

AOSHIDA DP1

YULONG DP1 USB Digital Interface User Manual

Model: DP1

1. INTRODUCTION

The YULONG DP1 is a high-performance USB Digital Interface and Audio Player designed for home stereo systems. It supports a wide range of digital music streaming protocols and high-resolution audio formats, providing exceptional sound quality and versatile connectivity options.

This manual provides detailed instructions for setting up, operating, and maintaining your DP1 unit. Please read it thoroughly before use to ensure optimal performance and longevity of your device.

2. KEY FEATURES

- **Input & Output Versatility:** Equipped with Dual Accusilicon AS338 low-noise audio synchronization oscillators, supporting network, USB, and word clock input/output. Optical, coaxial, and AES outputs support PCM up to 1536kHz and DSD up to 1024 format.
- **Extensive Streaming Protocol Support:** Compatible with Airplay2, DLNA, Squeezeelite, Roon Bridge, HQNaa, Daphile, LMS, and Spotify for seamless digital music streaming.
- **Advanced Voltage Regulation:** Features a built-in 25W linear power supply with an LT1764 main regulator. Independent secondary precision low-noise linear voltage regulators are used for the network/USB port, clock, PLL, audio driver, and audio output drivers.
- **Dual Core CPU Architecture:** Utilizes a dual-core CPU with optimized power and memory layout, streamlining Linux as the internal processor for superior sound quality.
- **FPGA Power Design:** Direct communication with FPGA integrates all functions of network stream decoding, USB interface, SPDIF demodulation/encoding, data FIFO, and clock PLL into the CPU+FPGA for efficient operation.

3. PRODUCT OVERVIEW

3.1 Front Panel



Figure 3.1: Front view of the YULONG DP1, showing the IPS LCD screen displaying input signal dynamic spectrums and retro VU meters, along with the control knob on the right.

The front panel of the DP1 features an IPS LCD screen that displays various information, including input signal dynamic spectrums and classic VU meters. A single control knob allows for easy menu navigation and functional adjustments, providing an intuitive user experience.

3.2 Rear Panel and Connections



Figure 3.2: Rear view of the YULONG DP1, illustrating the various input and output ports including AES/EBU, Optical, Coaxial, IIS, USB, LAN, Clock input/output, and AC power input.

Network streaming playback, USB audio is easy to switch, Handy, compact but packed with features

