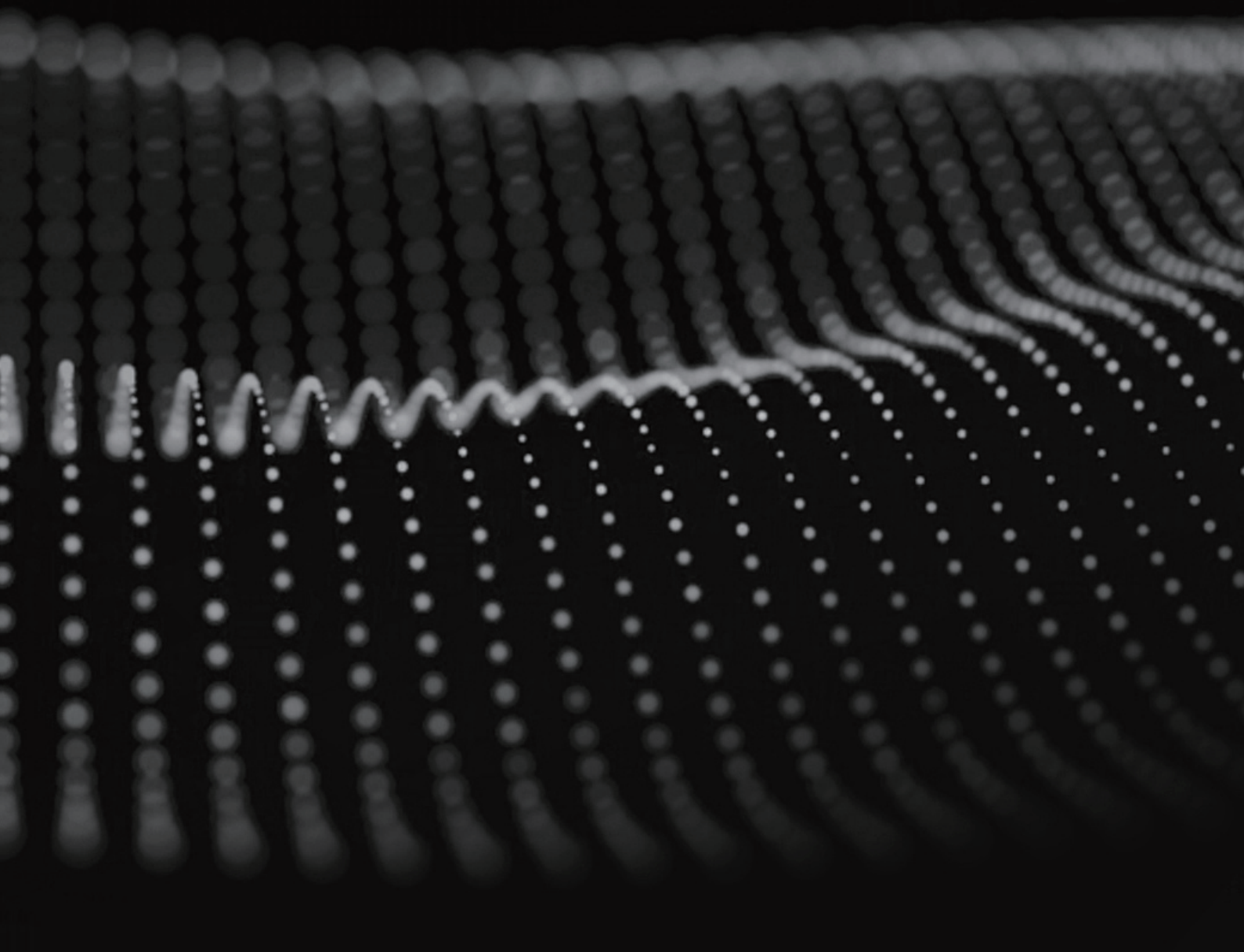
DENAFRIPS

VENUS 15th · User Manual

Committed to providing high-quality HiFi audio solutions, delivering an exceptional auditory feast to customers worldwide



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Important Safety Instructions

warnings

Risk of electric shock inside the unit. Do not open the cover.

- To minimise the risk of electric shock, do not remove the outer cover (or back cover).
- If repairs are necessary, they should be carried out by qualified service personnel.
- To avoid fire and electric shock hazards, do not allow the unit to get wet or damp.

①. **Read Protective Measures**–Before using the equipment, carefully read all warning information in the instruction manual regarding protection and operation.
②. **Follow the instructions for use**–Please follow the operation and use information in the instruction manual, and do not operate in violation of the instruction manual.
③. **Keep away from water and humidity**–Do not place the unit near water, such as bathtubs, washbasins, sinks, washing machines, etc.; and do not use it in high–temperature and high–humidity environments,such as damp basements.

④. **cleanse**–Do not use liquid cleaners and mist cleaners, clean with a dry cloth. Unplug the unit before cleaning.
⑤. **power supply**–Please use the power supply according to the labelling of the product. The wiring should be arranged reasonably, please do not step on the line, pulling the power cord, so as not to cause damage. Pay special attention to the wires of plugs, convenient sockets and equipment connections.
⑥. **Heat Dissipation**—In order to ensure that the product is used reliably, overheating of the device should be avoided, please do not cover cover the device. Do not use the product on surfaces similar to beds, sofas, carpets and other similar surfaces.
If the appliance is installed built–in, such as in a bookcase or on a shelf, make sure there is adequate ventilation. Keep a distance of 10cm (4”) on each side,above and behind the appliance. The rear edge of the appliance bracket or upper cover should be 10cm(4”) away from the rear panel or wall to allow space for ventilation and heat dissipation.
⑦. **Thermal energy**—Keep the product away from heat sources such as radiators, stoves, and other objects that generate heat (including power amplifiers).
⑧. **Prevent foreign objects or liquids**—Please avoid allowing objects or liquids to enter the device through any openings, as contact with live components may cause a fire or electric shock hazard. Do not place this device in environments where it may be exposed to rain or splashing liquids, and avoid placing containers with liquids (such as vases) on the device.

⑨. **Lightning**—During thunderstorms, please unplug the power cord to effectively prevent damage from lightning strikes.
⑩. **Protection**—Disconnect the power plug when the product is not used for a long period of time.
⑪. **Repair—**Users should not attempt to open the casing of the equipment to avoid electric shock.If repair services are required, please send the unit to an authorized service center under the following circumstances:
a) Foreign objects or liquids have entered the unit.
b) The equipment has been exposed to rain.
c) The device operates abnormally.
d) The device has been dropped or physically damaged.
⑫. **Disconnecting device**—When the plug, appliance coupler, and power s0witch are used as the disconnecting device, ensure easy operation.
⑬. This product is only safe for use at altitudes below 2000 meters.
⑭. This product is only safe for use in non–tropical climates.
⑮. Class I equipment should be connected to a grounded power outlet with a protective earth connection, as indicated on the warning label of the power outlet.

