

Owner's Manual

MOON Series

100 D


Digital-to-Analog Converter



M O O N

MOON 100D Digital-to-Analog Converter

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 100D Digital-to-Analog Converter

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 100D Digital-to-Analog Converter.

1. **ALWAYS** disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component.
 2. The MOON 100D 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 MOON 100 D 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 100 D 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 100 D with any liquid. If a liquid substance does enter your MOON 100 D, 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 100D.
 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 100D. If a problem occurs contact your MOON dealer.
 12. **NEVER** expose the MOON 100D to extremely high or low temperatures.
 13. **NEVER** operate the MOON 100D 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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MOON 100D Digital-to-Analog Converter

Congratulations!

Thank you for selecting the **MOON 100D Digital-to-Analog Converter (DAC)** as a part of your hi-fi reproduction system. This DAC has been designed to offer state-of-the-art high-end performance in an elegant and compact 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 Digital-to-Analog Converters available in its class. We have been building high-performance audio equipment for 30 years, and the know-how gained through our cumulative experience is an important reason why **MOON** digital audio components are so musically satisfying.

The performance of your **100D** 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 DAC.

Before setting up your new **MOON 100D**, we encourage you to please read this manual thoroughly to properly acquaint yourself with its features. We hope you enjoy listening to the **MOON 100D DAC** 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 100D DAC** should be removed from its box with care. The following accessories should be included inside the box with your DAC:

- ✓ *External AC power supply*
- ✓ *Quick Reference Guide*

As soon as the DAC 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 DAC. The customized packaging is specially designed to protect the **MOON 100D DAC** from potential damage that may occur during shipping.

Please write the serial number of your new Simaudio **MOON 100D** in the space provided below for future reference.

Serial No.: _____

MOON 100D Digital-to-Analog Converter

Introduction

Your **MOON 100D DAC** incorporates many significant design features to achieve its “world class” level of performance. This is an abbreviated list of the more important features:

Power supply with **3 stages of voltage regulation**

A **fully asynchronous** sample rate converter

BurrBrown PCM1793 high-resolution 24-bit/192-kHz Digital-to-Analog Converter and 8X oversampling digital filter

Accurate digital clocking system for exceptionally low intrinsic jitter levels

Single-ended RCA analog outputs

Advanced analog signal path using a **DC servo circuit** and **proprietary analog filter**

Pure copper circuit board tracings with extremely low impedance characteristics.

Extremely rigid chassis construction to minimize the effects of external vibrations.

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

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

Installation & Placement

The **MOON 100D** should be placed on a solid level surface. You should avoid placing it near a heat source as this could compromise the DAC's performance and reliability. Like all digital audio products, the **MOON 100D** operates at a very high-frequency; even though it is well shielded, you should not place it too close to source components sensitive to either RFI or EMI, such as a turntable or a phono preamplifier. *You should never place another component directly on top of this DAC.*

