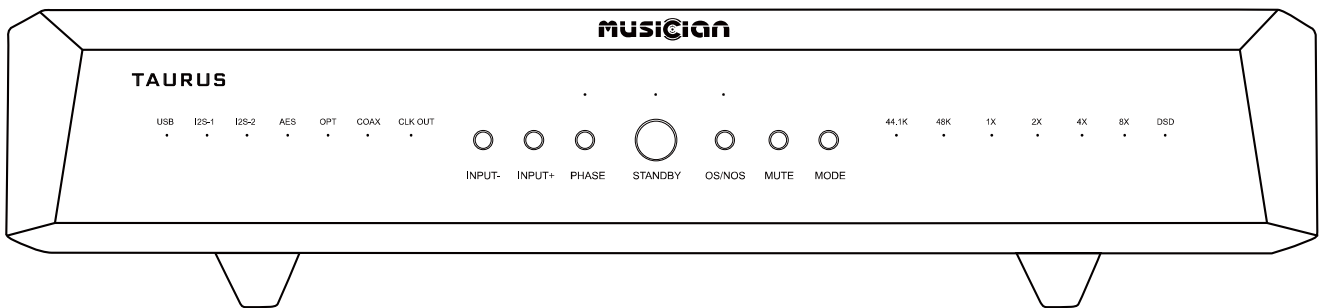


# TAURUS R2R DAC



**User's Manual** | Email: [info@musician-audio.com](mailto:info@musician-audio.com)  
Official website: <http://www.musician-audio.com>

# Introduction

**Thank you for choosing MUSICIAN products!**

Guangzhou LEZHJIA 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.

# Product Information

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## Technical Highlights

## R2R DAC

- Proprietary R2R+DSD architecture, true balanced 24Bit R2R+6Bit DSD (32 step FIR filter). Adopting ALTERA high efficiency chip. 0.005% precision resistor, low distortion, low noise power supply, FIFO buffer.
- Each channel is equipped with an independent high-speed FPGA to control decoding through four sets of 0.005% R-2R network with low linearity error, high decoding speed and low digital noise.
- The self-developed and designed digital filter works in 16 X Over Sampling mode, with 32bit input resolution for each filter stage, which can greatly increase the dynamic contrast, analyzing power, and more natural and delicate tone, and so on.
- Dual crystal design, can accurately reproduce audio signals of different sampling rates, jitter is greatly reduced and stability is significantly improved.
- The power supply adopts chopper rectification, customized MUSICIAN brand red shell capacitors, equipped with O-type 250W iron core transformer, multiple LT1763, LT3045 for 2 times regulator filtering, can effectively isolate the linear regulator for digital and analog part of the multi-stage power supply, which ensures that the DAC can provide low noise and stable power supply voltage.
- DSD1024, PCM 1536KHz supports USB and I2S inputs (audio source needs to be compatible with this unit's interface).
- Proprietary USB audio solution based on the STM32 F46 Advanced AMR microcontroller.
- Sycon USB driver licensed for Windows platforms
- No drivers required for Mac and Linux

## **DSD**

All inputs are DSD64 DoP, USB and I2S inputs are DSD1024.

## **PCM**

All inputs are 24bits / 44.1K, 48K, 88.2K, 96K, 176.4K, 192KHz.  
USB & I2S inputs are 1536KHz.

