

Owner's Manual

MOON Evolution Series 600i

Reference Dual-Mono Integrated Amplifier



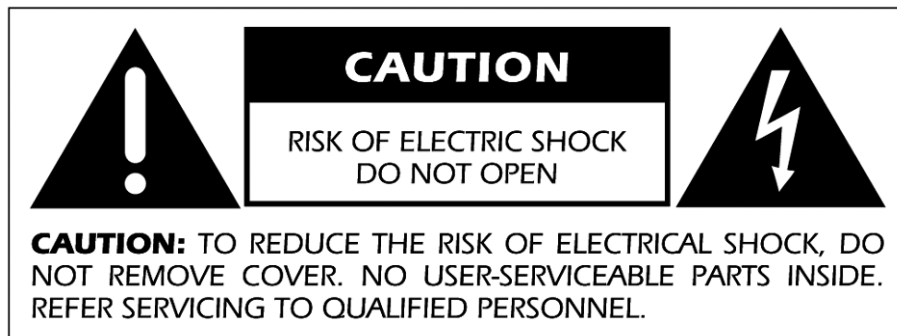
M O O N

MOON 600i Dual-Mono Integrated Amplifier

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 any heat sources such as radiators, heat registers, stoves or another apparatus that produces 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 for replacement of 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.  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.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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 or plug 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.
15. 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.



MOON 600i Dual-Mono Integrated Amplifier

Important Safety Instructions (cont'd)



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 left) indicates compliance of this device with the EMC (Electromagnetic Compatibility) and LVD (Low Voltage Directive) standards of the European Community

Please read all instructions and precautions carefully and completely before operating your Simaudio MOON 600i Dual-Mono Integrated Amplifier.

1. **ALWAYS** disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component.
 2. The MOON 600i must be terminated with a three-conductor AC mains power cord which includes a protective earthing connection. To prevent shock hazard, all three connections must **ALWAYS** be used. Connect the MOON 600i 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. AC extension cords are **NOT** recommended for use with this product.
 4. **NEVER** use flammable or combustible chemicals for cleaning audio components.
 5. **NEVER** operate the MOON 600i 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.
 6. **NEVER** wet the inside of the MOON 600i with any liquid. If a liquid substance does enter your MOON 600i, immediately disconnect it from the AC mains and take it to your MOON dealer for a complete check-up.
 7. **NEVER** expose the MOON 600i to dripping or splashing of liquids and no objects filled with liquids, such as vases, shall be placed on top.
 8. **NEVER** block air flow through ventilation slots or heatsinks.
 9. **NEVER** bypass any fuse.
 10. **NEVER** replace any fuse with a value or type other than those specified
 11. **NEVER** attempt to repair the MOON 600i. If a problem occurs contact your MOON dealer.
 12. **NEVER** expose the MOON 600i to extremely high or low temperatures.
 13. **NEVER** operate the MOON 600i in an explosive atmosphere.
 14. **ALWAYS** keep electrical equipment out of reach of children.
 15. **ALWAYS** unplug sensitive electronic equipment during lightning storms.
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Date Code: 20121114

MOON 600i Dual-Mono Integrated Amplifier

Congratulations!

Thank you for selecting the **MOON 600i** Dual-Mono Integrated Amplifier as a part of your music/cinema system. This component has been designed to offer state-of-the-art high-end performance in an elegant package, while retaining all the sonic hallmarks on which Simaudio has made its reputation. We have spared no effort to ensure that it is ***the finest*** two-channel Integrated Amplifier available. We have been building high-performance audio equipment for over 25 years, and the know-how gained through our cumulative experience is an important reason why **MOON** integrated amplifiers are so musically satisfying.

Your new Integrated Amplifier is a true dual-mono design, whereby each channel operates completely independent of the other. The performance of your **600i** will continue to improve during the first 400 hours of listening. This is the result of a "break-in" period required for the numerous high quality electronic parts used throughout this integrated amplifier.

Before setting up your new **MOON 600i**, we encourage you to please read this manual thoroughly to properly acquaint yourself with its features. We hope you enjoy listening to the **MOON 600i** dual-mono integrated amplifier as much as the pride we have taken in creating this fine audio product. We understand the power and emotion of music and build our products with the goal of faithfully capturing these elusive qualities.

The information contained in this manual is subject to change without notice. The most current version of this manual is available on our official website at <http://www.simaudio.com/manuals.htm>

Unpacking

The **MOON 600i** integrated amplifier should be removed from its box with care.

The following accessories should be included inside the box with your integrated amplifier:

- ✓ AC power cable
- ✓ 'FRM-3' remote control with three 'AAA' batteries (USA and Canada only)
- ✓ 'SimLink' cable with 1/8" mini plug terminations on each end
- ✓ This owner's manual
- ✓ Quick reference card for the "**MOON 600i** Setup Menus"
- ✓ Warranty and product registration information (USA and Canada only)

As soon as the integrated amplifier is safely removed from its box and placed down, perform a thorough physical inspection and report any physical damage to your dealer immediately. We suggest that you keep all of the original packaging, storing it in a safe, dry place in the event that you're required to transport the integrated amplifier. The customized packaging is specially designed to protect the **MOON 600i** integrated amplifier from potential damage that may occur during shipping.