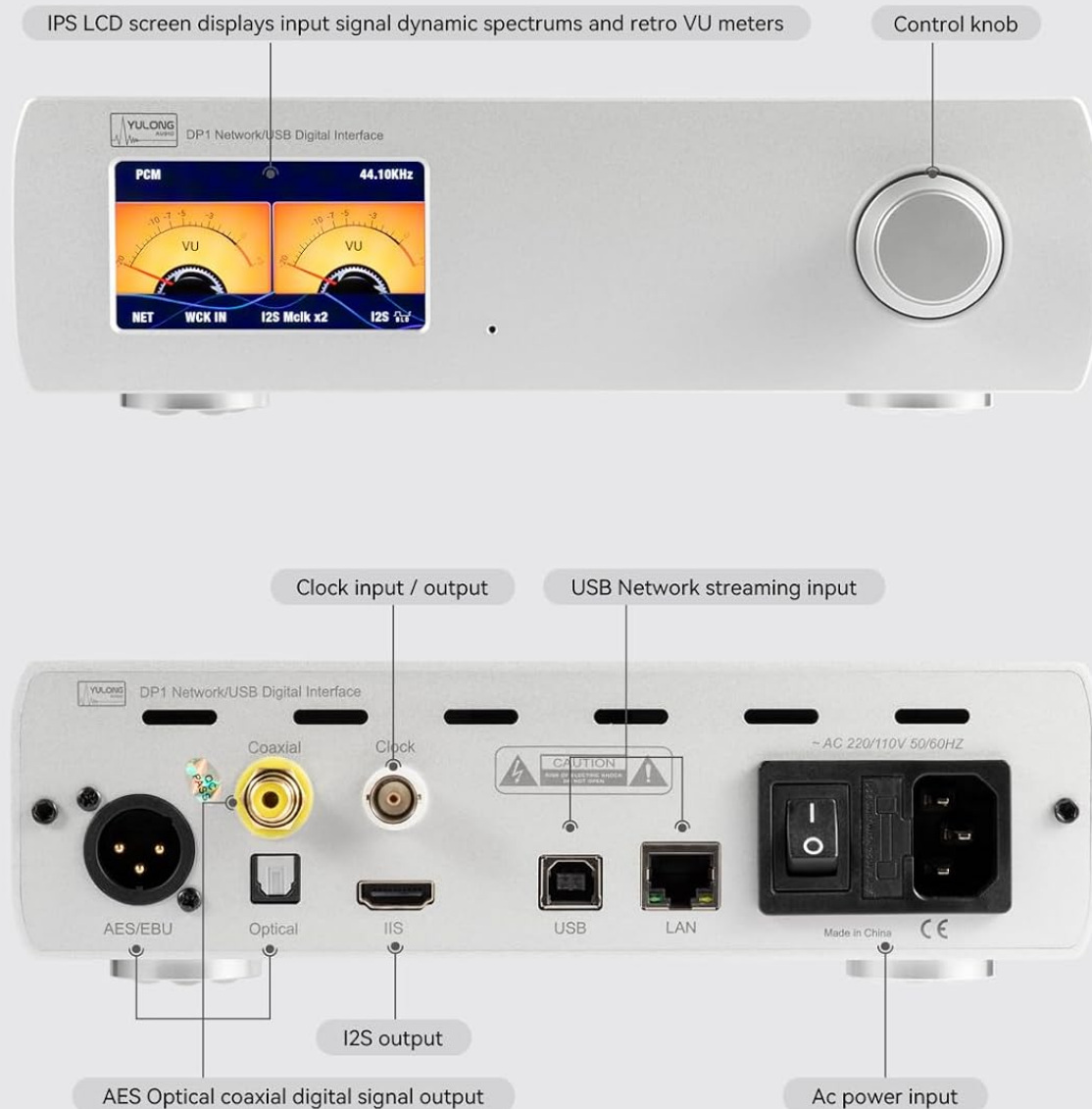


Figure 3.3: Labeled diagram of the YULONG DP1 rear panel, detailing the function of each port for easy identification and connection.

The rear panel provides comprehensive connectivity options for integrating the DP1 into your audio system. Key connections include:

- **AES/EBU Output:** Professional balanced digital audio output.
- **Optical Output:** TOSLINK digital audio output.
- **Coaxial Output:** RCA S/PDIF digital audio output.
- **IIS Output:** I²S digital audio output for compatible DACs.
- **USB Input:** For connecting to a computer or other USB audio sources.

- **LAN Port:** Ethernet connection for network streaming and control.
- **Clock Input/Output:** For external clock synchronization.
- **AC Power Input:** Standard IEC power inlet.

4. SETUP GUIDE

4.1 Unpacking and Placement

1. Carefully remove the DP1 unit and all accessories from the packaging.
2. Place the DP1 on a stable, flat surface away from direct sunlight, heat sources, and excessive moisture. Ensure adequate ventilation around the unit.
3. Avoid placing the unit near strong electromagnetic fields.

4.2 Connecting to Power

Connect the provided AC power cable to the AC power input on the rear panel of the DP1 and then to a suitable wall outlet. Ensure the power switch is in the OFF position before connecting.

4.3 Audio Connections

Choose the appropriate digital audio output based on your DAC or amplifier's input capabilities:

- **AES/EBU:** Use an XLR cable to connect the DP1's AES/EBU output to your DAC's AES/EBU input.
- **Coaxial:** Use a 75-ohm RCA coaxial cable to connect the DP1's Coaxial output to your DAC's coaxial input.
- **Optical:** Use a TOSLINK optical cable to connect the DP1's Optical output to your DAC's optical input.
- **IIS:** Use an HDMI cable to connect the DP1's IIS output to your DAC's IIS input. *Note: IIS pinout standards may vary between manufacturers. Consult your DAC's manual for compatibility.*

4.4 Network Connection

For network streaming features, connect an Ethernet cable from your router or network switch to the LAN port on the rear panel of the DP1.

