

Owner's Manual

MOON Evolution Series

SuperNova


CD Player



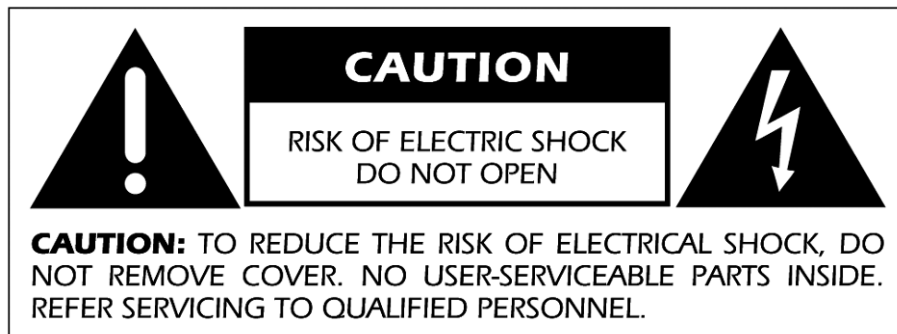
M O O N

MOON SuperNova CD Player

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.
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 SuperNova CD Player

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 SuperNova CD Player.

1. **ALWAYS** disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component.
 2. The MOON SuperNova must be terminated with a three-conductor AC mains power cord w which includes a protective earthing connection. To prevent shock hazard, all three connections must **ALWAYS** be used. Connect the MOON SuperNova 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 SuperNova 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 SuperNova with any liquid. If a liquid substance does enter your MOON SuperNova, immediately disconnect it from the AC mains and take it to your MOON dealer for a complete check-up.
 7. **NEVER** expose the MOON SuperNova 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 SuperNova. If a problem occurs contact your MOON dealer.
 12. **NEVER** expose the MOON SuperNova to extremely high or low temperatures.
 13. **NEVER** operate the MOON SuperNova in an explosive atmosphere.
 14. **ALWAYS** keep electrical equipment out of reach of children.
 15. **ALWAYS** unplug sensitive electronic equipment during lightning storms.
-

Table of Contents

Congratulations	5
Unpacking and Warnings	5
Introduction	6
Installation & Placement	7
Front Panel Controls	8
Rear Panel Connections	10
SimLink™	11
Operating the SuperNova	11
Balanced Operation	12
Remote Control Operation	12
Specifications	13

www.simaudio.com

MOON SuperNova CD Player

Congratulations!

Thank you for selecting the **MOON SuperNova** Reference CD Player as a part of your hi-fi reproduction system. This CD Player 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 amongst the finest CD players 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** CD Players are so musically satisfying.

The performance of your **SuperNova** 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 CD Player.

Before setting up your new **MOON SuperNova**, we encourage you to please read this manual thoroughly to properly acquaint yourself with its features. We hope you enjoy listening to the **MOON SuperNova** Reference CD Player 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 SuperNova** CD Player should be removed from its box with care. The following accessories should be included inside the box with your CD Player:

- ✓ *AC power cable*
- ✓ *'FRM-2' Full Function remote control with three 'AAA' batteries (USA and Canada only)*
- ✓ *'SimLink' cable with 1/8" mini plug terminations on each end*
- ✓ *Four (4) pointed screw-on cones (for the CD Player's legs)*
- ✓ *Four (4) protective flat dimpled discs to be placed under the screw-on cones*
- ✓ *This owner's manual*
- ✓ *Warranty and product registration information (USA and Canada only)*

As soon as the CD Player 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 CD Player. The customized packaging is specially designed to protect the **MOON SuperNova** CD Player from potential damage that may occur during shipping.

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

Serial No.: _____

MOON SuperNova CD Player

Introduction

Your **MOON SuperNova** CD Player incorporates many significant design features to achieve its “world class” level of performance. This is an abbreviated list of the more important features:

24-bit/352.8kHz internal upsampling with **8X oversampling**.

Ultra-high performance 24-bit BurrBrown PCM1798 DAC/Digital Filter.

Full unsolicited RS-232 bidirectional feedback.

Digital input for use as a digital-to-analog converter with either a digital music server or external transport.

Separate digital and analog power supplies, each with their own toroidal transformer

Fully **balanced differential** digital and analog circuitry *in a dual-mono design*.

MOON Alpha Clocking System with PLL synchronization yielding 25 PPM of jitter.

Power supply voltage regulation includes **i²DCf** (Independent Inductive DC Filtering); 1 inductor for each and every chip (i.e. OpAmp, DAC, Digital Filter, etc.) in the audio circuit's signal path – 20 stages in all.

