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# *220i Nēo Series*

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## Integrated Amplifier

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## Owner's Manual




**220i** *Nêo Series*

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## 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.
 



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.

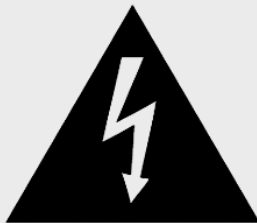
**WARNING:**

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



**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.

## 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 Nêo 220i Integrated Amplifier.***

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, disconnect the power supply cord plug from the AC receptacle.
2. The Nêo 220i 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 Nêo 220i 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. The mains plug of the power supply cord shall remain readily accessible.
4. **NEVER** use flammable or combustible chemicals for cleaning audio components.
5. **NEVER** operate the Nêo 220i 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 Nêo 220i with any liquid. If a liquid substance does enter your Nêo 220i, immediately disconnect it from the AC mains and take it to your MOON dealer for a complete check-up.
7. **NEVER** spill or pour liquids directly onto the MOON 220i.
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 Nêo 220i. If a problem occurs contact your MOON dealer.
12. **NEVER** expose the Nêo 220i to extremely high or low temperatures.
13. **NEVER** operate the Nêo 220i in an explosive atmosphere.
14. **ALWAYS** keep electrical equipment out of reach of children.
15. **ALWAYS** unplug sensitive electronic equipment during lightning storms.
16. **WARNING:** Do not expose batteries or battery pack to excessive heat such as sunshine, or fire or the like.

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**[www.simaudio.com](http://www.simaudio.com)**

Simaudio Ltd., 1345 Newton Road  
Boucherville, Québec J4B 5H2 CANADA

Date Code: 20150803

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## Introduction

Thank you for selecting the **Nêo 220i** 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 amongst **the finest** two-channel Integrated Amplifiers available in its class. We have been building high-performance audio equipment for over 30 years, and the know-how gained through our cumulative experience is an important reason why **MOON** integrated amplifiers are so musically satisfying.

The performance of your **220i** 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 **Nêo 220i**, we encourage you to please read this manual thoroughly to properly acquaint yourself with its features. We hope you enjoy listening to the **Nêo 220i** 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>

Your **Nêo 220i** 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:

**Six line-level inputs** including one front-mounted 1/8” mini-jack for personal media players.

**Headphone output** on ¼” TRS jack located on the front panel.

**RS-232 port** for i) full unsolicited bidirectional feedback in custom installation setups and ii) firmware updates.

**IR input** for external control.

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

**Class A output** to 5 watts for greater efficiency.

**SimLink™** controller port allows for 2-way communications between other compatible MOON components

**Rigid chassis construction** to minimize the effects of External vibrations

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

**Low operating temperature** for an ultra-long life expectancy.

## Unpacking

The **Nëo 220i** 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
- ✓ 'CRM-2' remote control with two 'AA' batteries
- ✓ 'SimLink™' cable with 1/8" mini plug terminations on each end
- ✓ This owner's manual
- ✓ Warranty and product registration information (USA and Canada only)

Once the **Nëo 220i** is unpacked, inspect it thoroughly and report any damage to your dealer immediately. We suggest that you keep all of the original packaging, storing it in a safe, dry place in case you're required to transport this product. The customized packaging is specially designed to protect the **220i** from any potential damage during transit.

Please write the serial number of your new **Nëo 220i** in the space provided below for future reference.

Serial Number

## Installation & Placement

The **Nëo 220i** Integrated Amplifier requires reasonable ventilation to maintain an optimum and consistent operating temperature, especially since it will radiate heat when driven hard. Consequently, it should be placed in a location with empty space around it for proper heat dissipation. You should never place another component on top of this integrated amplifier. 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 amplifier's performance and reliability. The **220i** uses a large toroidal transformer in its power supply; even though it is well shielded, you should not place this integrated amplifier too close to source components sensitive to EMI, such as turntables, phono preamplifiers and CD Players. Finally, *you should never place another component directly on top of this integrated amplifier.*

