GUSTARD

U18

High performance USB audio interface

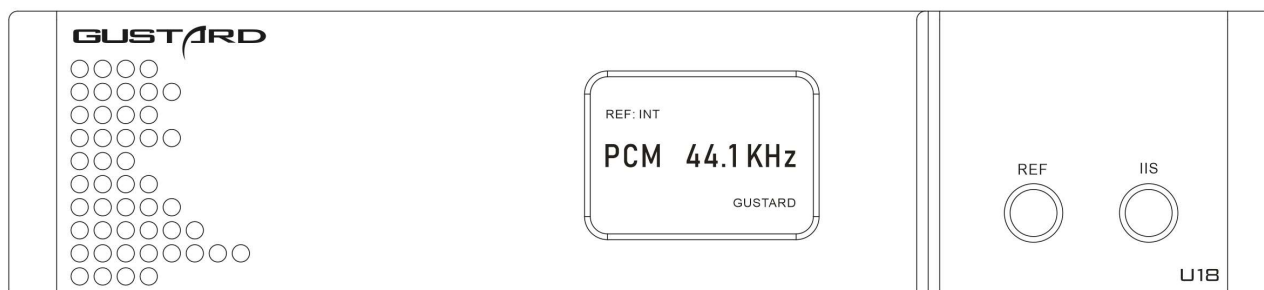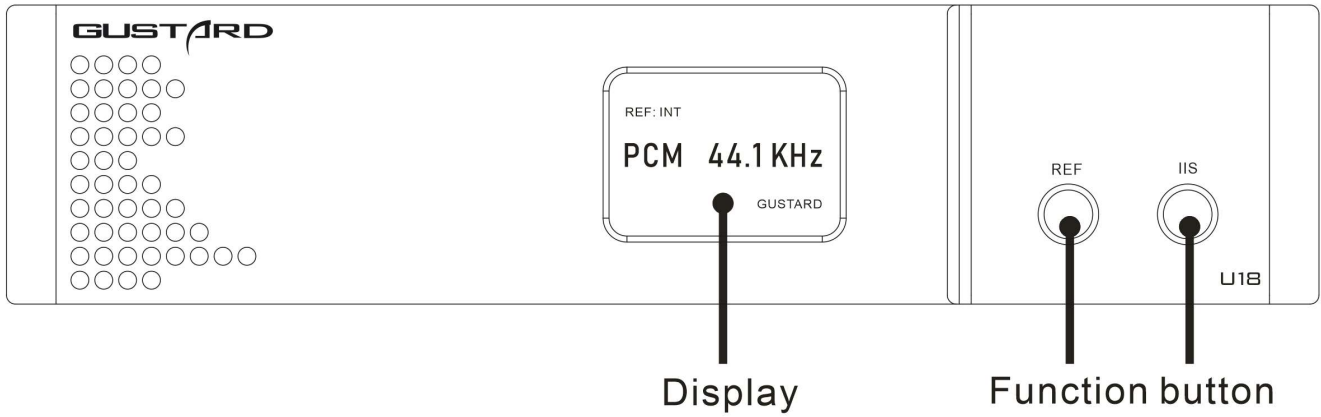## User Manual

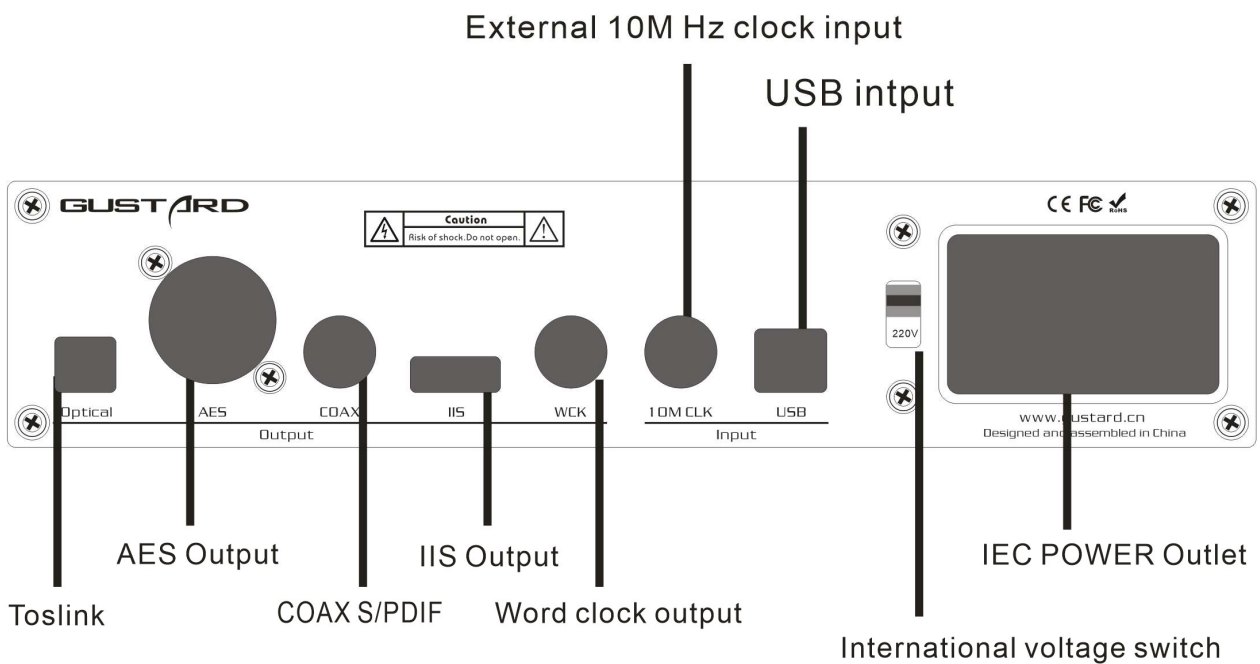# Table of Contents

Front Panel

Display   Function button

1. The screen is to display the sampling frequency, clock source and the output of BNC.

2. REF—Clock source. Press to switch between internal clock and external 10MHz clock.

3. IIS—Modes of IIS output. Short press to change the pinout and long press to change the DSD Flag.

Back Panel

External 10M Hz clock input

USB intput

Toslink

AES Output

COAX S/PDIF

IIS Output

Word clock output

International voltage switch

IEC POWER Outlet

Display

1. U18 uses a high-resolution OLED screen to display the working situation and functions. The following figure is main page of the display.
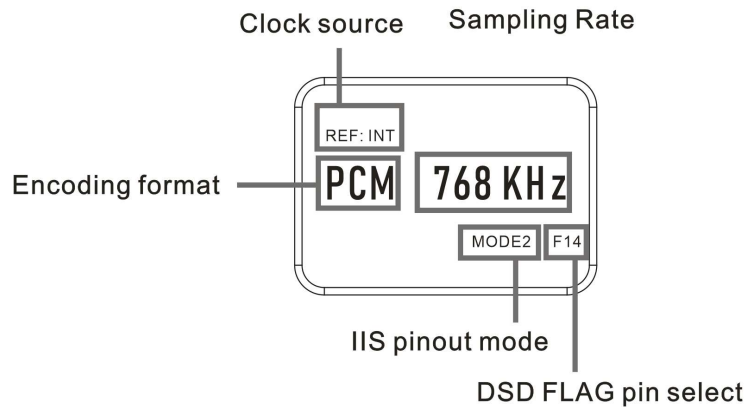
2. Reference clock selection (REF):

By K2—Bustard's second generation audio frequency synthesizer, U18 can use external 10MHz clock to enhance the sound quality. Press REF button can switch internal clock (INT) and external 10MHz clock (EXT). Internal clock uses AS338 Hi-End oscillators from Accusilicon with ultra-low noise and jitter in fs level.

* To protect your devices, this option will not automatically change, you must select the clock source after plug/unplug your external clock.

