GUSTARD R30

GUSTARD R30 Fully-Discrete R2R Network Streamer DAC User Manual

Model: R30

Introduction

This manual provides detailed instructions for the setup, operation, and maintenance of your GUSTARD R30 Fully-Discrete R2R Network Streamer DAC. Please read this manual thoroughly before using the device to ensure optimal performance and longevity.

Packaging List

Upon opening the package, please verify that all the following items are included:

- GUSTARD R30 Mainframe
- Power Cord
- USB Cable
- Remote Control
- Warranty Card

Image: Contents of the GUSTARD R30 package, including the mainframe, power cord, USB cable, remote control, and warranty card.

Front Panel Overview

The front panel of the GUSTARD R30 features essential controls and a display for real-time status and operations.

1. **Power Button:** Toggles between standby and active states. The R30 can remain in standby mode when the rear power switch is ON.
2. **Display Area:** Shows the current input channel, encoding format, and sampling rate. Displays menu items when in the setup menu.
3. **Volume Display:** Indicates the current volume level, ranging from -63.5dB to 0dB. 'FIXED' indicates bypass mode. Displays menu options during configuration.

4. **'-' Button:** Normally decreases volume. Cycles through options in the menu.
5. **Gear Button:** Short press switches inputs. Long press enters/exits the menu. Short press navigates items in the menu.
6. **'+' Button:** Normally increases volume. Cycles through options in the menu.

Image: Front view of the GUSTARD R30, highlighting the power button, display area, volume display, and control buttons.

Rear Panel Overview

The rear panel provides various input and output connections for the GUSTARD R30.

- **Clock Input:** For external 10MHz clock synchronization.
- **Coaxial Input:** Digital audio input.
- **AES Input:** Digital audio input.
- **USB Input:** For connecting to a computer or other USB audio source.
- **LAN Input:** For network streaming functionality.
- **TF Card Reader:** For firmware updates.
- **Update Firmware:** USB port for firmware updates.
- **220V/110V Voltage Switching:** Selector for power voltage.
- **Fuse:** Power fuse.
- **Line Out XLR Right/Left:** Balanced analog audio outputs.
- **Line Out RCA Right/Left:** Unbalanced analog audio outputs.
- **IIS Input (IIS-G):** Digital audio input with Gustard pinout.
- **Optical Input:** Digital audio input.
- **Trigger In/Out:** For 12V trigger control.
- **Power Supply Input:** AC power connection.
- **Power Switch:** Main power toggle.

Important: Ensure both voltage switches are set to the same voltage when operating the 220V/110V voltage switch, otherwise, it may damage the internal transformer upon powering on.

