S.M.S.L D200

S.M.S.L D200 Hi-Res DAC Instruction Manual

Model: D200

1. Introduction

This manual provides detailed instructions for the setup, operation, and maintenance of your S.M.S.L D200 Hi-Res DAC. Please read this manual thoroughly before using the device to ensure proper functionality and to maximize your audio experience. Keep this manual for future reference.

2. Product Overview

2.1 Front Panel

Figure 2.1: Front view of the S.M.S.L D200 DAC, showing the display screen, function knob, and indicator LED.

Figure 2.2: Close-up of the D200's front panel, highlighting the display and control knob.

1. **Display Screen:** Shows current input, volume, sampling rate, and other operational information.
2. **Function Knob:** Used for volume adjustment, menu navigation, and function selection. Short press to confirm, long press to exit menu or power on/off.
3. **Indicator LED:** Provides status feedback.
4. **Receiver Window:** For remote control signal reception.

2.2 Rear Panel

Figure 2.3: Rear view of the S.M.S.L D200 DAC, showing all input and output ports.

5. **XLR Outputs:** Balanced audio outputs (Left/Right).
6. **RCA Outputs:** Unbalanced audio outputs (Left/Right).
7. **Coaxial Input:** Digital audio input.
8. **Optical Input:** Digital audio input.
9. **USB Input:** USB-B port for connecting to a computer or other USB audio source.
10. **Clock Input:** 10MHz external clock input.
11. **Bluetooth Antenna:** Connection point for the Bluetooth antenna.
12. **AC Input:** Power input (AC 100-240V).

3. Setup

3.1 Initial Connection

1. **Connect Power:** Connect the provided power cable to the AC input on the rear panel and then to a suitable power outlet.

2. **Connect Audio Outputs:**
    - For balanced output, connect XLR cables from the D200's XLR outputs to your amplifier or active speakers.
    - For unbalanced output, connect RCA cables from the D200's RCA outputs to your amplifier or active speakers.
3. **Connect Audio Inputs:**
    - **USB:** Connect a USB-B cable from the D200's USB input to your computer or other USB audio source.
    - **Optical/Coaxial:** Connect optical or coaxial cables from your digital audio sources to the corresponding inputs on the D200.
    - **Bluetooth:** Attach the provided Bluetooth antenna to the designated port on the rear panel.
4. **External Clock (Optional):** If using an external 10MHz clock source, connect it to the CLK IN port. The system will automatically revert to the internal clock if no signal is detected from the external source.

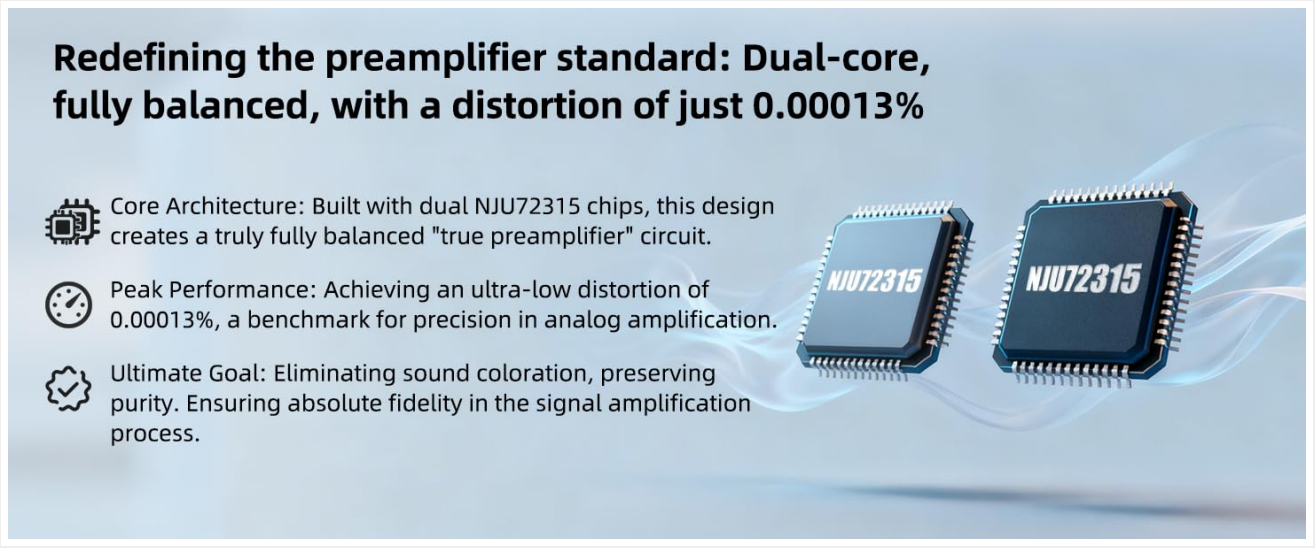


Figure 3.1: Diagram illustrating various input and output connections on the D200 rear panel.