* When the external 10MHz clock is not working properly, an EXT ERR will be displayed and the sampling frequency will keep blinking.
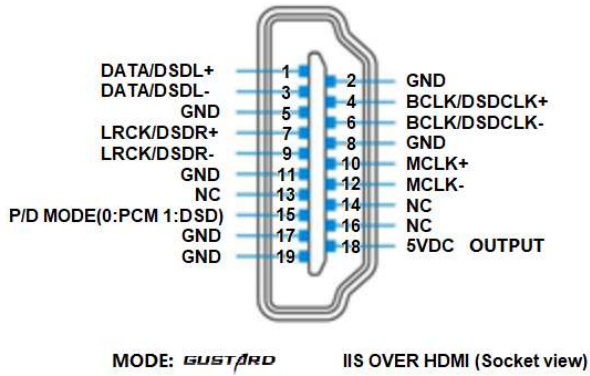
IIS pinout mode (IIS):

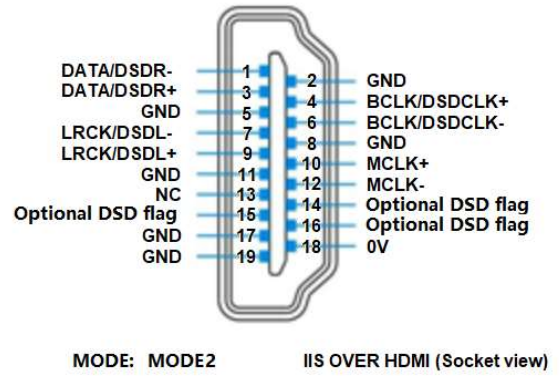There are 4 modes of IIS on U18's HDMI port: GUSTARD、MODE2、MODE3、MODE4

GUSTARD is for all Gustard's DAC
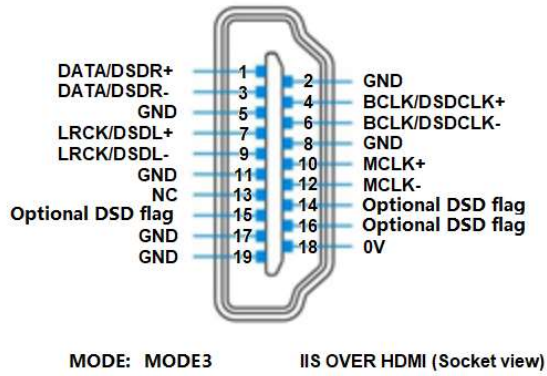
The following figure is the pinout of different modes.

*F14/F15/F16 are programable DSD FLAG pin, can be change by long press the IIS button. You do not need to change this option under GUSTARD mode.
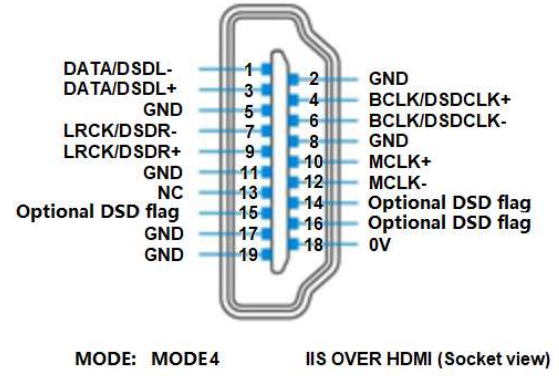
MODE 1 (GUSTARD):

Pin	Signal	Pin	Signal
1	DATA/DSDL+	2	GND
3	DATA/DSDL-	4	BCLK/DSDCLK+
5	GND	6	BCLK/DSDCLK-
7	LRCK/DSDR+	8	GND
9	LRCK/DSDR-	10	MCLK+
11	GND	12	MCLK-
13	NC	14	NC
15	P/D MODE(0:PCM 1:DSD)	16	NC
17	GND	18	5VDC OUTPUT
19	GND		

MODE: GUSTARD   IIS OVER HDMI (Socket view)

Please do not connect to the usual HDMI, this is not really HDMI

MODE 2:

Pin	Signal	Pin	Signal
1	DATA/DSDR-	2	GND
3	DATA/DSDR+	4	BCLK/DSDCLK+
5	GND	6	BCLK/DSDCLK-
7	LRCK/DSDL-	8	GND
9	LRCK/DSDL+	10	MCLK+
11	GND	12	MCLK-
13	NC	14	Optional DSD flag
15	Optional DSD flag	16	Optional DSD flag
17	GND	18	0V
19	GND		

MODE: MODE2   IIS OVER HDMI (Socket view)

Please do not connect to the usual HDMI, this is not really HDMI

MODE 3:

Pin	Signal	Pin	Signal
1	DATA/DSDR+	2	GND
3	DATA/DSDR-	4	BCLK/DSDCLK+
5	GND	6	BCLK/DSDCLK-
7	LRCK/DSDL+	8	GND
9	LRCK/DSDL-	10	MCLK+
11	GND	12	MCLK-
13	NC	14	Optional DSD flag
15	Optional DSD flag	16	Optional DSD flag
17	GND	18	0V
19	GND		

MODE: MODE3   IIS OVER HDMI (Socket view)

Please do not connect to the usual HDMI, this is not really HDMI

MODE 4:

Pin	Signal	Pin	Signal
1	DATA/DSDL-	2	GND
3	DATA/DSDL+	4	BCLK/DSDCLK+
5	GND	6	BCLK/DSDCLK-
7	LRCK/DSDR-	8	GND
9	LRCK/DSDR+	10	MCLK+
11	GND	12	MCLK-
13	NC	14	Optional DSD flag
15	Optional DSD flag	16	Optional DSD flag
17	GND	18	0V
19	GND		

MODE: MODE4   IIS OVER HDMI (Socket view)

Please do not connect to the usual HDMI, this is not really HDMI

Driver Installation on Windows

*The included CD contains Gustard's USB driver.

*The driver supports Windows 7 with SP1, Windows 8 and Windows 10

1. For tower PC usage, better to use the original USB 2.0 port on the back panel of the tower. The port on front panel will introduce more loss and bugs.

2. Turn U18 on after connecting it to PC, a new hardware will be found. If not, please try another port or turn U18 off on again.

3. Open the disk, double-click Gustard_UsbAudio_v4.82.0_2020-04-17_setup.exe 程序 (or newer version)
   When UAC alarming, click yes.
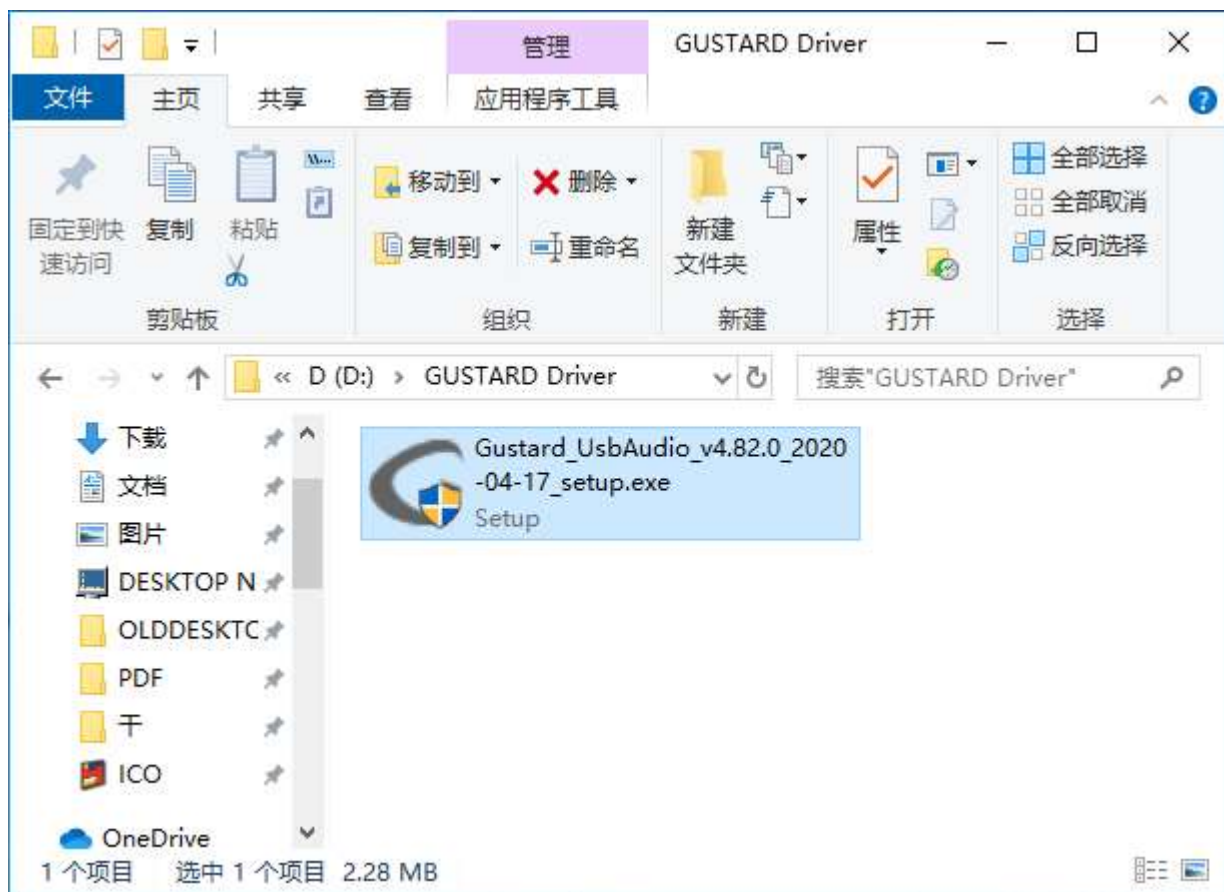
4. Then keep clicking next or install.
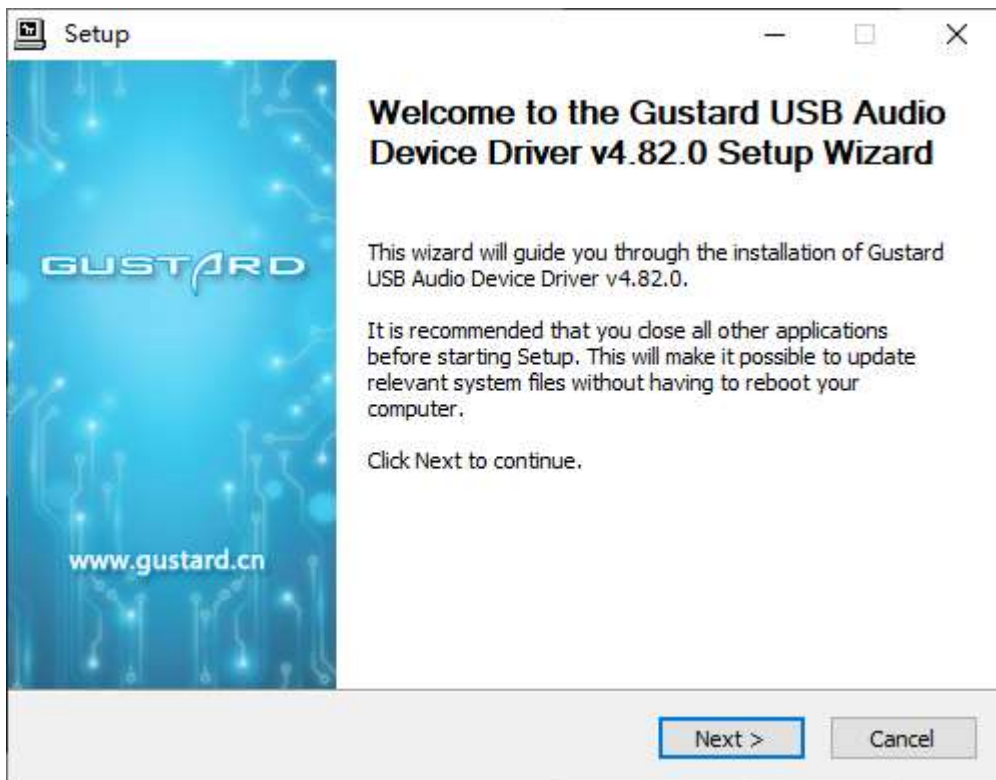
5. When showing: Setup requires that the device is..., please reboot U18 or reconnect the USB cable.