Please write the serial number of your new Simaudio **MOON 600i** in the space provided below for future reference.

Serial No.: _____

MOON 600i Dual-Mono Integrated Amplifier

Introduction

Your **MOON 600i** dual-mono integrated amplifier incorporates many significant design features to achieve its “world-class” level of performance. This is an abbreviated list of the more important features:

Our “no overall feedback” amplifier circuit design. The results are: Real-time amplification is achieved since interactions from the speaker back to the amplifier are virtually eliminated; More accurate musical reproduction with respect to tonality; Virtually non-existent transient intermodulation distortion (which is far more degrading to sonic performance than harmonic distortion); The elimination of common phase errors resulting from feedback.

Full unsolicited RS-232 bidirectional feedback

Custom proprietary toroidal transformer design with lower magnetic, electrical and thermal loss, yielding an improved power transfer and lower regulation factor. The result is increased current speed and better dynamics

An **oversized dual-mono power supply** and “**Class A**” **power output to 5 watts** for greater efficiency

SimLink controller port allows for 2-way communications between other compatible MOON Evolution Series components

M-eVOL2 volume control circuit using MDAC's (operating in a current steering R-2R configuration) which alter the audio signal's amplitude and yield no sonic degradation of the signal regardless of the selected volume setting

M-Lock circuit for “user selectable” maximum volume setting lock-out for each line input

Gain offset for each individual line input with a $\pm 10\text{dB}$ range

Proprietary MOON Bipolar Output transistors with unprecedented gain linearity resulting in improved bass response and even more accurate sonic reproduction

Each line input is fully configurable to be “**home theater ready**”, where the volume control of the 600i is bypassed

530 individual volume steps in 1dB and 0.1dB increments

Four-layer pure copper PCB tracings; The advantages include better ground and power supply circuit layouts resulting in a much shorter signal path and dramatically improved signal-to-noise ratio

Extremely rigid chassis construction to minimize the effects of external vibrations

Accurate matching of the very finest quality electronic components in a symmetrical circuit design

Installation & Placement

The **MOON 600i** dual-mono integrated amplifier is very heavy. It requires reasonable ventilation to maintain an optimum and consistent operating temperature. Consequently, it should be placed in a location with empty space around it for proper heat dissipation. As well, it should be placed on a solid, level surface. You should avoid placing it near a heat source or inside a closed cabinet that is not well ventilated as this could compromise the integrated amplifier's performance and reliability. *You should never place another component directly on top of this integrated amplifier.*

In the event that the surface you have chosen isn't perfectly level, each of the four (4) legs of your **600i** are height adjustable; carefully using your fingers, you can either raise each leg by turning the cone underneath clockwise, or lower each leg by turning it counterclockwise.

We strongly recommend that you leave these cones mounted to the component at all times for reasons related to both performance and aesthetics.

MOON 600i Dual-Mono Integrated Amplifier

Front Panel Controls



Figure 1: Front panel of MOON 600i dual-mono Integrated Amplifier

The front panel will look similar to Figure 1 (above). The large display window normally indicates the current volume level and, whenever you change the input, it will briefly show the selected input label. Located to the left side of the display are seven (7) buttons; To the right side of the display *is large rotary volume control and two (2) more buttons for a total of nine (9) which are all described in detail below:*

The “Standby” button disengages the input section from the rest of the **600i**’s circuitry and turns off the digital display. However, when in “Standby” mode all audio circuitry remains powered up to help maintain optimal performance. When switching back from “Standby”, both the ‘input’ and volume settings are re-established from the previous listening session. The blue pilot LED will not be illuminated when the **600i** is in “Standby” mode.

The “Mute” button reduces your volume setting to zero. Pressing the “Mute” button a second time will return the output volume to its previous level. As well, adjusting the volume level while the “Mute” function is engaged will effectively defeat the muting function.

The “Display” button allows you to adjust the brightness of the large digital display window. It also provides you with the option of turning off the display. There are three (3) different levels of brightness; The default is medium. Pressing the “Display” button once will increase the level to the highest setting. Pressing the button a second time will decrease the brightness to the lowest setting. Pressing the “Display” button a third time returns the display to its default setting of medium.

If you want to turn the display off, press and hold the “Display” button for 2 seconds. When the display is turned off, it will still come back on for a short period of time whenever you press any of the buttons located on the front panel or the remote control, using the brightness level that was previously set; the display will automatically turn off again once you are done. To turn the display back on, simply press and hold the “Display” button for 2 seconds.

The “← Bal →” buttons control channel balance; Pressing the left arrow button causes a decrease in the volume level of the right channel; pressing the right arrow button causes a decrease in the volume level of the left channel. The balance adjustment operates in 1% increments. When the balance is equal for both channels, “← 00 →” will appear in the front panel display. The range for the balance control varies from “← 100” for left channel only to “100 →” for right channel only.