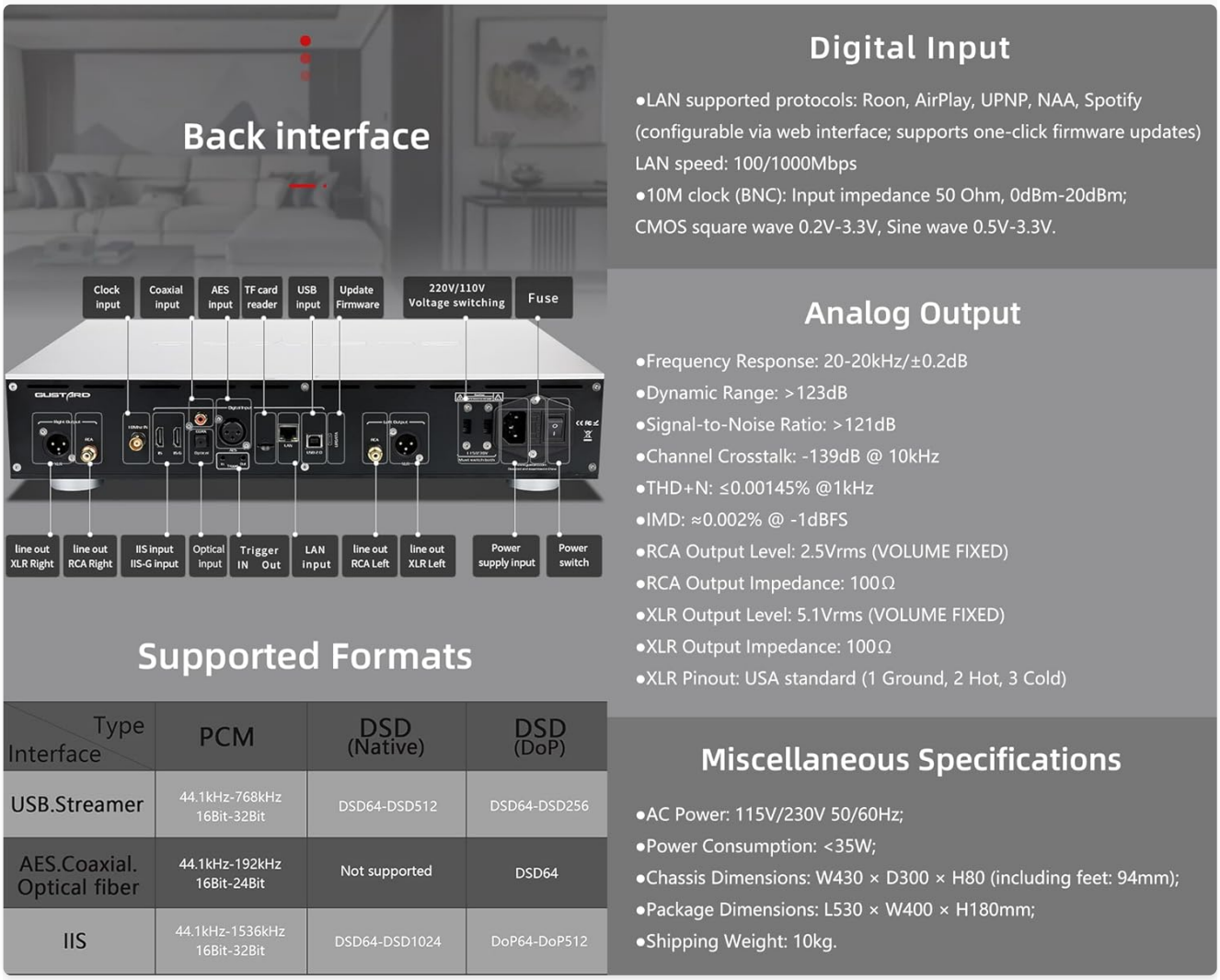

Image: Rear panel of the GUSTARD R30, showing all input and output connections with labels.

Display & Panel Controls

The R30 utilizes a large OLED display for real-time status monitoring and functional operations. The diagram below illustrates the main interface display states.

1. OLED Display

The display shows the input channel, external clock indication, encoding format, sampling rate, and volume.

2. Input Channel Selection

The R30 features 7 input channels. On the main interface, each press of the Gear Button cycles through available channels in this sequence: COAX → AES → OPT → USB → STREAMER → IIS(G) → IIS(M*).
***Note: IIS(G) is for fixed Gustard pinout configuration and cannot be adjusted. IIS(M*) supports adjustable pinout configuration.

3. Volume Adjustment

- When the main interface is displayed, pressing the "+" or "-" buttons directly adjusts the analog volume attenuation function of the passive preamplifier. Attenuation ranges from 0dB to -63.5dB (total 63.5dB attenuation).
- Pressing "+" at 0dB activates Fixed Output mode (bypassing attenuation circuit), displaying 'FIXED' indicator.
- When 'FIXED' is displayed, pressing "-" first exits bypass mode before controlling the attenuation level.

