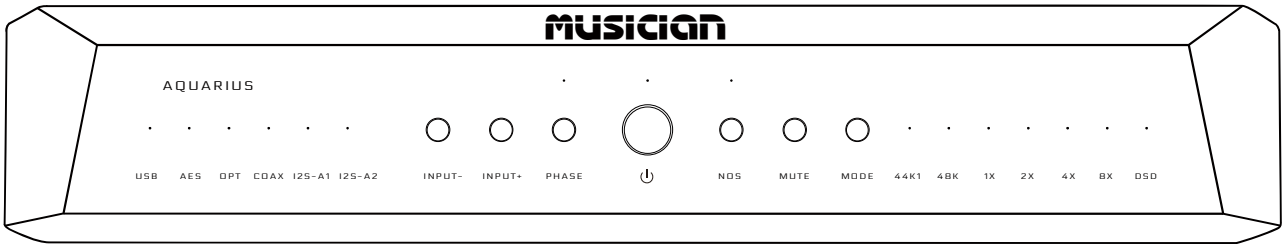
MUSICIAN

AQUARIUS R2R DAC



User's Manual

Email: info@musician-audio.com
Official website：http://www.musician-audio.com

Introduction

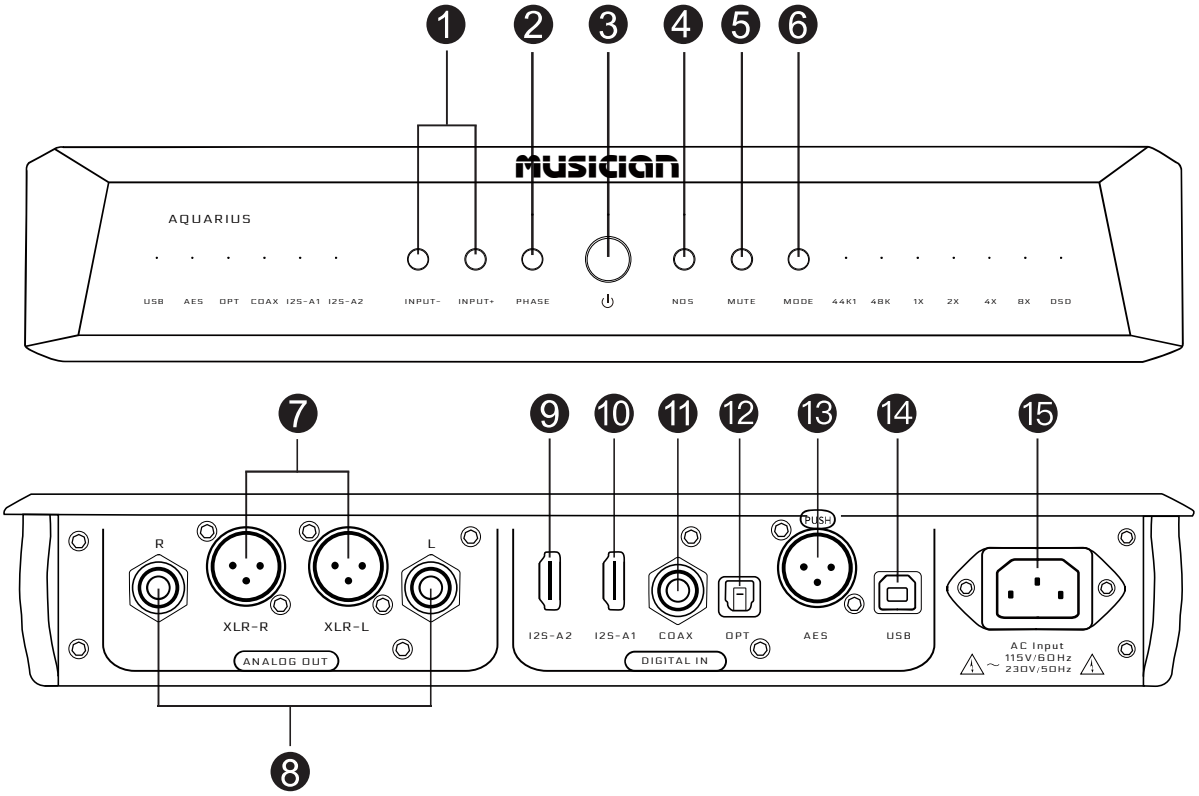
Thank you for choosing MUSICIAN products!