MOON 100D Digital-to-Analog Converter

Front Panel Controls

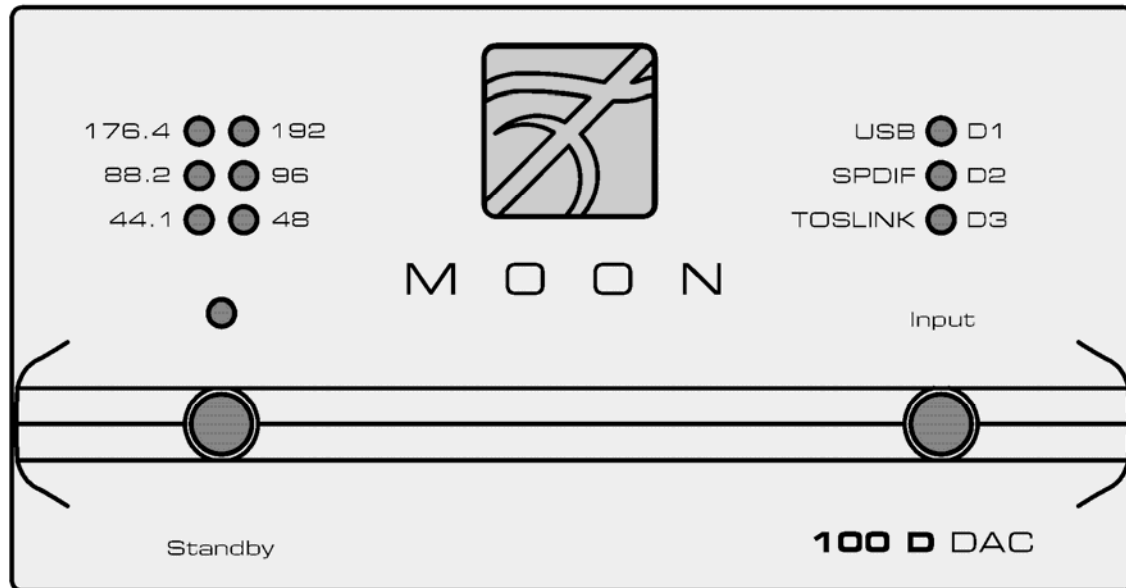


Figure 1: MOON 100D Front panel

The front panel will look similar to Figure 1 (above). The “Standby” button is located in the lower left corner and toggles the **MOON 100D** between standby mode and operational mode. When in “Standby” mode, the **100D**’s output signal is muted, however, all digital and analog audio circuitry remains powered up to help maintain optimal performance. As well, the blue LED on the **100D** will no longer be illuminated when the player is in “Standby” mode.

Directly above the “Standby” button is a vertical array of six (6) red LED’s to indicate the sampling frequency of the digital input signal: 192 kHz, 176.4 kHz, 96 kHz, 88.2 kHz, 48 kHz and 44.1kHz. Only when the **MOON 100D** has successfully locked onto an input signal will one of these LED’s illuminate.

The “Input” button, located in the lower right corner, allows you to sequentially scroll through the three (3) different digital inputs; each time you press the “Input” button, the **100D** scrolls to the next input. Directly above the “Input” button are three (3) red LED’s to indicate the selected input:

- D1USB
- D2S/PDIF
- D3TosLink

In the event that the **100D** cannot successfully lock onto the digital signal from the selected input, a sampling frequency LED will not illuminate. This may be the result of i) no digital source component connected to the selected input ii) a faulty digital audio cable between **100D** and your digital source component, your digital source iii) your digital source component not being powered up or iv) your digital source component malfunctioning.

When you put the **MOON 100D** into “Standby”mode, the currently selected input will remain the same when you put the unit back into operational mode. However, when the power supply connection is interrupted, the **100D** will automatically default to the “D1” input upon powering up.

MOON 100D Digital-to-Analog Converter

Rear Panel Connections

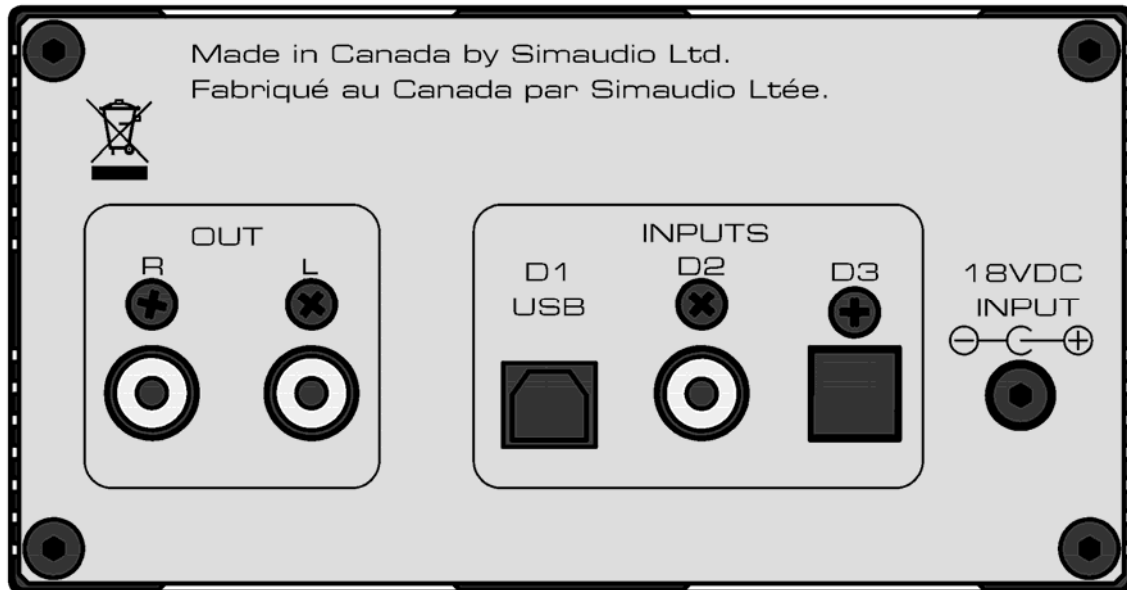


Figure 2: MOON 100D Rear panel

The rear panel will look similar to Figure 2 (above). On the left side is a pair of single-ended RCA analog audio output connectors. You should connect these to a single-ended stereo analog input on your preamplifier or integrated amplifier. Don't hesitate to use good quality interconnect cables.