MOON 600i Dual-Mono Integrated Amplifier

Front Panel Controls (continued)

The “← Input →” buttons allow you to choose which input source you wish to listen to. The **MOON 600i** dual-mono integrated amplifier has a total of five (5) inputs; The first input is fully-balanced and uses XLR connectors labeled B1. The next four (4) inputs are single-ended and use RCA connectors labeled S1, S2, S3 and S4. Assuming that you're currently listening to a source component connected to input B1, the “→” allows to sequentially scroll forward through the available inputs from S1 to S4. The “←” button allows you to sequentially scroll backwards from S4 to B1. Holding down either the “→” or “←” button will allow only a single change of the selected input. You must press the button again to select the next or previous input.

The rotary “volume” control determines the gain setting, which ranges from '0.0dB' (no output) to '80.0dB' (full output). This control does not function like a typical volume: When you rotate the dial, either clockwise to raise the volume or counter-clockwise to lower the volume, you are actually engaging a precision optical encoder which selects very high quality metal-film resistors that the audio signal passes through. The result is a proprietary gain circuit, called **M-eVOL2** that doesn't degrade the audio signal regardless of the setting, unlike all potentiometer based circuits. Since this circuitry operates in a fully balanced differential mode, no noise is introduced to the audio signal. Furthermore, there are no actual moving parts, so this technology has a minimum life expectancy of one million rotations.

The **MOON 600i** integrated amplifier provides a range of five-hundred and thirty (530) unique volume settings. This is achieved as follows: Within the 0.0dB to 30.0dB range, you can increase and decrease the volume in 1.0dB steps. From the 30.0dB to 80.0dB range, you can increase and decrease the volume by either 0.1dB or 1.0dB steps; By rotating the volume control slowly, the level will change by 0.1dB increments. A quicker rotation will change the volume in 1.0dB increments.

The “Setup” and “OK” buttons are used for programming the numerous software functions available on this integrated amplifier. The next section, entitled “Software Setup”, explains their usage in detail.

MOON 600i Dual-Mono Integrated Amplifier

Software Setup

The **MOON 600i** integrated amplifier includes powerful software that allows you to configure it to meet your specific needs. For each of the five (5) inputs, you can assign a *label* to replace the factory assigned name (i.e. B1, S1, etc.), assign a *maximum volume* level of less than 80.0dB, create an *offset volume* level ranging from -10.0dB to +10.0dB, *bypass* the volume control (to exclusively use the source component's volume instead) and *disable* the input completely when it's not in use. As well, you can assign any and all inputs to activate the **600i**'s *12 Volt trigger*, disable the front panel infrared sensor and change the IR code set for use with a universal remote control. Finally, there's a facility to reset all software settings back to their factory defaults. Please refer to the accompanying quick reference diagram for a snapshot of the entire Setup menu layout.

When you are in Setup mode, there are five (5) front panel items used to program this integrated amplifier; The "Setup" button for navigating up and down through the various menu levels, the rotary volume control for scrolling through the available choices within each programmable item, and the "OK" button for confirming and saving your selections.

What follows are step-by-step examples of how to configure an input, assign the 12 Volt trigger and reset the software back to the factory default. We will begin by walking through all 5 available options for the "B1" input:

- 1 To enter the Setup mode, begin by pressing the "Setup" button; "SETUP" will appear in the display window.
- 2 Rotate the volume control clockwise until "INPUTS" appears in the display. Press "OK".
- 3 Rotate the volume control clockwise until "B1" appears in the display. Press "OK".
- 4 "LABEL" will appear in the display. Press "OK".
- 5 "AUX1" will appear in the display. By rotating the volume control clockwise, you will scroll through more than 25 generic choices appearing in alphabetical order (AUX ... CD ... TUNER, etc.), various MOON source model names (i.e. ANDROMEDA ... 750D, etc) and finally a choice called "CUSTOM" which allows you to create your own text label of up to 8 characters in length (refer to the example at the end of this section for more details).

If you assign the "B1" input label to "MiND" (for the *MOON intelligent Network Device* music streamer), you are also automatically configuring this component's internal software which will allow it to operate with the MiND app, provided that the proper SimLink connections have been made with your other MOON components. Functions available using the MiND app are discussed in the next section.