A very short capacitor-free signal path using a DC servo circuit and proprietary 6dB/octave analog filter.

Four-layer pure copper circuit 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.

Designed to be **powered up at all times** for optimal performance.

Low operating temperature for a longer than normal life expectancy.

MOON SuperNova CD Player

Installation & Placement

The **MOON SuperNova** Reference CD Player 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 CD Player's performance and reliability. The **SuperNova** uses two toroidal transformers; even though they are well shielded, you should not place the player too close to source components sensitive to EMI, such as turntables and phono preamplifiers. *You should never place another component directly on top of this CD Player.*

Once you've decided on a location for the **SuperNova**, you should install the four (4) pointed screw-on cones into the threaded holes located on the bottom of the four (4) the corner posts of the CD Player chassis. These cones will easily scratch most surfaces, therefore it's advisable to follow these instructions: Place your **SuperNova** on a soft surface (i.e. carpet) and carefully turn it so that it rests on its side. Screw one cone onto each of the four posts. Carefully move the chassis to it's pre-determined location.

In the event that the surface you have chosen isn't perfectly level, each of the four (4) cones on your **SuperNova** 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.

Finally, if you have not used a CD Player before, you may be unaware that compact discs are very easily damaged, and must be kept very clean. Always store them in their jewel cases. Dirty or finger-marked discs will reproduce music poorly. Moreover, the player may even mute parts of a track, or be unable to find some tracks. If you need to clean a CD remember to use a soft lint-free cloth, using a radial action (i.e. starting from the center and aiming towards the edges). Do not attempt to clean a compact disc using a rotating motion.

MOON SuperNova CD Player

Front Panel Controls

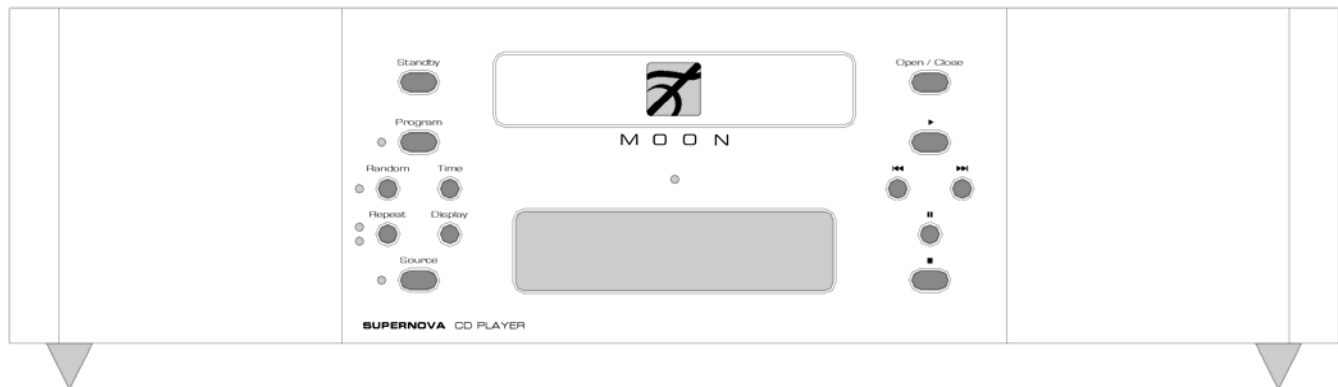


Figure 1: MOON SuperNova Front panel

The front panel will look similar to Figure 1 (above). The large digital display window indicates the track number of the compact disc currently playing (or the total number of tracks in stop mode) and corresponding time information.

The “Standby” button disengages the transport mechanism from the rest of the **SuperNova’s** circuitry and turns off the digital display. However, when in “Standby” mode, all digital and analog audio circuitry remains powered up to help maintain optimal performance. The blue pilot LED centrally located below the display window will no longer be illuminated when the player is in “Standby” mode.

The “Program” button allows you to program a selection of tracks in the order that you wish to listen them. After loading a compact disc into the **SuperNova**, select the first track you wish to listen to, using the ◀ or ▶ buttons and then press “Program”. To program a second track, select it the same way you did for the first one and press “Program” again. Repeat this operation as many times as you want to program tracks to a maximum of 30 tracks. Once you’ve completed programming your track selection(s), the digital display window will show the number of tracks that have been programmed and their total time. To begin playing your programmed selections, simply press the ▶ button. Pressing ■ will only suspend the playing of the programmed selection. Pressing ■ a second time will clear your program selection from the **SuperNova’s** memory. As well, opening the top drawer at any time will also clear your program. After you begin creating your program list, the LED immediately to the right of the “Program” button will illuminate and remain on until you clear your program from memory.