## **Digital Input**

Coaxial, Optical, AES, USB, I2S-1, I2S-2

## **Clock Output**

45.1584MHz , 49.152MHz

## **Analog Output**

XLR balanced, RCA single-ended

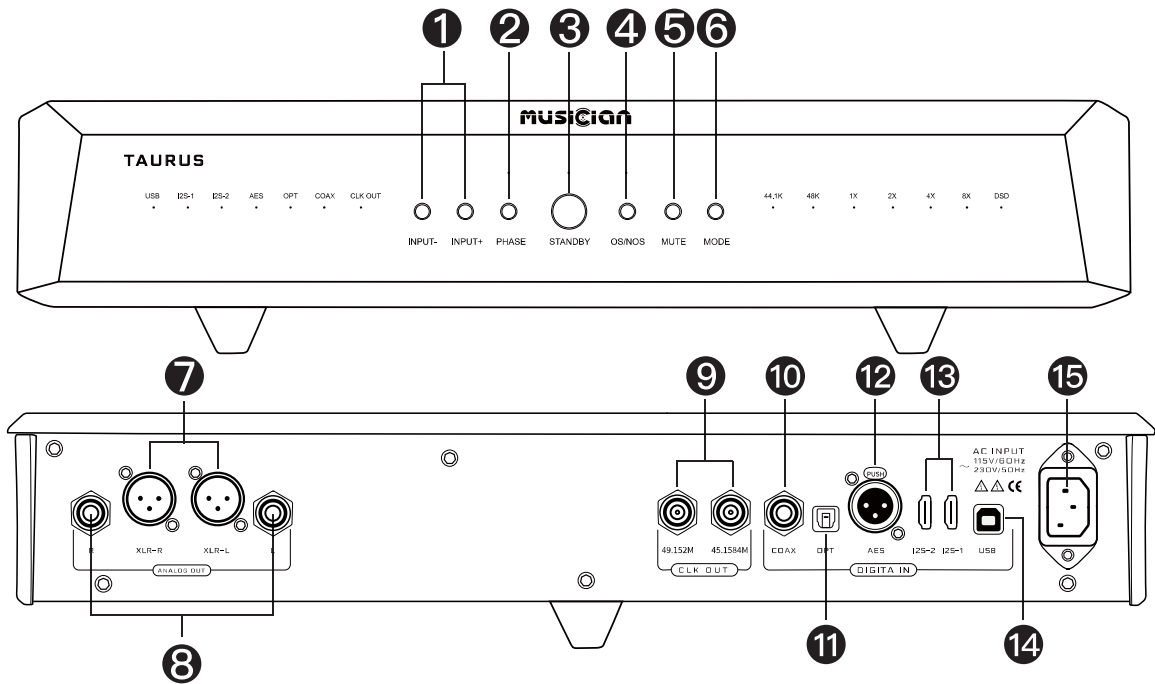
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Please note that the Taurus RJ45/HDMI ports are not typical network/multimedia RJ45/HDMI ports. They are purpose-built I<sup>2</sup>S ports. Do not connect them to a typical multimedia HDMI port (i.e. Blu-ray player/TV, etc.)/Ethernet network.

The I2S wiring sequence can be selected and matched using the panel buttons.

# Panel Information

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- |                                 |                              |                           |
|---------------------------------|------------------------------|---------------------------|
| <b>1</b> Input source selection | <b>6</b> MODE button         | <b>11</b> Optical input   |
| <b>2</b> Phase switching        | <b>7</b> XLR balanced output | <b>12</b> AES input       |
| <b>3</b> On/Off/Standby         | <b>8</b> RCA output          | <b>13</b> I2S input       |
| <b>4</b> OS/NOS buttons         | <b>9</b> Clock output        | <b>14</b> USB input       |
| <b>5</b> Mute switching         | <b>10</b> Coaxial input      | <b>15</b> Power connector |

## **Taurus comes with a proprietary USB audio solution driven by the STM32F446.**

- **License for Windows platforms Thesycon USB Driver**

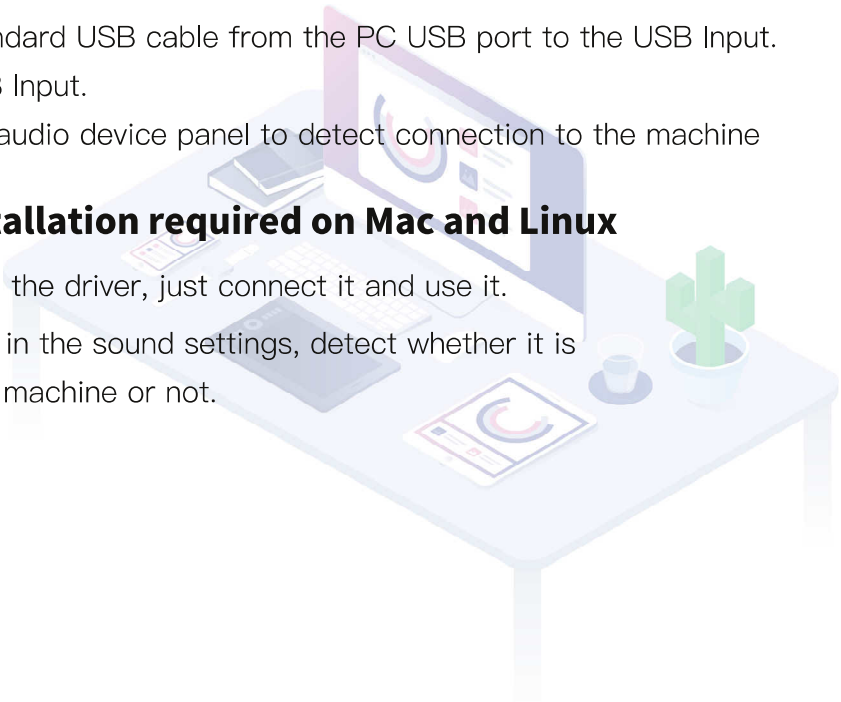
Download and install Thesycon USB Driver for Windows