- 6 When the label name you wish to assign to the B1 input appears in the display, press the "OK" button. "SAVED" will briefly appear in the display followed by "LABEL".
- 7 Press the "Setup" button and the label you've just assigned to the B1 input will appear in the display.
- 8 At this point you can (i) continue configuring other options for the B1 input (see the next step), (ii) configure another input such as S1 (rotate the volume control clockwise to access the S1 input), or (iii) leave the Setup mode (press the "Setup" button once and "INPUTS" appears in the display; the press it again and "EXITING" will appear in the display).
- 9 The next option to configure for the B1 input is the maximum volume setting. Press "OK" and "LABEL" will appear in the display. Then slowly rotate the volume control clockwise until "MAX VOL" appears in the display. Press "OK" and the factory default of "80.0dB" will appear in the display; this is the maximum volume level.
- 10 The maximum setting can be changed by rotating the volume control. A slow rotation makes 0.5dB adjustments and a faster rotation results in 1.0dB adjustments. Once you've found a desired setting, press "OK" and "SAVED" will briefly appear in the display followed by "MAX VOL". The lowest possible setting is 40.0dB.
- 11 The next option to configure for the B1 input is volume offset. This allows you to compensate for the different output levels amongst your various source components you will be connecting to the **600i**. Slowly rotate the volume control clockwise and "OFFSET" will appear in the display. Press "OK" and the factory default of "+6.0dB" will appear in the display.
- 12 You can adjust the volume offset in either 0.5dB (slow rotation) or 1.0dB (faster rotation) increments to either +10.0dB by rotating the volume control clockwise or -10.0dB rotating the volume control counter-clockwise. Once you've found the appropriate setting, press "OK" and "SAVED" will briefly appear in the display the "OFFSET".

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Software Setup (continued)

- 13 The fourth configurable option is the volume bypass feature for use with home-theater processors and source components that have their own volume control. When activated, the volume control of the **600i** is bypassed and the volume level is adjusted using the component connected to the input. Slowly rotate the volume control clockwise and "BYPASS" will appear in the display. Press "OK".
- 14 The factory default of "BYPASS N" will appear in the display. Use the volume control to alternate between "BYPASS N" and "BYPASS Y" and then press "OK". Next you will be asked to confirm your selection as "SURE ? N" will appear in the display. Rotate the volume control until "SURE ? Y" appears in the display. Press "OK" and "SAVED" will briefly appear in the display followed by "BYPASS". When you set the volume bypass to "Y", the volume setting you saved for the input with "OFFSET" will be maintained.
- 15 The fifth and final configurable option for the B1 input is to disable it in the event that it won't be used. Slowly rotate the volume control clockwise and "ENABLE" will appear in the display. Press "OK".
- 16 The factory default is "ENABLE Y" which will appear in the display. Use the volume control to alternate between "ENABLE N" and "ENABLE Y". Press "OK" and "SAVED" will briefly appear in the display followed by "ENABLE". When an input has been disabled it will appear only in the Setup menu as "B1 N/A".
- 17 You have now passed through all five configuration options for the B1 input. At this point, you can (i) repeat the above process for the another input by pressing the "Setup" button and then use the volume control to select the next input to configure, (ii) exit from the Setup procedure by pressing the "Setup" button three times or (iii) continue with the Setup procedure by assigning the 12 Volt trigger outputs, disabling the infrared remote sensor, changing the IR codes, or resetting the **600i** back to factory default status (see the following examples).

The **MOON 600i** is equipped with software that allows the MiND app to control various features of this preamplifier. With the MiND app you will be able to adjust the volume level, mute the output, place the preamplifier into 'Standby' mode and then place it back into operational mode. As well, when you begin playing a music track from the MiND app, the **600i** will automatically switch to the input configured for the MiND. With the MiND app, you are essentially controlling your entire MOON system using a hand-held Apple (iPad, iPhone, iPod Touch,) or Android device.

You don't need to LABEL an input with "MiND" to achieve these aforementioned functions, but you must configure one input for MiND functionality. An example for this scenario would be the **MiND 180D** streaming device feeding a digital signal to a **MOON 650D DAC /Transport**, which then outputs its analog signal to the **MOON 600i**.

Only one of the five inputs may be configured for the MiND. "B1" is the default input. If, in the previous section, you already assigned the "MiND" label to one of this preamplifier's inputs, then there's nothing required to do here – The corresponding input has been automatically configured for MiND and cannot be changed until you change the input 'LABEL' assignments. However, if you haven't assigned the "MiND" label to one of the **600i**'s inputs, the following example shows how to configure an input for MiND functionality:

- 1 You may either continue where we left off in the previous example by pressing "Setup" twice to return to the main menu and then turn the volume control until "MiND" appears in the display OR enter into the "Setup" mode from the beginning by pressing the "Setup" button and rotating the volume control until "MiND" appears in the display.
- 2 Press "OK" and "MiND:B1" will appear in the display.
- 3 Rotate the volume control clockwise until the input you want to configure appears in the display.
- 4 Press "OK" and "SAVED" will appear briefly in the display followed by "MiND".
- 5 Press the "Setup" button and "EXITING" will appear in the display.

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Software Setup (continued)

Assigning a custom label to an input:

- 1 Using the example from the previous page for configuring an input, repeat steps 1 through 5.
- 2 When "CUSTOM" appears in the display press the "OK" button. The display will show "....." .
- 3 Rotate the volume control clockwise to scroll through the 26 letters of the English alphabet, first in uppercase and then lowercase, followed by the numbers 0 through 9, and finally several miscellaneous symbols including the space character. When you see the letter/number/symbol you wish to use, press "OK" to select it and then repeat this step for the next character.
- 4 You must assign all 8 characters when creating a custom input label; In the event that your label requires only 5 characters, you will need to input a blank space for the remaining 3 characters.
- 5 Once you've filled the last position, press "OK" and "SAVED" will briefly appear in the display followed by "INPUTS".
- 6 Press the "Setup" button to exit from the Setup menu.

