641

integrated amplifier

MOON
by SIMAUDIO

Contents
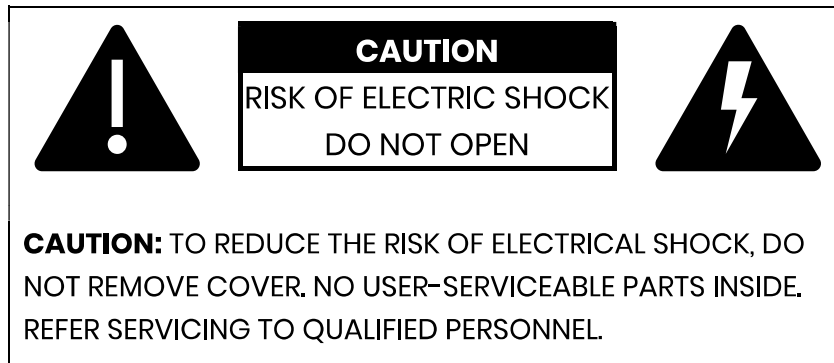
Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near heat sources such as radiators, heat registers, stoves or another apparatus that generate heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for safety. If the provided plug does not fit into the outlet, consult an electrician to replace the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. Unplug mains cord during transportation.

11. Only use attachments and accessories specified by the manufacturer.
12. The apparatus is heavy and requires two people to lift it. Exercise caution when maneuvering.
13. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip over.
14. Unplug this apparatus during lightning storms or when unused for long periods of time.
15. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way such as when the power cord has been damaged; liquid has been spilled or objects have fallen into the apparatus; or the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
16. No naked flame sources, such as candles, should be placed on the apparatus.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

The lightning flash with the arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Marking by the "CE" symbol (shown right) indicates compliance of this device with the EMC (Electromagnetic Compatibility) and LVD (Low Voltage Directive) standards of the European Community.

Waste from Electrical and Electronic Equipment (WEEE): This equipment must be sent to a separate collection facility for the recovery and recycling of electrical and electronic waste wherever dedicated facilities exist. WEEE regulations aim to contribute to sustainable production and consumption, addressing environmental and other issues caused by the growing number of discarded electronics. The symbol for the separate collection of electrical and electronic equipment indicates that this product should not be discarded as unsorted waste.

Hot Surface

The side panels are heat sinks, which could become dangerously hot while the device is in operation.

Caution: Do not touch

1. **ALWAYS** disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component. To completely disconnect this apparatus from the AC mains, use the rocker switch on the rear panel or disconnect the power supply cable from the AC receptacle.

2. The unit must be terminated with a three-conductor AC mains power cord, which includes an earth ground connection. To prevent shock hazard, all three connections must **ALWAYS** be used. Connect the unit only to an AC source of the proper voltage; both the shipping box and rear panel serial number label will indicate the correct voltage. Use of any other voltage will likely damage the unit and void the warranty.

3. **ALWAYS** connect the unit only to an AC source of the appropriate voltage. Both the shipping box and rear panel serial number label indicate the correct voltage. Incorrect voltage could damage the unit and void the warranty.

4. AC extension cords are **NOT** recommended for use with this product. The mains plug of the power supply cord shall remain readily accessible.

5. **NEVER** use flammable or combustible chemicals for cleaning audio components.

6. **NEVER** operate the unit with any covers removed. There are no user-serviceable parts inside. An open unit, especially if it is still connected to an AC source, presents a potentially lethal shock hazard. Refer all questions to authorized service personnel only.

7. **NEVER** wet the inside of the unit with any liquid. If a liquid substance does enter your unit, immediately disconnect it from the AC mains and take it to your MOON Partner for a complete check-up.

8. **NEVER** spill or pour liquids directly onto the unit.

9. **NEVER** block air flow through ventilation slots or heatsinks.

10. **NEVER** bypass any fuse.

11. **NEVER** replace a fuse with a value or type other than those specified.

12. **NEVER** attempt to repair the unit. If a problem occurs, contact a MOON Partner.

13. **NEVER** expose the unit to extremely high or low temperatures.

14. **NEVER** operate the unit in an explosive atmosphere.

15. **ALWAYS** keep electrical equipment out of reach of children.

16. **ALWAYS** unplug sensitive electronic equipment during lightning storms.

17. **WARNING:** Do not expose batteries or battery pack to excessive heat such as sunshine, or fire or the like.

Explore new frontiers

The landmark North Collection represents the culmination of years of research and development in the fields of audio, electronics, materials, and manufacturing processes. Its exciting new look is surpassed only by improvements in performance made possible by the passionate team of Simaudio engineers and technicians dedicated to delivering an uncompromised music listening experience. With the purchase of this MOON product, you join an elite group of music lovers around the world who expect the absolute best performance and build quality from products in any class.