VENUS15th: The Ultimate Digital Audio Decoding Experience

1. Digital/Analog Isolation Design

VENUS15th adopts a thorough digital and analog isolation design to ensure complete independence between digital signal processing and analog output. By using physical isolation technology, the digital processing board is completely separated from the R2R ladder network array, effectively reducing noise and providing higher signal-to-noise ratio and purer sound quality. The two boards are independently connected via high-precision OCXO modules to ensure every detail is perfectly reproduced.

2. High-Precision Oven-Controlled Crystal Oscillator (OCXO)

VENUS15th is equipped with dual OCXOs operating at 45.1584 MHz and 49.152 MHz. These highly accurate oscillators are housed in metal casings and placed at the core of the DAC, specifically designed for high-end audio applications. The temperature-controlled design of the OCXO minimizes frequency drift and jitter error, ensuring high-fidelity transmission of digital audio signals. Combined with a new power supply design, the stable current supply provides low-noise ROXC operating voltage, delivering silky-smooth performance.

3. Adaptive FIFO Buffer

To eliminate clock jitter, VENUS15th adopts an advanced adaptive FIFO buffer. This technology allows the received audio data to be stored in memory, ensuring stability and accuracy during data transmission. With the DAC's built-in phase-locked loop and the ultra-precise OCXO clock control module, jitter is virtually negligible, significantly improving audio detail reproduction.

4. Proprietary USB Audio Decoding Solution

VENUS15th features a proprietary USB audio decoding solution driven by an STM32F446 microcontroller, fully compatible with traditional digital audio player chips. The digital signal is decoded through an onboard FPGA, aiming to enhance signal accuracy and stability. The specially optimized USB interface design reduces cross-interference from digital input interfaces, ensuring the best sound reproduction effect.

5. High-Resolution Audio Support

VENUS15th supports PCM data streams up to 24-bit/1536kHz and native decoding capability up to DSD1024. Whether handling high-resolution PCM signals or DSD format, VENUS15th delivers an ultimate sound quality experience. The included Windows platform driver (THESYCON USB driver) ensures compatibility with various devices.

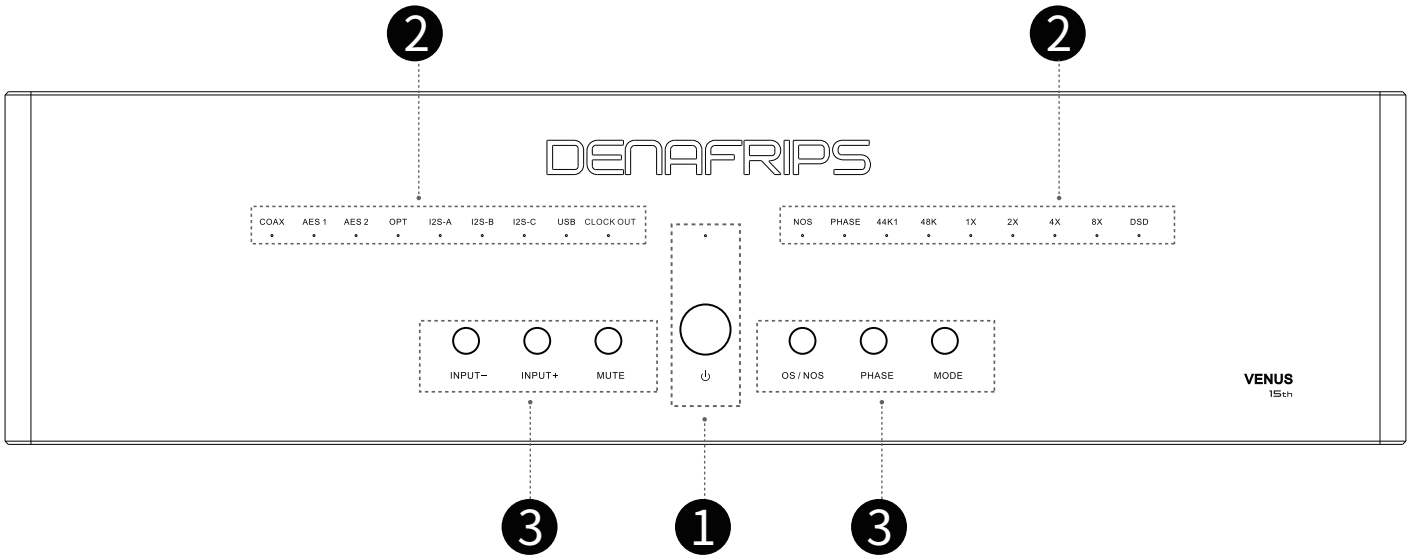
6. Professional Design and Optimization

VENUS15th is developed based on the successful TERMINATOR series by DENAFRIPS. Through continuous innovation and optimization, it aims to provide an ultimate audiophile-grade digital-to-analog conversion experience. Designed for audiophiles seeking top-tier sound quality, it represents the pinnacle of high-end digital audio.

7. Package Contents

If you purchase a certified product, the package will only include the device itself. Cables and remote control are not included.

Functional Panel Introduction



1.Power Button and LED Indicator

①. Power LED Indicator, Used to indicate the power status of the device.When the power is connected, the standby indicator lights up, indicating that the device is in standby mode.Press the standby button, the standby indicator will turn off, and the DAC will start working.

②. Power Button

Press the power button to turn the DAC on or off.

2. The LEDs on the DAC panel are used to indicate the current input source, sampling rate, multiplication factor, audio format, and other specific statuses.

①. Input Source Indicators: COAX, AES 1, AES 2, OPT, I2S-A, I2S-B, USBThese LEDs indicate different input sources. When a particular input source is selected and active, the corresponding LED will light up.

②. Sampling Rate Indicators：44K1 (44.1 kHz sampling rate); 48K (48 kHz sampling rate)

These LEDs indicate the sampling rate of the audio signal currently being processed.

