S.M.S.L DL400

S.M.S.L DL400 Audio DAC & Headphone Amplifier User Manual

1. Introduction

Thank you for choosing the S.M.S.L DL400 Audio DAC & Headphone Amplifier. This device is designed to deliver high-fidelity audio performance, featuring advanced decoding capabilities and a powerful balanced headphone amplifier. Please read this manual thoroughly to ensure proper setup and operation.

2. Safety Information

- Do not disassemble or modify the unit.
- Keep the unit away from water, moisture, and direct sunlight.
- Ensure proper ventilation to prevent overheating.
- Use only the provided power adapter.
- Avoid placing heavy objects on the unit.
- Unplug the unit during lightning storms or when unused for long periods.

3. Package Contents

Verify that all items are present in your package:

- S.M.S.L DL400 Audio DAC & Headphone Amplifier
- Quick Start Guide
- Remote Controller
- Power Cable
- USB Cable
- Bluetooth Antenna

4. Product Overview

4.1 Front Panel

The front panel features essential controls and headphone outputs.

Image: The front panel of the S.M.S.L DL400, highlighting the 6.35mm headphone port and 4.4mm balanced headphone port, along with power output specifications for 16Ω and 300Ω loads.

- **6.35mm Headphone Jack:** Standard single-ended headphone output.
- **4.4mm Balanced Headphone Jack:** Balanced headphone output for enhanced audio quality.
- **Display Screen:** Shows current input, volume, sample rate, and menu options.
- **Knob:** Multi-function control for volume adjustment and menu navigation.

4.2 Rear Panel

The rear panel provides various input and output connections.

Image: A detailed view of the S.M.S.L DL400's rear panel, illustrating all available input and output ports including XLR, RCA, AES/EBU, Coaxial, Optical, I2S, USB, Bluetooth Antenna, and Power Input.

- **XLR Balanced Output:** Professional balanced analog audio output.
- **RCA Output:** Standard single-ended analog audio output.
- **AES/EBU Input:** Professional digital audio input.
- **Coaxial Input:** Digital audio input via coaxial cable.
- **Optical Input:** Digital audio input via optical fiber.
- **I2S Input:** High-performance digital audio input, often used with dedicated audio transports.
- **USB Input:** Connects to a computer or other USB audio source.
- **Bluetooth Antenna:** For wireless audio reception.
- **Power Input:** Connects to the AC power supply.

5. Setup

5.1 Connecting Power

1. Ensure the DL400 is switched off.
2. Connect the provided power cable to the power input on the rear panel.
3. Plug the other end of the power cable into a suitable AC power outlet.

5.2 Connecting Audio Sources

Choose one of the following methods to connect your audio source:

- **USB:** Connect a computer or digital audio player to the USB input using a USB cable.
- **Optical/Coaxial:** Connect a CD player, TV, or game console to the Optical or Coaxial input.
- **AES/EBU:** For professional audio equipment, connect to the AES/EBU input.
- **I2S:** Connect compatible I2S sources. Refer to the image below for I2S interface standards.

Image: Diagram illustrating normal and reversed I2S pin definitions, as well as normal and inverted XLR pin configurations, for professional interface compatibility.

- **Bluetooth:** Screw the Bluetooth antenna onto its connector on the rear panel.

5.3 Connecting Headphones

Plug your headphones into either the 6.35mm or 4.4mm balanced headphone jack on the front panel.

5.4 Connecting to an Amplifier/Speakers

If using the DL400 as a DAC for an external amplifier or active speakers:

- **RCA:** Connect the RCA outputs to your amplifier's analog inputs using RCA cables.
- **XLR:** Connect the XLR balanced outputs to your amplifier's balanced inputs using XLR cables.

6. Operating Instructions

6.1 Power On/Off

Toggle the power switch on the rear panel to turn the unit on or off. The front display will illuminate upon power-on.

6.2 Input Selection

Rotate the front panel knob or use the remote control to cycle through available input sources (USB, Optical, Coaxial, AES/EBU, I2S, Bluetooth).

6.3 Volume Control

Rotate the front panel knob clockwise to increase volume and counter-clockwise to decrease it. The volume level is displayed on the screen. Alternatively, use the volume buttons on the remote control.