A pair of single-ended RCA connectors labeled "LINE OUT" can be found on the **MOON 600i's** rear panel. The output level can be configured as either fixed level (for use with a recording device) or variable level (for use with a sub-woofer or when using the MOON 600i as a preamplifier only). This is done as follows::

- 6 You may either continue where we left off in the previous example by pressing "Setup" twice to return to the main menu and then turn the volume control until "LINE OUT" appears in the display OR enter into the "Setup" mode from the beginning by pressing the "Setup" button and rotating the volume control until "LINE OUT" appears in the display.
- 7 Press "OK" and "VARIABLE" will appear in the display.
- 8 To change the output to fixed, rotate the volume control to alternate from "VARIABLE" to "FIXED"
- 9 Press "OK" and "SAVED" will appear briefly in the display followed by "LINE OUT".

The **MOON 600i** is equipped with a 12 Volt trigger output. When an input is assigned to the 12 Volt trigger, the device connected to the trigger will automatically start-up whenever you switch to that input. The default setting for all five inputs is on. When you set the IR input to "Y", all inputs previously set to "Y" for that trigger will automatically be set to "N". Then the trigger will be controlled exclusively by an external IR signal. The following example shows how to configure it:

- 10 You may either continue where we left off in the previous example by pressing "Setup" twice to return to the main menu and then turn the volume control until "TRIGGER" appears in the display OR enter into the "Setup" mode from the beginning by pressing the "Setup" button and rotating the volume control until "TRIGGER" appears in the display.
- 11 Press "OK" and "B1 : Y" will appear in the display.
- 12 To disable the 12 Volt trigger, press "OK" and "B1 ? Y" appears in the display; rotate the volume control to alternate from "Y" to "N" .
- 13 Press "OK" and "SAVED" will appear briefly in the display followed by "B1 : N".
- 14 To configure another input, rotate the volume control until that input appears in the display, then press "OK".
- 15 Repeat steps 3 and 4.
- 16 When you have finished with all of the inputs for the "TRIGGER" press the "Setup" button and "TRIGGER" will appear in the display. From this point you can (i) exit from the Setup procedure by pressing the "Setup" button again and "EXITING" will appear in the display or (iii) continue with the Setup procedure by disabling the infrared remote sensor, changing the IR codes, resetting the **600i** back to factory default status (see the following examples) or configuring more inputs (example on previous page).

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Software Setup (continued)

In the event that you want to control the **MOON 600i** using a wired aftermarket infrared remote control receiver with a universal remote control, you can disable the IR sensor located on the front panel as follows:

- 1 You may either continue where we left off in the previous example by pressing "Setup" twice to return to the main menu and then turn the volume control until "INFRARED" appears in the display OR enter into the "Setup" mode from the beginning by pressing the "Setup" button and rotating the volume control until "INFRARED" appears in the display.
- 2 Press "OK" and "NORMAL" will appear in the display.
- 3 To disable the **MOON 600i's** front panel IR sensor, rotate the volume control to alternate from "NORMAL" to "DISABLED".
- 4 Press "OK" and "SAVED" will appear briefly in the display followed by "INFRARED".
- 5 Press the "Setup" button to exit from the Setup menu.

The **MOON 600i** is equipped with a rear mounted IR input for use with aftermarket wired infrared remote control receivers. In the event that you want to control the **MOON 600i** with a universal remote control and **NOT** the one included (FRM-2), you can change the RC-5 remote control system codes. This procedure is recommended when you have a large custom install setup that uses multiple integrated amplifiers and/or preamplifiers that operate on the RC-5 standard and you need to make each component unique w.r.t. remote control operation – up to 4 components. Before making the following change, you should have a basic understanding how to program a universal remote control. The following example shows how to change the IR codes that the **MOON 600i** will recognize:

- 1 You may either continue where we left off in the previous example by pressing "Setup" twice to return to the main menu and then turn the volume control until "IR CODE" appears in the display OR enter into the "Setup" mode from the beginning by pressing the "Setup" button and rotating the volume control until "IR CODE" appears in the display.
- 2 Press "OK" and "DEFAULT" will appear in the display.
- 3 To change the RC-5 system codes, rotate the volume control to scroll through the available sets of RC-5 compatible codes: "SYS11", "SYS14", "SYS15", and "SYS19".
- 4 Once you've decided on one, Press "OK" and "SAVED" will appear briefly in the display followed by "IR CODE".
- 5 From this point you can (i) exit from the Setup procedure by pressing the "Setup" button again and "EXITING" will appear in the display or (iii) continue with the Setup procedure by disabling the infrared remote sensor, changing the IR codes, resetting the **600i** back to factory default status (see the following example), configure the 12 Volt Trigger Output or configure more inputs (examples on previous pages).

