



Musician STM32F446 Pisces Hi-Fi Digital Interface User Manual

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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.
- 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.
- 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

Technical Highlights PISCES

- Proprietary FPGA DSP Processing Architecture
- FIFO Buffer and Reclock with Internal Crystal
- TCXO temperature compensated active crystal oscillator
- O-type single crystal copper transformer
- Optical Isolated All Digital Input Interfaces
- Proprietary USB Audio Solution via STM32F446 Advanced
- AMR Based MCU
- Licensed Thesycon USB Driver For Windows Platform
- Driverless On Mac & Linux
- External Clocks Input Supported (45.1548MHz/49.152MHz)

DSD

DSD64(DoP) on Coax/AES/Opt Input & Output Up to DSD512 On USB Input & I²S Output.

PCM

24bits / 44.1, 48, 88.2, 96, 176.4, 192KHz On All Output Up to 768KHz On USB Input & Up to 384KHz on I²S Output.

Digital Input

USB2.0 Type B

External Clock Input

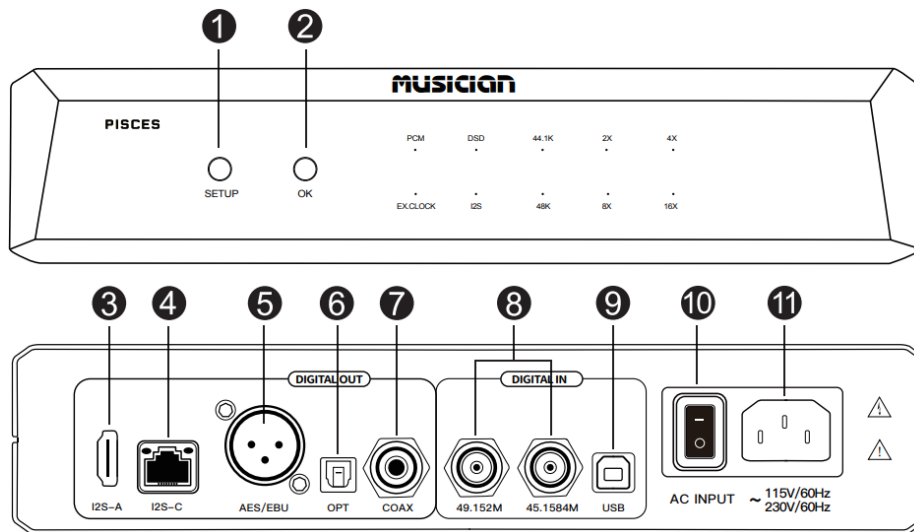
45.1548MHz 49.152Mhz

Digital Output

AES/EBU, I²S HDMI LVDS/I²S RJ45 Ivcmos, Optical, Coaxial

Please note that the RJ45/HDMI ports of PISCES are not typical network/multimedia RJ45/HDMI ports. They are purpose-built I²S ports. Please do not connect it to the typical multimedia HDMI port (i.e. Bluray player/TV etc) / Ethernet network.

Panel information



1. **SETUP** button
2. OK button
3. I²S HDMI LVDS
4. I²S RJ45 LVCMOS
5. AES/EBU output
6. Optical output
7. Coaxial output
8. Clock input
9. USB input
10. Power Switch
11. Power input

Driver

PISCES is equipped with a proprietary USB audio solution driven by STM32F446, which supports 24bit/768khz PCM data stream and DSD to DSD512 processed at this level.

• Licensed Thesycon USB Driver For Windows Platform

Download and install Thesycon USB Driver for Windows.

1. Connect the standard USB cable from PC USB port to the USB input
2. Select USB input. The USB input LED should illuminate
3. Check the PC audio device panel to see if it is connected to the machine

• Driverless On Mac & Linux

No need to install the driver, it can be used by connecting

After connection, check whether it is connected to the machine in the sound setting

LED indicator

PCM

Light off: Shutdown status/ Input signal is not PCM audio

Light flashing: Power on status/ Input signal is PCM audio

EX.CLOCK

Light off: Internal clock

Light on: External clock

DSD

Light off: Shutdown status/ Input signal is not DSD audio

Light flashing: Power on status/ Input signal is DSD audio

I2S

Light off: left and right channels of DSD are L/R

Light on: right and left channels of DSD are R/L

44K1/48K

Varies according to the sampling rate of the input signal

Light off: the input signal is not the sampling rate

Light on: the input signal is the sampling rate

2x / 4x / 8x / 16x

Change 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 flashing: the input signal is n times the frequency of the sampling rate

Button description

SETUP Button

In home mode: press the button and the PCM light flashes + DSD light flashes to enter menu mode

In menu mode: In menu mode: press the button to cycle through the menu list

In function setting: no response when pressing the button

OK Button

In home mode: no response when pressing the button

In menu mode: Press the button to enter the setting of the corresponding menu list

In function setting: Press the button to switch functions

No operation

In the menu mode or function setting, if the key does not act for about 6 seconds, it will return to the home mode. It cannot return when USB starts to upgrade.

