KGUSS GUSTARD R30

Gustard R30 Network Streamer DAC Instruction Manual

Model: GUSTARD R30 | Brand: KGUSS

1. Introduction

The Gustard R30 is a fully-discrete R2R network streamer and Digital-to-Analog Converter (DAC) designed for high-fidelity audio reproduction. It features a true 1-bit DSD decoding capability, FPGA-based clock management, a self-developed network bridge, and a discrete Class-A analog output stage. This manual provides comprehensive instructions for setting up, operating, and maintaining your R30 unit to ensure optimal performance and longevity.

Figure 1.1: Front view of the Gustard R30 Network Streamer DAC. This image shows the sleek silver chassis with the display area and touch interface controls.

2. Key Features

- **Discrete R2R Ladder:** Utilizes a discrete R2R module for direct digital signal conversion through a resistor ladder network, providing an organic sound.
- **True 1-bit DSD Decoding:** Native support for DSD1024, with a DIRECT DSD mode that bypasses PCM conversion for preserving micro-details and timing integrity.
- **Smart Digital Filtering:** Offers three filter modes (Linear Sharp, Minimum Slow, Super Slow) based on adaptive multi-order algorithms to reduce aliasing noise and enhance resolution.
- **FPGA-Powered Control:** A programmable FPGA manages clocking, PLL shaping, and signal routing for low jitter

and stable synchronization.

- **Precision OCXO Clocking:** Features an SC-cut crystal OCXO clock for imperceptible jitter and accepts an external 10MHz clock input.
- **Self-Developed Network Bridge:** CelWare-based system optimized for audio playback, supporting Roon Bridge, AirPlay, HQPlayer NAA, UPnP/DLNA, Spotify Connect, MConnect, BubbleUPnP, and QQMusic.
- **Class-A Analog Stage:** Discrete Class-A low-pass filter stage for precise control of frequency response, harmonic character, and transient handling.
- **Passive Relay Preamplifier:** R2R relay-based volume control, allowing direct connection to powered monitors or power amplifiers, with a pure bypass mode.
- **XMOS USB with Isolation:** XMOS XU216 interface supporting PCM768k and DSD512, with independent voltage regulation and isolated channels for minimal interference.

Figure 2.1: Overview of the Gustard R30's core features, including R2R architecture, 1-bit DSD support, digital filtering, FPGA, OCXO, network streaming, and analog output stage.

Figure 2.2: Detailed view of the R30's all-new 27-Bit Architecture and True 1-Bit DSD Decoding capabilities, highlighting the internal components.

Figure 2.3: Exploded view illustrating the Digital Filter technology, OCXO Clock, GCLK-02 Clock Module, and FPGA Programmable Logic Chip within the R30.