Reset the **MOON 600i** software settings back to their factory defaults:

- 1 You may either continue where we left off in the previous example by turning the volume control until "RESET" appears in the display OR enter into the "Setup" mode from the beginning by pressing the "Setup" button and then rotating the volume control until "RESET" appears in the display.
- 2 Press "OK" and "RESET N" will appear in the display.
- 3 Rotate the volume control until "RESET Y" appears in the display.
- 4 Press "OK" and "SURE ? N" will appear in the display.
- 5 Rotate the volume control until "SURE ? Y" appears in the display.
- 6 Press "OK" and "SAVED" will briefly appear in the display followed by "RESET".
- 7 Press the "Setup" button again and "EXITING" will appear in the display.

MOON 600i Dual-Mono Integrated Amplifier

Rear Panel Connections

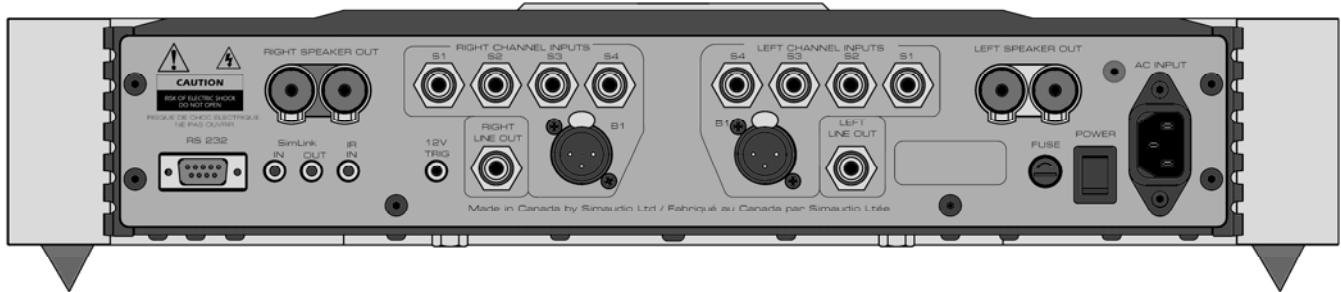


Figure 2: Rear panel of MOON 600i Integrated Amplifier

The rear panel of the **MOON 600i** dual-mono integrated amplifier will look similar to Figure 2 (above). There are two rows of connectors; the upper row contains one pair of heavy duty gold-plated speaker binding posts for each channel to connect to your loudspeakers. In between these binding posts are four (4) pairs of single-ended RCA inputs labeled S1, S2, S3, and S4. This layout is the result of **600i**'s dual-mono design, the left channel inputs/outputs are grouped together on one side and the right channel inputs/outputs are grouped together on the opposite side.

On the lower row, beginning on the left side, you will find a full-function bi-directional RS-232 port control and status for custom integration or automation using a DB9 connector. Immediately to the right of the RS-232 port are two (2) "SimLink" connectors labeled "in" and "out" on 1/8" mini jacks. Please refer to the next section entitled SimLink for more details. As well, there's a 1/8" mini-jack input for use with aftermarket infrared remote control receivers. Further to the right, there's a 12V trigger output on a 1/8" mini-jack.

The **MOON 600i** is equipped with a "Line Out", that can be configured as either a fixed or variable output (refer to page 10 in the section entitled "Software Setup" for details). Beside each of the "Line Out" connectors are balanced XLR inputs labeled B1, with each channel's input connector located on its respective side, just like the single-ended inputs. Finally, on the right is the "AC Power" section with the "AC Fuse" socket cover, a main power switch ("0"=off, "1"=on) and the IEC receptacle for the included AC power cord. As well, don't hesitate to use high quality interconnect cables. Poor quality interconnect cables can degrade the overall sonic performance of your system.

All rear panel connectors have been chosen because they provide the best possible connections for your unit. A poor contact will degrade the signal substantially, and plugs and sockets should all look clean and free of dirt and corrosion. The easiest way to clean them is to remove the cables from their sockets and push them back in again. This procedure requires that your integrated amplifier and the rest of your components be completely turned off.

MOON 600i Dual-Mono Integrated Amplifier

SimLink™

The SimLink™ provides communication features between various **MOON** components. For example, if you were to connect the **750D** CD Player to the **600i** Integrated Amplifier via the SimLink™, pressing the ► (play) button on the **750D** would cause the integrated amplifier to automatically switch to its designated input for the CD Player. ***You must assign the input with the name “750D” for this feature to work.*** If you were to adjust the brightness level of the large digital display window using the “Display” button on the **600i**, the brightness level of the **750D**'s display will automatically adjust to the same brightness level as that of the **600i**. Conversely, since the SimLink™ is a true bi-directional connection, adjusting the **750D**'s brightness level will automatically adjust the brightness level of the **600i**.

A third feature of SimLink™ involves the “Standby” function. By pressing down and holding the “Standby” button for 2 seconds on the **600i**, all other **MOON** components connected via the SimLink will go into “Standby” mode along with the **600i**. The same logic applies when switching from “Standby” to active mode.