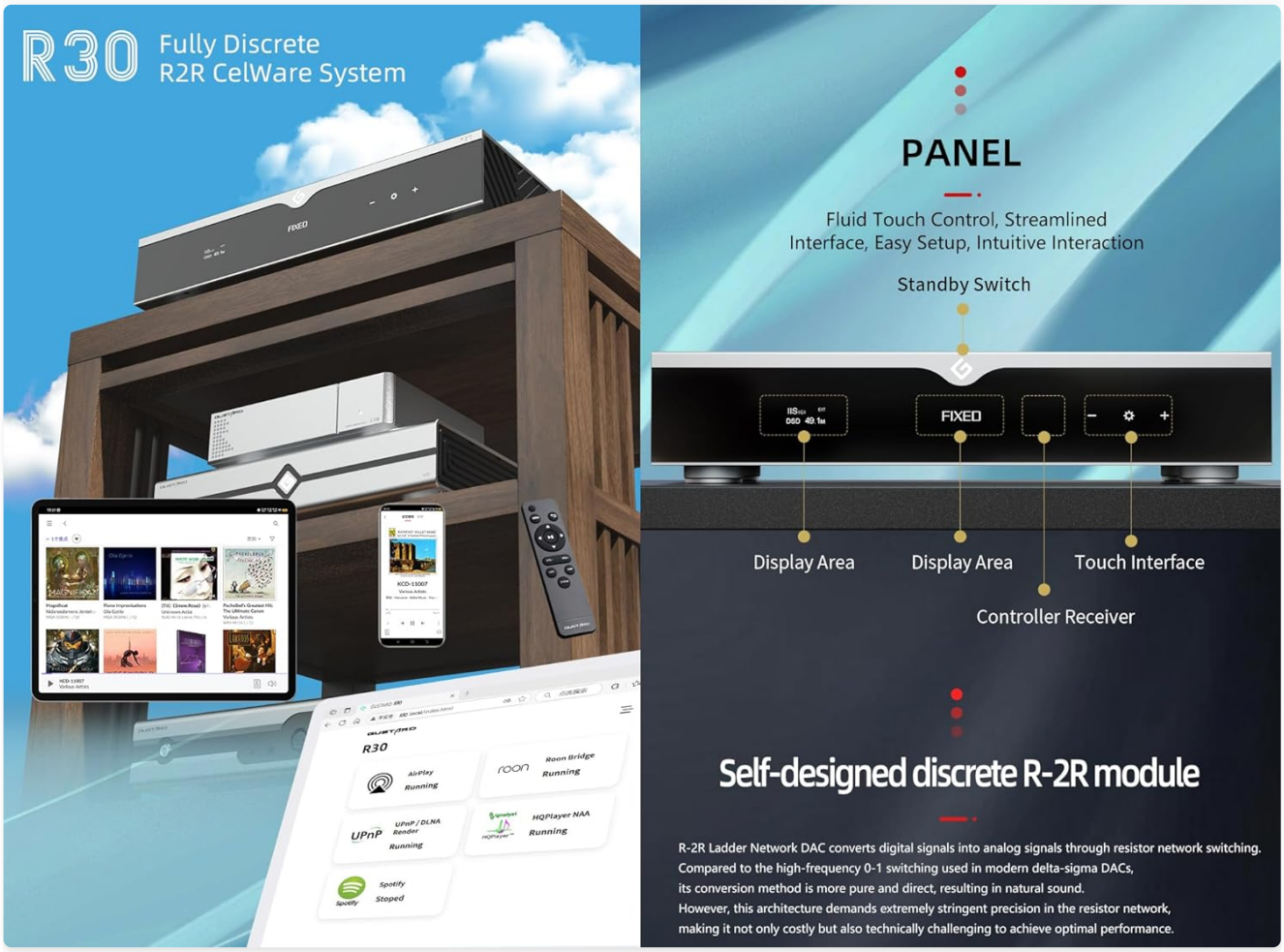

Image: Detailed view of the GUSTARD R30's front panel display and touch interface, illustrating input, volume, and settings controls.

Setup Menu

On the main screen, long press the Gear Button to enter the settings menu (hereinafter referred to as the menu button). In this state, the menu button can sequentially switch the menu items to be modified. "+" and "-" buttons are used to adjust the currently selected menu options. When the screen is in the settings menu, long press the menu button again to return to the main screen.