6. Complete. Click Finish.

Completing the Gustard USB Audio Device Driver v4.82.0 Setup Wizard

Gustard USB Audio Device Driver v4.82.0 has been installed on your computer.

Click Finish to close this wizard.
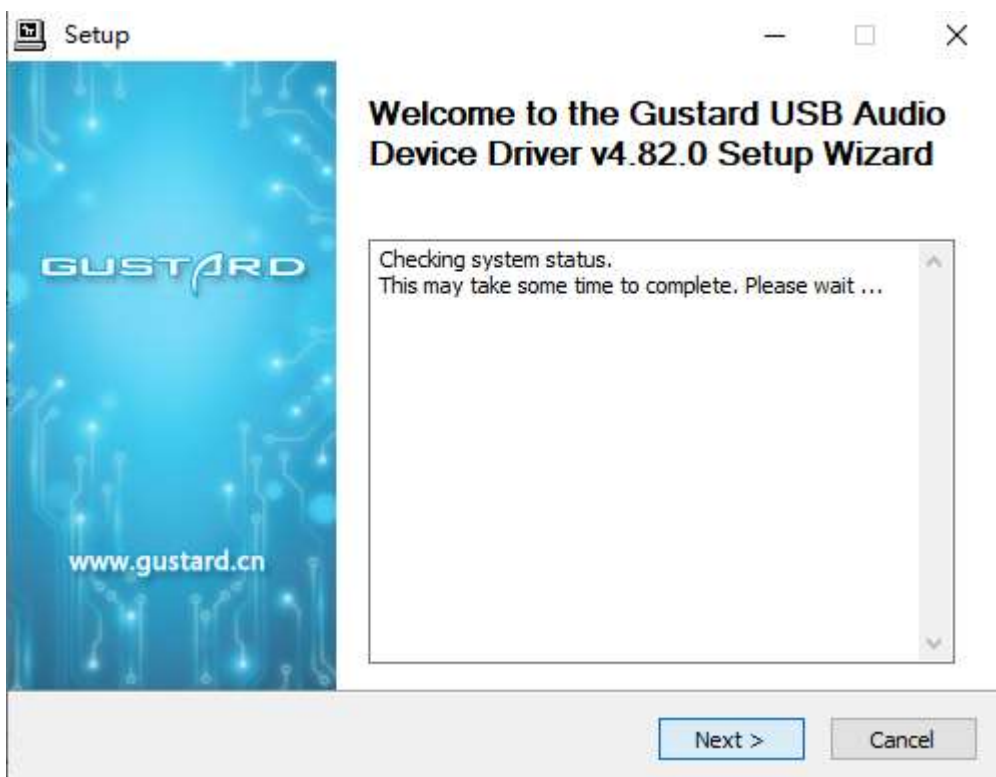
< Back   Finish
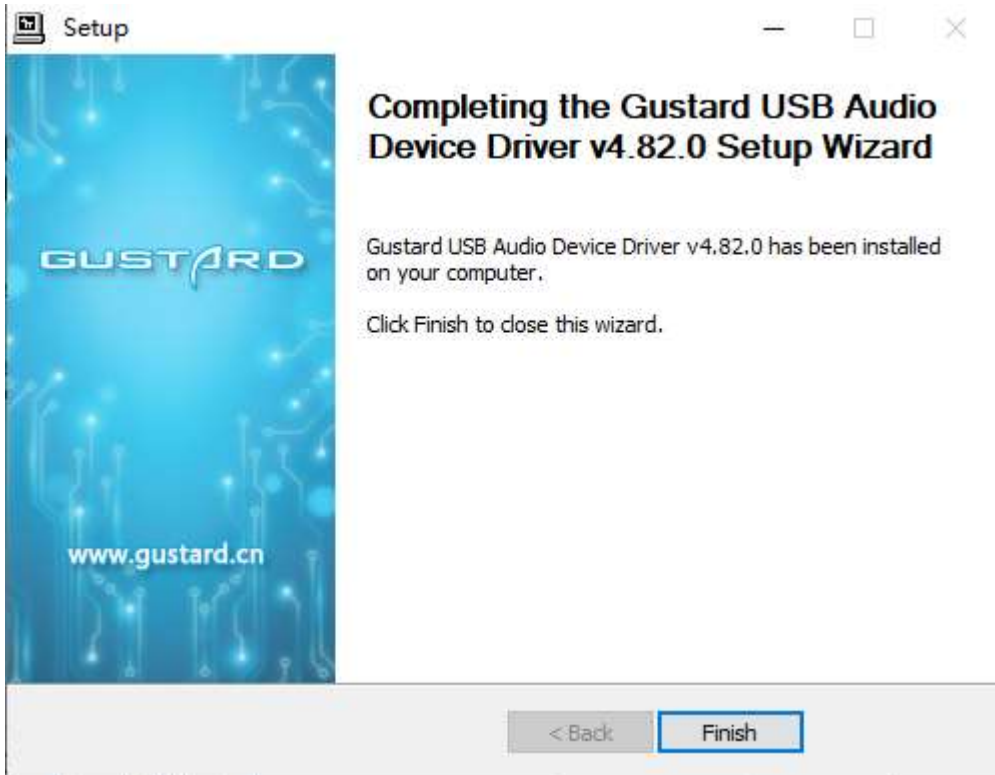
DSD hardware decoding on foobar2000