1. Connect a standard USB cable from the PC USB port to the USB Input.
2. Select the USB Input.
3. Check the PC audio device panel to detect connection to the machine

- **No driver installation required on Mac and Linux**

No need to install the driver, just connect it and use it.

After connecting, in the sound settings, detect whether it is connected to the machine or not.



# LED light indication

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## USB/I2S/AES/OPT/COAX

Changes according to the sound source button

**Light off:** The sound source is not selected      **Light on:** The sound source is selected

**Running light:** single cycle light up when mute status

## STANDBY

**Lamp off:** power on status

**Lamp on:** standby status

## MODE

**Lamp off:** Clock has no output

**Lamp on:** Clock has output

## PHASE

**Light off:** in phase

**Light on:** Reverse phase

## OS/NOS

**Light off:** OS / **Light on:** NOS

## 44.1K/48K

Varies according to the sampling rate of the input signal

**Light off:** The input signal is not at the sampling rate

**Light on:** The input signal is at this sampling rate

## DSD

**Lights off:** PCM audio/**lights on:** DSD audio

## 1X/2X/4X/8X

Varies according to the sampling rate n times the frequency of the input signal

**Light off:** The input signal is not n times the frequency of the sampling rate

**Light on:** The input signal is n times the frequency of the sampling rate

# Button Description

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<b>STANDBY</b>	<p><b>STANDBY light off:</b> In the startup state, press standby</p> <p><b>STANDBY light on:</b> In standby mode, press to start</p>
<b>INPUT-</b>	<p><b>In homepage mode:</b> press the button to select the audio source to the left</p> <p><b>In menu mode:</b> Press the button to enter the clock output function setting</p> <p><b>In the clock output function setting:</b> press the button to switch the clock output frequency</p> <p><b>In other function settings:</b> no response when pressing the button</p>
<b>INPUT+</b>	<p><b>In homepage mode:</b> press the button to select the audio source to the right</p> <p><b>In menu mode:</b> no response when pressing the button</p> <p><b>In the filter function settings:</b> press the button to enter the USB upgrade function settings</p> <p><b>In other function settings:</b> no response when pressing the button</p>
<b>PHASE</b>	<p><b>In homepage mode:</b> Press the button to switch between in phase and out phase</p> <p><b>In menu mode:</b> Press the button to enter the I2S pin function settings (you need to select the I2S audio source first)</p> <p><b>In the I2S pin function setting:</b> Press the button to switch the I2S pin</p> <p><b>In other function settings:</b> no response when pressing the button</p>
<b>OS/NOS</b>	<p><b>In homepage mode:</b> Press the button to switch between OS and NOS</p> <p><b>In menu mode:</b> Press the button to enter the DSD left and right channel function settings</p> <p><b>In DSD left and right channel settings:</b> Press the button to switch between L/R and R/L</p> <p><b>In other function settings:</b> no response when pressing the button</p>



# Button Description

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<b>MUTE</b>	<p><b>In homepage mode:</b> Press the button to switch between mute and playback/also to enter menu mode and homepage mode</p> <p><b>In menu mode:</b> Press the button to return to homepage mode</p> <p><b>In function settings:</b> no response when pressing the button</p>
<b>MODE</b>	<p><b>In homepage mode:</b> no response when pressing the button</p> <p><b>In menu mode:</b> Press the button to enter the filter function settings</p> <p><b>In the filter function settings:</b> press the button to switch between fast and slow roll down</p> <p><b>In other function settings:</b> no response when pressing the button</p>