## Front Panel Controls

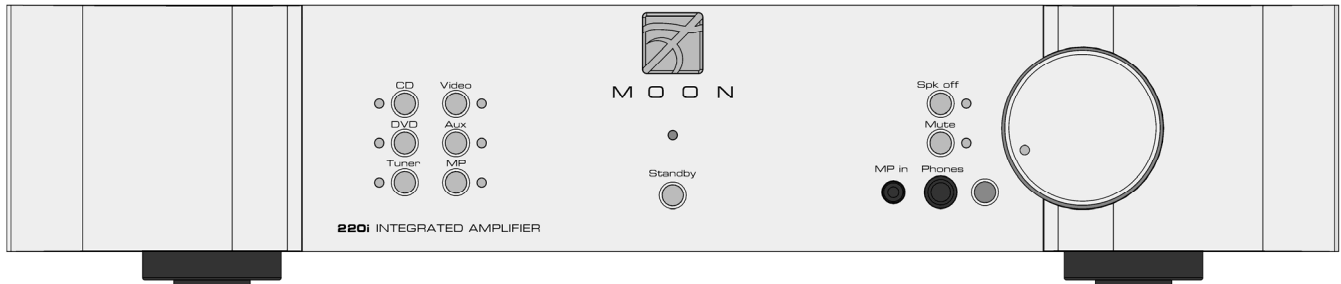


Figure 1: Nêo 220i Front panel

The front panel will look similar to Figure 1 (above). The remote control sensor is located directly to the right of the "Phones" output jack and it should never be blocked, otherwise remote control operation may be compromised.

The "Standby" button disengages the input section from the rest of the **Nêo 220i's** circuitry. When in "Standby" mode all audio circuitry remains powered up to help maintain optimal performance. When switching back from "Standby" to the "on" mode, both the 'input' and volume level settings will be memorized from the previous listening session. The blue indicator LED turns off when the **220i** is in "Standby" mode.

The **Nêo 220i** integrated amplifier has six (6) inputs labeled CD, Video, DVD, Aux, Tuner, and MP. Each of the first five (5) inputs has a corresponding pair of input connections located on the unit's rear panel (refer to the section entitled "Rear Panel Connections" for further details). The sixth input, labelled "MP" (Media Player) has its corresponding input connection located on the right side of the front panel for easy access. The "MP" input uses a 1/8" mini-jack connector which is the most common type of connection found on portable media players. Select any one of these six (6) inputs by simply pressing the associated button. When selected, the corresponding red indicator LED, located directly beside the button will illuminate.

The "Spk off" button turns off the output signal **only** to the loudspeakers connected to the **Nêo 220i**. This feature is very useful when using headphones. When

this function is engaged, the red LED located to the right will illuminate.

The "Mute" button mutes the output signal to the loudspeaker terminals, headphone jack, as well as both the fixed and variable line output connectors (refer to the section entitled "Rear Panel Connections" for further details). Pressing the "Mute" button a second time will reinstate the volume back to its previous level. When the output signal is muted, the red LED to the right will repeatedly flash on and off.

The "Phones" jack is used for connecting a pair of stereo headphones to the **Nêo 220i**. The input connector is a standard 1/4" stereo TRS jack. When a pair of headphones are used with the **220i**, the loudspeakers will still receive an output signal. However, you should use the "Spk off" button for private listening.

The rotary "Volume" control determines the output level and has an embedded red LED to indicate its actual position.



## Rear Panel Connections



Figure 2: Nêo 220i Rear panel

The rear panel will look similar to Figure 2 (above). There are five (5) pairs of single-ended inputs on RCA connectors labeled CD, DVD, TUNER, VIDEO and AUX. The RCA input connectors on the rear panel have been color coded: 'white' for the left channel and 'red' for the right channel.

The **Nêo 220i** integrated amplifier also has one pair of non-amplified outputs labeled 'PRE OUT', located next to the AUX input, and is designated for output to a power amplifier with single-ended RCA inputs in the event that you wish to use your **220i** as a preamplifier only. The output level on the 'PRE OUT' is variable and is adjusted by volume control.

Don't hesitate to use high quality interconnect cables\*. Poor quality interconnect cables can degrade the overall sonic performance of your system.

To the right of the input and "PRE OUT" section are a series of input/output connectors for external communication. From left to right there 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. Next, there's a 1/8" mini-jack input for use with aftermarket infrared remote control receivers. Finally, there's a full-function bi-directional RS-232 port control and status for custom integration or automation on a DB9 connector.

The **Nêo 220i** is equipped with a pair of gold-plated binding posts. Connect your speakers, with the cables of your choice, to the **220i**'s speaker binding posts. Take care to respect the polarity ("+" , "-" ) of the outputs. Once again, don't hesitate to use high quality speaker cables\*. Poor quality speaker cables can degrade the overall sonic performance of your system.