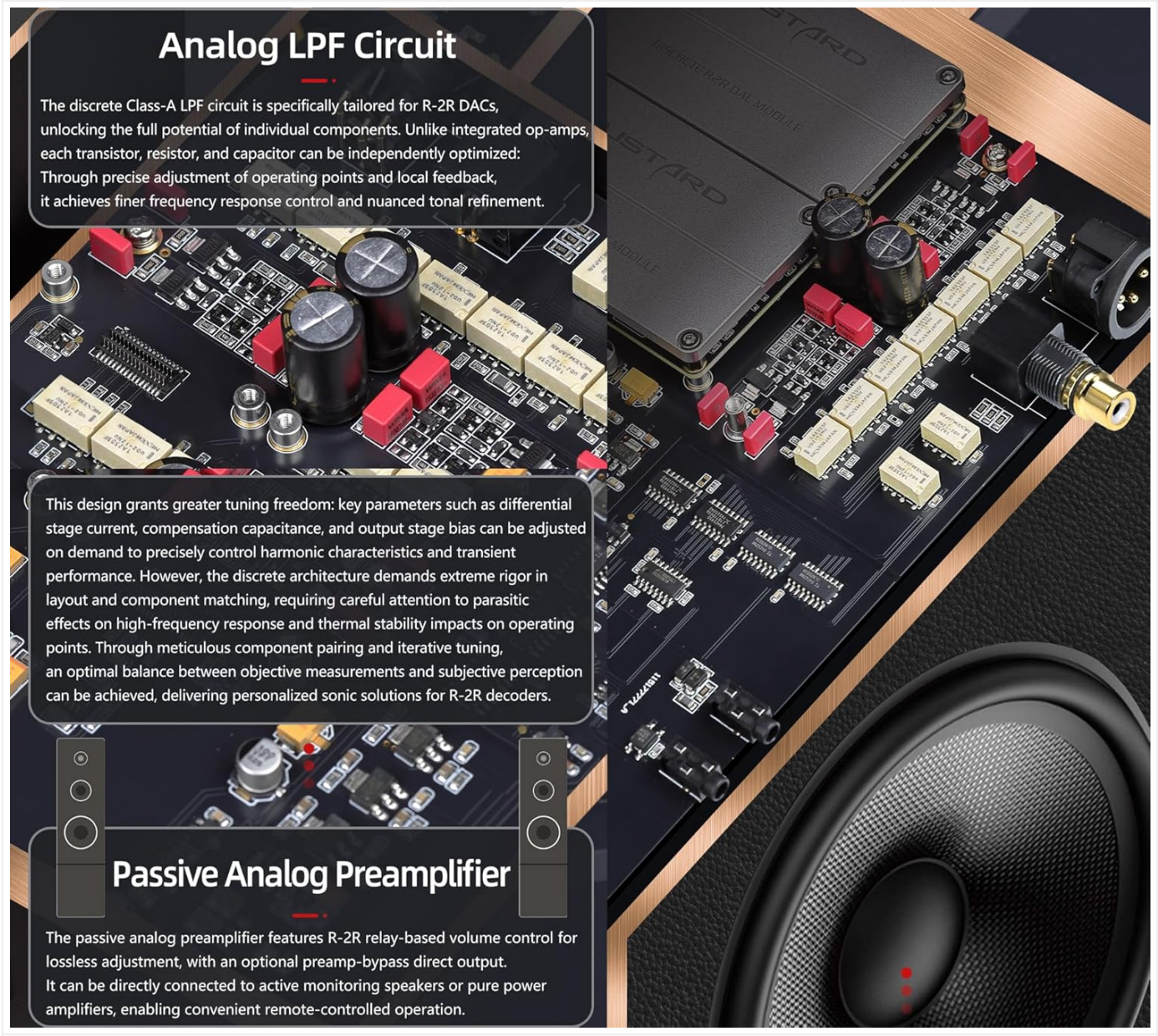

Figure 2.4: Close-up of the R30's Analog LPF Circuit and the Passive Analog Preamplifier, detailing the discrete components.

3. Setup

3.1. Unboxing and Contents

Carefully unpack your Gustard R30 unit from its packaging. Ensure all components are present and undamaged. The package should contain:

- 1 x GUSTARD R30 Unit
- Power Cable (not explicitly listed but implied)
- Remote Control (implied by "Controller Support")
- User Manual (this document)

3.2. Connections

Before connecting any cables, ensure the R30 unit is powered off. Refer to the back panel diagram for connection points.