The “Random” button, when pressed, will play each of the tracks on a compact disc in a completely random order, as opposed to the sequential order as they appear on the disc. If you have already created a program of selected tracks, it will play these programmed tracks in a random order. The LED located immediately to the right of the “Random” button will illuminate when you’ve engaged the random mode.

The “Time” button allows you to scroll through the four (4) different display modes for time related information. Each time you press the “Time” button, the system scrolls to the next time information mode. By default, the **SuperNova** will display the elapsed time of the track currently playing. The scrolling order is as follows:

1. Elapsed time of the current track
2. Remaining time of the current track
3. Elapsed time of the entire compact disc (or programmed tracks)
4. Remaining time of the entire compact disc (or programmed tracks)

MOON SuperNova CD Player

Front Panel Controls (continued)

Pressing the "Repeat" button once results in the entire disc being played again once it has reached the end of the final track. Pressing "Repeat" a second time will result in the track currently playing being repeated again once it has ended. To cancel this mode, simply press the "Repeat" button a third time or open the CD drawer. There are two (2) LED's located to the right of the "Repeat" button; The top one will illuminate when the current track is being repeated and both will illuminate when the entire disc is being repeated.

If you have created a program of selected tracks, pressing "Repeat" once will result in your entire program repeating itself once it has completed its cycle; Pressing "Repeat" a second time will result in the current track from your program being played again once it has ended; Pressing "Repeat" a third time will terminate the "Repeat" mode.

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 medium. Pressing the button a second time will further increase the brightness to the highest setting. Pressing the "Display" button a third time returns the display to its default setting of low.

If you want to turn the display off, press and hold the "Display" button for 3 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 established; 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 3 seconds. The sonic performance of the **MOON SuperNova** CD Player may improve slightly when the display is turned off.

The "Source" button is used to select an external digital source which must be connected to the BNC S/PDIF digital input on the rear panel. The **MOON SuperNova** will then function as a reference quality Digital-to-Analog converter. Directly to the left of this button is an LED that will illuminate only when an external digital signal is engaged.

To load a compact disc into the **SuperNova**, press "Open / Close" to open the drawer. While the drawer is opening, the word "OPENING" will appear in the display window, followed by "OPEN" when the drawer is fully open. Place the CD in the drawer with the label side facing up. To close the drawer, press "Open / Close" again; "CLOSING" will appear in the display window followed by "LOADING" once the drawer is closed. "LOADING" indicates that the **SuperNova** is reading the CD's table of contents. Once the CD is successfully read, the total number of tracks and total playing time will appear in the display window. As a result of various copy protection schemes, some CDs will take longer to read than others. When you load an incompatible CD (i.e. data only, SACD, DVD-A or DVD-Video), the word 'BAD DISC' will appear in the display window and the drawer will automatically open to eject this CD. **Finally, in the event that you inadvertently leave the drawer open, it will automatically close after approximately three (3) minutes.**

Press ► to begin playing a compact disc. Pressing ► while a track is already playing will result in the current track immediately playing again, starting from the beginning.

Press ◀ to search backward or ▶ to search forward through the compact disc's tracks. When you've located the track number, press ► to begin playing that track. In the event that you initiate a forward or backward track change while a disc is already playing, it will automatically start playing the track you select; you need not press ►.

Press || to pause the compact disc currently playing. The disc will continue spinning and the laser will be suspended in its current position. Press || a second time or ► to resume playing the disc.

Press ■ to stop the compact disc from playing. The laser will return to the start position of the disc.