Finally on the far right side is the main power switch ("0"=off, "1"=on), the IEC receptacle, labeled "AC Input" for the included AC power cord, and the "AC Fuse" socket cover. Connect the supplied AC power cable to the IEC receptacle. Ensure that the AC wall outlet you use has a functioning ground. For the best sonic performance, it is preferable that you plug your **220i** directly into a dedicated AC outlet and avoid using an extension cord. If you have the time and willingness, consider installing a superior quality AC wall outlet such as a hospital grade Hubbell\*.

\* Please speak with your MOON Authorized Retailer about the benefits of high quality cables for your system, and superior quality AC wall outlet.

## SimLink™

The SimLink™ provides communication features between various **MOON** components. For example, if you were to connect the **260D** to the **220i** via the SimLink™, pressing the ► (play) button on the **260D** will cause the **220i** to automatically switch to the input labelled 'CD'.

A second feature of SimLink™ involves the "Standby" function. By pressing down and holding the "Standby" button for 2 seconds on either the **260D** or **220i**, both units will go into "Standby" mode. The same logic applies when switching from "Standby" to active mode.

If you are using the "MiND" Music Streamer and an external digital-to-analog converter (DAC), you must make a SimLink™ connection between the "MiND's" SimLink™ out and the **220i's** SimLink™ in. The 'Aux' input is the default input for the "MiND" Music Streamer; When you press the ► (play) button on the "MiND" App, the **220i** will automatically switch to the input labeled 'Aux'. You can change these default settings for the "MiND" as follows: Select the input that you want as the new default for "MiND", then press and hold the "MP" button until the front panel display begins to flash on and off.

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 may not function. Also, there is no master component in a SimLink™ chain; no one particular component operates as the main communications controller.

## Operating the Nêo 220i

We recommend leaving your **Nêo 220i** powered up at all times to maintain optimal performance. When you plan on being away for a few days, it may not be a bad idea to power off your amplifier. Please keep in mind that once fully "broken-in", your **220i** requires several hours of operation before reaching optimal performance after powering it up again.

### Turning on your Nêo 220i for the first time

Prior to turning the amplifier on for the first time, make sure that every cable is properly connected to avoid any problems. Flick the main rocker switch, located on the rear panel, labeled "POWER" to the '1' (on) position. The blue LED on the front panel will blink for up to 10 seconds while it achieves standby mode. When it stops blinking and is not illuminated, your **220i** is in standby mode. Next, briefly press the push button labeled "Standby" located on the front panel. You will hear a very faint click sound confirming that everything is in order. The blue LED on the front panel will illuminate, indicating that the **220i** is now powered up and ready for use.

### On and Off Sequence

To avoid having any annoying noises (ie. "thumps" and "pops") emanate from your speakers when powering your **220i** on or off, you should always power up any source components prior to powering up your **220i**. As well, always power down your **220i** prior to powering down any source components.

## Remote Control Operation

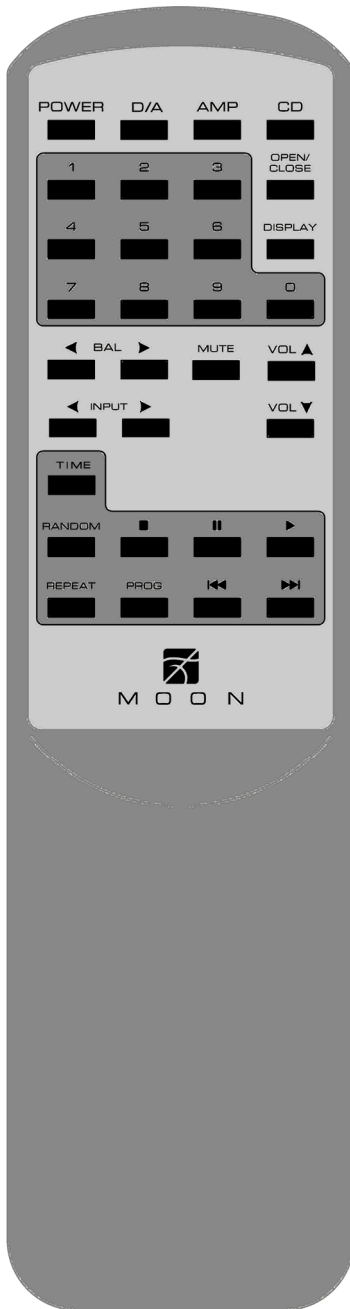


Figure 3: CRM-2 Remote Control

The **Nêo 220i** Integrated Amplifier uses the '**CRM-2**' full-function remote control (figure 4). It operates on the Philips RC-5 communication protocol and is can be used with other MOON by Simaudio components.