4.5 USB Connection (Optional)

If using the DP1 as a USB digital interface, connect a USB cable from your computer or other USB audio source to the USB input on the rear panel.

5. OPERATING INSTRUCTIONS

5.1 Powering On/Off

After all connections are made, flip the power switch on the rear panel to the ON position. The front display will illuminate, indicating the unit is powered on. To power off, flip the switch back to the OFF position.

5.2 Navigating the Interface

The DP1 features a single control knob for navigating menus and adjusting settings. Rotate the knob to scroll through options and press the knob to select an option or confirm a setting.

IPS LCD screen displays input signal dynamic spectrums and retro VU meters. The remote control or single-knob interface allows easy menu navigation and functional adjustments. The human-machine interaction design makes operation simple and intuitive.



Figure 5.1: Examples of the DP1's IPS LCD screen displaying different visual modes, such as a real-time spectrum analyzer and classic analog-style VU meters, providing visual feedback on the audio signal.

5.3 Input Selection

From the main screen, rotate the control knob to highlight the desired input source (e.g., NET, USB, WCK IN). Press the knob to select it. The display will show the active input.

5.4 Network Streaming

Once connected to your network via the LAN port, the DP1 can be discovered by compatible streaming applications (e.g., Spotify Connect, Roon, DLNA/UPnP controllers). Select the DP1 as your audio output device within your chosen streaming application.

Supported streaming protocols include Airplay2, DLNA, Squeezelite, Roon Bridge, HQNaa, Daphile, LMS, and Spotify.

5.5 USB Audio Playback

When connected to a computer via USB, the DP1 will appear as an audio output device. Select the DP1 in your computer's sound settings or audio player software. Drivers may be required for certain operating systems (e.g., Windows) for optimal performance with high-resolution audio.

6. TECHNICAL DETAILS AND ARCHITECTURE

6.1 Internal Processing

Powerful digital processing – the milestone of the sound

The 7th generation of Yulong Jitter and Interface Control (JIC) a Network streaming , a femto-second clock, USB interface, a SPDIF demodulator, a FIFO buffer and a PLL synchronizer that enables better sound.