3.2 Driver Installation (for USB)

For Windows operating systems (Windows 7/8/8.1/10/11), a driver is required for USB audio playback. Please download the latest driver from the official S.M.S.L website. Mac OS X 10.6 and above, Android, and iOS are driverless.

4. Operation

4.1 Power On/Off

Long press the function knob on the front panel to power the device on or off.

4.2 Volume Control

Rotate the function knob to adjust the volume level.

4.3 Input Selection

Short press the function knob to enter the menu, then rotate to navigate to "INPUTS" and short press again to select your desired input source (USB, Bluetooth, Optical, Coaxial).

4.4 Bluetooth Operation

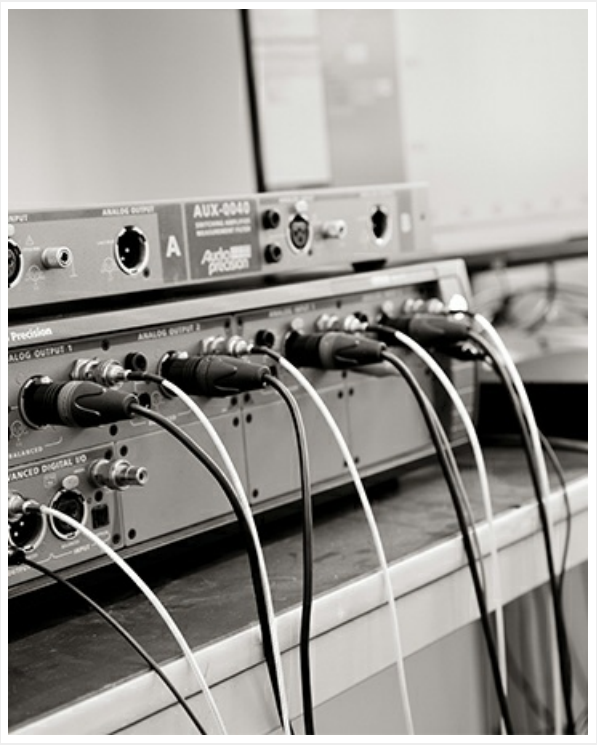


Figure 4.1: The D200 display showing Bluetooth song information and lyrics.

1. Switch the D200 input source to Bluetooth.
2. Enable Bluetooth on your mobile phone or other transmitting device.
3. Search for "SMSL D200" in your device's Bluetooth settings.
4. Select "SMSL D200" to pair. Once connected, the D200 display will show "Connected".
5. The D200 supports Bluetooth song information, lyrics display, and playback control via remote.

Bluetooth Remote Control Buttons:

- Previous Track: Remote left button
- Next Track: Remote right button
- Pause Playback: Remote up button

4.5 Menu Settings

Figure 4.2: Example of the D200's settings menu on the display.

Short press the function knob to access the main menu. Rotate the knob to navigate through options and short press to select. Long press to exit the menu.

- **INPUTS:** Select the audio input source (USB, Bluetooth, Optical, Coaxial).
- **CLOCK IN:** Select internal or external clock source.

- **OUTPUTS:** Configure output settings.
- **PCM FILTER:** Select PCM digital filter characteristics (Slow Roll-off, Sharp Roll-off, Filter Off).
- **DSD FILTER:** Select DSD filter bandwidth (Narrow, Normal, Wide).
- **SOUND COLOR:** Adjust sound characteristics (Low OSR+HPC ON/OFF, High OSR+HPC ON/OFF).
- **PRE MODE:**
    - **PRE AMP:** Preamp output, volume controlled.
    - **FIXED CHOOSE:** Output volume fixed to the currently set DAC mode volume.
    - **FIXED:** Output volume fixed to the maximum volume of DAC mode.