6.4 Remote Control Functions

The included remote control provides convenient access to various functions.

Image: The infrared remote control for the S.M.S.L DL400, showing buttons for power, navigation, menu, input switching, mute, volume, and customizable FN key. It also highlights adjustable display brightness.

- **ON/OFF:** Power on/off the unit.
- **Back/Previous Track:** Navigate back or to the previous track (for supported sources).
- **Up Select** / **Play/Pause:** Navigate up in menus or play/pause audio.
- **Enter/Exit Menu:** Access or exit the menu.
- **Enter Submenu** / **Next Track:** Enter a submenu or skip to the next track.
- **Down Select:** Navigate down in menus.
- **Switch Input:** Cycle through input sources.
- **Mute:** Mute/unmute audio.
- **FN Key:** Customizable function key.
- **Volume Up/Down:** Adjust volume.

6.5 Menu Navigation and Settings

Press the knob or the 'Enter' button on the remote to access the main menu. Rotate the knob or use the up/down buttons to navigate, and press to select.

- **PCM Filters:** The DL400 offers various PCM digital filters to tailor the sound to your preference. Experiment with options like Linear Fast, Minimum Fast, Linear Slow, Minimum Slow, Apodizing, Minimum Phase, and Low Dispersion.

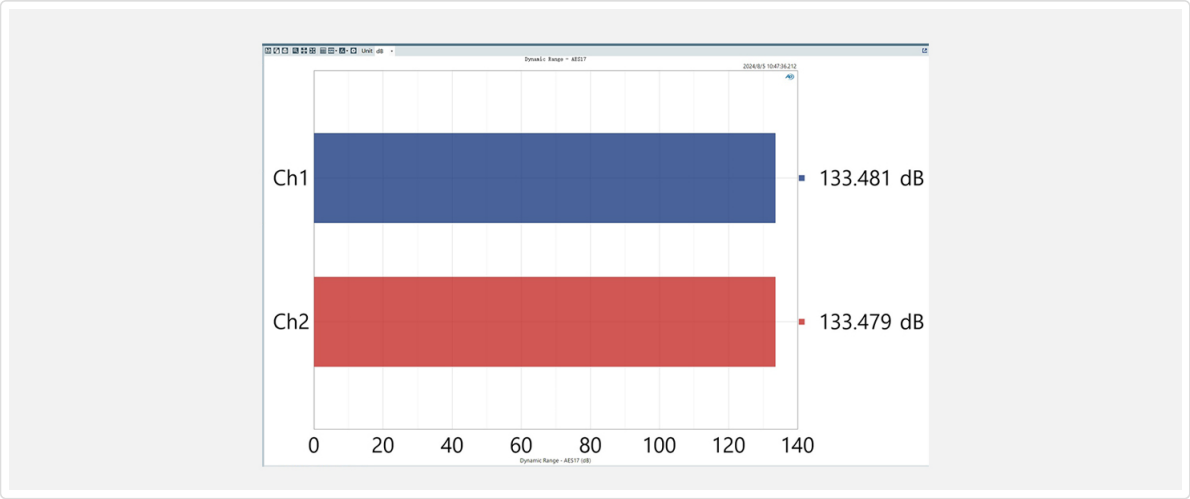

Image: The S.M.S.L DL400 display showing PCM filter options and a frequency spectrum graph illustrating the characteristics of different filter types (Linear Fast, Minimum Fast, Linear Slow, Minimum Slow, Apodizing, Minimum Phase, Low Dispersion).

- **Sound Color:** Adjust the tonal characteristics of the audio output.
- **DPLL Functionality:** Digital Phase-Locked Loop settings. If audio interruptions occur due to poor clock stability, increasing the DPLL value (from 1-15, default is 5) can help.
- **Display Brightness:** Adjust the brightness of the front display (6 levels available).

6.6 MQA Decoding

The DL400 supports full MQA decoding, allowing you to experience Master Quality Authenticated audio files at their highest resolution.