Menu Structure:

1. PCM FILTER
2. DSD FILTER
3. NOS MODE
4. REF CLOCK
5. IIS MODE
6. PHASE
7. TRIGGER CH.
8. TRIGGER VOL.
9. DISPLAY

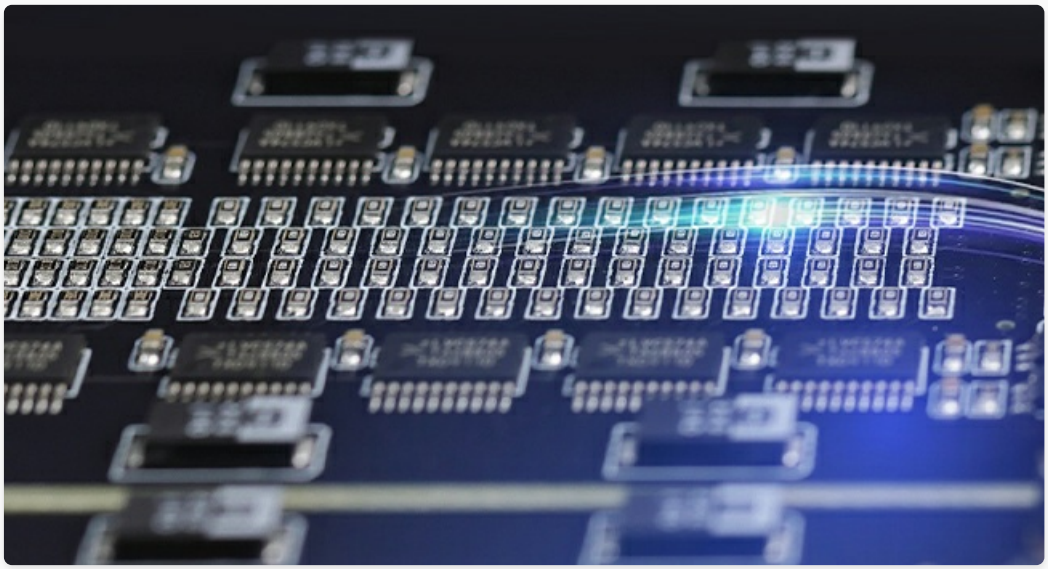

Image: Diagram illustrating the hierarchical structure of the GUSTARD R30's setup menu and its various options.

Menu Functions

Access the menu by pressing the Menu Button on the main interface. Each menu option is detailed below.

1. PCM FILTER (PCM Digital Filter Adjustment)

The R30 employs a self-developed high-performance PCM oversampling digital filter module with three filter types:

- **VIVID (Default):** Similar to the FAST roll-off type of traditional digital filter, but with better ringing characteristics, very small pre-ringing, and fast convergence post-ringing. It aims for a broad soundstage and sound restoration. Recommended for most music styles.
- **GENTLE:** Similar to the SLOW roll-off type of traditional digital filter, offering a soft listening experience.
- **COMPOSITE:** A hybrid digital filter, balancing characteristics between Vivid and Gentle for a good listening experience.

2. DSD FILTER (DSD Digital Filter Adjustment)

The DSD filter has 4 built-in bandwidth options: **47K (Default), 50K, 60K, 70K**.

3. NOS MODE (No Oversampling Filter Mode)

When enabled, the PCM signal bypasses the oversampling filter entirely, decoded straight through the R-2R decoder module. This preserves micro-details and timing integrity. When enabled, there may be a slight clicking sound when the playback data format switches between PCM and DSD.

- **DISABLE (Default)**
- **ENABLE**

4. REF CLOCK (Reference Clock Selection)

The GUSTARD-K2, low-noise clock synthesizer, achieves ultra-low jitter performance. The R30 offers two clock options:

- **INTERNAL (Default):** Uses the built-in OCXO internal reference.
- **EXT. 10MHz:** Selects an external 10MHz reference source. It is recommended to connect to GUSTARD C16 or C18 reference 10M master clocks.

If the external clock is lost, powered off, or its frequency deviation is greater than +/-150ppm, "EXT ERR" will be

displayed and flash.

5. IIS MODE (IIS Pinout Mode Selection)

The R30 features two IIS input interfaces:

1. **IIS(G):** Fixed Gustard pinout protocol (non-adjustable). DSD playback requires a DSD FLAG signal from the source device.
2. **IIS(M*):** Features adjustable pinout configuration. Its auto-detection capability for PCM and DSD encoding eliminates the need for FLAG signals.