The connection rules for the SimLink™ are very basic. You must always connect the supplied cable between one component's “SimLink™ Out” jack and another component's “SimLink™ In” jack. If you inadvertently connect the cable between either two “SimLink™ In” or two “SimLink™ Out” jacks, the SimLink™ communication feature will not function. Also, there is no master component in a SimLink™ chain; no one particular component operates as the main communications controller.

Operating the 600i

We recommend that you leave your **MOON 600i** dual-mono integrated amplifier powered up at all times to maintain optimal performance. In the event that you plan to be away from your home for a few days, powering off the integrated amplifier may not be a bad idea. Once fully “broken-in”, please keep in mind that your **600i** will require several hours of playing time before it reaches its peak performance after you've powered it up again.

Turning on your MOON 600i for the first time

Prior to turning this integrated amplifier on for the first time, make sure that every cable is properly connected to avoid any problems. Then turn on your integrated amplifier in the following manner:

- 1) Flick the main rocker switch labeled “POWER” to the ‘1’ (on) position on the rear of the controller chassis.
- 2) Press the push button labeled “Standby” on the **600i**, the blue LED's on both chassis' will confirm operation and the digital display will illuminate. You are now ready to begin listening to music.

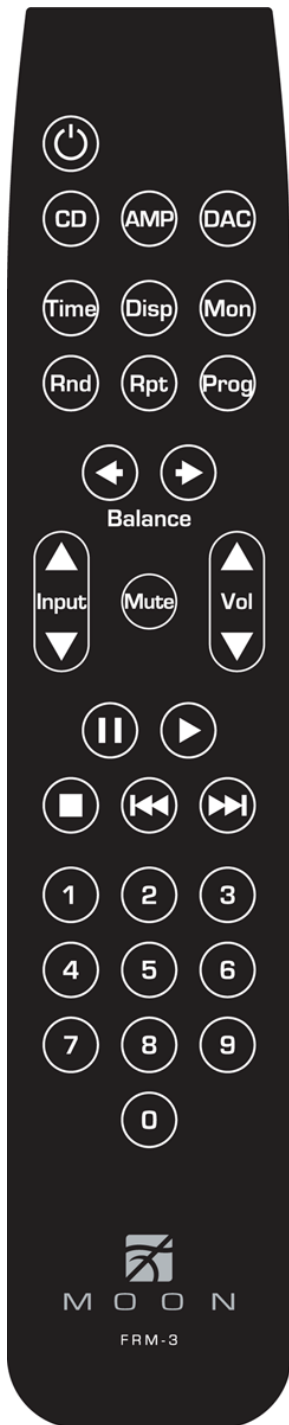
On and Off Sequence

To avoid having any annoying noises (ie. “thumps” and “pops”) emanate from your speakers when powering your **600i** on or off, you should

- 1) Always power up your **600i** integrated amplifier after powering up your source component(s).
- 2) Always power down your **600i** before powering down your source component(s).

MOON 600i Dual-Mono Integrated Amplifier

Remote Control Operation



The **MOON 600i** Dual-Mono Integrated Amplifier uses the '**FRM-3**' full function, all aluminum backlit remote control (figure 3). It operates on the Philips RC-5 communication protocol and is can be used with other MOON components such as CD Players, DAC's, Integrated Amplifiers, as well as other Preamplifiers.

The '**FRM-3**' remote uses three AAA batteries (included). To install them, use a Phillips head screwdriver #1 to remove the three screws located on the rear plate; insert the batteries in the correct direction and then screw the rear plate back into place.

To operate the **600i** with this remote control, you must first press the **AMP** button located on the second row from the top.

The  power button switches the **600i** between 'Standby' and 'On' mode.

The **Balance** ◀ and **Balance** ▶ buttons control channel balance; Pressing the left arrow button causes a decrease in the volume level of the right channel; pressing the right arrow button causes a decrease in the volume level of the left channel. The balance adjustment operates in 1% increments. When the balance is equal for both channels, "◀ 00 ▶" will briefly appear in the front panel display. The range for the balance control varies from "◀ 100" for left channel only to "100 ▶" for right channel only.

The **Input** ▲ and **Input** ▼ buttons allow you to sequentially scroll through each of the preamplifier's inputs, performing the identical function as the 'Input' buttons located on the **600i**'s front panel

The **Mute** button, located between the input and volume buttons, reduces your volume setting to zero, performing the identical function as the 'Mute' button located on the **600i**'s front panel.

The **Vol**▲ and **Vol**▼ buttons increase and decrease the volume level. From 30 to 80dB, holding either button down results in 1.0dB volume changes; repeatedly pressing either button very briefly results in 0.1dB volume changes.

The **Disp** button allows you to adjust the brightness of the digital display window. It also provides you with the option of turning off the display, performing the identical function as the 'Display' button located on the **600i**'s front panel.