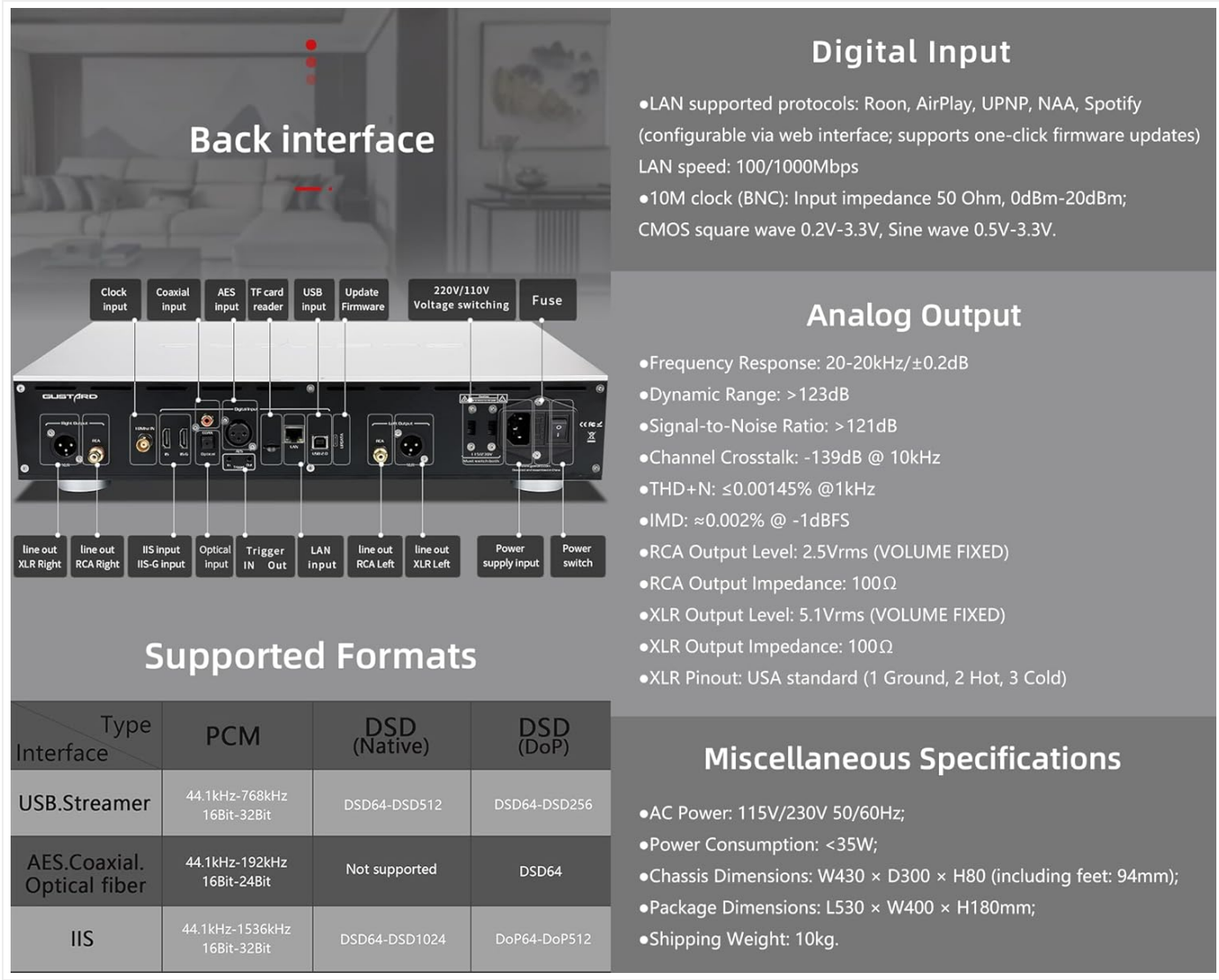

Figure 3.1: Rear panel of the Gustard R30, showing various input and output ports, along with digital input specifications.

- **Analog Output:**
  - Connect your amplifier or powered speakers to the**RCA Output** (2.5Vrms) or **XLR Output** (5.1Vrms) ports. Ensure correct polarity for XLR (USA standard: 1 Ground, 2 Hot, 3 Cold).
- **Digital Input:**
  - **LAN:** Connect an Ethernet cable to the LAN port for network streaming (Roon, AirPlay, UPnP, NAA, Spotify). Supports 100/1000Mbps.
  - **10M Clock (BNC):** For external clock synchronization, connect a 10MHz clock source to the BNC input. Input impedance 50 Ohm, 0dBm-20dBm. Supports CMOS square wave (0.2V-3.3V) and Sine wave (0.5V-3.3V).
  - **USB:** Connect your computer or digital audio source via the USB input (XMOS XU216 interface).
  - **IIS:** The R30 features two IIS inputs. Refer to Section 4.4 for IIS Pinout Configuration.*Note: IIS is not standard HDMI. Do not connect to a regular HDMI port.*
  - Other digital inputs include **AES**, **Coaxial**, and **Optical fiber**.
- **Power:** Connect the supplied power cable to the AC power input (115V/230V 50/60Hz). Ensure the voltage switch (if present) is set correctly for your region.

3.3. Powering On

After all connections are secure, press the power switch on the rear panel or the standby switch on the front panel to turn on the R30. The display will illuminate, indicating the unit is operational.