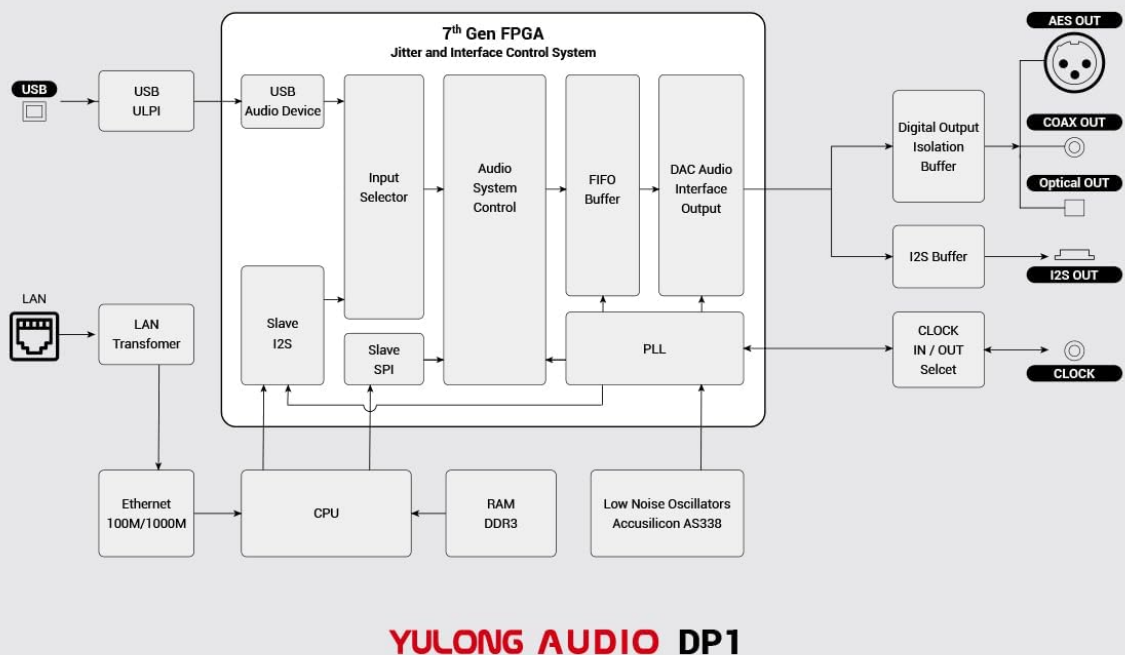


Figure 6.1: Block diagram of the DP1's 7th Gen FPGA Jitter and Interface Control System, showing the signal flow from inputs (USB, LAN) through the CPU, FPGA, and various buffers and oscillators to the digital outputs.

The DP1 incorporates a 7th generation Yulong Jitter and Interface Control (JIC) system. This advanced architecture includes a network streaming module, a femto-second clock, a USB interface, an SPDIF demodulator, a FIFO buffer, and a PLL synchronizer, all working in concert to deliver superior audio fidelity.

6.2 Distortion Measurement

Distortion Measurement

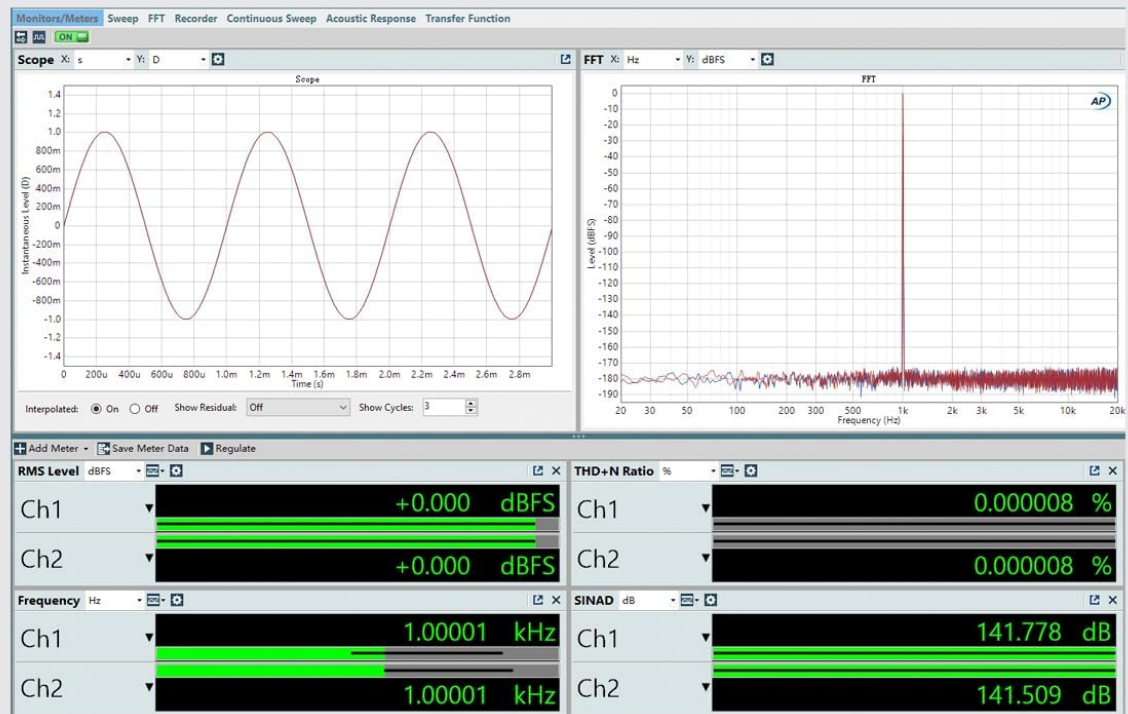


Figure 6.2: A measurement graph illustrating the low distortion performance of the YULONG DP1, with THD+N values as low as 0.000008%.