Guangzhou LEZHIJIA Technology Co.,Ltd.(MUSICIAN Audio) was formally established in 2020. The R & D team is formed by a group of enthusiasts with more than 20 years of audio research and development experience. It is committed to the following product: R2R discrete balanced decoders, balanced headphone amplifiers, balanced amplifiers, balanced pre-amplifiers, headphones, passive speakers, and other audio products.

***Tips**

- Do not cover newspapers, tablecloths, curtains, etc. on the machine, as this may prevent heat dissipation. If the temperature inside the machine is too high, it may cause a fire, damage the machine, or cause personal injury.When using switches, knobs or cables, do not use excessive force.
- Only use the voltage specified by this machine. Using a voltage higher than the specified value is dangerous and may cause fire, damage to the unit, or personal injury.
- Do not attempt to modify or repair this unit by yourself. If you need any service, please contact the MUSICIAN after-sales team through the official website.
- If you plan not to use the machine for a long time, disconnect the power cord from the AC wall outlet. To strengthen the protection of this product, unplug the power cord from the wall outlet during lightning, or when no one is managing it, and when not using it for a long time. This will prevent the product from being damaged during lightning and power grid surges.

Front and rear panels



1 Input Source Selection

2 Phase Switching

3 Switch / Standby

4 NOS Button

5 Mute Switch

6 MODE Button

7 XLR Balanced output

8 RCA Output

9 I2S Input – A2

10 I2S Input – A1

11 COAX Input

12 OPT Input

13 AES Input

14 USB Input

15 Power Input

Product information

Technical Highlights R2R DAC

Proprietary R2R + DSD Architecture. True balanced 24BIT R2R + 6BIT DSD (32 steps FIR Filters). The ALTERA chip is used, 0.005% precision resistance, Low distortion, Low Noise Power Supply, FIFO Buffer.

Each channel is equipped with an independent high-speed FPGA to control the decoding with 4 sets of 0.005% R-2R network. The linear error is small, the decoding speed is high, and the digital noise is low.

Self-developed and designed digital filters, working in 16 X Over Sampling mode, each level of filter has a 32-bit input resolution, which can greatly increase dynamic contrast, analysis, and more natural and delicate timbre, etc.

Dual crystal oscillator design can accurately restore audio signals with different sampling rates, greatly reducing jitter and significantly improving stability.

Power supply adopts a thick metal package and is equipped with an O-Type transformer. The linear regulator that can effectively isolate the digital and analog parts of the multi-level power supply can ensure low noise and stable power supply voltage for the DAC.

DSD1024, PCM1536 Supports On USB & I2S Input (the audio source needs to be compatible with the native interface).

Proprietary USB Audio Solution via STM32F446 Advanced AMR Based MCU

Licensed Thesycon USB Driver For Windows Platform

Driverless On Mac & Linux

DSD

DSD64-DoP On All Input, DSD1024 On USB & I2S Input

PCM

24bits / 44.1, 48, 88.2, 96, 176.4, 192KHz On All Input,
1536kHz On USB & I2S Input

Operating instructions

Switch/Standby

After the power is turned on, press the power key to turn on the DAC, and the LED is off. If you press the power key again, the DAC will switch to standby mode and the LED will light up.

Input + / Input –

Press the button to select the input source, press input + to select the next, press input - to select the previous, select the corresponding input source, and the LED will light up.