● foobar2000 configuration

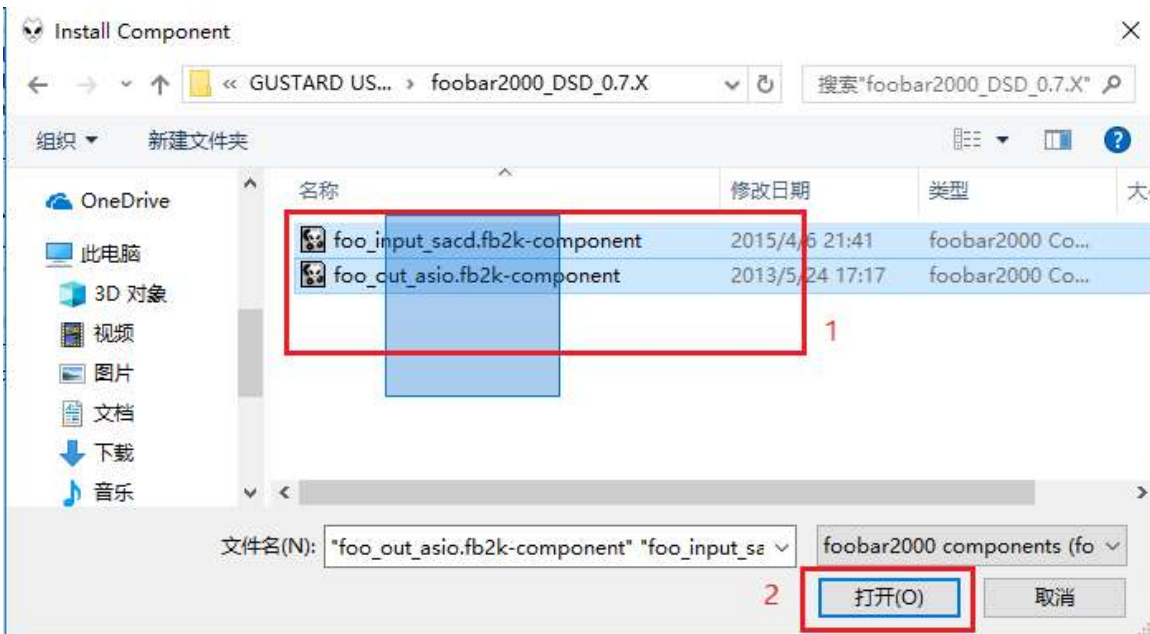1. Open foobar2000_DSD_0.7.X, double-click ASIOProxyInstall-0.7.2.exe, then keep clicking next or install to finish.
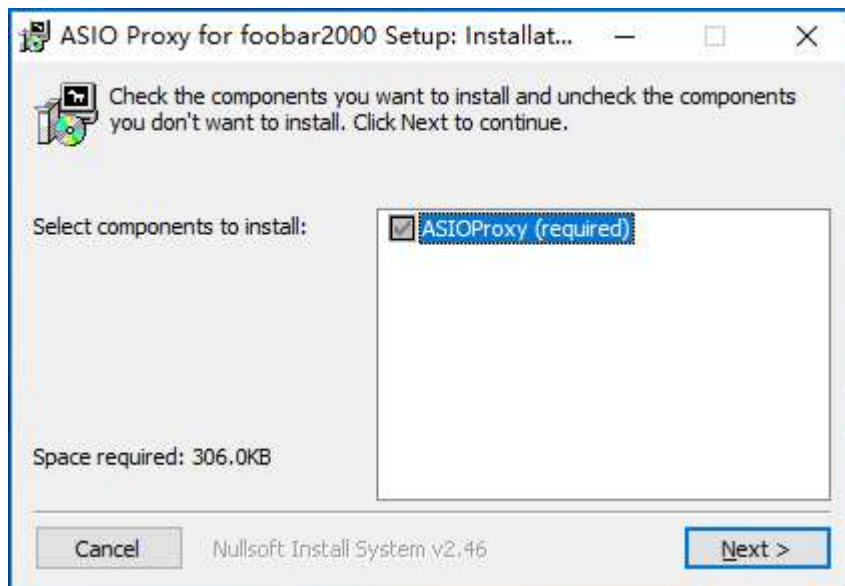
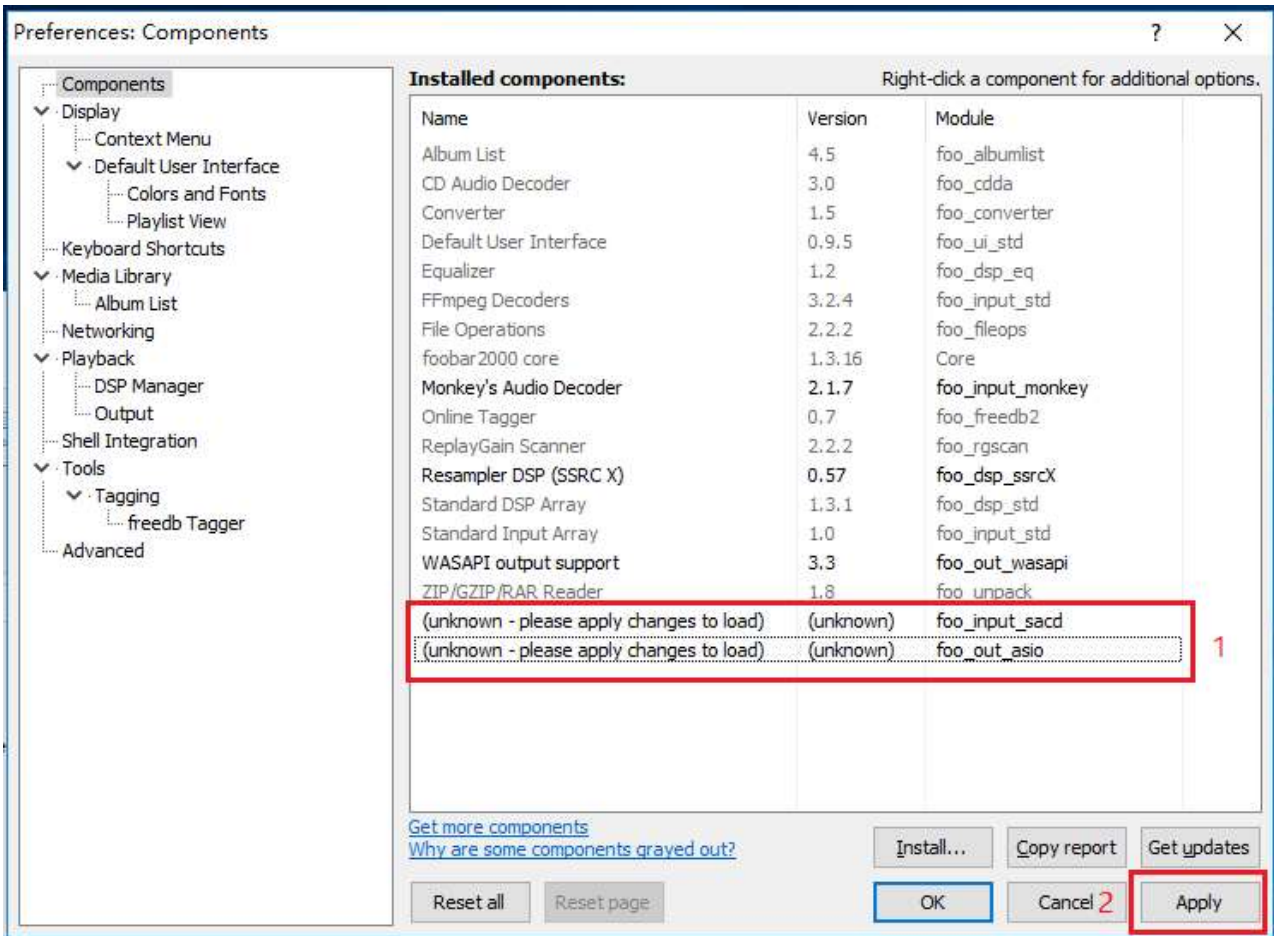2. Run foobar2000, click File—>Preferences.
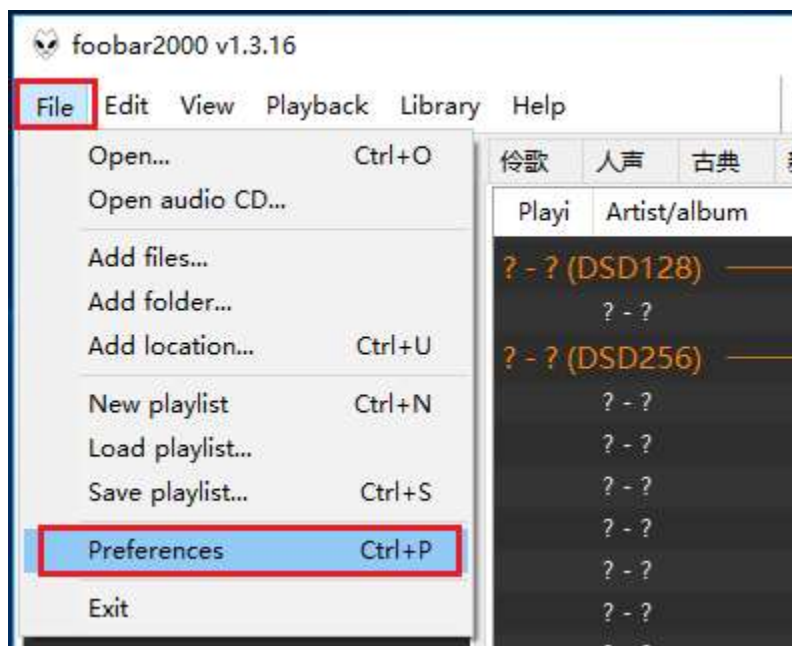