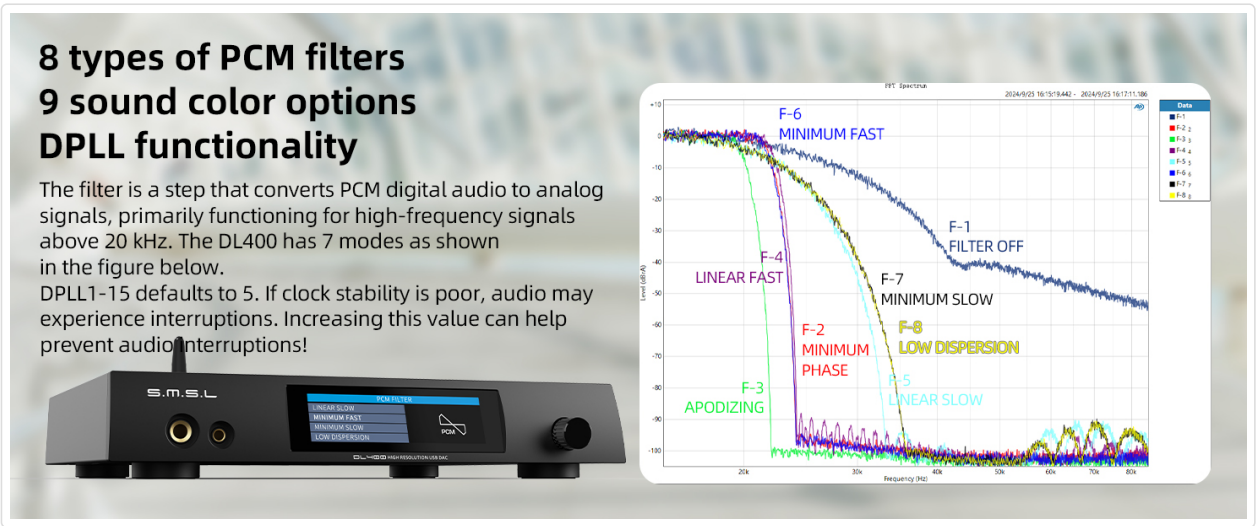

Image: Explains MQA (Master Quality Authenticated) full decoding support on the DL400, showing the MQA logo and a visual representation of 'Music Origami' for high-resolution audio.

7. Maintenance

- Clean the unit with a soft, dry cloth. Do not use liquid cleaners or aerosols.
- Keep the ventilation openings clear of dust and debris.
- Store the unit in a cool, dry place when not in use for extended periods.

8. Troubleshooting

Problem	Possible Cause	Solution
No power	Power cable not connected; Power switch off	Check power cable connection; Turn on power switch
No sound output	Incorrect input selected; Volume too low; Muted; Cables loose	Select correct input; Increase volume; Unmute; Check all audio cable connections
Distorted sound	Source issue; Incorrect sample rate; Faulty cable	Check audio source; Verify sample rate settings; Replace cables
Bluetooth not connecting	Antenna not connected; Device not in pairing mode; Interference	Ensure Bluetooth antenna is connected; Put DL400 and device in pairing mode; Reduce distance or interference
Remote control not working	Batteries dead; Obstruction; Out of range	Replace batteries; Remove obstructions; Operate within range

9. Specifications

Feature	Specification
DAC Chip	ES9039MSPRO
USB Processor	XMOS XU-316 (3rd Generation)
PCM Support	Up to 32-bit/768kHz
DSD Support	DSD512 (Hard Decoding), DSD256 (Native)
Headphone Output Power (32Ω)	3000mW x 2
Headphone Output Power (300Ω)	700mW
Inputs	USB, Optical, Coaxial, AES/EBU, I2S, Bluetooth
Outputs	RCA, XLR, 6.35mm Headphone, 4.4mm Balanced Headphone
Bluetooth Version	5.1
Bluetooth Codecs	aptX, aptX HD, LDAC, AAC, SBC
MQA Support	Full MQA Decoding
Dimensions (W x D x H)	250mm x 240mm x 47mm (approx. 9.84 x 9.45 x 1.85 inches)
Item Weight	4.4 pounds (approx. 2 kg)

10. Warranty and Support

The S.M.S.L DL400 comes with a standard manufacturer's warranty. Please refer to the warranty card included in your package or visit the official S.M.S.L website for detailed warranty terms and conditions. For technical support, troubleshooting assistance, or service inquiries, please contact your retailer or the official S.M.S.L customer support channels.