. Failure to observe this may cause a malfunction.

2. Digital connection from such device as a CD player (Refer to "B" and "C" in the connection diagram)

Connect between the (coaxial or optical) digital output terminal of a CD player, an SACD player, a DVD player, and other such devices and the digital input terminal (COAX/OPT 1/OPT2) of this unit with a coaxial digital cable or an optical digital cable.

This terminal is a shutter-type. Direct the cable connector correctly when inserting the cable into the terminal. If the cable connector is inserted forcibly to the wrong direction, the terminal may be deformed, and the shutter may not be able to close even after cable disconnection.

Upper side



The optical terminals are directed as illustrated.

Lower side

3. Analog connection from such device as a CD player (Refer to "D" in the connection diagram.)

Connect between the analog output terminals of a CD player, an SACD player, a DVD player, a tuner, a TV audio system, and other such devices and the analog input terminals (ANALOG IN) of this unit with 2 RCA pin-plug cables.

How to connect output devices

1. Unbalanced connection with such device as an integrated amplifier (Refer to "E" in the connection diagram.)

Connect between the analog unbalanced output terminals (RCA) of this unit and the unbalanced input terminals of such device as an integrated amplifier with 2 RCA pin-plug cables.

At this connection, the sound volume of the output signal change in accordance with the state of the line output level fix/variable selection switch (FIX/VARIABLE).

FIX/VARIABLE selection switch	FIX indicator	Sound volume of the output signal	Devices to be connected i.e. amplifier
FIX	lit up	Always fixed	Integrated amplifier
VARIABLE	off	Interlocked with the volume control	Power-amplifier/active speakers

2. Balanced connection with such device as an integrated amplifier (Refer to "F" in the connection diagram.)

Connect between the analog balanced output terminals (XLR) of this unit and the balanced input terminals of such device as an integrated amplifier with 2 XLR balanced cables.

At this connection, the sound volume of the output signal change in accordance with the state of the line output level fix/variable selection switch (FIX/VARIABLE).

FIX/VARIABLE selection switch	FIX indicator	Sound volume of the output signal	Devices to be connected i.e. amplifier
FIX	lit up	Always fixed	Integrated amplifier
VARIABLE	off	Interlocked with the volume control	Power-amplifier/active speakers

3. Digital output to such device as another D/A converter (Refer to "G" in the connection diagram.)

Connect between digital output terminal (COAX/OPT) of this unit and such devices as a D/A converter and a CD player equipped with digital input terminals with a coaxial digital cable and an optical digital cable.

This unit is a D/A converter. Any operations for sound playback are performed by such input device as a PC/Mac or CD player connected to the input terminals.

Before operation

1. Ensure that the connections are correctly performed. (Normal playback cannot be achieved with wrong connections of R and L.)
2. After ensuring that the volume control has been rotated counterclockwise to the end and the sound volume is at the minimum level, press the operation switch to turn on the power of this unit.

Sound playback of a device connected to a digital input terminal (analog output)

1. Select an input device to be played back with the input selector. (USB/COAX/OPT 1/OPT 2)
2. When the input devices start playback, the digital signal unlock indicator (UNLOCK) turns off, and the sampling frequency of the playback signal is displayed on the LED.

If the digital signals input to the unit are abnormal, the digital signal unlock indicator (UNLOCK) lights up, and signals will not be output.

3. If such a device as an integrated amplifier is connected to the analog unbalanced output terminals (RCA) or if such a device as an integrated amplifier is connected to the analog balanced output terminals (XLR) under the condition that the analog output level fix/variable selection switch (FIX/VARIABLE) on the rear panel is set to FIX, adjust the sound volume with the volume control of the output device.

If such a device as an integrated amplifier and amplifier-built-in speakers is connected to the analog unbalanced output terminals (RCA) or if such a device as a power amplifier is connected to the analog balanced output terminals (XLR) under the condition that the analog output level fix/variable selection switch (FIX/VARIABLE) is set to VARIABLE, adjust the sound volume with the volume control of this unit.