MOON SuperNova CD Player

Rear Panel Connections

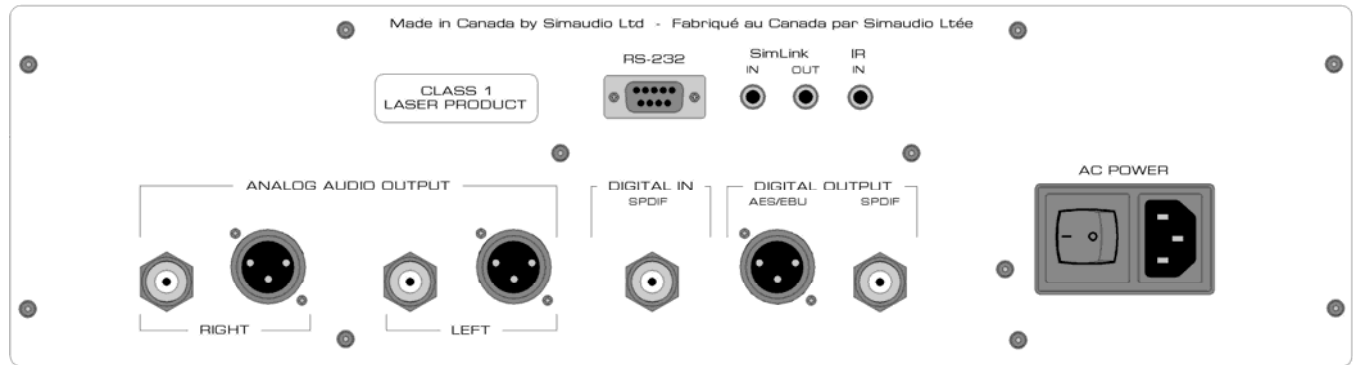


Figure 2: MOON SuperNova Rear panel

The rear panel will look similar to Figure 2 (above). On the far left side are a pair of analog audio outputs for the right channel labeled "Right Analog" with both a single-ended RCA connector and a balanced XLR connector. Next is a 4-pin XLR connector labeled "DC Power Input 1" followed by the "Left Analog" audio outputs on RCA and XLR connectors. For the audio analog outputs, don't hesitate to use good quality interconnect cable when making the connection between the **MOON SuperNova** and your preamplifier or integrated amplifier. We strongly recommend that you use the balanced XLR connectors on your **SuperNova** to maximize its level of performance.

There is one S/PDIF digital input on a BNC connector labeled "Digital In". This allows you to use external digital source with a digital output such as a music server in conjunction with the **MOON SuperNova**, with the latter functioning as a reference digital-to-analog converter. As well, there are two (2) connectors labeled "Digital Output" that allows for external digital signal processing, whereby the SuperNova functions only as a digital transport. The connectors are AES/EBU on an XLR connector and S/PDIF on a BNC connector. For either of the S/PDIF digital connectors, you should always use a 75Ω digital audio cable terminated with BNC connectors. In the event that this isn't available, you may use a digital audio cable terminated with RCA connectors and RCA-to-BNC adaptors. If you decide to use the AES/EBU digital output, use a dedicated AES/EBU 110Ω digital audio cable terminated with XLR connectors.

The **MOON SuperNova** is equipped with full-function bi-directional RS-232 port control and status for custom integration or automation. 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.

Your **MOON SuperNova** CD Player has a 1/8" mini jack input for use with aftermarket infrared remote control receivers. The "IR in" connector is located on the upper right section of the rear panel.

Finally on the right side is the "AC Power" section with a main power switch ("0"=off, "1"=on) and IEC receptacle for the included AC power cord.

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 CD Player and the rest of your components be completely turned off. Not heeding this warning may result in serious damage to your equipment. Special contact cleaning fluids and enhancers should not be used, as they deposit a difficult to remove residue which degrades the performance of your components.

MOON SuperNova CD Player

SimLink™

The SimLink™ provides communication features between various **MOON** components. For example, if you were to connect the **SuperNova** CD Player to the **i-7** Integrated Amplifier via the SimLink™, pressing the ► (play) button on the **SuperNova** would make the integrated amplifier automatically switch to its designated input for the CD Player (Please refer to the **i-7** owner's manual for more information if applicable). If you were to adjust the brightness level of the large digital display window using the "Display" button on the **SuperNova**, the brightness level of the **i-7**'s display will automatically adjust to the same brightness level as that of the **SuperNova**. Conversely, since the SimLink™ is a true bi-directional connection, adjusting the **i-7**'s brightness level will automatically adjust the brightness level of the **SuperNova**.

A third feature of SimLink™ involves the "Standby" function. By pressing down and holding the "Standby" button for 2 seconds on the **SuperNova**, all other **MOON** components connected via the SimLink will go into "Standby" mode along with the **SuperNova**. 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 SuperNova

We recommend that you leave your **MOON SuperNova** CD Player 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 CD Player may not be a bad idea. Once fully "broken-in", please keep in mind that your **SuperNova** will require several hours of playing time before it reaches its peak performance after you've powered it up again.

Turning on your MOON SuperNova for the first time

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

- 1) Flick the main rocker switch labeled "POWER" to the '1' (on) position on the rear panel.
- 2) Press the push button labeled "Standby" on the **SuperNova**, the blue LED will confirm operation and the digital display will show 'no disc'. You are now ready to load a compact disc and begin listening to music.