Get ready for the performance of a lifetime.

Before getting started

Carefully remove the unit from its packaging. Visually inspect it, and in the case of damage, report it to your MOON Retailer immediately.

The packaging materials were designed to protect this product while in transit. Store these materials in a dry location for the duration of the warranty period.

The information contained in this Manual is subject to change without notice. The most recent version is available at simaudio.com/guides-downloads.

The MOON 641 includes:

- Quick Start Guides (2)
- MOON BRM-1 Remote Control
- Power Cable
- Ethernet Cable
- USB Cable
- Warranty Registration Card (Canada & USA only)

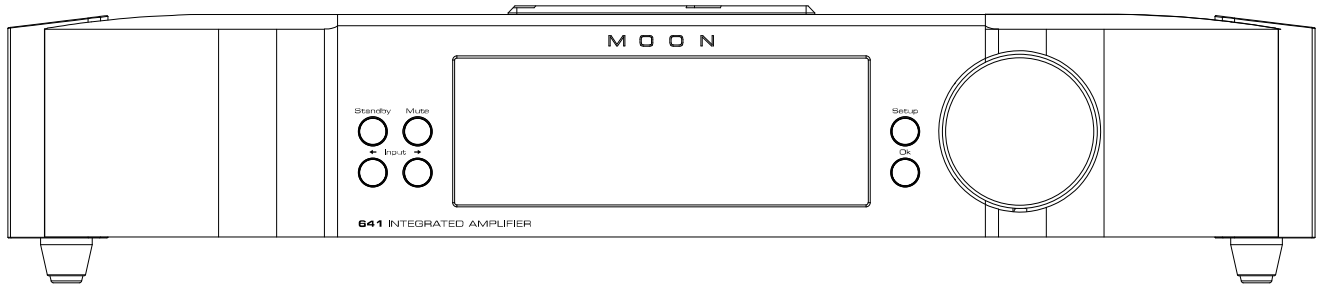*Note the serial number of your MOON 641 for future reference.*

Install your MOON 641

Consider the location and environment of the device carefully. Set it upon an open, stable, and flat surface. The device requires sufficient space above and around it to adequately disperse the heat it generates. Maintain a minimum gap of 5 cm (2") around the sides and 10 cm (4") above of the unit to enable airflow. When stacking multiple units, install MOON Bridges (sold separately) between them.

The performance of this device will continue to improve during the first 100 hours of listening.

Get to know your MOON 641
Front Panel

Standby

toggles the device between active and inactive modes when the device is powered on

Mute

cuts and restores the audio signal to all outputs

> Adjusting the volume also restores muted audio.

Input

scrolls ← and → through available inputs

> The **display** provides useful feedback about the state of the device.
>
> - It identifies the active input and volume of the device.
> - It also serves as the visual interface for the configuration menu.

Setup

accesses the extensive configuration menu to personalize the device

> To navigate the menu…
>
> - Use the volume knob to scroll through the options.
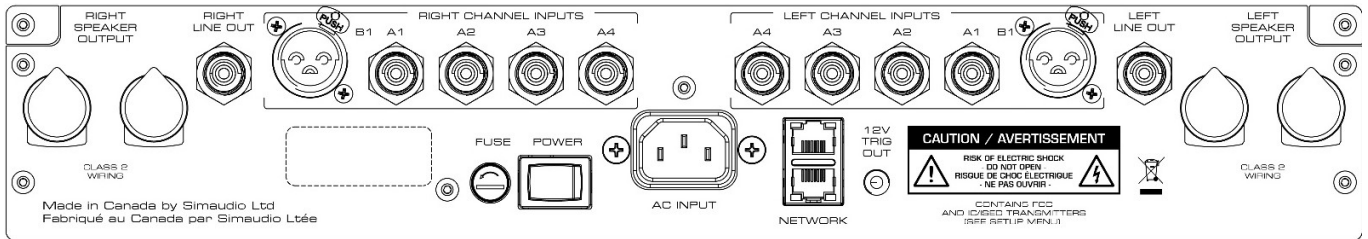> - Use OK to confirm a selection or Setup to cancel it.

OK

selects or confirms on-screen prompts

> The rotary knob adjusts volume and interfaces with the configuration menu.
> - Rotating the knob adjusts the volume in 1.0 dB increments between 0 and 20, and in 0.5 dB increments between 20 and 80.
> - The knob also navigates the interface for the configuration menu.

Rear Panel

Audio Connections

ANALOG INPUTS

A1 – A4
single-ended (RCA) connections for unbalanced line-level analog source devices

BALANCED
differential (XLR) connections for balanced analog line-level source devices

LINE OUT
individually configurable

Output Types

- VARIABLE: for use as a preamplifier connecting to power amplifiers, subwoofers, and active loudspeakers
- FIXED: for connecting to headphone amplifiers and other devices with integrated volume control

For more information, see Connectivity.