4. Operating Instructions

4.1. Front Panel Controls

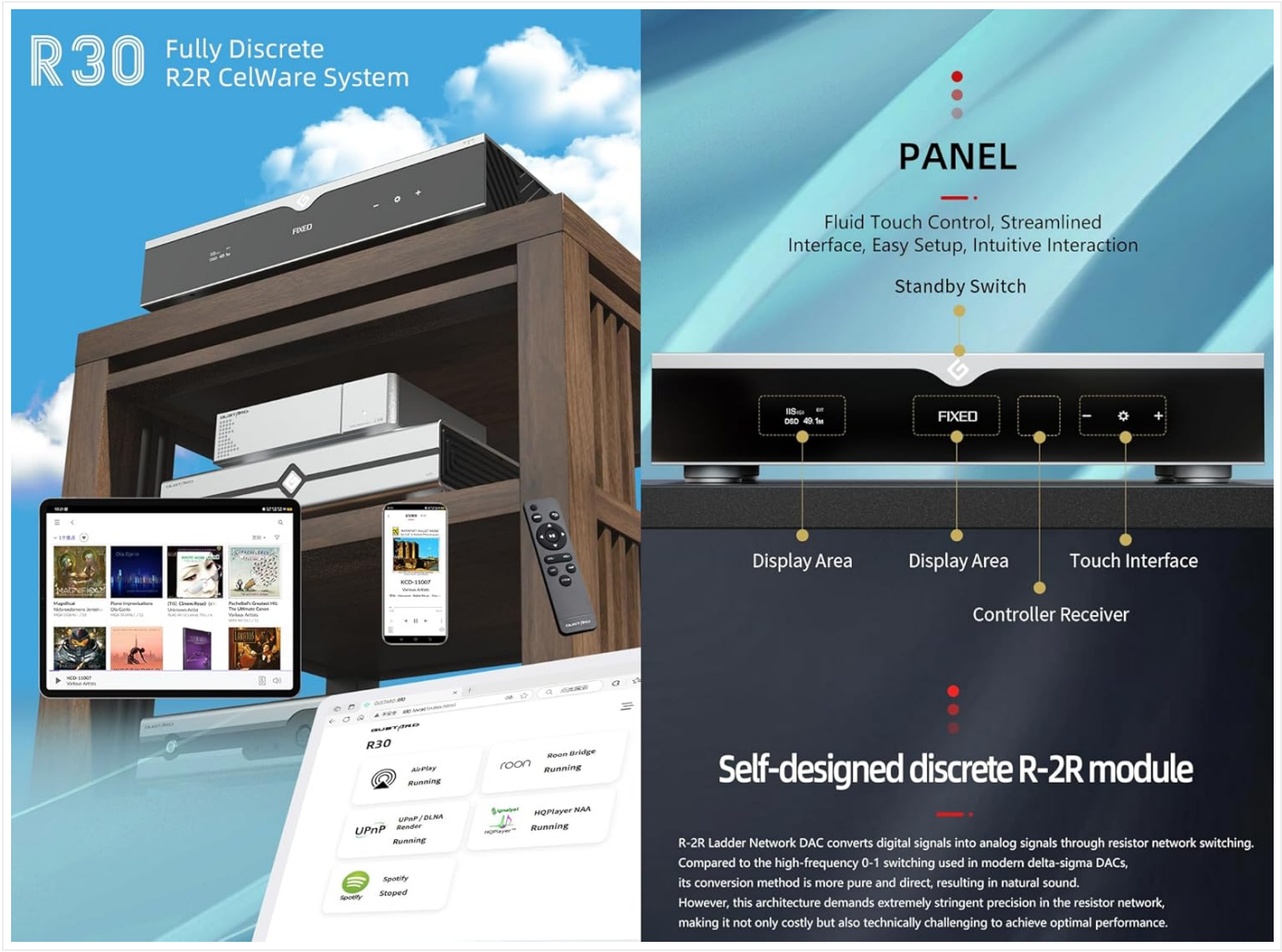

Figure 4.1: Front panel layout of the Gustard R30, showing the display area, touch interface, and controller receiver. Also illustrates the CelWare-based network bridge system.

The R30 features a fluid touch control interface on its front panel:

- **Display Area:** Shows current input, sample rate, volume level, and other status information.
- **Touch Interface:** Provides intuitive control for navigating menus, changing inputs, and adjusting settings.
- **Controller Receiver:** For use with the included remote control.
- **Standby Switch:** Toggles the unit between active and standby modes.