Function setting description

Function Settings Button Operation LED indicator USB Upgrade Function settings Press the setup button to enter the menu mode, and correctly follow the LED indicator to select the USB upgrade function setting Press the setup button repeatedly PCM light flashes + DSD light flashes + 8X light flashes Select the USB upgrade function setting, and then press the OK button to enter the USB upgrade function setting and correctly follow the LED light instructions Select the function setting and press the OK button PCM light flashes + DSD light flashes + 8X light is on In the USB upgrade function setting, press the OK button to switch between USB upgrade and exit USB

upgrade Press the OK button again to switch PCM light flashes + dsd light flashes+ 2X + 4X + 8X + 16X light comes on Start the upgrade. In this state, it takes about 6 seconds. The button is inoperable and cannot return to the home mode

| | Function Settings | Button Operation | LED indicator |
|---|---|---|---|
| External Clock Function setting | Press the SETUP button to enter the menu mode and correctly follow the LED indicator to select the external clock function setting | Press the setup button repeatedly | PCM light flashes + DSD light flashes + Ex.clock light flashes |
| | Select the external clock function setting and then press the OK button to enter the external clock function setting, and correctly follow the LED indicator | Select the function setting and press the OK button | PCM light flashes+DSD light flashes+ Ex.clock light comes on |
| | Press the OK button in the external clock function setting to turn off and turn on the external clock function | Press the OK button again to switch | 44k1 light off or 48K light off: Turn off the external clock 44k1 light on or 48K light on: Turn on the external clock |
| I2S PinFunction setting | Press the setup key to enter the menu mode, and correctly follow the LED indicator to select the I2S pin function setting | Press the setup button repeatedly | PCM light flashes + DSD light flashes + I2S light flashes |
| | Select the I2S pin function setting and then press the OK key to enter the I2S pin function setting and correctly follow the LED indicator | Select the function setting and press the OK button | PCM light flashes + DSD light flashes + I2S light comes on |
| | In the I2S pin function setting, press the OK key to switch the I2S pin | Press the OK button again to switch | 44K1(DATA) 2X(BCK) 4X(LRCK)When the light is off, it is positive44K1(DATA) 2X(BCK) 4X(LRCK)When the light is on, it is negative |
| DSD left and right channel function settings | Press the setup key to enter the menu mode, and correctly follow the LED indicator to select the DSD left and right channel function settings | Press the SETUP button repeatedly | PCM light flashes + DSD light flashes + 48K light flashes |
| | Select the DSD left and right channel function settings and then press the OK button to enter the DSD left and right channel function settings and correctly follow the LED indicator | Select the function setting and press the OK button | PCM light flashes + DSD light flashes + 48K light is on |
| | | | 16X Light off: L/R |
| | | | 16X Light on: L/R |

| | | | |
|--|---|-------------------------------------|---|
| | In the DSD left and right channel function setting, press the OK button to switch the DSD left and right channels | Press the OK button again to switch | PCM light flashes + DSD light flashes + 8X light is on Exit the upgrade. In this state, it takes about 6 seconds. If there is no operation on the button, you can return to the home mode |
|--|---|-------------------------------------|---|

*Corresponding LED indicator

| I2S PIN | 44K1(DATA) | 2X(BCK) | 4X(LRCK) |
|---------|------------|---------|----------|
| 8 Modes | | | |
| 1 | :DATA+ | :BCK+ | :LRCK+ |
| 2 | :DATA- | :BCK+ | :LRCK+ |
| 3 | :DATA+ | :BCK- | :LRCK+ |
| 4 | :DATA- | :BCK- | :LRCK+ |
| 5 | :DATA+ | :BCK+ | :LRCK- |
| 6 | :DATA- | :BCK+ | :LRCK- |
| 7 | :DATA+ | :BCK- | :LRCK- |
| 8 | :DATA- | :BCK- | :LRCK- |

PISCES I2S Pin

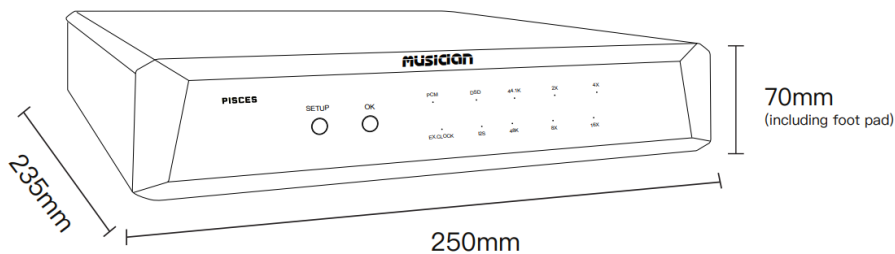
There is no industry standard of I2S connection. Different brand/product has different I2S line order.

If you would like to use the I²S connection, the I²S pinout matching with the DAC has to be configured correctly. Mismatch of I²S pinout may result in static/noise output. The excessive noise output level may damage the loudspeakers/headphone drivers.

I²S Suggestions for matching DAC

1. Connect I2S cable (high quality HDMI cable <3ft/1m)
2. Turn down the volume (minimum audible volume)
3. Play music (first PCM, then DSD)
4. I2S setting for running DAC(consult DAC manufacturer for details)
5. When playing PCM and DSD, one of the modes should match the playing source

It is recommended to conduct an audio tone test to ensure that the L/R channel is correct in phase/out of phase.



Basic parameters

Function keys: SETUP Button, OK Button

Input mode: USB2.0 Type B External clock (45.1548mhz/49.152mhz)

Output mode: AES/EBU , I²S HDMI LVDS / I²S RJ45 lvcmos, Optical , Coaxial

Power input: 100-240V AC, 50/60hz (Global voltage)

Machine size: 250mm*235mm*70mm (Height includes foot pad)

Machine weight: 3.5kg

Package weight: 4.5kg

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. 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.

info@musician-audio.com



Documents / Resources

| | |
|--|---|
|  <p>MUSICIAN PISCES 系统级数字界面 使用说明书 STM32F446</p> | <p>Musician STM32F446 Pisces Hi-Fi Digital Interface [pdf] User Manual STM32F446 Pisces Hi-Fi Digital Interface, STM32F446, Pisces Hi-Fi Digital Interface, Hi-Fi Digital Interface, Digital Interface, Interface</p> |
|--|---|

References

- [User Manual](#)