The DP1 is engineered for extremely low distortion, contributing to its transparent and accurate sound reproduction. As shown in the measurement data, the Total Harmonic Distortion plus Noise (THD+N) is exceptionally low, indicating a clean audio signal.

7. TECHNICAL SPECIFICATIONS

Technical Specificaiton

NET, USB input	PCM: up to 32Bit/1536KHz
	DSD: DoP64, DoP128, Native DSD64/128/256/512/1024
AES, Coaxial, output	PCM: up to 32Bit/384KHz
	DSD: DoP64, DoP128
Optical output	PCM: up to 24Bit/192KHz
	DSD: DoP64
I2S output	PCM: up to 32Bit/1536KHz
	DSD: DoP64, DoP128, Native DSD64/128/256/512/1024
CLOCK input / output	44.1KHz-768KHz
THD+N	0.000008%
Dynamic Range	140dB
Power consumption	<20W
Dimension	248mm x 210mm x 60mm (LxDxH)
Weight	2.5Kg

Figure 7.1: Detailed table outlining the technical specifications of the YULONG DP1, including supported input/output formats, clock rates, and physical dimensions.

Category	Specification
NET, USB Input	PCM: up to 32Bit/1536KHz DSD: DoP64, DoP128, Native DSD64/128/256/512/1024
AES, Coaxial Output	PCM: up to 32Bit/384KHz DSD: DoP64, DoP128
Optical Output	PCM: up to 24Bit/192KHz DSD: DoP64, DoP128, Native DSD64/128/256/512/1024
I2S Output	PCM: up to 32Bit/1536KHz DSD: DoP64, DoP128, Native DSD64/128/256/512/1024
CLOCK Input / Output	44.1KHz-768KHz
THD+N	0.000008%
Dynamic Range	140dB

Category	Specification
Power Consumption	<20W
Dimension (L x D x H)	248mm x 210mm x 60mm (9.76" x 8.26" x 2.36")
Weight	2.5Kg

8. MAINTENANCE

8.1 Cleaning

To clean the exterior of the DP1, use a soft, dry, lint-free cloth. Do not use liquid cleaners, aerosols, or abrasive cleaning agents, as they may damage the finish or internal components.

8.2 Storage

If storing the unit for an extended period, disconnect it from power and store it in a cool, dry place, ideally in its original packaging to protect it from dust and physical damage.

9. TROUBLESHOOTING

Problem	Possible Cause / Solution
No Power	Ensure the power cable is securely connected to the DP1 and the wall outlet. Check if the power switch on the rear panel is in the ON position. Verify the wall outlet is functional by plugging in another device.
No Audio Output	Confirm the correct input source is selected on the DP1. Check all audio cables (AES/EBU, Coaxial, Optical, IIS) for secure connections. Ensure your DAC/amplifier is powered on and set to the correct input. Verify the volume level on your amplifier/DAC is not muted or too low. For USB audio, ensure necessary drivers are installed on your computer and the DP1 is selected as the output device. For network streaming, ensure the DP1 is connected to the network and recognized by your streaming application.
Intermittent Audio / Dropouts	Check for loose cable connections. Ensure your network connection is stable for streaming. Try restarting the DP1 and your source device.

Problem	Possible Cause / Solution
Display Not Working	Check power connection. If the unit powers on but the display remains blank, contact customer support.

10. WARRANTY AND SUPPORT

AOSHIDA provides a limited warranty for the YULONG DP1 against defects in materials and workmanship under normal use. The specific terms and duration of the warranty may vary by region and retailer. Please retain your proof of purchase for warranty claims.

For technical support, warranty service, or general inquiries, please contact AOSHIDA customer service through their official website or the retailer from whom you purchased the product. You can find more information on the [AOSHIDA Store on Amazon](#).