Functional Panel Introduction

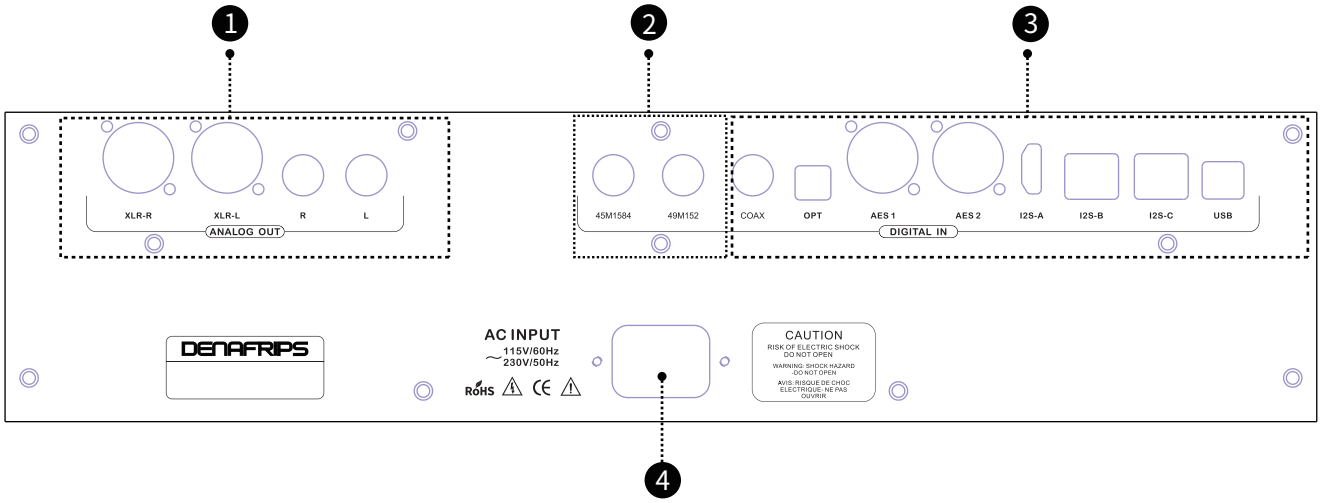
③. Multiplication Factor Indicators：1X (original sampling rate); 2X (2 times the sampling rate); 4X (4 times the sampling rate); 8X (8 times the sampling rate)
These LEDs indicate the multiplication factor of the current audio signal (if the sampling rate is multiplied).
④. Audio Format Indicators：Lit when in DSD mode, off when in PCM mode.
⑤. Other Status Indicators：CLOCK OUT (Clock Output); NOS (Non-Oversampling); PHASE (Phase)
CLOCK OUT Light Off: Internal clock On: External clock is active, indicating that the DAC is outputting a clock signal. This clock signal can be used to synchronize other audio devices, ensuring that all devices use the same clock source, which reduces jitter and other timing issues, enhancing overall audio system performance.
OS/NOS Indicator: When the light is on, it indicates NOS mode; when off, it indicates OS mode.
In OS mode, the DAC processes the incoming digital audio signal and increases the sampling rate.
Oversampling increases the number of data points through interpolation algorithms, thereby improving audio quality.
In NOS mode, the DAC directly processes the incoming digital audio signal without any sampling rate processing. This mode preserves the original characteristics of the audio signal.
PHASE indicator: When the light is on, it indicates in-phase; when the light is off, it indicates out-of-phase.

3. Button Descriptions

① IN- Button
In Home Mode: Press to select the previous audio source.
In Menu Mode: Press to enter CLOCK OUT clock output switching mode.
In Function Settings: Press to switch the corresponding clock.
② IN+ Button
In Home Mode: Press to select the next audio source.
In Menu Mode: Press to enter the single/dual AES setting mode.
In Function Settings: Press to switch between single and dual AES modes.
③ MUTE Button
In Home Mode: Press to toggle between mute and playback; when muted, the device
enters Menu Mode.
In Menu Mode: Press to exit mute mode.
In Function Settings: No function.
④ OS/NOS Button
In Home Mode: Press to toggle between OS (Oversampling) and NOS (Non-Oversampling) modes.
In Menu Mode: Press to enter DSD channel (left/right) function settings.
In Function Settings: Press to switch between L/R and R/L.

⑤ PHASE Button
In Home Mode: Press to toggle between in-phase and out-of-phase modes.
In Menu Mode: Press to enter the I2S pin configuration settings (I2S source must be selected first).
In Function Settings: Press to switch I2S pin configurations.
⑥ MODE Button
In Home Mode: No function.
In Menu Mode: Press to enter the filter function settings.
In Function Settings: Press to switch between fast roll-off and slow roll-off.

Rear Panel Interface Introduction



1. Audio Signal Output

XLR-R: Represents the right-channel analog XLR output, connected to the right-channel input of an audio system or amplifier.

XLR-L: Represents the left-channel analog XLR output, connected to the left-channel input of an audio system or amplifier.

RCA-R: Represents the right-channel analog RCA output, usually marked in red. Connected to the right-channel input of an audio system or amplifier.

RCA-L: Represents the left-channel analog RCA output, usually marked in white or black. Connected to the left-channel input of an audio system or amplifier.

Balanced output can be achieved using XLR (pin 1 = ground, pin 2 = positive, pin 3 = negative), or single-ended output can be achieved using RCA.

Note: The RCA output is paralleled with the positive end of the XLR output. To avoid affecting the listening experience, it is not recommended to use RCA and XLR outputs simultaneously.

For the best fit and to avoid any risk of damaging the RCA socket, we recommend using RCA cables with an inner pin diameter not exceeding 3.2 mm

2. Clock Output Interface

45M1584 and 49M152: Clock output interfaces for synchronizing and transmitting high-precision clock signals.
Clock signal synchronization is essential for reducing jitter and improving audio quality. Synchronizing the clock signals between different devices ensures consistent transmission and processing of digital audio signals, reducing signal distortion.