4.2. Network Streaming

Figure 4.2: Diagram illustrating the R30's self-developed network bridge system and its supported protocols, alongside details of the XMOS USB interface.

The R30's self-developed CelWare-based network bridge system supports various streaming protocols:

- Roon Bridge
- AirPlay
- HQPlayer NAA
- UPnP/DLNA
- Spotify Connect
- MConnect
- BubbleUPnP
- QQMusic

To configure network settings and update firmware, access the web interface by entering "http://r30.local" in your computer's browser.

4.3. Digital Filter Modes

The R30 offers three digital filter modes to tailor the sound to your preference:

- **Linear Sharp:** Provides a sharp roll-off with pre-ringing.
- **Minimum Slow:** Offers a slower roll-off with minimal pre-ringing.
- **Super Slow:** A very gentle roll-off, often preferred for a more natural sound.

These modes can be selected via the front panel controls or remote control.

4.4. Volume Control and Preamp Functionality

The R30 features a passive analog preamplifier with R2R relay-based volume control, offering a range of 0dB to -65dB. This allows you to connect the R30 directly to powered monitors or a power amplifier and control the volume remotely. You can also switch to a pure bypass mode if you prefer to use an external preamplifier.

4.5. IIS Pinout Configuration

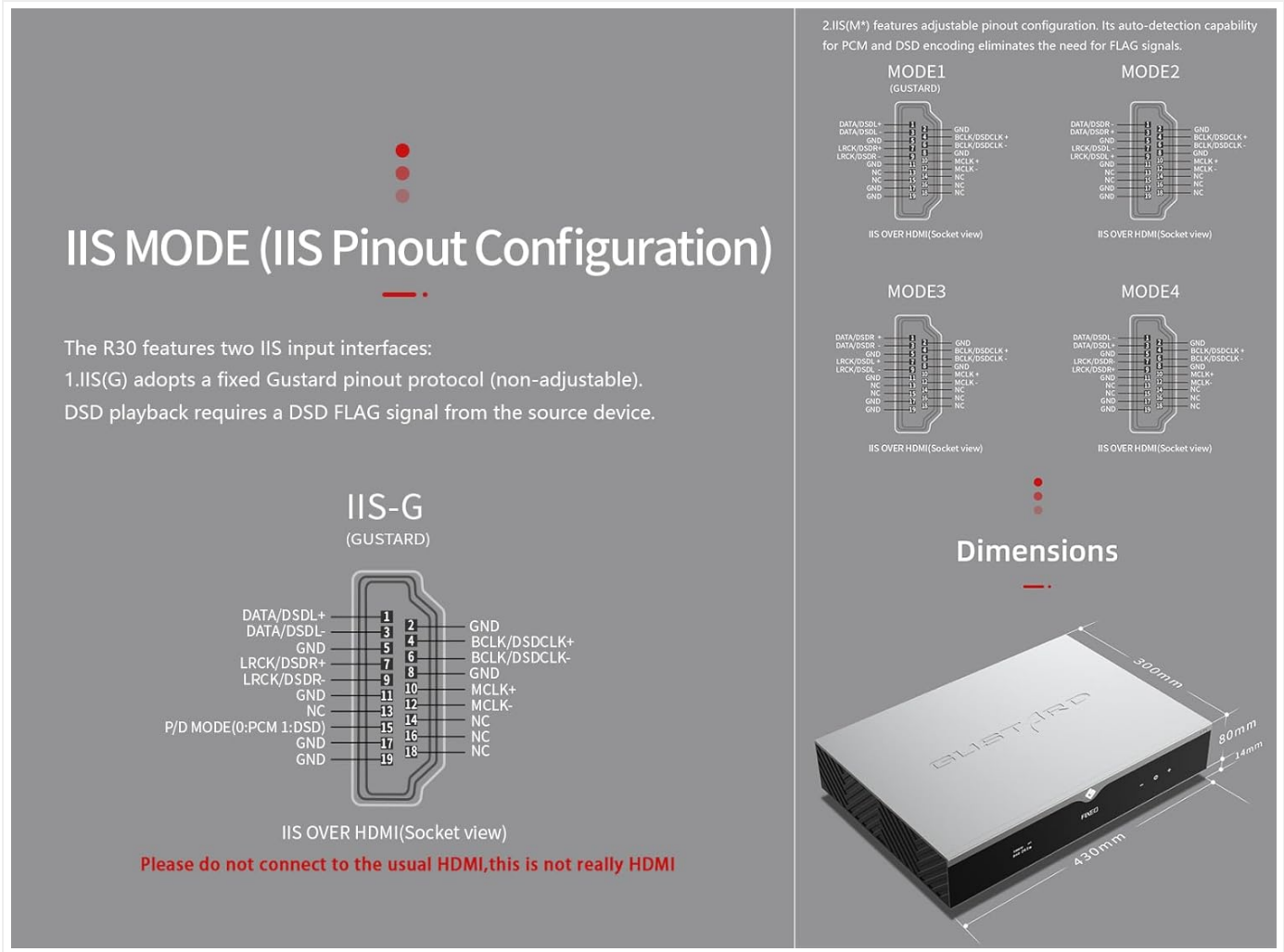

Figure 4.3: Detailed diagrams of the R30's IIS pinout configurations (IIS-G and IIS(M)) and the overall dimensions of the unit.*

The R30 includes two IIS input interfaces:

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

Refer to Figure 4.3 for detailed pinout diagrams (MODE1, MODE2, MODE3, MODE4 for IIS(M*) and IIS-G).**Important:** These IIS inputs are not standard HDMI. Do not connect them to regular HDMI ports on other devices.

5. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the unit. Avoid abrasive cleaners or solvents.
- **Ventilation:** Ensure adequate ventilation around the unit to prevent overheating. Do not block the ventilation slots.
- **Storage:** If storing the unit for an extended period, disconnect it from power and store it in a cool, dry place.

6. Troubleshooting

This section addresses common issues you might encounter with your Gustard R30.