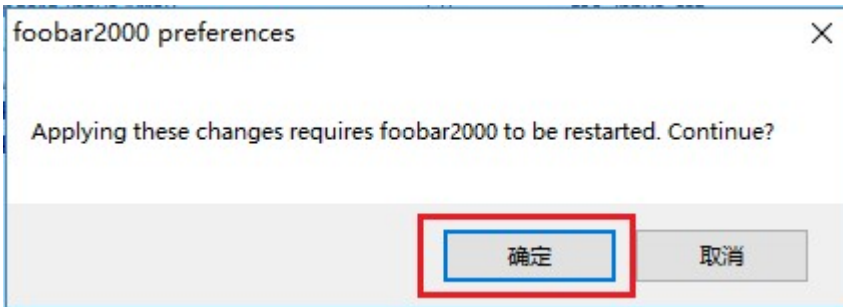3. Click 'Components' on left bar, then click 'Install' on bottom-right corner.
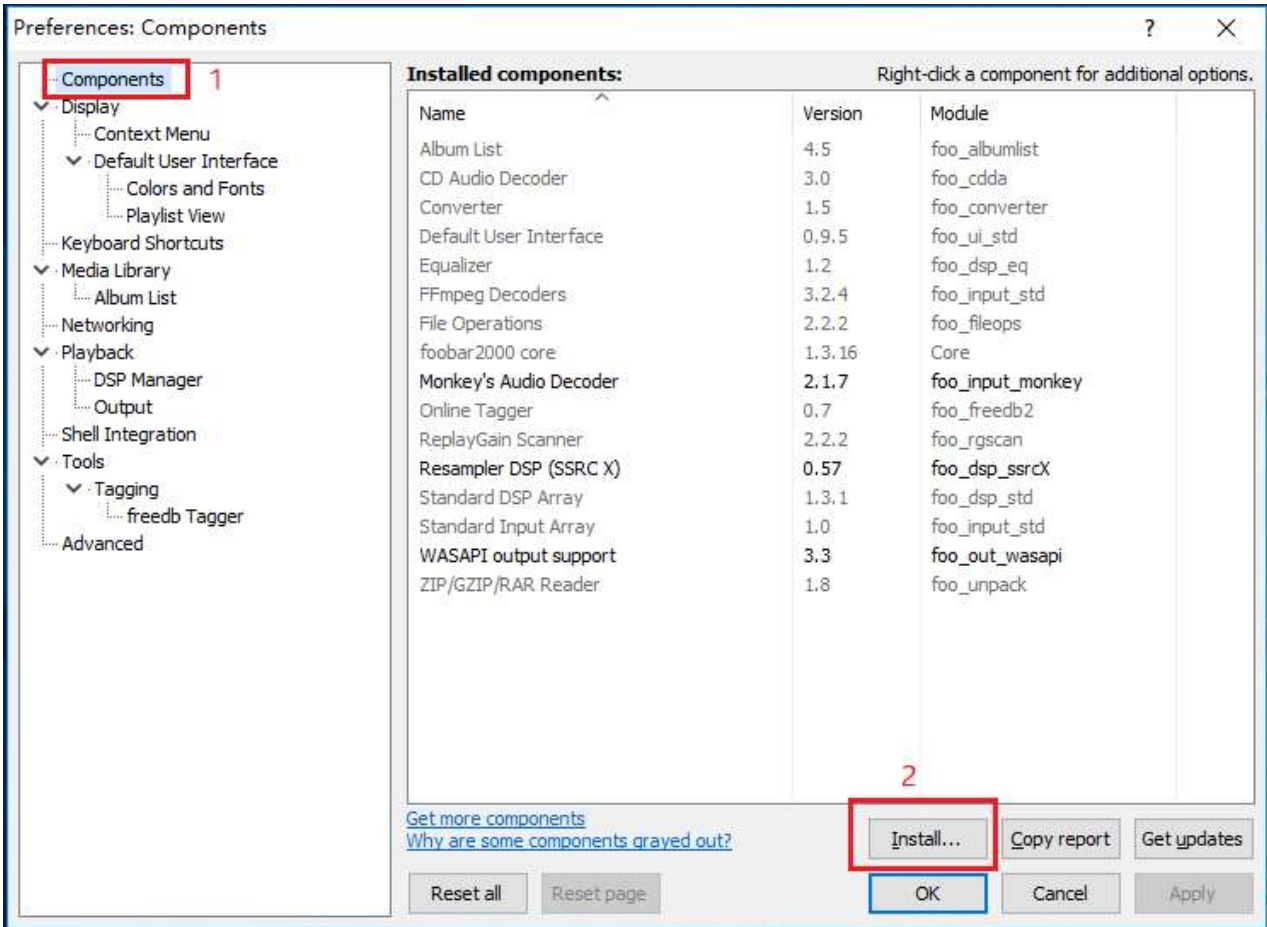
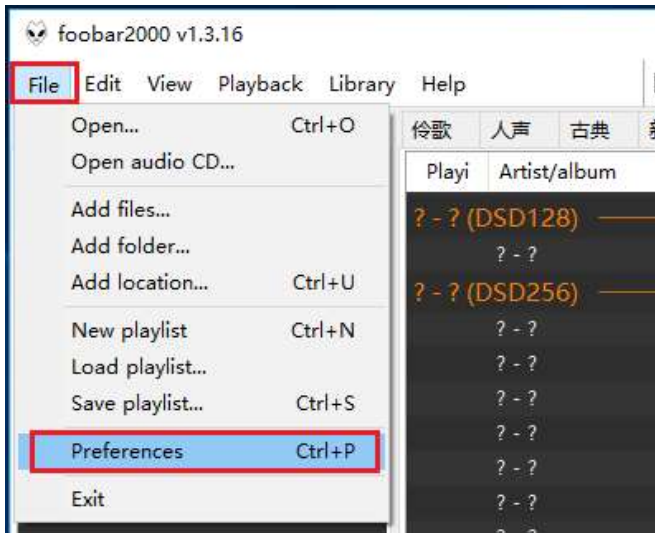Select two files under foobar2000_DSD_0.7.X folder, and click 'Open'.
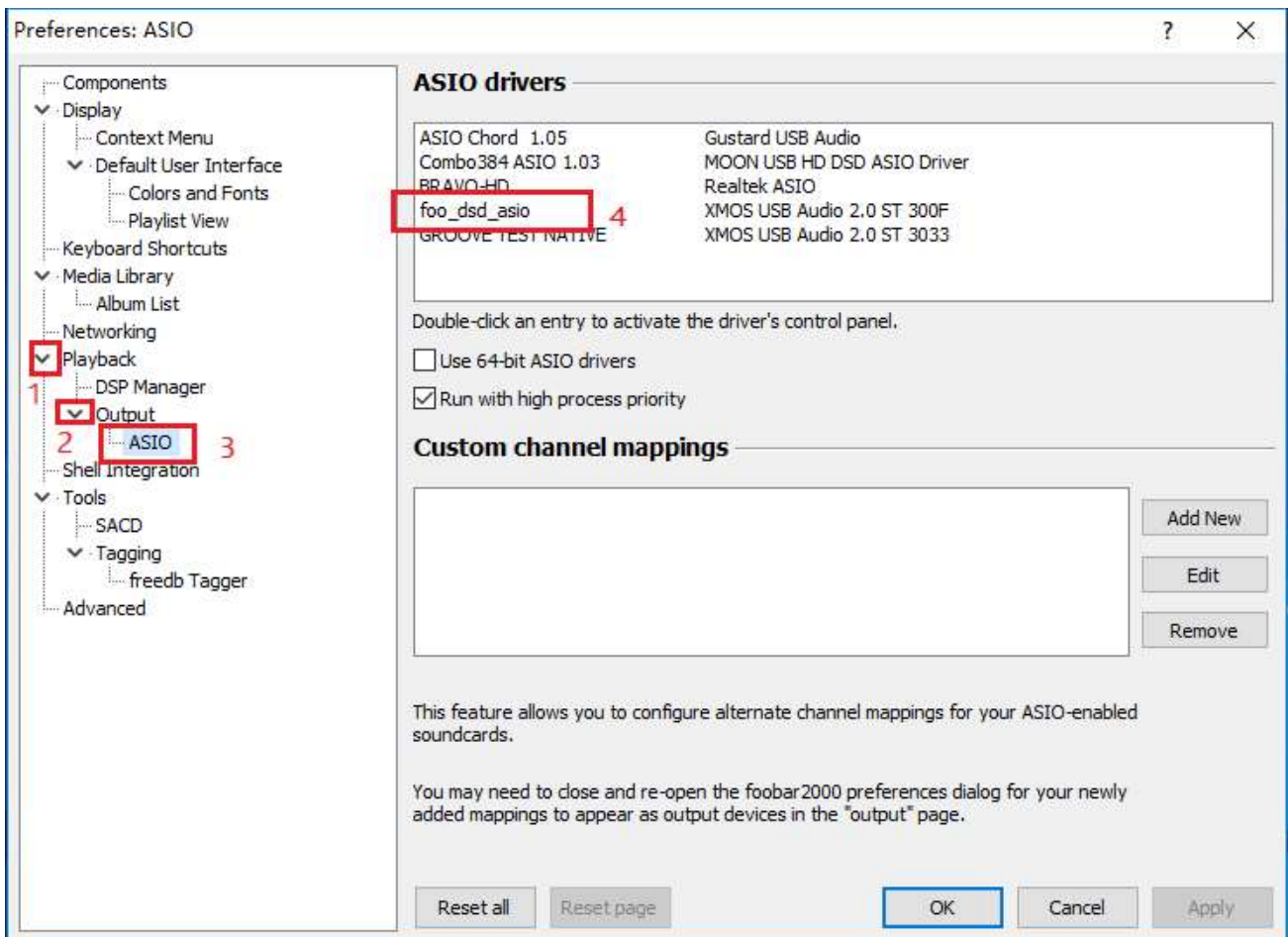
Two new components will appear in the list, click 'Apply'.