3. Digital Audio Input Interfaces

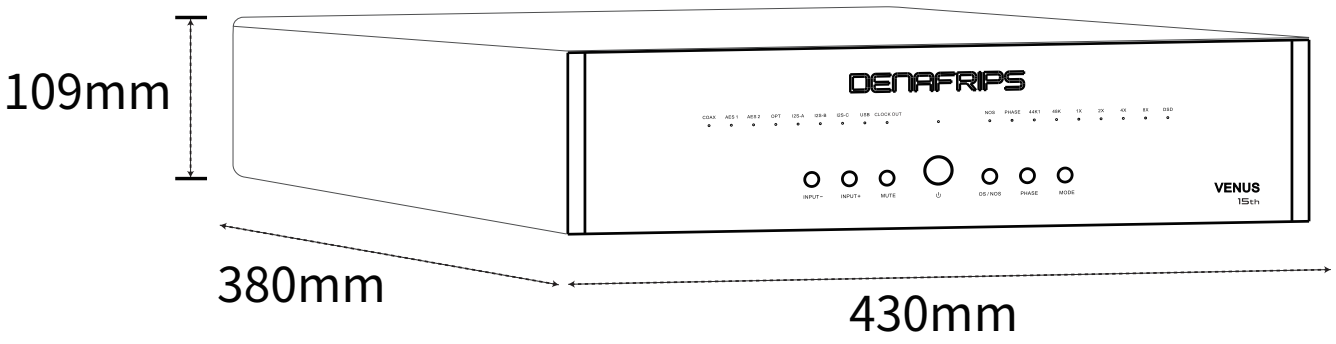
There are eight input interfaces: COAX, OPT, AES 1, AES 2, I2S-A, I2S-B, I2S-C, and USB
COAX: (Coaxial) A digital interface known for stable transmission, suitable for short-distance connections, offering high audio quality.
OPT: (Optical) A digital interface resistant to electromagnetic interference, suitable for long-distance connections, providing clear audio transmission.
AES: A balanced digital input interface with an input impedance of 110 ohms. It can be set to single-mode or dual-mode input (see the function settings guide for details).
I2S: (HDMI standard cable) input interface, The wiring sequence may vary among different manufacturers. This device offers eight wiring sequence
optionsto match different manufacturers. Please refer to the functional setup instructions for detailed configuration.

Note: Do not plug or unplug this cable while the device is powered on to avoid static damage to the product.
USB: (Universal Serial Bus) An interface that provides convenient digital audio transmission, allowing high-fidelity audio data transfer. It is suitable for connecting to PCs, Macs, and various digital audio devices.

4. Power Input Interface

This unit uses a three-core power cable. Users should ensure that the power supply is properly grounded.
Correct use of the power input interface ensures that the DAC device receives stable and reliable power support.

Technical Specifications



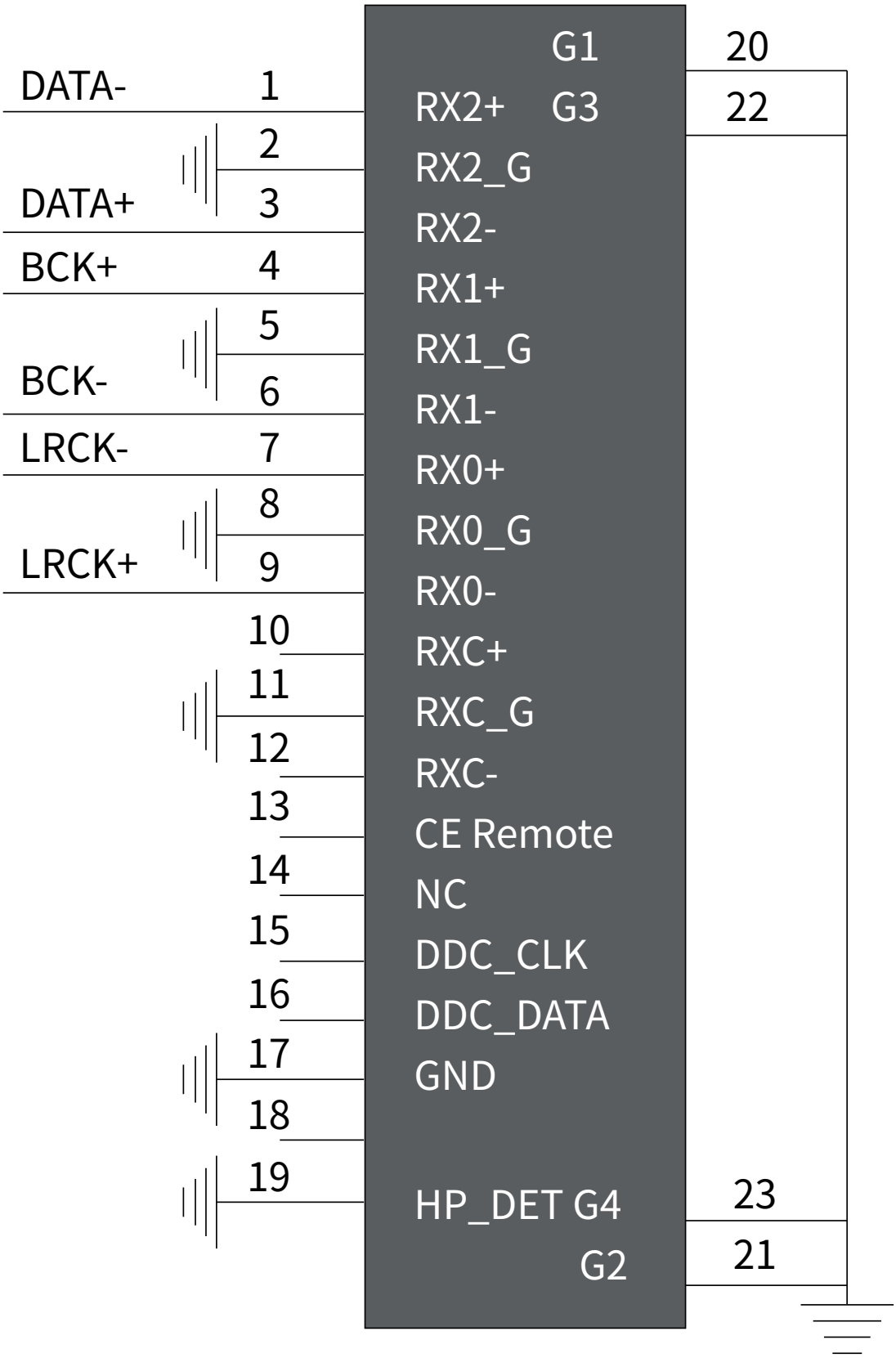
Description	Parameters
R-2R DAC	Proprietary R2R + DSD Architecture
	True balanced 26BIT R2R + 6BIT DSD (32-level FIR filter)
	Matched precision thin-film 0.005% R-2R network array
DSD	Coaxial/AES/Opt input DSD64 / 2.8224MHz (DoP)
	DSD1024 / 45.1584MHz *Only for USB and I2S input
PCM	All inputs support 24-bit / 44.1, 48, 88.2, 96, 176.4, 192 KHz
	1536KHz *on USB and I2S inputs
Digital Inputs	RCA Coaxial
	OPT x 1
	AES/EBU x 2 (Supports dual AES/EBU L/R channel input)
	USB2.0 Type B
Analog Outputs	2.2Vrms at RCA, 625Ω
	4.4Vrms at XLR, 1250Ω