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## Function Setting Description

	Function settings	Button operation	LED light indication
<b>Filter function settings</b>	Press the MUTE button to enter menu mode, then press the MODE button to enter filter function settings	MUTE button+MODE button	8X light on
	Press the MODE button in the filter function settings to switch between fast and slow roll down	Switch with the MODE button	1X light off: rapid roll down
	(Note: After 5 seconds, no operation will automatically return to the homepage mode)		1X light on: slow roll down

# Function Setting Description

	Function settings	Button operation	LED light indication
<b>USB upgrade function settings</b>	First select the USB audio source, then enter the filter function settings, and then press the Input+ button to enter the USB upgrade function settings <small>(Note: Setting the USB upgrade function cannot be exited and can only be turned off or powered off)</small>	Select USB audio source first>>> MUTE>>>MODE>>>INPUT+	8X light on+DSD light on
	Press the Input+ button in the USB upgrade function settings to enter the upgrade status	Input+ button to start upgrading	USB light flashing+ COAX light flashing: Start upgrading
<b>I2S pin function settings</b>	First select any I2S audio source, then press the MUTE button to enter menu mode, and then press the PHASE button to enter I2S pin function settings	MUTE button + PHASE button	The selected I2S light is on+ the DSD light is on
	Press the PHASE button in the I2S pin function settings to switch between I2S pins <small>(Note: After 5 seconds, no operation will automatically return to the homepage mode)</small>	PHASE button for switching	1X(DATA), 2X(BCK), 4X(LRCK) Lights off as positive 1X(DATA), 2X(BCK), 4X(LRCK) Light on as negative
<b>DSD left and right channel function settings</b>	Press the MUTE button to enter menu mode, then press the NOS button to enter DSD left and right channel function settings	MUTE button + NOS button	OPT light on + DSD light on
	Press the NOS button in the DSD left and right channel function settings to switch between L/R and R/L	NOS button for switching	44.1K light on: L/R 48K light on: R/L
<b>Clock output function settings</b>	Press the MUTE button to enter menu mode, then press the Input button to enter clock output function settings	MUTE button + Input button	DSD light on
	Press the Input button in the clock output function setting to switch the clock output frequency <small>(Note: After 5 seconds, no operation will automatically return to the homepage mode)</small>	Input- button for switching	44.1K light on 48K light on 1X light on 2X light on 4X light on

Special functions		Button operation	LED light indication
<b>AGING MODE</b>	After turning on, the USB power supply mode is normally open (Note: Normal USB power supply can be restored by shutting down or powering off the power)	Simultaneously press and hold INPUT+, INPUT-, MODE	无
<b>View version number</b>	Simply enter the USB upgrade function settings to view the current program version number (Note: Setting the USB upgrade function cannot be exited and can only be turned off or powered off)	Select USB audio source first >>> MUTE>>>MODE>>>INPUT+	44.1K, 48K <small>(When the 44.1K light is off, it indicates that the version number has flashed out, and when the 48K light is off, it indicates that the revision number has flashed out.)</small>
			1X, 2X <small>(The number of flashes of 1X light indicates the current version number, and the number of flashes of 2X light indicates the current revision number)</small>