Sound playback of a device connected to an analog input terminal (analog output)

1. Select an input device to be played back with the input selector. (LINE)
2. If such a device as an integrated amplifier is connected to the analog unbalanced output terminals (RCA) or if such a device as an integrated amplifier is connected to the analog balanced output terminals (XLR) under the condition that the analog output level fix/variable selection switch (FIX/VARIABLE) on the rear panel is set to FIX, adjust the sound volume with the volume control of the output device.

If such a device as a power amplifier and amplifier-built-in speakers is connected to the analog unbalanced output terminals (RCA) or if such a device as a power amplifier is connected to the analog balanced output terminals (XLR) under the condition that the line output level fix/variable selection switch (FIX/VARIABLE) is set to VARIABLE, adjust the sound volume with the volume control of this unit.

FIX/VARIABLE selection switch	FIX indicator	Sound volume of the output signal	Devices to be connected i.e. amplifier
FIX	lit up	Always fixed	Integrated amplifier
VARIABLE	off	Interlocked with the volume control	Power-amplifier/active speakers

How to use the digital output

The playback signals input to this unit can be output from a digital output terminal to such devices as another D/A converter and a CD player equipped with digital input terminals. A CD player equipped with no USB input terminals can receive digital signal that is input from the USB input terminal of this unit by connecting between a digital input terminal (OPT/COAX) of the player and a digital output terminal (OPT/COAX) of the unit.

1. Select an input device to be played back with the input selector. (USB/COAX/OPT 1/OPT 2/LINE)
2. Adjust the sound volume with the volume control of the connected system device.

Operations

How to use the headphone output

Insert the standard plug of headphones into the headphone jack (PHONES) on the front panel of this unit after the volume control is rotated counterclockwise to the end.

Start the playback of the input device, and rotate the volume control slowly clockwise to your favorite sound volume.

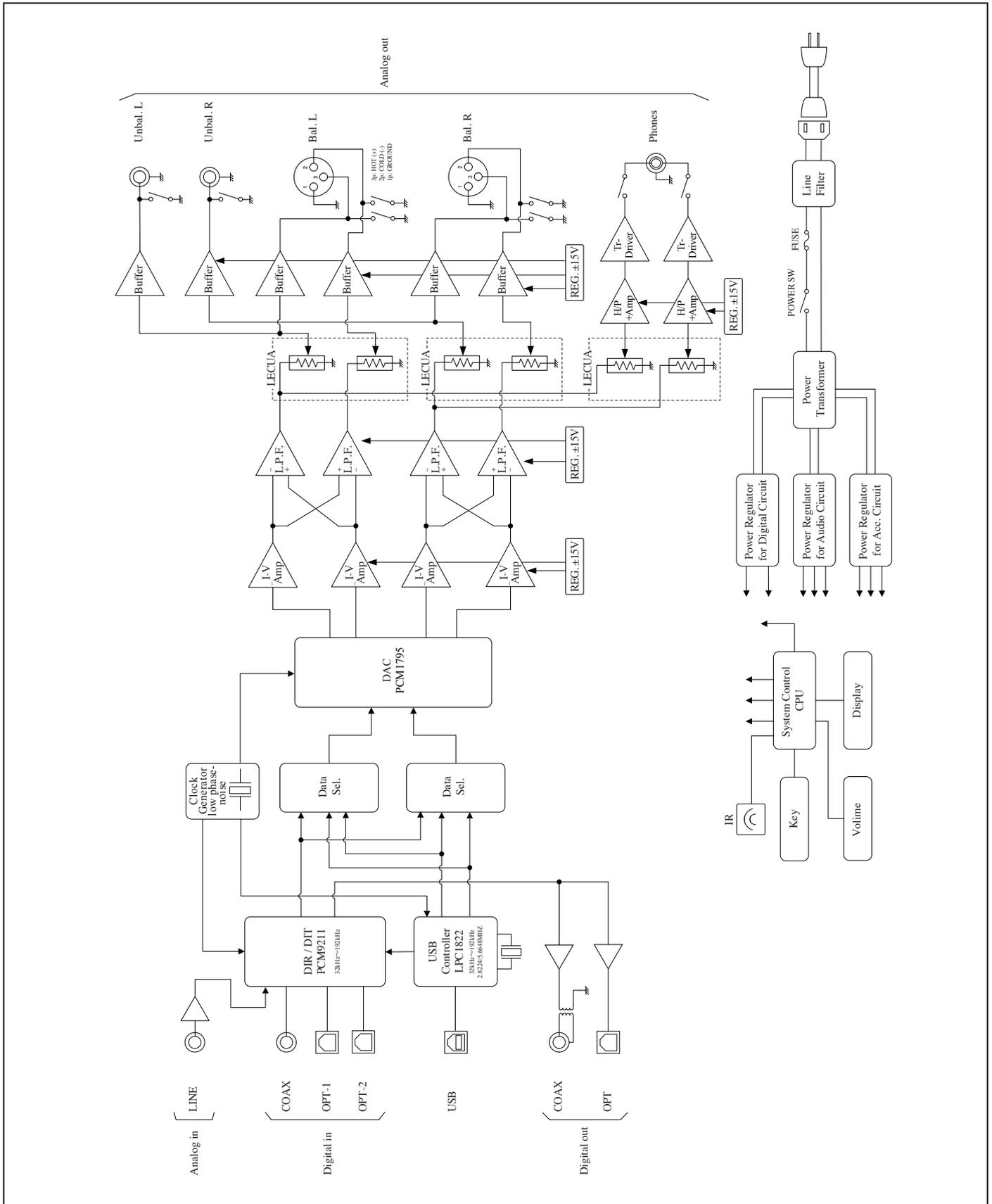
Whenever the power is turned on and off, the input selector is changed over, or the headphone plug is connected or disconnected, be sure to rotate the volume control counterclockwise to the end to set the sound volume to the minimum.