Figure 3: FRM-3 Remote Control

MOON 600i Dual-Mono Integrated Amplifier

Remote Control Operation (continued)

Backlight Function

Your **FRM-3** features a backlight capability that allows you to effortlessly operate this remote control in a darkened environment. Since battery lifespan is substantially reduced when the backlighting feature is activated, the **FRM-3** includes 3 different operational modes to help preserve battery life:

Default Mode (#1): The backlight is triggered on by either moving the remote control (via an internal motion detector) or by pressing any button on the remote's keypad; The backlight will remain illuminated for a full five (5) seconds after the last event (motion or pressed button). To activate the "Default Mode", press and hold the "CD" button for three (3) seconds. The backlight will illuminate once, very briefly for confirmation.

Button Mode (#2): The backlight is triggered ONLY by pressing any button on the remote's keypad - the internal motion detector is deactivated; The backlight will remain illuminated for a full five (5) seconds after the last button is pressed. To activate the "Button Mode", press and hold the "AMP" button for three (3) seconds. The backlight will illuminate twice, very briefly for confirmation.

Off Mode (#3): The backlight feature is completely disabled. To activate the "Off Mode", press and hold the "DAC" button for three (3) seconds. The backlight will illuminate three times, very briefly for confirmation.

Troubleshooting

Your **MOON 600i** is a "smart" integrated amplifier equipped with a self-diagnostic system that will automatically shut itself down when it (i) detects DC (direct current) from any input or (ii) reaches a dangerously high operating temperature. When DC is present, the front panel display will show "DC LEVEL"; when overheating "HIGHTEMP" will appear in the display. If your **600i** powers itself off or will not power up, there may very well be DC present in one (or more) of the inputs coming from one (or more) of your source components. You must determine if there is any DC present. The best way to accomplish this is by first powering down the **600i** via the main power rocker switch, then physically removing all inputs to the **600i** leaving only the speakers connected. Attempt to power up your **600i** again: A successful power up will indicate the presence of DC coming from one of your signal sources (ie. CD Player).

Balanced Operation

When using an unbalanced interconnect, the audio signal runs through both the center wire and the shield/ground wire. Any noise picked up by this interconnect (ie. nearby magnetic fields such as an AC power cord) will be reproduced by the integrated amplifier, then heard through the loudspeakers. Conversely, a balanced interconnect has three separate conductors; one for the ground and two for the actual signal. These two signals are identical except that one is 180 degrees out of phase with the other. For example, when one conductor is carrying a signal of +10 Volts, the other will be carrying a signal of -10 Volts. When these two inverted signals on a balanced line are output from the **MOON 600i**, any noise picked up by the interconnect will be eliminated since a differential circuit amplifies only the difference between these two signals: Noise on a balanced interconnect will be equal on both conductors and therefore not be processed.

MOON 600i Dual-Mono Integrated Amplifier

Specifications

Configuration	Fully balanced, dual-mono
Power Supply Transformers	2 x 400VA
Power Supply Capacitance	80,000 μ F
Circuit Topology	Open Loop
Balanced inputs (XLR)	1 pair
Single-ended inputs (RCA)	4 pairs
Input Impedance	23,700 Ω
Input Sensitivity	490mV – 6.0V RMS
Preamplifier line-level output (RCA)	1 pair @ 50 Ω
Output Device Type - Amplifier	Proprietary MOON BiPolar - 4 per channel
Output Binding Posts	Gold-plated WBT
Output Power @ 8 Ω	125 Watts per channel
Output Power @ 4 Ω	250 Watts per channel
Output Impedance	0.03 Ω
Damping Factor	> 267
Volume Steps	0.5dB from 0-30 and 0.1dB from 30-80
Gain Control	M-eVOL2
Gain	37dB
Signal-to-noise Ratio (Preamplifier / Amplifier)	120dB (20-20kHz) / 105dB @ full power
Maximum Output Voltage	35 Volts
Slew Rate	35V/ μ s
Maximum Current - Peak / Continuous.....	30 amperes / 18 amperes
Frequency Response	10Hz - 100kHz +0/-0.1dB
Crosstalk @ 1kHz	-100dB
Intermodulation Distortion	Unmeasureable
THD (20Hz - 20kHz @ 1 watt)	< 0.015%
THD (20Hz - 20kHz @ 175 watts)	< 0.04%
Remote Control	All Aluminum Full-Function (FRM-2)
Display Type	8 character dot matrix LED
Power Consumption @ idle	45 Watts
AC Power Requirements	120V / 60Hz or 240V / 50Hz
Shipping Weight	48 lbs / 21 Kgs
Dimensions (W x H x D, inches)	18.75 x 4.0 x 18.1

Balanced Input Pin Assignment:

Pin 1.....	Ground
Pin 2.....	Positive
Pin 3	Negative

NOTE: In the event that you require the RS-232 codes for your **MOON 600i**, please contact Simaudio Ltd. directly by either email (service@simaudio.com) or by toll-free telephone (877-980-2400).



Fuse Replacement:

For the 120V version use a 6A fast blow (3AG size).
For the 230V version use a 3A fast blow (3AG size).