Select USB as the input , the LED above the corresponding USB lights up

Select AES as the input , the LED above the corresponding AES lights up

Select OPT as the input , the LED above the corresponding OPT lights up

Select COAX as the input , the LED above the corresponding COAX lights up

Select I2S (A1 / A2) as the input , the LED above the corresponding I2S (A1 / A2) lights up

Digital Audio Signal Input Sampling Rat

The following table illustrate the Input Sampling Rate LED status

Phase

Press the button to toggle Phase Output. LED On: Positive Phase, LED Off: Negative Phase

NOS

NOS Indicator light off means oversampling ; NOS Indicator light oneans original sampling rate

Mute

Press the button to enable/disable Mute. When mute, the Input Signal LED will be blinking from Left to Right.

Mode

The MODE button is for Filter Selection, but only under OS mode. First, to press the Mute button to enter configuration mode, then short press the MODE button, 2x light On means Slow Filter
2x light Off means Sharp Filter。

Digital audio signal input

Five input modes: I2S * 2, Coaxial, Optical Fiber, AES, USB.

DSD1024, PCM1536 Supports On USB & I2S Input
(the audio source needs to be compatible with the native interface).

Base Sampling Rat	Multiplie	Input Forma
44.1 kHz	1X	44.1 kHz
	2X	88.2 kHz
	4X	176.4 kHz
	8X	352.8 kHz
	16X = 2X+8X	705.6 kHz
	32X = 4X+8X	1411.2 kHz
48 kHz	1X	48 kHz
	2X	96 kHz
	4X	192 kHz
	8X	384 kHz
	16X = 2X+8X	768 kHz
	32X = 4X+8X	1536 kHz
DSD	1X	DSD 64
	2X	DSD 128
	4X	DSD 256
	8X	DSD 512
	16X = 2X+8X	DSD 1024

Drive installation

1. Please visit the official website of MUSICIAN and download the (http://www.musician-audio.com/en/col.jsp?id=105) Download the Aquarius driver: “ Aquarius drive.Zip ”.

2. Connect the device with the computer by USB cable → turn on thedevice→short press “ Input ” to switch to the USB input mode.

3. Open the downloaded Aquarius file → click setup to start theinstallation → continue to click “ Next ” → until the installation iscomplete and show “ Finish ”.

4. After installation , in the right corner of the computer → Click on the playback device select “ MUSICIAN USB DAC ” the as the default device

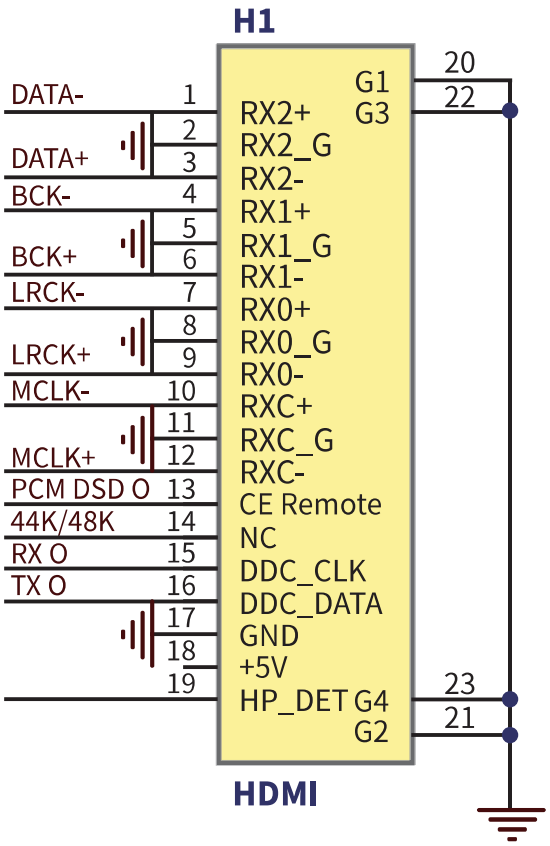
   Drive installation finished

I2S Pin Configuration of Aquarius

PS: There is no industry standard of I2S connection. Different brand/ product has different I2S line order.