IIS(M*) adjustable Pinout mode IIS input has four Pinouts: **MODE1 (Default), MODE2, MODE3, MODE4**. MODE1 is compatible with the GUSTARD mode. If you are connecting to a GUSTARD front end such as U12, U16, U18, S16, S26, etc., you can match them with MODE1, which is the former works in the Gustard output mode.
Please do not connect to the usual HDMI, this is not really HDMI.

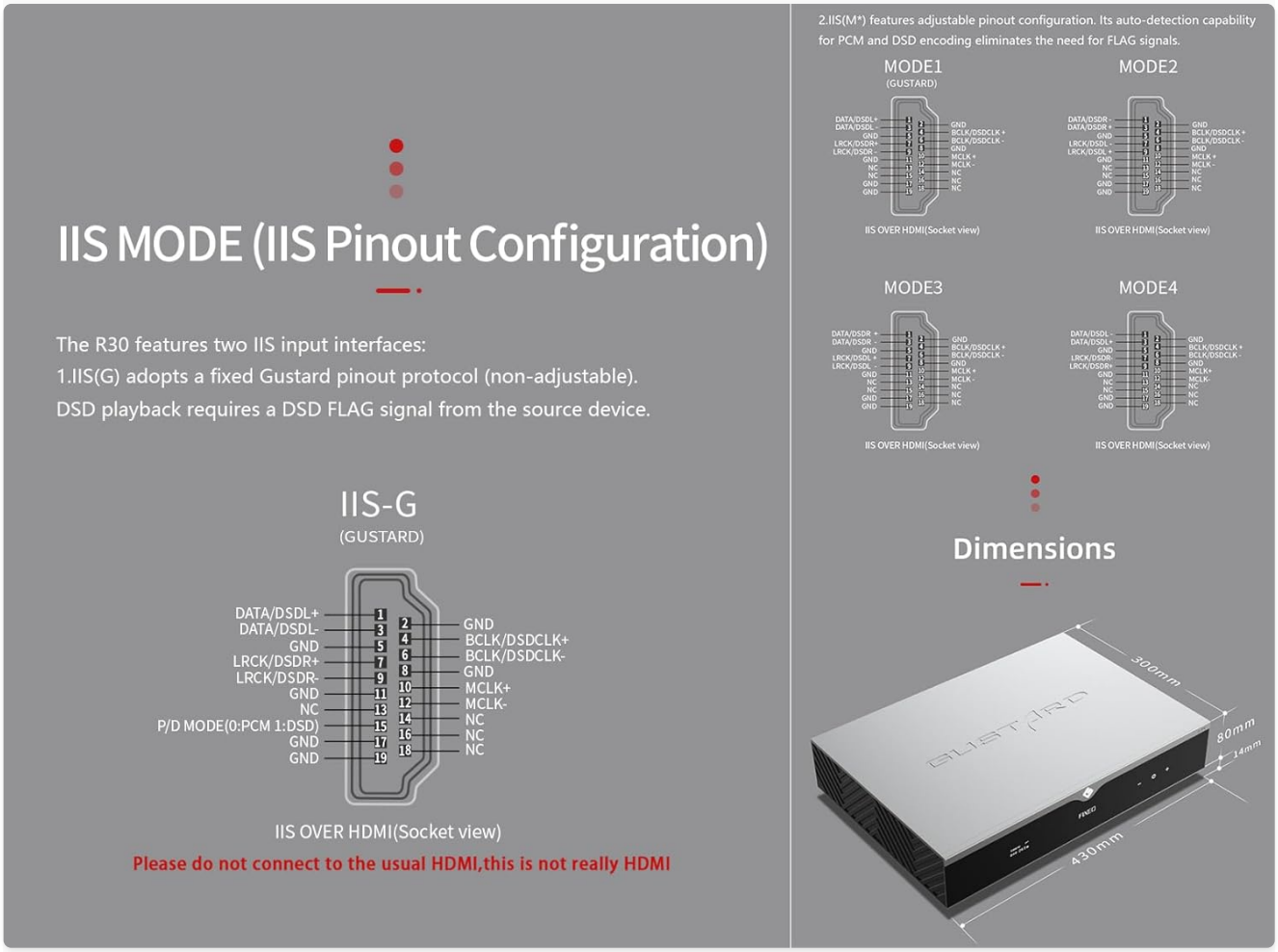

Image: Diagrams illustrating the various IIS pinout configurations (IIS-G, MODE1, MODE2, MODE3, MODE4) for the GUSTARD R30.