  Note: Fixed DAC mode volume is 2dB less than the PRE AMP mode interface output volume.
- **FN KEY FOR:** Customize the function of the FN key (Outputs, Bluetooth, Phase).
- **LANGUAGE:** Select display language.
- **AUDIO PHASE:** Adjust audio phase.
- **DIMMER:** Adjust display brightness.
- **BRIGHTNESS:** Adjust display brightness.
- **RESET:** Reset all settings to factory defaults.

5. Key Features

5.1 ROHM BD34352EKV DAC Chip

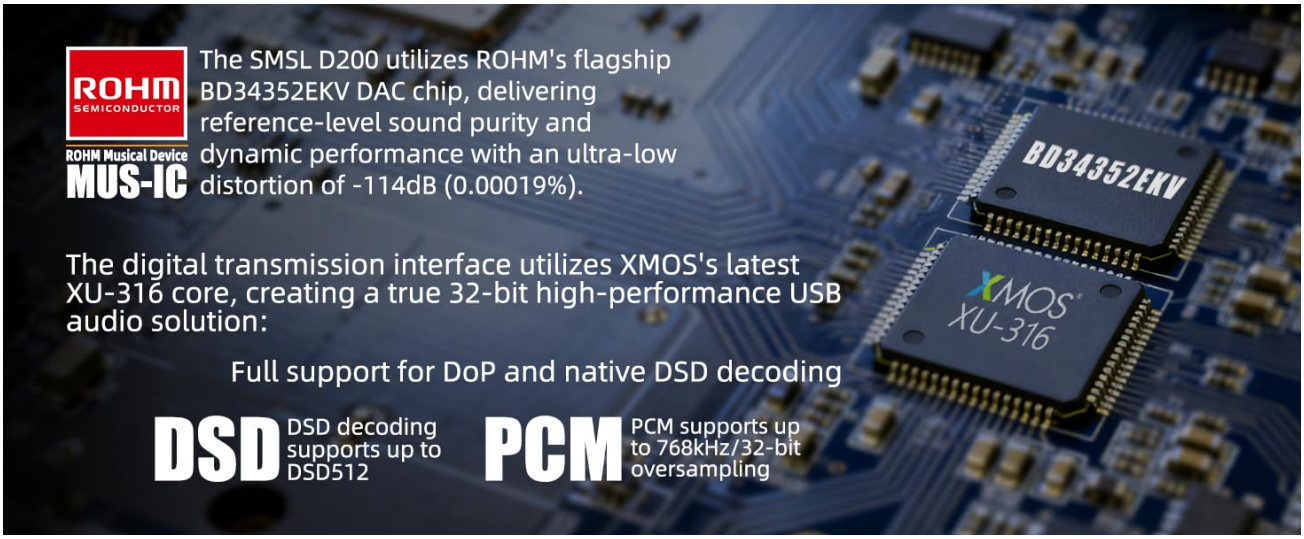


Figure 5.1: Internal components, showing the ROHM BD34352EKV DAC chip and XMOS XU-316 USB solution.

The D200 incorporates the ROHM BD34352EKV flagship DAC chip, providing high-fidelity audio reproduction with ultra-low distortion (0.00019% / -114dB) and a high signal-to-noise ratio (123dB).

5.2 XMOS XU-316 USB Solution

Equipped with the XMOS XU-316 true 32-bit USB solution, the D200 supports native DSD and DoP modes, PCM up to 768kHz, and DSD decoding up to DSD512 via USB, optical, and coaxial inputs.

5.3 Qualcomm Bluetooth with Lyrics Display

The D200 features Qualcomm's next-generation Bluetooth chip, supporting high-definition codecs such as LDAC (24-bit/96kHz), aptX HD, AAC, and SBC for wireless audio streaming. It uniquely supports simultaneous display of lyrics and song information on the device's screen during Bluetooth playback.

5.4 MQA and MQA-CD Full Decoding

The D200 provides full MQA decoding capabilities via USB, optical, and coaxial inputs, allowing for the complete "unfolding" of MQA audio files to restore original studio master quality. It also supports MQA-CD playback.