Description	Parameters
AC Power Requirement	115V AC 60Hz; 230V AC 50Hz
Power Consumption	⩽20W
Frequency Response	20–80KHz (+1/-3dB)
THD+N	0.0015% (A-weighted)
Signal-to-Noise Ratio	129dB
Dynamic Range	>132 dB
Crosstalk	-120dB
Dimensions	430W x 380D x 109H mm (including feet)
Weight	17.6kg
Color	Silver/Black
Warranty	12 months

Mode	LED		
	1X	2X	4X
	DATA	BCK	LRCK
1	○	○	○
2	●	○	○
3	○	●	○
4	●	●	○
5	○	○	●
6	●	○	●
7	○	●	●
8	●	●	●

I2S PINOUT						
PIN	DATA		BCK		LRCK	
Mode	1	3	4	6	7	9
1	DATA-	DATA+	BCK+	BCK-	LRCK-	LRCK+
2	DATA+	DATA-	BCK+	BCK-	LRCK-	LRCK+
3	DATA-	DATA+	BCK-	BCK+	LRCK-	LRCK+
4	DATA+	DATA-	BCK-	BCK+	LRCK-	LRCK+
5	DATA-	DATA+	BCK+	BCK-	LRCK+	LRCK-
6	DATA+	DATA-	BCK+	BCK-	LRCK+	LRCK-
7	DATA-	DATA+	BCK-	BCK+	LRCK+	LRCK-
8	DATA+	DATA-	BCK-	BCK+	LRCK+	LRCK-

I2S Pin Configuration(The factory default setting is Mode "1", with all lights off. "○" = Light off, "●" = Light on)



HDMI I2S Input Diagram

Configuration Guide

I2S Pin Configuration

1.Select I2S input
2.Press the sound button once to enter configuration mode
3.Adjust the corresponding switch, where 1X 2X 4X will toggle fixed mode on/off, representing binary 000-111
4.Wait for 10 seconds
5.DAC returns to operation mode

Recommended I2S Source Matching (DDC/Transport/ Streamer)

1.Connect I2S cable
2.Set the volume (lowest)
3.Play a well-known track (first PCM, then DSD)
4.Apply the DAC’ s I2S settings to 000-111
5.Ensure that one mode matches the source for PCM and DSD playbackIt’ s recommended to conduct an Audio Tone Test (sound frequency test) to confirm that the L/R channels are in phase and correctly aligned.

I2S DSD Channel Swap Configuration

1.Select I2S input
2.Press the sound button once to enter configuration mode
3.Toggle the NOS button
  COAX light represents L/R
  AES1 light represents R/L
4.Wait for 10 seconds
5.DAC returns to operation mode

Configuration Guide

Filter Function Settings

1.Press the MUTE button to enter menu mode, then press the MODE button to enter filter function settings
(Press MUTE + MODE buttons) → 8x Light on.
2.In filter function settings, press the MODE button to switch between fast roll-off and slow roll-off
(Press the MODE button to switch)
1x Light off：Fast roll-off
1x Light on：Slow roll-off

USB Upgrade Function Settings

1.In standby mode, select USB input, then press the standby button to enter standby (press the standby button first) → standby light ON
2.After entering standby, press the MODE button (press the MODE button once again to enter upgrade state) → standby light ON

Dual AES Function Settings

1.Press the MUTE button to enter menu mode, then press INPUT + button to enter Dual AES function setting (Press MUTE + INPUT + button) → USB light ON + CLOCKOUT light ON
2.In the dual AES function setting, press INPUT+ again
(press INPUT+ button to switch)
AES2 light ON = Dual AES
OPT light ON = Single AES

Clock Output Function Settings

1.Press the MUTE button to enter menu mode, then press INPUT- button to enter clock output function setting

LED Indicators

No clock output = No lights ON; Clock output active = CLOCKOUT light and corresponding
clock light ON
CLOCK OUT light ON + COAX light ON = Output and input signal sampling rates are equal word clock.
CLOCK OUT light ON + AES1 light ON = Digital Clock Output
CLOCK OUT light ON + AES2 light ON = Half of the main clock output
CLOCK OUT light ON + OPT light ON = Main clock output