6.1. No Power

- Check if the power cable is securely connected to both the R30 and the power outlet.
- Verify that the power outlet is functional.
- Ensure the power switch on the rear panel is in the 'On' position.
- Check the fuse on the rear panel (refer to Figure 3.1). If blown, replace it with a fuse of the same rating.

6.2. No Sound Output

- Confirm that the correct input source is selected on the R30.
- Check all audio cable connections between the R30 and your amplifier/speakers.
- Ensure the volume level on the R30 is not set to minimum or muted.
- Verify that your amplifier/speakers are powered on and functioning correctly.

6.3. Network Connectivity Issues

- Ensure the Ethernet cable is properly connected to the LAN port.
- Check your router and network settings.
- Access the R30's web interface (http://r30.local) to check network status and configuration.
- Restart your router, the R30, and the streaming device.

7. Specifications

Gustard R30 Technical Specifications

Category	Specification
Digital Input (LAN)	Supported protocols: Roon, AirPlay, UPNP, NAA, Spotify (configurable via web interface; supports one-click firmware updates) LAN speed: 100/1000Mbps
Digital Input (10M Clock BNC)	Input impedance 50 Ohm, 0dBm-20dBm; CMOS square wave 0.2V-3.3V, Sine wave 0.5V-3.3V.
Digital Input (USB)	XMOS XU216 interface, supports PCM768k and DSD512.
Digital Input (IIS)	DSD1024, PCM 1536kHz (only IIS)
Analog Output - Frequency Response	20-20kHz/±0.2dB

Category	Specification
Analog Output - Dynamic Range	>123dB
Analog Output - Signal-to-Noise Ratio	>121dB
Analog Output - Channel Crosstalk	-139dB @10kHz
Analog Output - THD+N	≤0.00145% @1kHz
Analog Output - IMD	≈0.002% @-1dBFS
Analog Output - RCA Level	2.5Vrms (VOLUME FIXED)
Analog Output - RCA Impedance	100Ω
Analog Output - XLR Level	5.1Vrms (VOLUME FIXED)
Analog Output - XLR Impedance	100Ω
Analog Output - XLR Pinout	USA standard (1 Ground, 2 Hot, 3 Cold)
AC Power	115V/230V 50/60Hz
Power Consumption	<35W
Chassis Dimensions (W×D×H)	430 × 300 × 80 mm (including feet: 94mm)
Package Dimensions (L×W×H)	530 × 400 × 180 mm
Shipping Weight	10kg (22 pounds)
Color	Silver
Item Model Number	GUSTARD R30