SPEAKER OUTPUTS

+/–
binding posts for connecting loudspeakers

Insert banana pins through the holes in the extremities of the barrels or unscrew the barrels to expose a gap underneath for spades and bare wire contacts.

Functional

12V TRIG OUT
mini-jack (TS) connection for coupling a compatible power amplifier to synchronize Standby behaviours

NETWORK
network (RJ-45) connections for Ethernet cables
- for MOONLink functionality with compatible MOON products
- for extending the network to an additional device (*eg*, NAS device or TV)
- for connecting the device to a network router

FUSE
magazine containing a power supply fuse

Please appreciate that while some users may report improvements in the performance of their audio equipment when original parts are replaced with after market parts, MOON cannot guarantee the proper functioning of its products under such conditions. Our engineers have ensured that the original fuse should protect your device from catching fire due to electrical calamities. All security, quality, and performance testing, as well as standards certification, is performed with specific components, and any modification from the original design may void its warranty.

AC connecter & power switch
for connecting power cable and toggling the device on | and off O

With the power switch on, the unit may be toggled in and out of Standby using the button on the front panel, a remote control, the MiND Controller, or by MOONLink. The unit may require up to a minute to connect to the network. For best performance, the device should remain powered up and may be toggled into Standby when not in use. It should be powered down during extended absences by disconnecting the power cable.

Always power on the source devices before the integrated amplifier.

Always power off the integrated amplifier before the source devices.

Personalize your MOON 641

Setup Menu

The device features an extensive menu for configuring and customizing many of its functions.

Navigating the Menu

- The Setup button enters the menu and returns to previous screens.
- The knob rotates to scroll through options.
- The OK button selects the emphasized option.

Editing Text

The knob rotates to reveal uppercase letters, lowercase letters, digits, and symbols.

The Input ← and → buttons move the cursor left and right.

When the complete text is correctly displayed and the cursor remains on the last character, the OK button registers the text.

Note: Do not advance the cursor beyond the last desired character.

```
Setup

·   Inputs
·   Line Output
·   Network
·   Remote Control
·   MOONLink
·   Display
·   Volume Settings
·   Standby Settings
·   Firmware
·   Information
·   Reset
```

Connectivity

Inputs

Each input may be personalized.

- Label is the name of the input as it appears on the display. Select a predefined label or manually enter a custom label.
- Offset is a variable amount of gain applied to each input to fine-tune its volume level so that source components connected to all inputs may have similar levels.
- Home Theatre Bypass disables volume control in this device. This mode sets the preamp volume to unity gain for use with a separate audio-video receiver or home theater processor. There is an additional prompt to confirm that a device with its own volume control is connected to the input of the MOON 641 before activating this mode.
- Enable makes an input available to select. It may be disabled to reduce the number of unused inputs to scroll through.

Line Output

The RCA outputs may be configured as a Variable-volume output for use as a preamplifier (*eg*, with a subwoofer) or as a Fixed-volume output for use with a device with its own volume control (like a headphone amplifier).

Caution: The fixed volume level is extremely high!
Before setting the analog output of this device to Fixed, lower the volume of the preamp or integrated amp to which it is connected.

Network

Upon powering on the device, it automatically attempts to connect to a wired network.

- The Configuration of the network is either Automatic or Manual. Manual Configuration permits the configuration of specific advanced network parameters including IP address, subnet mask, gateway address, and DNS server.
- Information displays useful details about the network connection of this device.

Functionality

Remote Control

This unit may link with up to two BRM-1 remote control units at a time.

- Link Remote searches for a nearby MOON BRM-1 remote control, displaying its unique ID on both devices and permitting them to be associated.
- Unlink Remote displays associated BRM-1 units permitting them to be disassociated from this device.
- Information displays useful details about the associated BRM-1 units.

Refer to the separate Guide included with the BRM-1 for more information.

MOONLink

MOONLink technology makes MOON products more intelligent.

A single button press can trigger automated behaviours and simultaneously operate multiple devices over a network in a symbiotic MOONLink Group. MOONLink simultaneously toggles Standby and can adjust display brightness for all devices in the Group, while enabling volume control and automatic input selection of specific devices in the Group.