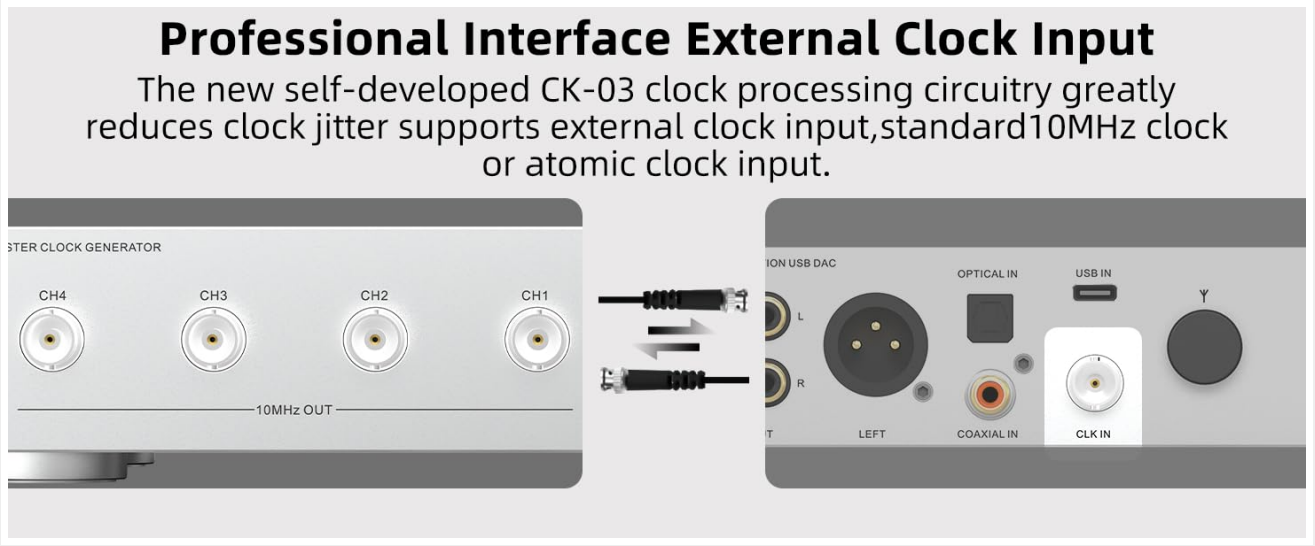


Figure 5.2: Explanation of MQA and MQA-CD decoding support.

5.5 External Clock Input and CK-03 Circuitry

Figure 5.3: Rear panel detail showing the 10MHz clock input port.

The D200 includes a standard 10MHz external clock input for connecting professional-grade or atomic clocks, which helps to eliminate jitter. This is complemented by the newly developed CK-03 clock processing circuitry for internal clock optimization.

5.6 Fully Balanced True Preamp

The device features a fully balanced true preamp circuit utilizing dual NJU72315 chips, which contributes to an extremely low distortion level of 0.00013%.

Figure 5.4: Image depicting the dual NJU72315 chips used in the balanced preamp circuit.

6. Specifications

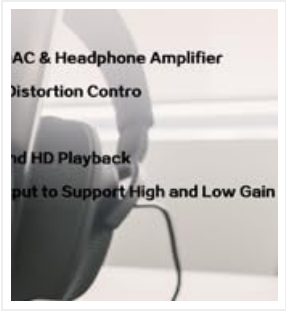


Figure 6.1: Detailed technical specifications for the S.M.S.L D200 DAC.

Feature	Detail
Inputs	USB, Optical, Coaxial, Bluetooth
Outputs	XLR, RCA
Line Output Amplitude	XLR: 5 Vrms, RCA: 2.5 Vrms
THD+N	0.00019% (-114dB) (UN-WTD)
Dynamic Range	XLR: 123dB, RCA: 121dB
SNR	XLR: 123dB, RCA: 121dB
USB Transfer Mode	USB 2.0 Asynchronous
USB Compatibility	Windows 7/8/8.1/10/11 (Driver Required), Mac OS X 10.6 above, Android, iOS, Linux (Driverless)
MQA Decoder	USB / Optical / Coaxial
Sampling Rates & Bit Depth (USB)	PCM: 44.1-768kHz (32bit), DSD: 2.8224-22.5792MHz (1bit), DoP: 2.8224-11.2896MHz (1bit)
Sampling Rates & Bit Depth (Optical/Coaxial)	PCM: 44.1-192kHz (24bit), DoP: 2.8224MHz (1bit)
Bluetooth	Support SBC, AAC, aptX HD, LDAC
Power Consumption	<10W
Standby Power Consumption	<0.5W
Dimensions (WxHxD)	200x47.9x197.9mm
Weight	1.214kg / 2.68lbs

7. Performance Measurements

The following graphs illustrate the measured performance characteristics of the S.M.S.L D200 DAC, demonstrating

its adherence to high audio fidelity standards.