## I2S Pin (Each I2S audio source corresponds to each I2S pin)

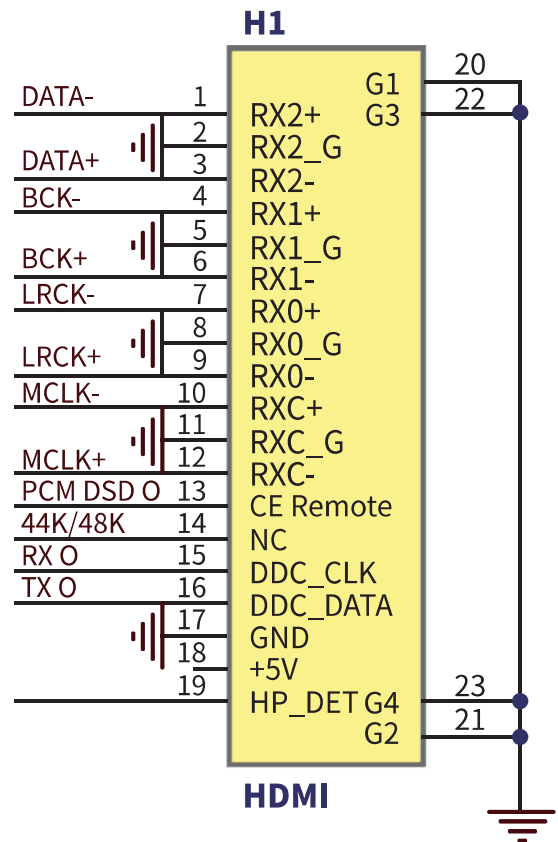
I2S Pin ▶	1X(DATA)	2X(BCK)	4X(LRCK)
8 modes ▼			
1	Light off:DATA+	Light off:BCK+	Light off:LRCK+
2	Light on:DATA-	Light off:BCK+	Light off:LRCK+
3	Light off:DATA+	Light on:BCK-	Light off:LRCK+
4	Light on:DATA-	Light on:BCK-	Light off:LRCK+
5	Light off:DATA+	Light off:BCK+	Light on:LRCK-
6	Light on:DATA-	Light on:BCK+	Light on:LRCK-
7	Light off:DATA+	Light on:BCK-	Light on:LRCK-
8	Light on:DATA-	Light on:BCK-	Light on:LRCK-

# Taurus I2S pin configuration

Please note that there are no industry standards for I2S connections.  
Different brands/products have different I2S line sequences.

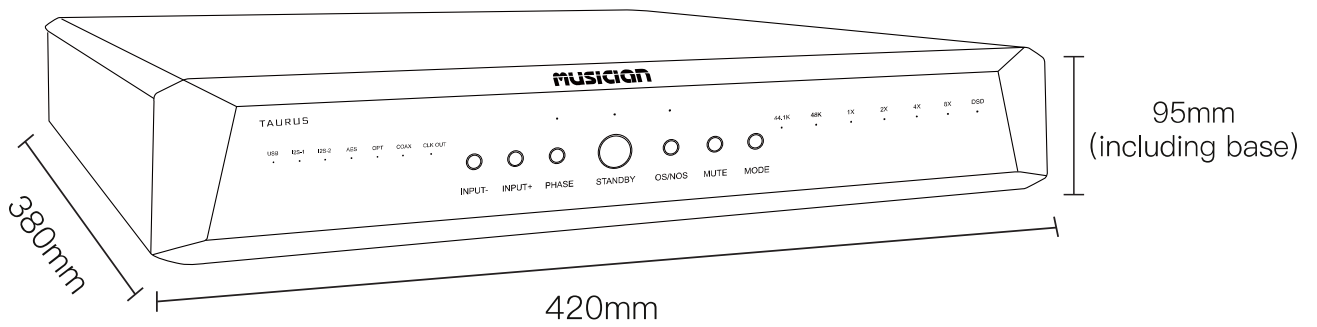
If you use a standard HDMI cable, you can make it compatible with most devices through the following mode setting methods:

1. Select the audio source input to I2S-1 or I2S-2;
2. Press the PHASE button in the I2S pin function settings to switch the I2S pin.
3. Stop the operation after selecting a satisfactory sound, and the machine will automatically exit the mode setting function after 5 seconds.



Through the above I2S settings, MUSICIAN products can basically meet the needs of most brands on the market.

If the above settings prevent normal playback (such as hissing). This should not be considered a defective product, but rather a matching failure. The recommended solution is to use a customized HDMI cable (pin diagram on the right).



## Basic Parameters

**Function buttons:** INPUT-, INPUT+, PHASE, STANDBY, OS/NOS, MUTE, MODE

**Input method:** Coaxial, Optical, AES, USB, I2S-1, I2S-2

**Output method:** XLR, RCA, external clock (45.1584MHz/49.152MHz)

**Power input:** 115V/60Hz ~ 230V/50Hz

**Bare metal size:** 420mm \* 380mm \* 95mm (W \* D \* H) (height includes base)

## List of Packaging Items

Taurus \*1

User manual \* 1

Warranty Card \* 1

# 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 with in 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.