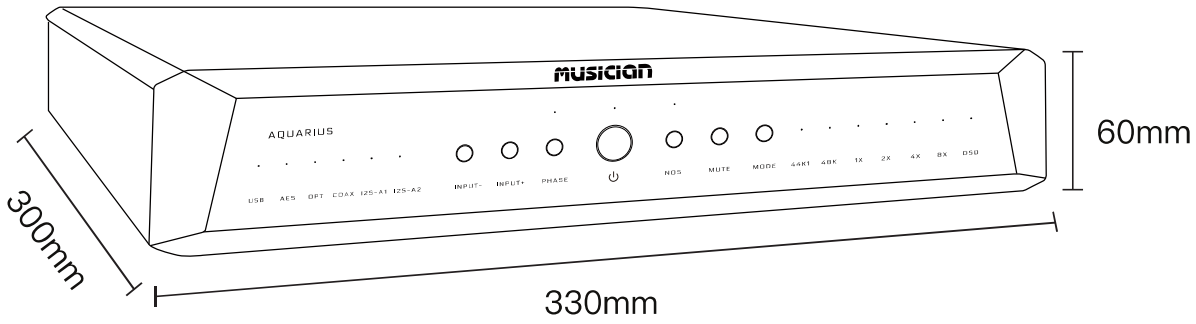
MUSICIAN Aquarius is trying to compatable with most of device by the following mode setting method if you are using standard HDMI cable:

1. Select the sound source input to I2S-A1 or I2S-A2 as per your needs;
2. Press and hold the MUTE button for 3 seconds until the I2S light flashes;
3. Press the PHASE button during the flashing process to cycle through the phase modes (there are total 8 modes, 1X, 2X, 4X indicator lights are binary mode Display);
4. Stop the operation when you selected the satisfied sound, the machine automatically exits the mode setting function after 5 seconds.



Through the above I2S settings, Aquarius can basically meet most of the brands on the market.

If it can not playing properly(such as hiss sound) by the above setting. This shall not be considered as a defective product, but just a matching failed. The suggested solution is to use a customized HDMI cable(The pin layout is on the right).



Basic Parameters

Function keys: Input source selection (+ –), Phase switching, Switch/Standby, NOS, Mute, Mode

Input mode: I2S * 2, coaxial, optical fiber, AES, USB

Output mode: XLR, RCA

Power input: 115v–230v (50 / 60Hz)

Bare machine size: 330mm*300mm*60mm

Bare metal weight: 5.8kg

Packing weight: 7.35kg

Packing list

Aquarius *1	User'Manual *1	Waranty card *1

AC Power Description:

In order to ensure the sense of hearing, Auqrius is not equipped with a power cord. Please use a high–quality power cord that has been connected to the ground pin, which can support global AC power and the range is 100–250V.

Warranty

We take pride in the quality of our products with strict quality control checks. To give you more confidence, all of our products are provided with a three-years warranty. Within the first 30 days from the date of purchase, most items can be returned for refund or exchange if meet the following conditions.
Wish you enjoy a wonderful shopping experience!

RETURNABLE ITEMS

Items that can be returned/refunded or exchanged within 30 days of receipt must comply with the following standards:

1.Any returned items must be accompanied by all accessories, hardware, manuals or instructions, and in the same "new" state as when shipped to you.

2.Any returned items will be evaluated after receipt. Of course, we will not refund any defective products caused by improper handling, improper use, tampering or improper use.

3.If there is no complete original packaging (original packing box, foam filling, etc.) at the time of return, 25% replenishment fee will be charged.

Tips: The items should be transported back safely. Before we received, You will take full responsibility. If you choose to replace, we will ship your replacement items free of charge.

RETURN FEE AND ADDRESS

We aim to provide services that benefit all our loyal customers. Global customers can return products to our Chinese warehouse. Please always contact us before returning items to relevant addresses.

1. All transportation costs are borne by the customer. This includes shipping costs for returns or exchanges. Shipping costs are non-refundable.

2. Please contact your local post office to confirm the actual return shipping fee before shipping back. We recommend that you use the cheapest postal service if available.