If the headphones are used for a long time at a high sound volume level, your hearing may be damaged.

Applied use of the analog output terminals

If the analog output level fix/variable selection switch (FIX/VARIABLE) is set to VARIABLE and the analog unbalanced output terminals (RCA) of this unit are connected to the main in terminal (MAIN IN) of an integrated amplifier (such as LUXMAN L-505uX) that is equipped with the separate function, the pre-amplifier section can be used as a newly-designed pre-amplifier circuit.

Block Diagram



Specifications

Format	2-channel, USB D/A converter	
Ambient operating temperature	+5 °C to +35 °C	
Audio output characteristics	Output voltage/output impedance:	UNBALANCE terminal (RCA terminal) 2.5 Vrms/300 Ω BALANCE terminal (XLR terminal) 2.5 Vrms/600 Ω For DSD (Refer to page 10) 1.2 Vrms (d-1) 1.7 Vrms (d-2)
		PHONE terminal (Standard plug) 130 mW + 130 mW (600Ω) 400 mW + 400 mW (32Ω) 200 mW + 200 mW (16Ω)
	Frequency response:	4 Hz to 20 kHz (+0, -0.5 dB) 2 Hz to 50 kHz (+0, -3.0 dB)
	Total harmonic distortion:	0.001 %
	S/N ratio:	118 dB
	Dynamic range:	118 dB
	Channel separation:	107 dB
Digital input	Coaxial digital input	0.2 to 2.5 Vp-p
	Optical digital input:	-14.5 to -24 dBm
	USB input: (Applicable OS)	Microsoft Windows Vista or later, Mac OS X10.7 or later
	Sampling frequency:	OPT/COAX input: 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz (16 bit, 20 bit, 24 bit)
		USB input: PCM: 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz (16 bit, 24 bit, 32 bit)
		DSD: 2.8224 MHz, 5.6448 MHz (1 bit)
Line input	Input sensitivity/input impedance:	2.5 Vrms / 6.7 kΩ
	Max. input:	2.5 Vrms
Digital output	Coaxial digital output:	RCA terminal 0.5 Vp-p/75 Ω
	Optical digital output:	Optical digital terminal -15 to -21 dBm

Attached functions	Front panel	<ul style="list-style-type: none"> • Power switch • Input LED • PHASE INVERT indicator • FIX indicator • Sound volume 	<ul style="list-style-type: none"> • Input selector • Sampling frequency LED • SENSITIVITY HIGH indicator • UNLOCK indicator • Headphone output terminal
	Rear panel	<ul style="list-style-type: none"> • AC inlet • Digital output terminal (COAX, OPT) • FIX/VARIABLE selection switch 	<ul style="list-style-type: none"> • Digital input terminals (USB, COAX, OPT 1/OPT 2) • Analog output terminals (BALANCE, UNBALANCE)
Accessories		<ul style="list-style-type: none"> • Remote control RD-24 • Owner's Manual (This document) • Safety cautions 	<ul style="list-style-type: none"> • Coin-type lithium battery, CR2025 • Power cable
Power supply		230 V ~ (50 Hz)	
Power consumption		20 W	
Weight (Main unit)		5.4 kg	
Dimensions		364 (W) x 81 (H) x 279 (Knobs (14 mm) and terminals (8mm) included) (D) mm	

* Specifications and appearance are subject to change without prior notice.