Figure 7.1: THD+N (Total Harmonic Distortion + Noise) measurements for RCA and XLR outputs.

Figure 7.2: Intermodulation Distortion (IMD) and Frequency Response graphs.

Figure 7.3: Signal-to-Noise Ratio (SNR) and Dynamic Range measurements.

8. Troubleshooting

If you encounter issues with your S.M.S.L D200, please refer to the following common problems and solutions:

- **No Power:**
  - Ensure the power cable is securely connected to both the D200 and the power outlet.
  - Verify the power outlet is functional.
- **No Sound Output:**
  - Check that the correct input source is selected on the D200.
  - Verify that the output cables (XLR or RCA) are correctly connected to your amplifier/speakers.
  - Ensure your amplifier/speakers are powered on and set to the correct input.
  - Check the volume level on the D200 and your amplifier/speakers.
  - If using USB, ensure the correct driver is installed (for Windows) and selected as the audio output device on your computer.
- **Bluetooth Connection Issues:**

- Ensure the Bluetooth antenna is securely attached.
- Verify the D200 is set to Bluetooth input mode.
- Delete "SMSL D200" from your device's paired Bluetooth list and attempt to re-pair.
- Move your transmitting device closer to the D200 to reduce interference.

- **Distorted Sound:**
  - Check all cable connections for looseness or damage.
  - Ensure the sampling rate of your audio source matches the D200's capabilities for the selected input.
  - Try resetting the D200 to factory settings via the menu.

9. Warranty and Support

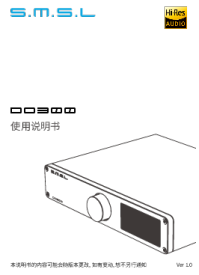
S.M.S.L products purchased from authorized retailers typically come with a manufacturer's warranty. For specific warranty terms and conditions, please refer to the documentation included with your product or contact your point of purchase.
For technical support, product inquiries, or warranty claims, please contact S.M.S.L customer service or your authorized dealer. S.M.S.L aims to provide excellent products and services.

- **Authenticity:** All S.M.S.L products purchased from authorized stores are 100% authentic.
- **Online Service:** 24-hour online service is available for inquiries.
- **Warranty Period:** Typically 1 year or more from the date of purchase (may vary by product and region).

You can find more information and support on the official S.M.S.L website or through your retailer.

Related Documents - D200

	SMSL D200 High-Resolution USB DAC User Manual Comprehensive user manual for the SMSL D200 High-Resolution USB DAC, covering safety, warranty, features, technical specifications, operation, and MQA playback.
	SMSL AO300 User Manual: Hi-Fi DAC and Amplifier Guide Comprehensive user manual for the SMSL AO300 Hi-Fi DAC and Amplifier, detailing features, specifications, operation, safety, and warranty information.

	[SMSL RAW-MDA 1 User Manual and Specifications] Comprehensive user manual and technical specifications for the SMSL RAW-MDA 1 audio DAC and amplifier, covering features, functions, connectivity, and operation.
	[S.M.S.L DL100 High-Resolution USB DAC User Manual | Features, Specifications, and Operation] Comprehensive user manual for the S.M.S.L DL100 High-Resolution USB DAC. This guide covers safety notes, warranty terms, product features, detailed specifications, remote control operation, display interface, instructions for use, MQA playback, and connecting to ARC-compatible TVs via HDMI.
	[S.M.S.L PL200 MQA-CD Player User Manual] Comprehensive user manual for the S.M.S.L PL200 MQA-CD Player, detailing features, specifications, operation instructions, safety precautions, and warranty information.
	[S.M.S.L DO300 MQA Hi-Res DAC User Manual] Comprehensive user manual for the S.M.S.L DO300 DAC, detailing features, specifications, safety, warranty, and operational instructions for this high-resolution audio converter.