6. PHASE (Phase Setting)

This function offers two options:

- **NON-inverted (Default):** When non-inverted, the RCA output of R30 is normal phase, and the XLR balanced output is American standard polarity output (1 ground, 2 hot, 3 cold).
- **Inverted:** When inverted, only the RCA output is reverse phase, and the XLR balanced output is Japanese/European standard polarity output (1 ground, 2 cold, 3 hot).

7. TRIGGER CH. (Linkage Trigger Start Channel Selection)

The R30 can be triggered by an external 12V linkage signal and automatically turn on from standby mode. When the 12V trigger signal ceases or drops to 0V, automatic standby activation occurs. When the R30 is working, it is switched to the input channel of this setting by the 12V trigger linkage signal.

- **LAST (Default):** The input channel that was in use before entering standby last time.
- Other options include COAX, AES, OPT, USB, STREAMER, IIS(G), IIS. Selecting any channel activates it upon receiving a 12V trigger signal.

8. TRIGGER VOL. (Link Trigger Boot Volume Selection)

The R30 can be powered on from standby via an external 12V trigger signal and automatically set to the selected volume level. Alternatively, during operation, a 12V trigger signal switches the output to the preset volume. This option configures the output volume after trigger activation.

- **LAST (Default):** The volume used before entering standby.
- **FIXED:** Fixed full-scale output bypassing attenuation.
- **-20dB:** Output at a volume attenuated to -20dB.
- **-30dB:** Output at a volume attenuated to -30dB.
- **-40dB:** Output at a volume attenuated to -40dB.

9. DISPLAY (Screen Brightness Settings)

Long-term high-brightness use of OLED screens can cause screen burn-in or ghosting. Therefore, the R30 is designed to always select automatic screen off, or manually select automatic screen off, which can also reduce interference.

- **AUTO (Default):** Automatically reduce brightness.
- **AUTO OFF:** Automatically turn off the screen.

Infrared Remote Control

When operating DAC products, press and hold the DAC button for over 3 seconds to enter DAC control mode. AMP/STREAM modes control other Gustard products.

1. **Standby:** Press once to activate R30 from standby. Press once during operation to enter standby.
2. **Menu:** Press to access R30's setup menu.
3. **Pad with 4 direction keys:** Up/Down navigates menu items. Left/Right adjusts selected options. Center press activates/deactivates mute.
4. **Back:** Returns to main interface.
5. **Vol-:** Decreases output volume on main interface.
6. **Vol+:** Increases output volume on main interface.

Notes:

- Operational range varies with angle.
- Obstructions between remote and sensor may cause malfunction.
- Remove batteries if unused for more than 1 month.
- Thoroughly clean battery compartment if leakage occurs.
- May accidentally trigger other IR-controlled devices.

Image: Layout of the GUSTARD R30 infrared remote control, detailing button functions for DAC, amplifier, and streamer control.

Network Bridge Streamer Quick Start

After connecting R30's RJ45 port to your local network:

1. Select the STREAMER channel and await system boot (approximately 1 minute, until "DSD 24.5MHz" appears).
2. Access R30's configuration page via: http://R30.local (as shown below). Disable unused streaming protocols on the web interface to maximize system efficiency. Firmware updates are also performed here.

(Mobile/tablet operation pending until dedicated app release)
You can turn off streaming protocols that are not frequently used through the web page to maximize system music playback performance. At the same time, the online upgrade of the Streamer is also operated on the web page.
(After the dedicated Streamer APP is launched, the above operations can be performed in the APP)

Image: Screenshot of the GUSTARD R30's web interface for network bridge configuration, showing various streaming protocols like AirPlay, Roon, UPnP, HQPlayer NAA, and Spotify.