On and Off Sequence

To avoid having any annoying noises (i.e. "thumps" and "pops") emanate from your speakers when powering your **SuperNova** on or off, you should

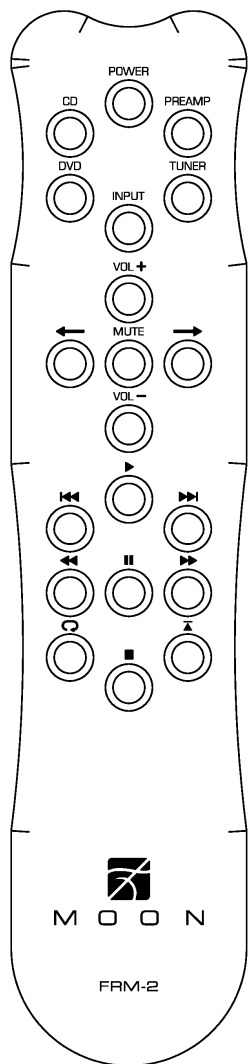
- 1) Always power up your **SuperNova** CD Player before powering up your preamplifier and/or integrated amplifier.
- 2) Always power down your **SuperNova** after powering down your preamplifier and/or integrated amplifier.

MOON SuperNova 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 both the preamplifier and 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 +4 Volts, the other will be carrying a signal of -4 Volts. When these two inverted signals on a balanced line are output from the **MOON SuperNova**, 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.

Remote Control Operation



The **MOON SuperNova** CD Player uses the 'FRM-2' full function, all aluminum remote control (figure 3). It operates on the Philips RC-5 communication protocol and can be used with other Simaudio MOON components such as the P-8, P-5 and P-3 Preamplifiers, as well as the i-7, i-5 and i-3 integrated amplifiers.

The 'FRM-2' remote uses three AAA batteries (included). To install them, use the supplied Allen key to remove the three screws located on the back plate; insert the batteries in the correct direction and then screw the back plate back into place.

To operate the **SuperNova** with this remote control, you must first press the button labeled 'CD' on the top left corner.

The lower section of the 'FRM-2' has nine (9) buttons, eight (8) of which operate the **SuperNova**. All of these functions are available on either the top panel or front panel of the CD Player. Please refer to these aforementioned sections for a more detailed description of each of these buttons:

- ▶ Play the compact disc loaded into the player
- ◀◀ Skip to the previous track on the disc
- ▶▶ Skip to the next track on the disc
- ◀◀◀ Scan backwards through the current track of the disc
- || Pauses the player
- ▶▶▶ Scan forward through the current track of the disc
- ↶ Repeat the entire disc (1x) or the current track (2x)
- Stop playing the current track

Figure 3: FRM-2 Remote Control

MOON SuperNova CD Player

Specifications

Configuration	Fully balanced, dual-mono
Digital Power Supply Transformer	25VA
Analog Power Supply Transformer	10VA
Digital Power Supply Capacitance	17,600 μ F
Analog Power Supply Capacitance	8,000 μ F
Transport Mechanism	Philips L1210/S
Digital Filter / Digital-to-Analog Converters	BurrBrown PCM1798
Frequency Response (audible)	20Hz - 20kHz +0/-0.1dB
Frequency Response (full range)	2Hz - 72kHz +0/-3dB
THD @1kHz, 0dBFS (A-weighted).....	< 0.001%
Intermodulation Distortion	< 0.003%
Dynamic Range	> 116dB
Signal-to-noise Ratio	> 120dB @ full output
Slew Rate	50V/ μ s
Channel Separation	> 116dB
Low Level Linearity	< \pm 1.0dB at -120dBFS
Intrinsic Jitter	< 25 picoseconds RMS
Analog Outputs – Balanced	1 pair XLR
Max. Analog Output @ 0dBFS - XLR	4.0 Volts
Analog Output Impedance - XLR	50 Ω
Analog Outputs – Single Ended	1 pair RCA
Analog Output Impedance - RCA	50 Ω
Max. Analog Output @ 0dBFS - RCA	2.0 Volts
Digital Input	S/PDIF (RCA)
Digital Outputs (2)	S/PDIF (RCA) and AES/EBU (XLR)
Digital Output Impedance - S/PDIF	75 Ω (0.5 Volts p-p)
Digital Output Impedance - AES/EBU.....	110 Ω (3.7 Volts p-p)
Remote Control	All Aluminum Full-Function
Display Type.....	8 character dot matrix LED
Power Consumption @ idle	25 Watts
AC Power Requirements	120V / 60Hz or 240V / 50Hz
Shipping Weight	40 lbs / 18 Kgs
Dimensions (W x H x D, inches)	18.75 x 5.5 x 16.5
Balanced 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 SuperNova**, 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 0.5A slow blow (5 x 20mm size).
For the 230V version use a 0.25A slow blow (5 x 20mm size).