Before Asking for Repair Services

While the unit is used, an unusual phenomenon may be confused as a malfunction for a certain reason. Prior to asking our official sole distributor of your country for repair services, please check the table below and read the operating instructions for the subsidiary devices. If the cause of the malfunction cannot be identified, please make queries to the purchasing store. When we have once accepted your request for repair services, inspection fees and traveling expenses may be claimed even though the unit is found to be normal. Besides, a personal computer such as a PC/Mac connected to the unit and the software that operates on the PC/Mac (operations and settings included) are not supported.

Problem	Cause/Solution	Ref. page
No power is supplied even though the operation switch is pressed.	<ul style="list-style-type: none"> Connect the power cable to the AC inlet (AC IN) and the AC outlet firmly. 	16
No sound is generated. / Sound volume is too low.	<ul style="list-style-type: none"> Connect the input devices, amplifier, speakers, and headphones correctly. 	15 - 17
	<ul style="list-style-type: none"> Set the input selector to the source to be played back. 	18
	<ul style="list-style-type: none"> When you are listening to the sound of headphones or the variable analog output, adjust the sound volume with the volume control of the main unit. 	18 - 19
	<ul style="list-style-type: none"> When you are listening to a sound with the fixed analog output, adjust the sound volume with the volume control of the connected amplifier. 	18 - 19
No sound is generated. / Sound volume is too low. (Digital input)	<ul style="list-style-type: none"> Connect digital cables correctly. 	15 - 17
	<ul style="list-style-type: none"> If the USB is selected as an input source, select this unit (DA-250) as the output destination by configuring the sound setting of a PC/Mac. 	Refer to the instruction manual of the PC/Mac or the software in use.
	<ul style="list-style-type: none"> If the unit (DA-250) cannot be selected even when trying the solution above, reconnect the USB cable. 	
	<ul style="list-style-type: none"> If the USB is selected as an input source, adjust the sound volume by configuring the sound setting of a PC/Mac. 	
	<ul style="list-style-type: none"> If the USB is selected as an input source, adjust the sound volume on a player software of a PC/Mac. 	
	<ul style="list-style-type: none"> Ensure that this unit supports the sampling frequency and the number of quantization bits of the played back digital signals. 	8
	<ul style="list-style-type: none"> Ensure that the digital signal unlock indicator (UNLOCK) is not lit up. (When the digital signal from the digital device is not synchronized with this unit, the source may not be played back.) 	6
The remote control cannot be operated.	<ul style="list-style-type: none"> Operate the remote control within the specified operating range. 	13
	<ul style="list-style-type: none"> Replace the remote control battery with a new one. 	13
	<ul style="list-style-type: none"> The remote control infrared receiver is exposed to direct sunlight or strong light sources (such as inverter fluorescent lights). Change the installation place or angle to avoid the exposure to light sources. 	13

Problem	Cause/Solution	Ref. page
An electronic device such as a television malfunctions.	<ul style="list-style-type: none">• Some devices equipped with a wireless remote control receiver may malfunction when the remote control of this unit is operated. Keep this unit away from such devices.	13
Hum noises (boon or zzz noise) are generated.	<ul style="list-style-type: none">• Insert the RCA pin-plugs of the line cables firmly.• Induction noise may be picked up from the power transformer of another device. Install this unit distantly from the other device.• When you are listening to the sound of headphones, arrange the headphone cable and the power cable so that they are not laid too close.	16

This unit may not work normally when the unit is subject to external influence such as static electricity. In such a case, the unit can work normally by unplugging the power cable once and plugging it again. If the problem is not solved, please contact your dealer or our service center.