The '**CRM-2**' remote uses two AA batteries (included). To install them, simply slide the back plate off in the direction of the arrow; insert the batteries in the correct direction and then replace the back plate.

To engage the '**CRM-2**' remote for use with the **Nêo 220i** Integrated Amplifier, you must first press the button labeled **AMP**.

The **POWER** button located on the upper left will switch the integrated amplifier to either 'Standby' or 'On' mode.

The 2 buttons labelled **◀ INPUT ▶** allow you to sequentially scroll, either backwards or forwards, through all six (6) available inputs. For example, to switch from the "CD" to the "VIDEO" input you may press either **◀ INPUT** three (3) times or **INPUT ▶** three (3) times. Pressing and holding down either of these buttons results in only a single change to the selected input.

The 2 buttons labelled **▼ VOL ▲** allow you to control the volume level. Pressing **▼ VOL** results in a decrease in the volume level; Pressing **VOL ▲** results in an increase in the volume level. You may either press and hold these buttons down or press them briefly to make volume adjustments.

The **MUTE** button turns off the output volume. Pressing the "Mute" button a second time will reinstate the output volume level back to its current setting.

**NOTE:** The 2 buttons labelled **◀ BAL ▶** and the **DISPLAY** button don't affect the operation of the **220i**.

**Remote operation with multiple MOON components**

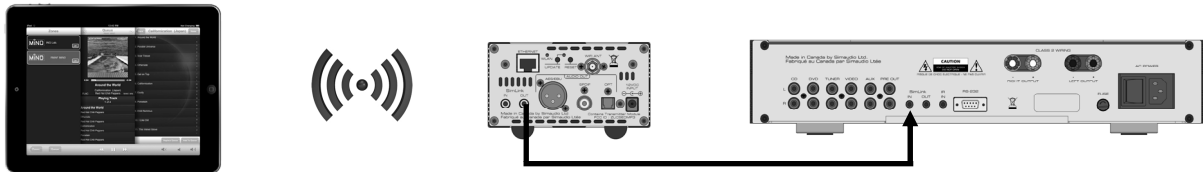


Figure 4: Remote Operation with SimLink™

In figure 4 we have a 180 MiND Music Streamer and a **Nêo 220i** Integrated Amplifier connected together via their respective SimLink™ ports. The SimLink™ output on the 180 MiND is connected to the SimLink™ input on the **220i** using a 1/8" mini-jack cable. When you launch the MiND App on your Apple smart device (full list on the MiND page of our website) and select this system's ZONE, both the 180 MiND and the **220i** will turn on. To shut down the system, press "Off" for this ZONE in the MiND app.

## Specifications

Configuration	Stereo
Power Supply Transformer	250VA
Power Supply Capacitance	20,000 $\mu$ F
Class Of Operation – Amplifier	Class A/B
Single-ended inputs	5 (RCA)
Mini-jack input	1 (1/8")
Input Sensitivity	370mV – 3.0V RMS
Input Impedance	11,000 $\Omega$
Preamplifier output	1 (RCA)
Headphone output	1 ( 1/4" Strereo TRS)
Output Device Type – Amplifier	Bipolar
Output Power @ 8 $\Omega$	40 Watts per channel
Output Power @ 4 $\Omega$	80 Watts per channel
Gain	34dB
Signal-to-noise Ratio	101dB @ full power
Frequency Response	10Hz - 100kHz +0/-3.0dB
Crosstalk@ 1kHz	-78dB
Intermodulation Distortion	0.07%
Total Harmonic Distortion (20Hz-20kHz @ 1W)	0.015%
Total Harmonic Distortion (20Hz-20kHz @ 50W)	0.03%
Remote Control	Full-Function (CRM-2)
AC Power Requirements	120V / 60Hz ou 240V / 50Hz
Shipping Weight	20 lb. / 8 Kg.
Dimensions (W x H x D, inches / cm.)	16.9 x 3.5 x 14.4 / 42.9 x 8.9 x 36.6



Fuse Replacement: 120V version uses a 4A fast blow (3AG)  
 230V version uses a 2A fast blow (3AG)