Click yes in the message box, foobar2000 will relaunch.
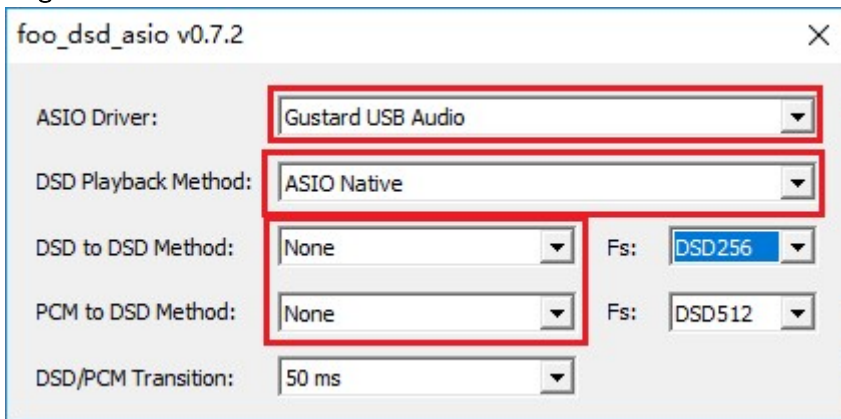
4. Click File—>Preferences.

5. Click 'Playback' —> 'Output' —> 'ASIO', then double-click 'foo_dsd_asio'.
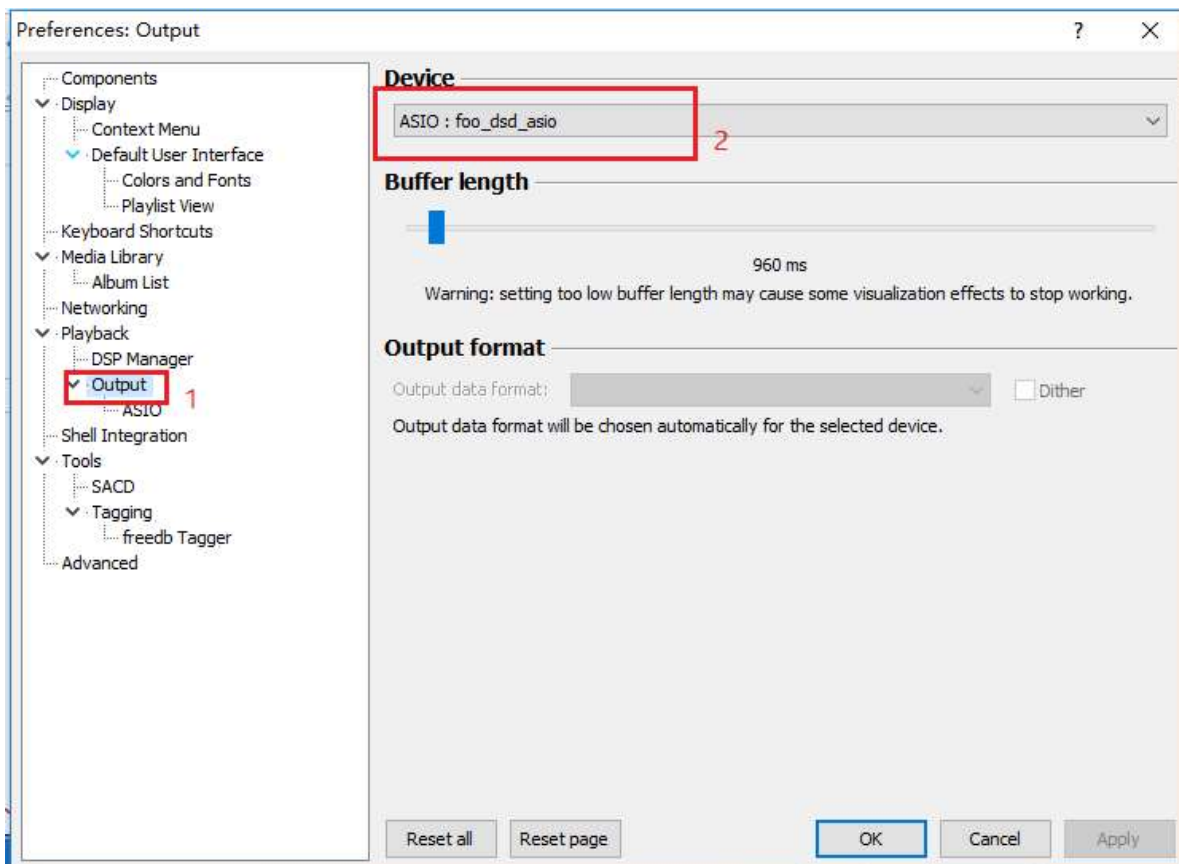
6. In the new window of 'foo_dsd_asio', select 'Gustard USB Audio' in ASIO Driver

