Owner's Manual

MOON Series

100D

Digital-to-Analog Converter

M O O N

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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.: _____

Introduction

Your **MOON 100 D 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 100 D** 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 100 D** operates at a very high-frequency; even though it is well shielded, you should not place the 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.*

Front Panel Controls

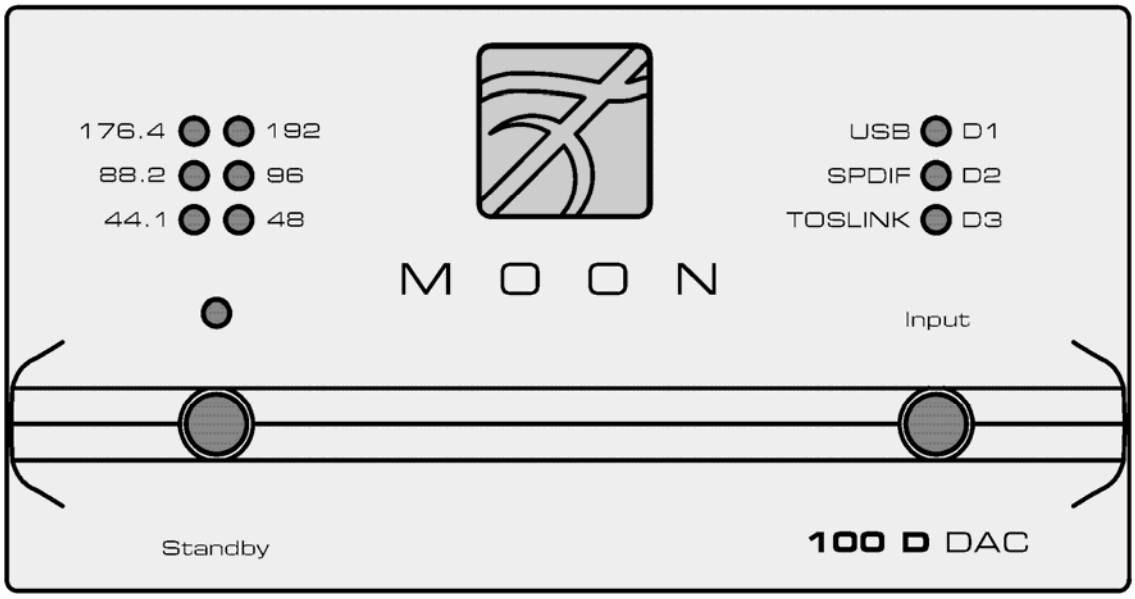

Figure 1: MOON 100D Front panel

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:

D1 .....USB
D2 .....S/PDIF
D3 .....TosLink

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.

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 recevier

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.

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.

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 RMS
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