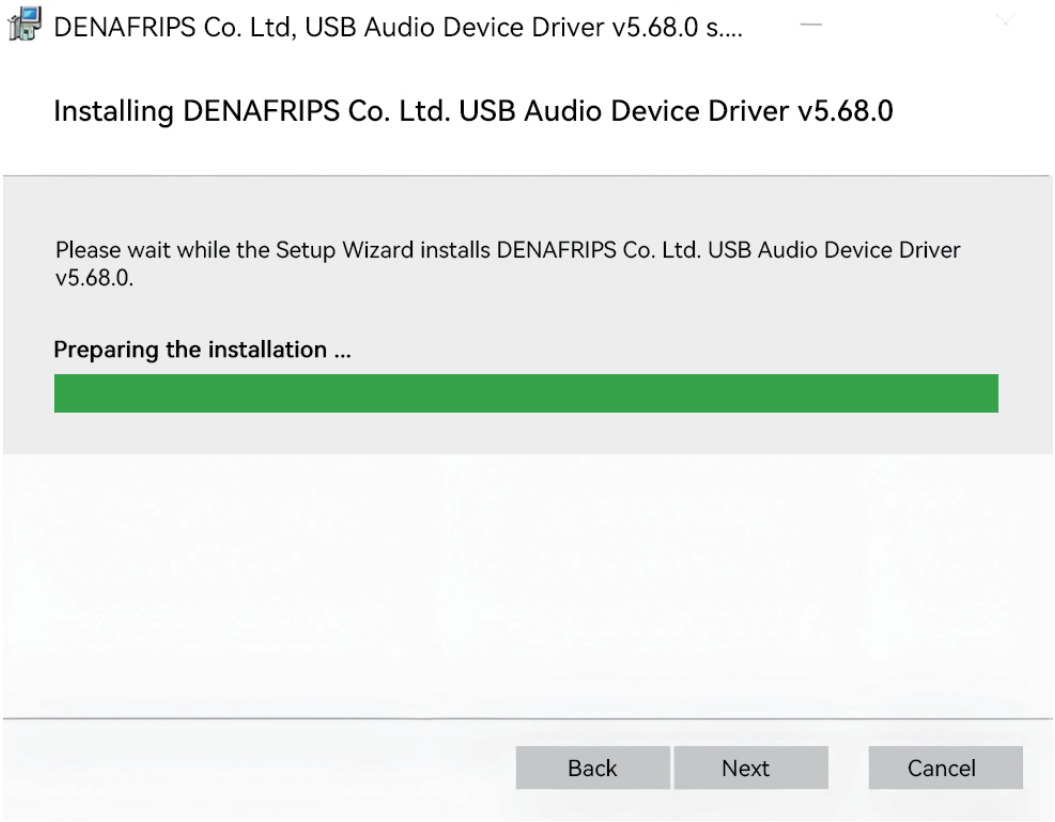
Driver Installation

USB Driver Installation – Windows Operating System(Only compatible with Windows 10 and above) A USB driver is required for installation. This USB driver is licensed by THESYCON and is designed to provide the highest quality audio playback for computer audio systems.

Note: Mac and Linux operating systems do not require a USB driver.Installation Guide:

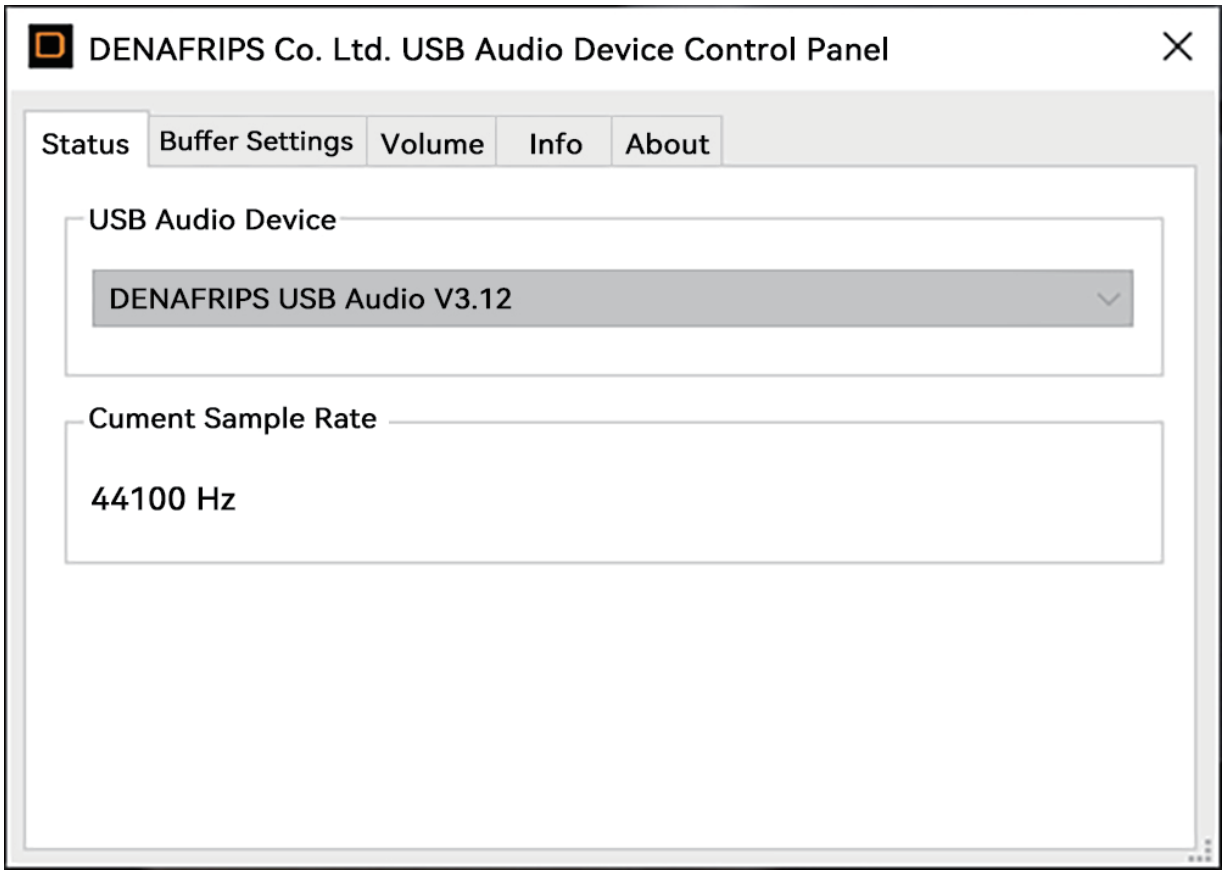
1. Do not connect the USB cable from the computer to the DAC. Please disconnect it before installing the USB driver.
2.Download the driver from the support page: https://www.denafrips.com/download-thesycon.