Select 'ASIO Native' in DSD Playback Method, other options should be same as the figure. Click X to exit.
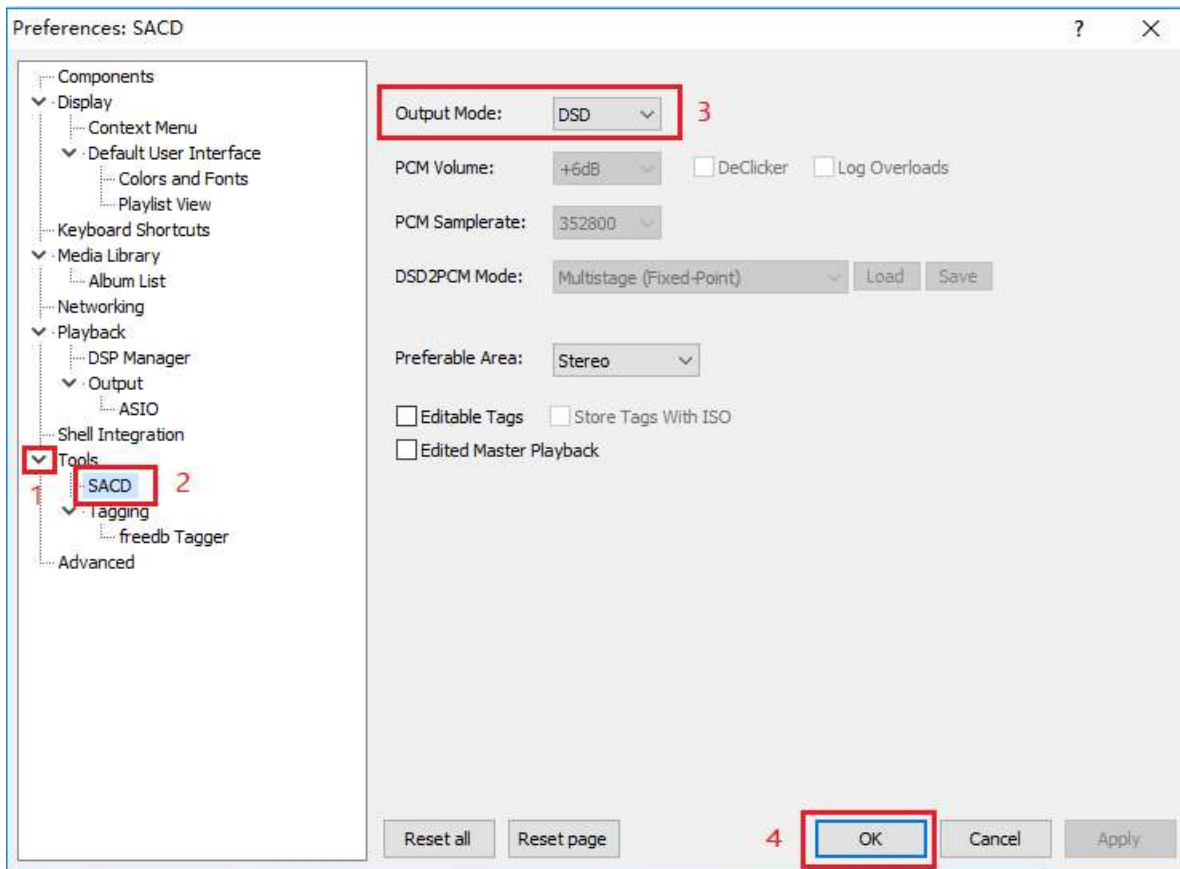

7. Click 'Output' on left bar, then select 'ASIO:foo_dsd_asio' under 'Device'

8. Click 'Tools' —> 'SACD', then select 'DSD' under 'Output Mode'.
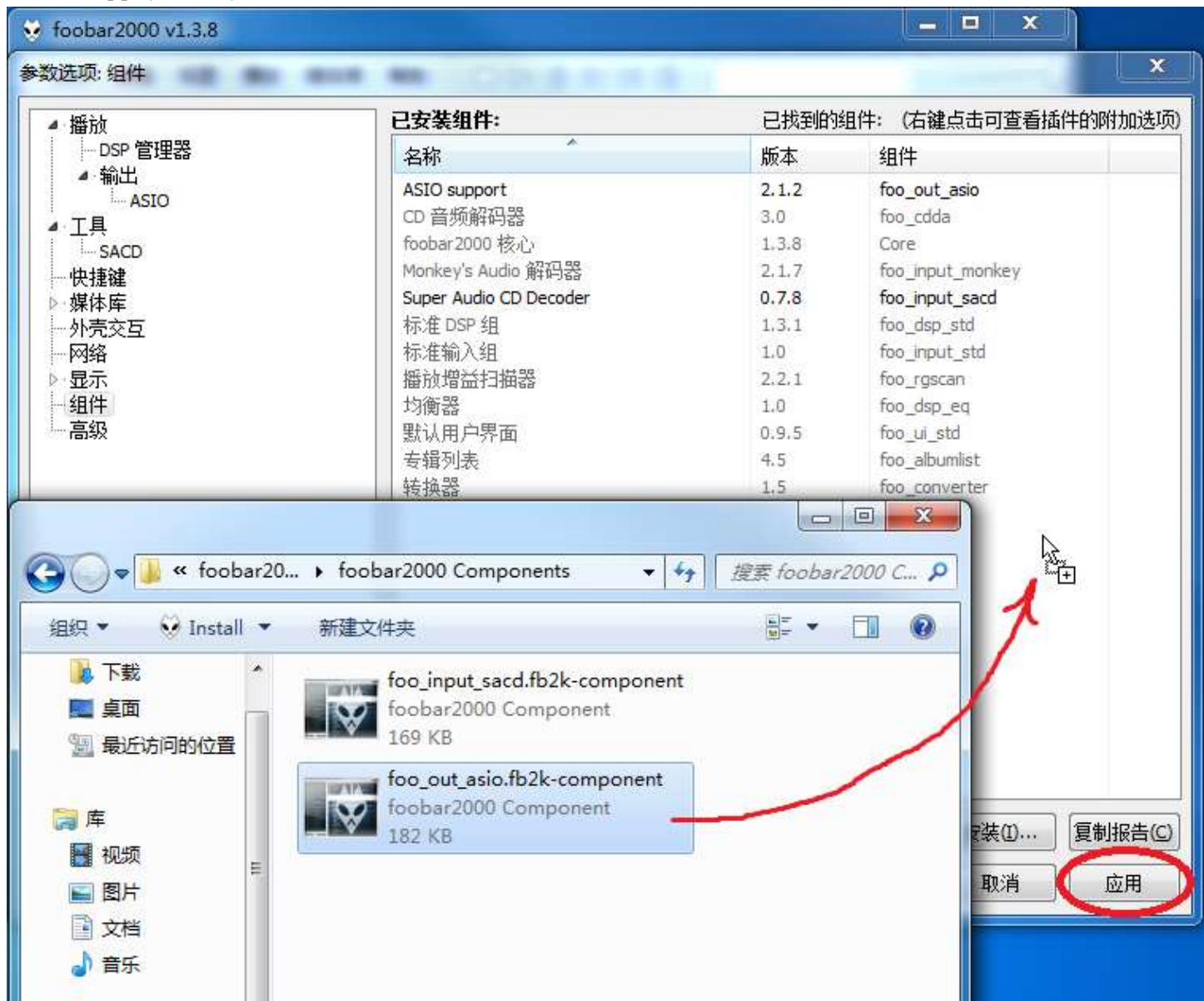
   Click 'OK' to complete.

DSD playback issues

● foobar2000

1. Q: Why there is no 'ASIO' option under 'Playback'-> 'Output'?

A: Because the ASIO components is not installed. Drag the 'foo_out_asio.fb2k-component' under 'foobar2000_DSD'into foobar2000's 'components'page. Then click apply and yes to relaunch foobar2000. You can use ASIO now.
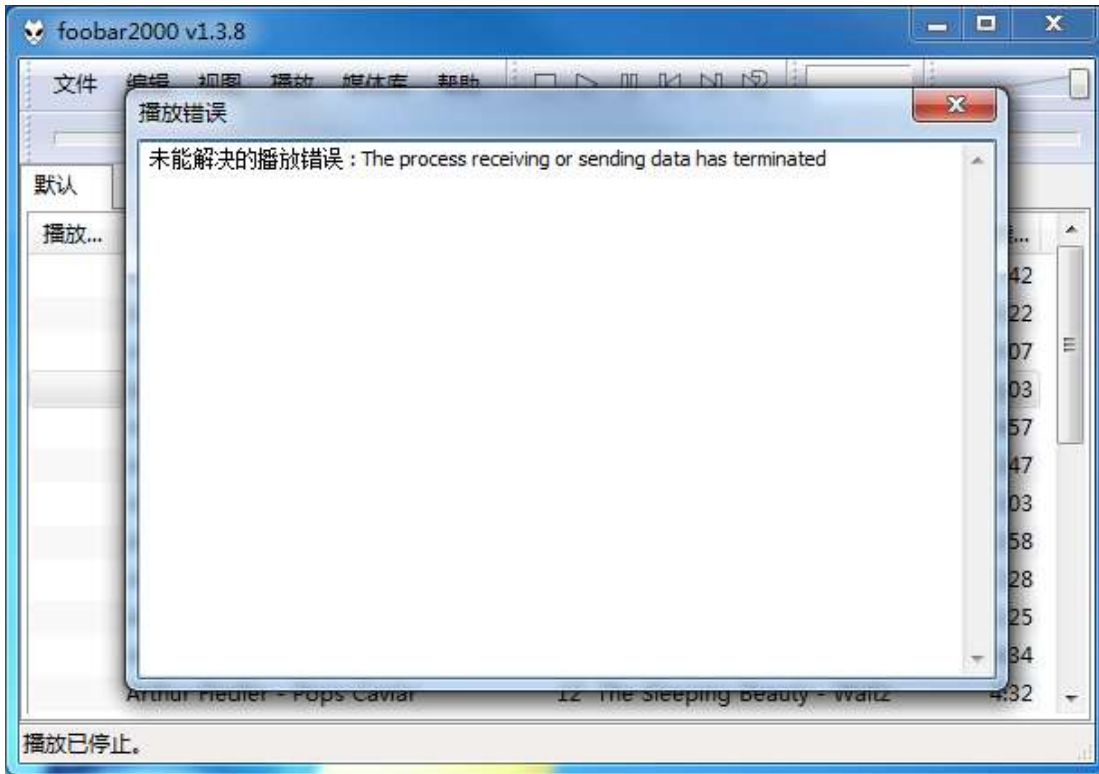
2. Q: Why there is no 'SACD' option under 'Tools'?