- MOONLink Group permits the customization of a Group.
  - o Name identifies a device within the Group.
  - o Group ID assigns a Group number to a Device.
    Assigning the same ID to other devices joins them together as a Group.
  - o Status lists information about the device.
  - o Reset the name and ID to their default values to remove a device from a Group.
  - o Firmware verifies the firmware of the selected device and updates it when necessary.
- Available Devices lists devices on the network that could be added to a Group.
- MOON DAC identifies which input is used to connect a DAC with MOONLink compatibility.
  1. When scrolling through the inputs on a BRM-1, an additional arrow appears on the selected input.
  2. Tapping the centre of the display switches the BRM-1 to selecting the inputs on the DAC.
- A MOONLink Group should include no more than one preamplifier, and there is already a preamplifier integrated within this device.
- Holding the Standby button on the front panel for two seconds automatically toggles Standby mode on all the devices in the MOONLink Group.

Display

Display On

The display may be disabled so that only user interaction temporarily activates the display.

Brightness

The display brightness is variable and may be customized.

- Brightness Level is a value from 0% to 100%.
- Adaptive Brightness uses sensors to adjust automatically to ambient lighting in the environment.
- MOONLink Brightness Sync duplicates the brightness adjustments of this device on other devices in the MOONLink Group.

Background Image

This device displays a pre-defined background image or none at all.

Screen Saver

Two screen saver styles are available, which may also be disabled.

- Mode determines what triggers the screen saver.
  - One mode activates the screen saver after 20 minutes of silence.
  - One mode activates the screen saver after 20 minutes of inactivity.
- Style sets the automatic screen saver to display a blank screen or a floating MOON logo.

Volume Settings

The highest volume setting of the preamp is 80.

- Startup Volume sets a default initial volume level.
- Maximum Volume level sets an upper threshold to prevent accidents.

Standby Settings

- Full Power keeps most of the electronics powered up while in Standby.
- Low Power powers down most of the electronics while in Standby.
- Auto-Standby engages Low Power Standby after 20 minutes of inactivity.

Firmware

Certain hardware components in this device require firmware to function.

- Versions displays the various firmware versions currently installed.
- Update begins the procedure of verifying and, if necessary, updating the firmware with on-screen guide prompts.

Information

Device information, including its serial number, and certifications are displayed for referencing.

Reset

The Reset procedure reverses all customizations (including input configurations) to factory default settings. It does not revert the firmware to an earlier version.

Troubleshooting

Error Messages

If typical operation is disrupted, the device may display a message on its display.

firmware update error

Normally, the device recovers automatically from a firmware update error. If the problem persists…

1. Verify that the device is connected to the network and that the network is accessing the Internet.
2. Wait 30 minutes.
3. If the device continues to indicate a firmware update error, contact support@simaudio.com.

temperature protection

If a device overheats, it could return to normal operation after a period of cooling down.

1. Power down the device using the rear rocker switch.
2. Wait 10 minutes.
3. Consider the location and environment of the device carefully. Make adjustments to decrease the temperature and increase airflow around the device.
4. Power up the device and resume normal operation.
5. If the device continues to indicate temperature protection, contact support@simaudio.com.

voltage protection

If a device has a voltage issue, it will most likely require service.

1. Power down the device using the rear rocker switch.
2. Wait 60 seconds.
3. Power up the device and resume normal operation.
4. If the device continues to indicate voltage protection, contact support@simaudio.com.

DC protection

The device will shut down if it detects DC at its input, internally, or at its output. To determine the source of the issue…

1) Power down the device using the rear rocker switch.
2) Disconnect all cables from the device.
3) Wait 60 seconds.
4) Reconnect only the power cable.
5) Power up the device.
   a) If the device continues to indicate DC protection, contact support@simaudio.com.
   b) If not…
6) Reconnect one loudspeaker.
   a) If the device indicates DC protection, there is an issue with that loudspeaker or its cable.
   b) If not, connect the other loudspeaker.
   c) If the device indicates DC protection, there is an issue with that loudspeaker or its cable.
   d) If not…
7) Reconnect one source device.
   a) If the device indicates DC protection, there is an issue with that device or its cable.
   b) If not, continue this process of elimination.

Specifications
Technical

Output Power (Stereo 8 Ω)	125 W
Output Power (Stereo 4 Ω)	250 W
Input Sensitivity	300 mV – 6 V
Input Impedance	22 kΩ
Gain	40 dB
Frequency Response	2 Hz – 90 kHz (+0 dB / –3.0 dB)
Crosstalk	–109 dB
Total Harmonic Distortion @ 1 W	0.008%
Total Harmonic Distortion @ 125 W	0.003%
Intermodulation Distortion	0.06%
Signal-to-Noise Ratio	109 dB
Damping Factor	700
Power Consumption (Idle)	38 W
Power Consumption (Standby)	37 W
Power Consumption (Low Power Standby)	2.5 W
Shipping Weight	26 kg / 57.5 lbs
Dimensions (L x H x D)	48.1 cm x 10.2 cm x 46.5 cm / 18.95" x 4.03" x 18.32"
Fuse (120 V / 240)	F 6A H 250V 3AG / F 4A H 250V 3AG