3. Double-click the driver file on your computer to install.

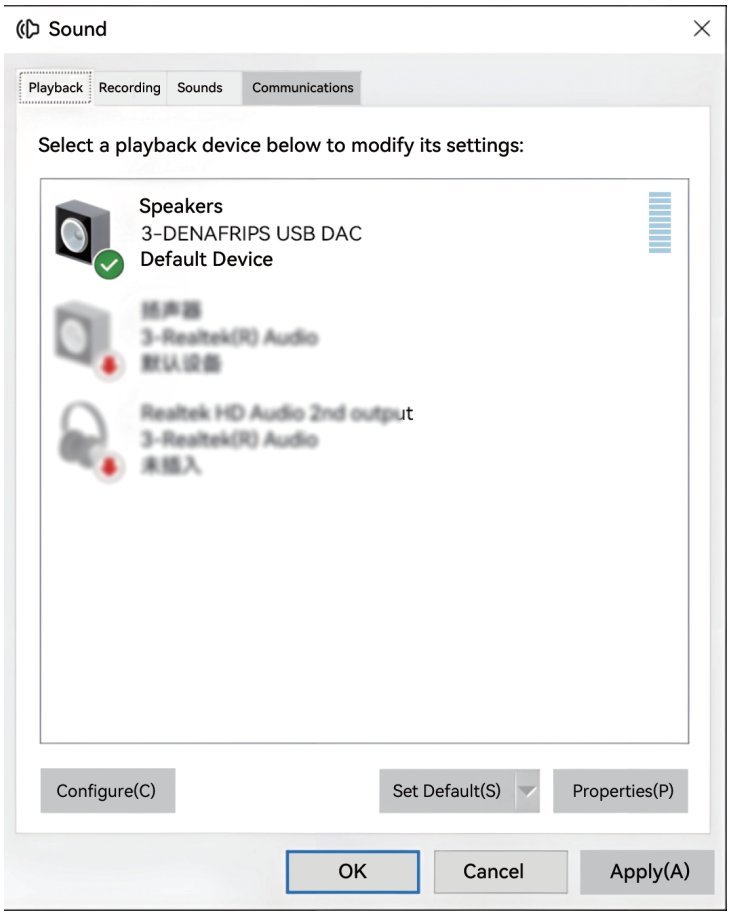


4. Follow the on-screen instructions to complete the installation.

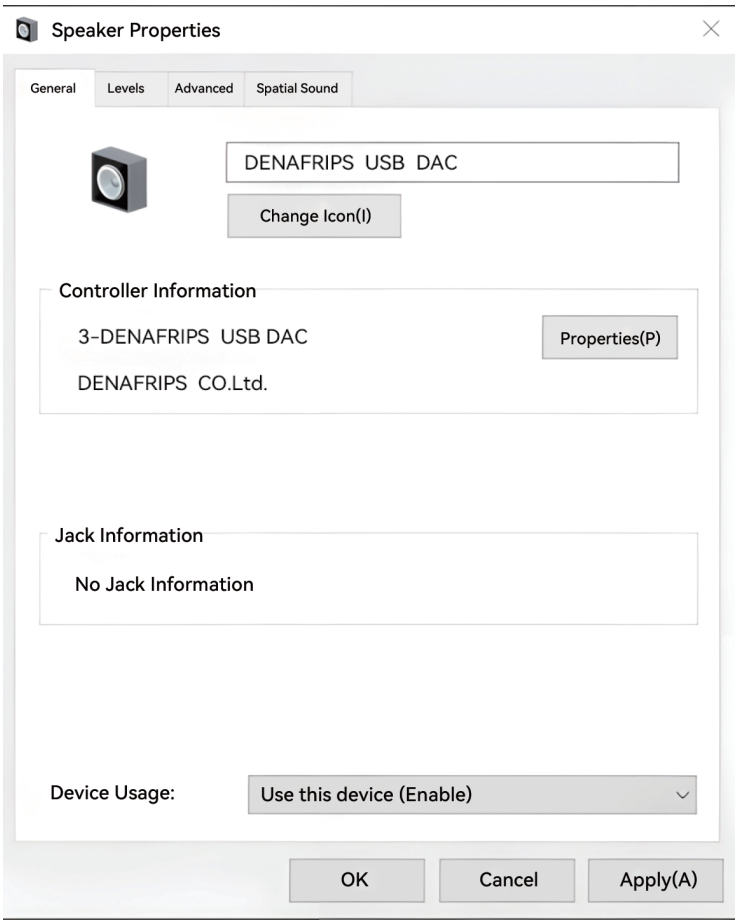
5. Restart your computer and connect the USB cable to the DAC.Find the driver icon at the bottom right corner of your computer screen.



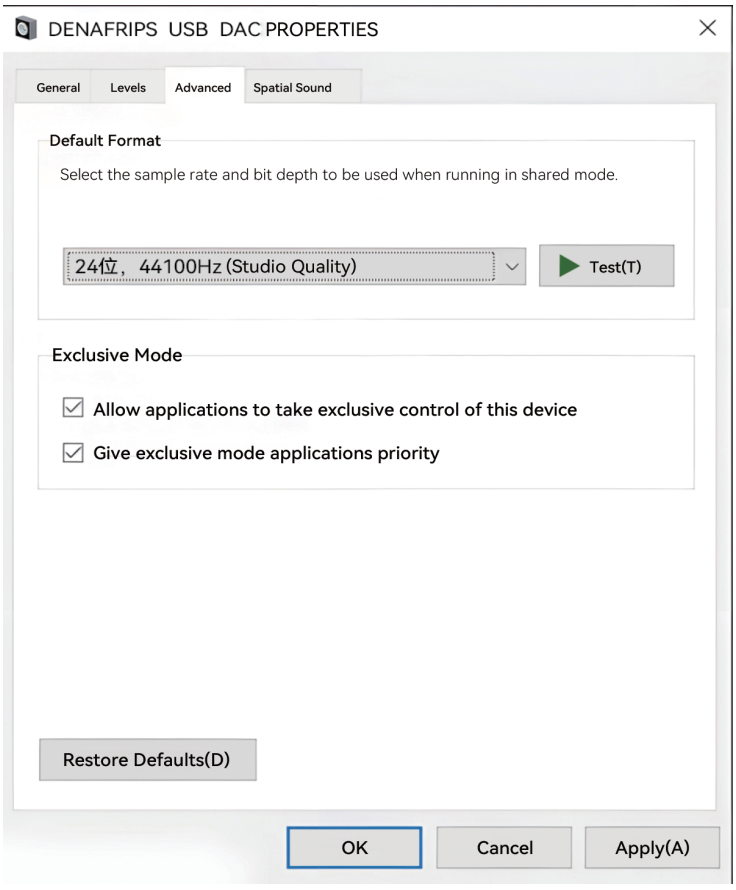
6. Click on the driver icon and select USB Input.