The right side has three (3) digital inputs – "D1" uses a USB (type-B) connector and is intended for use with a computer; "D2" uses a S/PDIF on a coaxial RCA connector and is meant to be used with devices equipped with an S/PDIF output such as music servers and disc transports. note: you should use a 75Ω digital audio cable terminated with RCA connectors to make an S/PDIF connection; "D3" is an optical Toslink connector and is intended for use with devices equipped with a digital Toslink output such as a DVD player or digital satellite receiver.

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 DAC 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 100D Digital-to-Analog Converter

Operating the MOON 100D

We recommend that you leave your **100D DAC** 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 Digital-to-Analog Converter may not be a bad idea. Once fully “broken-in”, please keep in mind that your **100D** will require several hours of playing time before it reaches its peak performance after you’ve powered it up again.

Making the AC Connection

For the best sonic performance, it is preferable that you plug your **100D DAC power supply** directly into a dedicated AC outlet and avoid using an extension cord. Then connect the terminated end of the power supply cord to the input labeled “18VDC INPUT”, located on the rear panel of the DAC’s chassis. In order to obtain the maximum performance from your audio system, we strongly recommend that the power supply cord not come into physical contact with any of the interconnect cables running to and from your **100D**. In the event that this can’t be avoided, you should ensure that any cables coming into contact with each other are crossed at ninety degree angle to minimize the contact area.

Powering up your MOON 100D for the first time

Since this Digital-to-Analog Converter is not equipped with an on/off power switch, when connecting/disconnecting the AC power cord you are actually turning the unit on/off. Prior to making the AC connection for the first time, make sure that every cable is properly connected to avoid any problems. Once the **100D** is connected to an AC source it will be in “Standby mode”. When you press the “Standby” button on the front panel, the **100D** will be ready for use and the blue LED will illuminate.

On and Off Sequence

To avoid having any annoying noises (ie. “thumps” and “pops”) emanate from your speakers when powering your **100D** on or off, you should

- 1) Always power up your **100D** before powering up your preamplifier and/or integrated amplifier.
- 2) Always power down your **100D** after powering down your preamplifier and/or integrated amplifier.

MOON 100D Digital-to-Analog Converter

Specifications

Type	Solid State
Front Panel Controls	Standby / Input Selector
LED Indicators	Locked Sampling Frequency / Input
Digital Input Types	S/PDIF (RCA) x 1 USB x 1 TosLink x 1
Digital Input Impedance (S/PDIF)	75 ohms @ 0.5 Volts
DAC / Digital Filter	BurrBrown PCM1793
Bit-depth range – S/PDIF, Optical	16 - 24 bits
Bit-depth range – USB	16 bits
Sampling Frequency Rates – S/PDIF, Optical.....	44.1, 48, 88.2, 96, 176.4 and 192kHz
Sampling Frequency Rates – USB	44.1 and 48kHz
Frequency Response (audible)	20Hz - 20kHz +0/-0.2dB
Frequency Response (full range)	2Hz - 72kHz +0/-3dB
THD @ 1kHz, 0dBFS (A-weighted)	< 0.003 %
IMD	< 0.005 %
Dynamic Range	> 106dB
Signal-to-noise ratio	> 105dB @ full output
Channel Separation	> 105dB
Low Level Linearity	±1.0dB to below 120dBFS
Intrinsic Jitter	< 25 picoseconds <i>RMS</i>
Single-ended Analog Output (RCA)	1 pair
Max. Analog Output @ 0dBFS - Standard	2.0 Volts RMS
Output Impedance	100Ω
Power Consumption @ idle	3 Watts
AC Power Requirements	120V / 60Hz or 240V / 50Hz
Shipping Weight	4 lbs / 2 Kgs
Dimensions (W x H x D, inches)	5.0 x 2.9 x 6.5