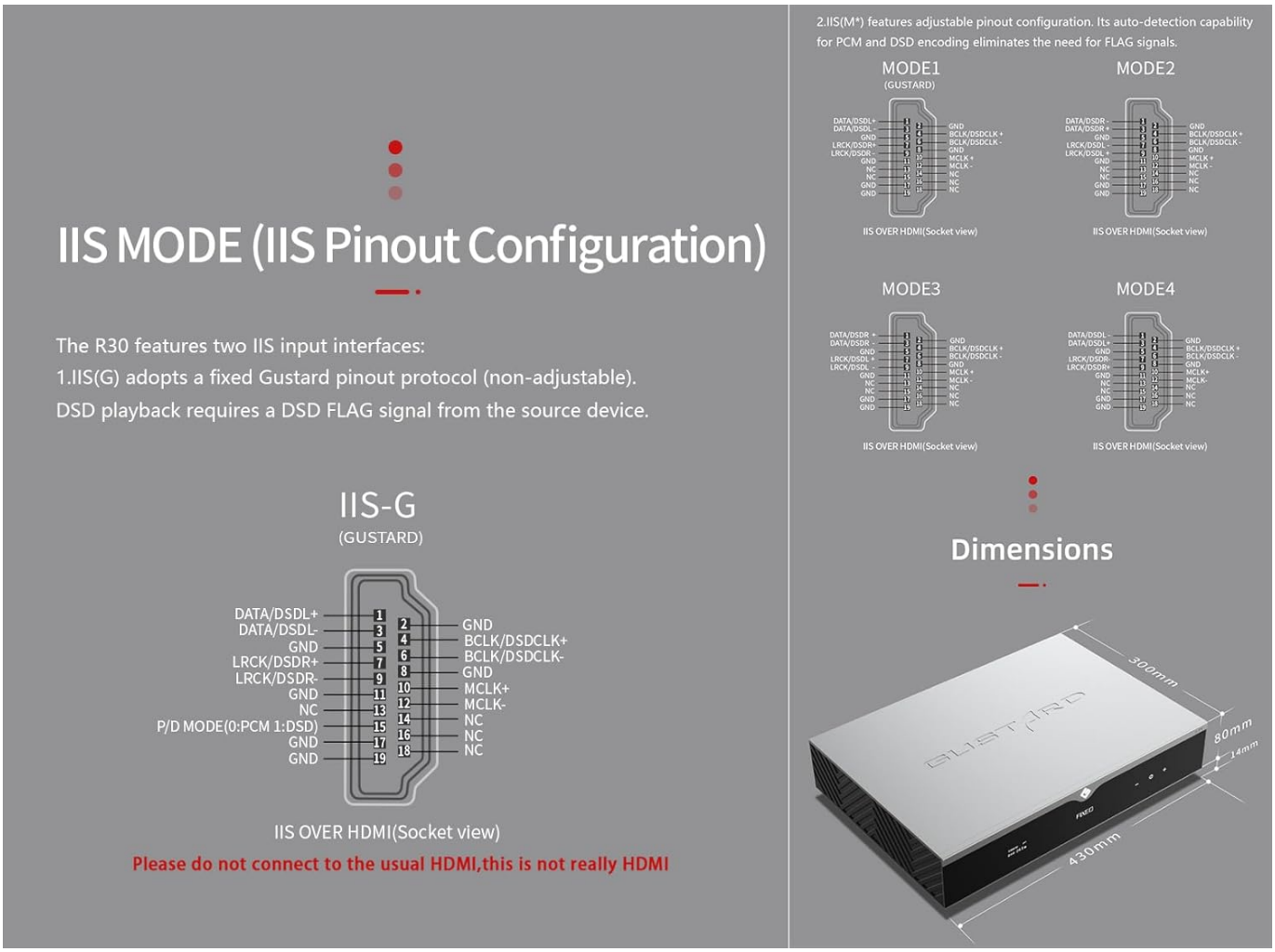

Figure 7.1: Dimensional drawing of the Gustard R30 unit.

8. Warranty and Support

For warranty information and technical support, please refer to the warranty card included with your product or visit the official KGUSS website. Keep your purchase receipt as proof of purchase for warranty claims.
For further assistance, you may also contact the seller, HIFI College, through the Amazon platform.

Related Documents - GUSTARD 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.