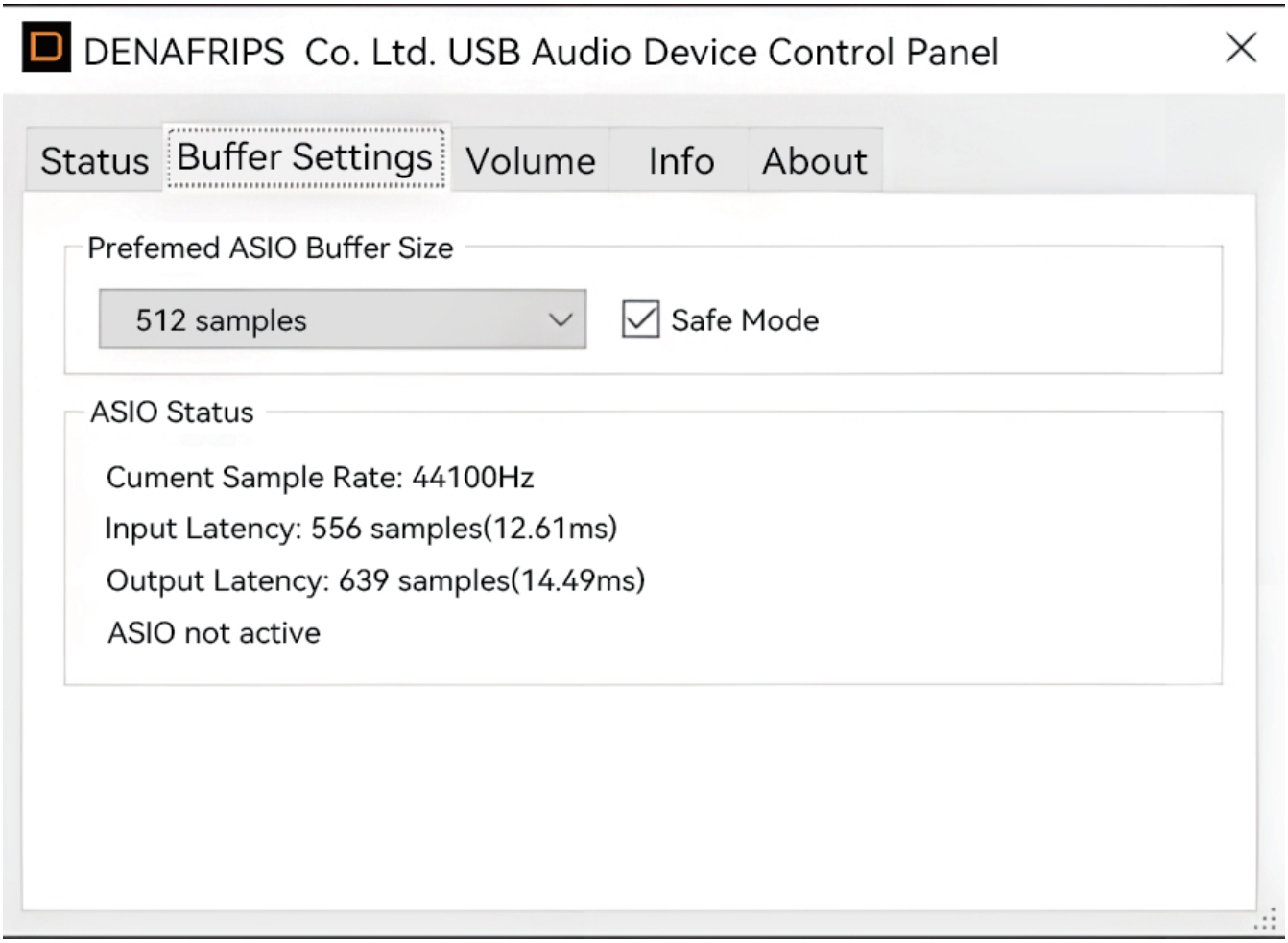
7. Set DENAFRIPS USB DAC as the default sound card for the Windows operating system.



8. DENAFRIPS USB DAC Properties Description



9. Direct Sound Default Format



10. ASIO Buffer Size

1. Roon	2. JRiver
3. Foobar2000	4. Sonicstudio Amarra

11. Recommended Playback Software

Common Troubleshooting Methods

Issue	Solution
A. No Sound Output	1. Check all connection cables and ensure the input source is correctly connected to the DAC. 2. Check volume settings, ensure the source is not muted and the volume is at a medium level. 3. Replace data cables or signal cables to confirm there are no faults. 4. Check the DAC's input selection and settings to ensure the correct input source is selected.
B. Noise or Distortion	1. Use high-quality power cables and power adapters to ensure a stable power supply. 2. Check all connection cables and ports to ensure they are functioning properly. 3. Avoid placing the DAC near sources of electromagnetic interference, such as power cables or wireless devices.

Common Troubleshooting Methods

Issue	Solution
C. Sound Quality Loss	1. Ensure the sampling rate and format of the input signal match the DAC’ s supported format. 2. Adjust the DAC’ s filter settings and decoding settings to select an appropriate sound mode. 3. Check all signal cables and connectors to ensure the connections are secure and undamaged.
D. Device Won't Power On	1. Check whether the power cable and power adapter are properly connected and ensure the power outlet has power. 2. Try restarting the DAC or unplugging and reconnecting the power cord. 3. If the issue persists, contact customer support for a detailed solution.

Common Troubleshooting Methods

Issue	Solution
E. Input Signal Not Recognized	1. Ensure the format and sampling rate of the input signal match the DAC’ s supported format. 2. Check the input port and connection cables to confirm there are no faults or poor connections.
F. DAC Cannot Recognize USB Device	1. Ensure the latest USB driver for the DAC is installed. 2. Check the USB connection cable and port to ensure the connection is secure and undamaged. 3. Try using a different USB cable or a different USB port.

After-Sales Service

1. Thank you very much for choosing DENAFRIPS products. This product comes with a one-year free warranty. Duringthe warranty period, if the product malfunctions due to non-human factors, we will provide free repair or replacement services. Please provide the serial number on the warranty card when contacting customer support.

1. Within Warranty Period: Within one year from the date of purchase, under normal use and non-human damage, if there are any product quality or functional issues. Learn More：https://www.denafrips.com/blank-6
DENAFRIPS provides free repair or replacement of parts and covers the round-trip shipping costs.

2. Within the Warranty Period: Within one year from the date of purchase, if any product quality or functional issues occur due to human-caused damage.
The specific charges will be determined based on the actual fault and the cost of replacing parts. Please contact our after-sales service center for a detailedrepair quote. The customer is responsible for the round-trip shipping costs.

3.After the Warranty Period: Paid repair service will be available after the warranty period expires. We will continue to provide repair services for a fee.
Specific charges will be determined based on the actual fault condition and the cost of replacement parts. Please contact our after-sales service center for a detailed repair quote. The customer is responsible for the round-trip shipping costs.

2. The product will not be eligible for free warranty service under any of the following conditions:
   a. The product has exceeded the specified warranty period from the date of purchase.
   b. The product does not match the model, barcode, or purchase date listed on the warranty card.
   c. Unauthorized modification or repair of circuits or components by anyone other than DENAFRIPS technicians.
   d. Damage caused by human factors (such as dropping, impact, water exposure, fire, etc.).
   e. Damage caused by irresistible natural forces (such as earthquakes, floods, lightning strikes, etc.).
   f. Damage caused by exceeding the allowed operating environment.
   g. Damage caused by improper use or storage (including but not limited to: circuit or component burnout due to excessive voltage; damage to the casing or internal components due to impact; damage caused by excessive dust; product oxidation or corrosion, etc.).

3. This warranty policy applies only to customers who purchase products from the official website. For products purchased from distributors, the warranty terms will be governed by the warranty policy established by the seller.

DENAFRIPS

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