Official Product Video: GUSTARD R30 - User Manual

Your browser does not support the video tag.

Video: An official user manual video for the GUSTARD R30, demonstrating its features and operation. This video is provided by HIFI College.

Product Specifications

Digital Input Support Formats:

Type	PCM	DSD (Native)	DSD (DoP)
USB.Streamer	44.1kHz-768kHz 16Bit-32Bit	DSD64-DSD512	DSD64-DSD256
AES.Coaxial.Optical fiber	44.1kHz-192kHz 16Bit-24Bit	Not supported	DSD64
IIS	44.1kHz-1536kHz 16Bit-32Bit	DSD64-DSD1024	DoP64-DoP512

Analog Output:

- Frequency Response: 20-20kHz/±0.2dB
- Dynamic Range: >123dB
- Signal-to-Noise Ratio: >121dB
- Channel Crosstalk: -139dB @ 10kHz
- THD+N: ≤ 0.00145% @1kHz
- IMD: ≈0.002% @ -1dBFS
- RCA Output Level: 2.5Vrms (VOLUME FIXED)
- RCA Output Impedance: 100Ω
- XLR Output Level: 5.1Vrms (VOLUME FIXED)
- XLR Output Impedance: 100Ω
- XLR Pinout: USA standard (1 Ground, 2 Hot, 3 Cold)

Other Specifications:

- AC Power: 115V/230V 50/60Hz
- Power Consumption: <35W
- Chassis Dimensions: W430 × D300 × H80 (including feet: 92mm)
- Package Dimensions: L530 × W400 × H180mm
- Shipping Weight: 10kg (with package)
- 10MHz BNC Input: Input impedance 50 Ohm, 0dBm-20dBm; CMOS square wave 0.2V-3.3V, Sine wave 0.5V-3.3V.
- Trigger: IN- 12V Typ. OUT- 12V Typ.

Image: Overview of the GUSTARD R30's key features and specifications, including R2R architecture, 1-bit DSD support, digital filters, clocking, and network capabilities.

Warranty Terms

Thank you for choosing GUSTARD HIFI products. To safeguard your rights and interests, please read the following warranty terms carefully. You can promptly obtain comprehensive after-sales service provided by GUSTARD.

Product Warranty

You will enjoy a 2-year free warranty and lifetime maintenance after the date of purchasing GUSTARD's HIFI 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 R30 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.

Contact Information

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Related Documents - R30

	Gustard R30 User Manual: Fully Discrete R2R Network Streaming DAC User manual for the Gustard R30, a fully discrete R2R network streaming DAC. This guide details front and rear panel controls, display functions, setup menu options, menu functions like PCM filter and IIS modes, IR remote operation, network streamer setup, product specifications, and warranty information.
	Gustard R26 High-Performance Audio DAC User Manual Detailed user manual for the Gustard R26 High-Performance Audio DAC. Covers MQA technology, front and back panel controls, screen and menu operations, remote control functions, comprehensive specifications, and product warranty information. Essential guide for audiophiles using the Gustard R26.
	GUSTARD X30 High Performance Audio DAC User Manual Comprehensive user manual for the GUSTARD X30 High Performance Audio DAC, detailing its features, operation, settings, specifications, and warranty information.
	Gustard R30 Fully Discrete R2R Network Streaming DAC User Manual User manual for the Gustard R30, a fully discrete R2R network streaming DAC. This guide covers front and rear panel controls, setup menu options, menu functions, IR remote operation, network bridge streamer setup, detailed product specifications, and warranty information.

	Gustard X26III DAC Network Streamer User Manual Comprehensive user manual for the Gustard X26III DAC Network Streamer, covering setup, operation, specifications, and troubleshooting for optimal audio performance.
	Gustard R30 Fully Discrete R2R Network Streaming DAC User Manual User manual for the Gustard R30, a fully discrete R2R network streaming DAC. Covers front panel, rear panel, display, setup menu, remote control, network streamer, product specifications, and warranty information.