A: Because the SACD components is not installed. Drag the 'foo_out_sacd.fb2k-component' under 'foobar2000_DSD' into foobar2000's 'components' page. Then click apply and yes to relaunch foobar2000. You can use SACD now.
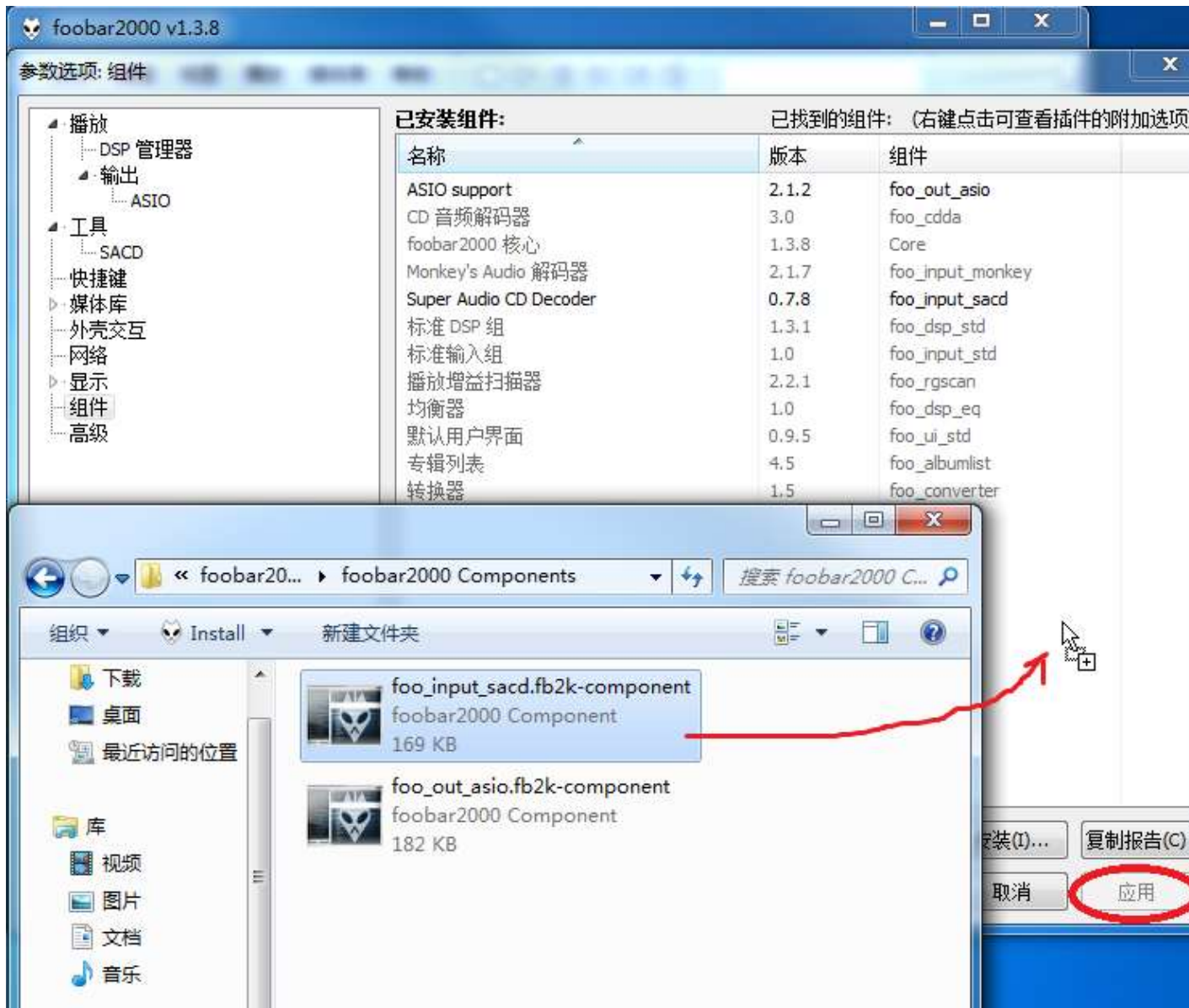
3. Q: Finished all settings, I got such a bug when playing DSD file.

A: It is caused by version conflicts of ASIOProxy and SACD component. They should all be 0.7.x. If you are using an old version of foobar2000 whose SACD component is 0.6.x. The ASIOProxyInstall-0.7.2 will cause the conflicts.

There are two solutions. The first is to upgrade the SACD component[following Q&A2]. But some versions of foobar2000's components is locked, it would work to reinstall the official version. If you do not want to reinstall your foobar2000, you can choose the old version of ASIOProxy like ASIOProxyInstall-0.6.5.exe.
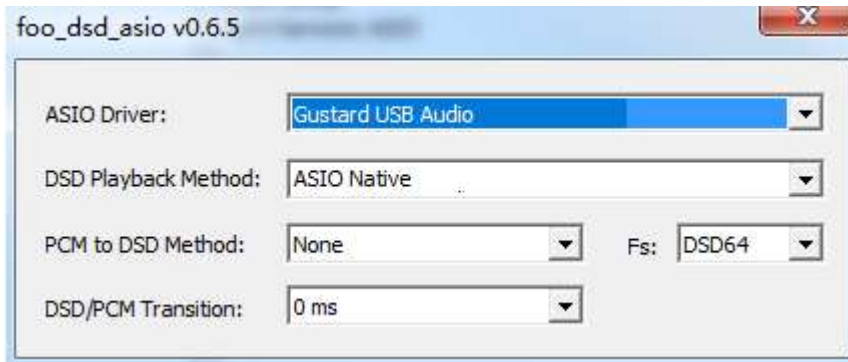
Specifications

Inputs:

USB: USB Type-B female, support USB2.0

10M BNC: 50 Ohm input impedance, 0dBm-20dBm, CMOS Square wave 0.2V-3.3V, Sine wave 0.5-3.3V。

Outputs:

Coaxial: 75 Ohm output impedance, 500mV P-P @75 Ohm 24bit 44.1k-384k/DoP 64-128

AES (XLR): 110 Ohm output impedance, 2.1V P-P @110 Ohm 24bit 44.1k-384k/DoP 64-128

Optical Audio Toslink: 24bit 44.1k-192k /DoP 64

Word Clock output:

Word Clock Frequency: PCM: 44.1k-768k   DSD:2.82M-22.57M
Word Clock Voltage: 3.3Vpp MAX @ 100k load

IIS over HDMI (not a standard HDMI):
LVDS voltage capable, PCM: 32bit 44.1k-768k,
                       DSD 2.82M-22.57M (DSD64-DSD512)

Others:
AC input: AC 115V/230V 50/60Hz
Power Consumption: <15W
Size: 220mm(Width)*50mm(Height)*170mm(Length) (protrusion not included)
Packing size: 285mm(Width)*85mm(Height)* 270mm(Length)
Weight: 2.5Kg (with pack)

Product Warranty:

You will enjoy the 2-year free warranty and lifetime maintenance after the date purchasing GUSTARD's U18 product.

＊The manufacturer bears only the freights from Chinese mainland. Part of the freight and tax generated from overseas will be solved by the user with the dealer negotiation.

Free Warranty Service

GUSTARD X26pro from the purchasing date in the free warranty period, the user uses the product in normal, and the product fails due to component quality or manufacturing problems.

Beyond the Warranty Service

Belonging to one of the following circumstances, products are no longer provided warranty service.
a. Products from the date of purchase has exceeded a predetermined warranty period.
b. Model, barcodes and purchase date do not match the actual product and warranty card.
c. Without GUSTARD technician permission, unauthorized modifications to the circuit, components or self-repaired product.
d. Damaging caused by irresistible natural forces.
e. Beyond the permitted use of environmental damage.
f. Damaging due to incorrect use or improper storage. Including but not limited to: the voltage is too high to burn the circuits or components; Bumping and resulting in damaging the shell or internal; damaging due to water, oil, liquid and excessive dust; product oxidation or corrosion, etc.
g. Beyond the warranty period, such as an individual component damage, appearance due to human damage, firmware modifications lead to unable to work by unauthorized users. GUSTARD commits to take reasonable maintenance fees (except large area components or circuit board burned beyond repair). Freight and maintenance costs, material costs are required the user to bear.