SMSL SU2 Pure Digital Audio Decoder - Official User Manual

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1. Product Introduction

Thank you for purchasing the SMSL SU2, a high-performance pure digital-to-analog converter (DAC) engineered by SMSL Audio for audiophiles and desktop audio enthusiasts seeking a minimalist, high-fidelity signal conversion solution. Adhering to a "pure decoding" design philosophy, this device eliminates non-essential functions to concentrate all hardware resources and circuit optimization on core digital signal processing and analog conversion, delivering ultra-low distortion, high dynamic range, and transparent sound reproduction at an accessible price point.
Built with a premium ESS ES9039Q2M flagship-grade decoding chip and four high-quality TI OPA1612A operational amplifiers in a balanced architecture, the SU2 offers exceptional audio performance that far exceeds its entry-level positioning. It supports multiple digital input formats and both balanced and unbalanced analog outputs, making it the ideal core component for building a compact desktop HiFi system, matching with CD players, digital music players, independent USB interfaces, power amplifiers, and active monitor speakers.

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2. Core Specifications & Key Features

- **Decoding Chip**: Premium ESS ES9039Q2M high-performance DAC chip, flagship-level signal processing capability
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Operational Amplifier: 4 x TI OPA1612A high-fidelity op-amps, fully balanced analog output architecture

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THD+N: ≤0.00006%, ultra-low distortion for pure, uncolored sound

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Dynamic Range: ≥123dB, wide dynamic response for delicate audio detail restoration

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Input Support: AES/EBU, Coaxial (SPDIF), Optical (Toslink) digital inputs; NO USB input (requires independent USB interface for computer connection)

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Supported Audio Format: PCM up to 24Bit/192kHz, full compatibility with mainstream digital audio sources

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Output Interface: Unbalanced RCA Output (2.3Vrms), Balanced XLR Output (4.7Vrms), fixed gain output (NO built-in volume control)

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Power Supply: Built-in high-efficiency power supply module, stable and low-noise power delivery

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Shell Material: Full aluminum alloy chassis, effective anti-interference and heat dissipation

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Indicator Light: LED status indicator for signal input and sampling rate display

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Product Positioning: Pure decoder, no headphone amp, no Bluetooth, no extra functions, focus on professional decoding performance

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3. Package Contents

Please check all items carefully upon receiving your SMSL SU2 DAC to confirm completeness and avoid shipping-related damage or missing accessories:

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1 x SMSL SU2 Pure Digital Audio Decoder

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1 x Power Cord (matching regional standard)

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1 x Product Warranty Card

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This Official User Manual

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4. Interface Description & Connection Guide

4.1 Rear Panel Interface Layout

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Digital Input Section: AES/EBU Port, Coaxial Port, Optical Port

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Analog Output Section: L/R RCA Unbalanced Output, L/R XLR Balanced Output

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Power Section: Power Switch, Power Inlet

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4.2 Connection Steps

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Power Connection: Confirm the device power switch is OFF, connect the included power cord to the power inlet and a grounded power socket.

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Digital Input Connection: Use a compatible digital cable to connect the digital source (CD player, DAP, independent USB interface) to one of the AES/EBU, Coaxial, or Optical ports on the SU2. The device will automatically identify and lock the input signal.

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Analog Output Connection: Connect the RCA or XLR output to the input of a power amplifier, active speaker, or headphone amplifier. **Note: This is a pure decoder with fixed gain output, no built-in volume control; volume adjustment must be done via the rear-end device.**

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Power On: Toggle the power switch to ON, the LED indicator will light up, indicating the device is powered on and ready for operation.

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4.3 Indicator Light Explanation

The LED indicator displays the current input signal sampling rate and working status, helping users quickly confirm normal operation. Stable lighting indicates normal signal locking; flickering indicates no valid input signal, please check the digital source and cable connection.

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5. Usage Instructions & Warm-Up Tips

5.1 Basic Usage Notes

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This is a fixed-gain pure decoder, **DO NOT connect directly to passive speakers**, must be used with a power amplifier or active speakers with volume control.

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For computer/laptop connection, an additional independent USB-to-digital (coaxial/optical/AES) interface is required, as the SU2 does not have a built-in USB input module.

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Avoid hot-plugging analog and digital cables during operation to prevent signal interference or device damage.

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Keep the device in a well-ventilated area, avoid blocking the heat dissipation gaps to ensure stable long-term operation.

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5.2 Warm-Up Guide (Recommended)

To achieve optimal audio performance, the SMSL SU2 requires a warm-up period to stabilize internal circuits and components. We recommend **30 - 60 minutes of continuous low-volume warm-up** after powering on before formal listening. This process stabilizes the decoding chip and op-amp performance, making the sound smoother, background quieter, and dynamic response more robust, fully unlocking the device's high-fidelity potential.

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6. Care & Maintenance

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Clean the aluminum alloy chassis regularly with a soft, dry cloth. Do not use water, alcohol, detergent, or corrosive chemicals to avoid surface damage and circuit corrosion.

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Keep the device away from moisture, dust, high temperatures, direct sunlight, and strong magnetic fields to prevent component aging, signal interference, and performance degradation.

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Avoid placing heavy objects on the device or dropping it, as physical impact may damage internal precision circuits and chips.

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Unplug the power cord during long-term non-use to extend the service life of the built-in power supply module.

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Regularly check cable connections for looseness, and replace damaged cables promptly to ensure stable signal transmission.

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7. Safety & Usage Precautions

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Use only the included original power cord, and confirm the input voltage matches the local power supply standard to avoid short circuits or equipment burnout.

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Do not disassemble, modify, or repair the device by yourself. Unauthorized disassembly will void the warranty and may cause electric shock hazards and permanent damage.

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Keep the device out of reach of children and pets to prevent electric shock, falling injuries, or cable entanglement.

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Do not place any liquid containers on the device to avoid liquid ingress causing short circuits and permanent failure.

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If abnormal noise, overheating, or other faults occur during use, immediately turn off the power and disconnect the power cord, then contact official after-sales service for inspection.

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8. Troubleshooting

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No Sound Output: Check power connection, power switch status, digital input cable and source, rear-end amplifier/speaker volume, and output interface connection.

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Distorted/Noisy Sound: Confirm the digital signal is normal, replace the digital/analog cable, check for nearby electromagnetic interference, and complete the warm-up process.

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Indicator Flickering/No Signal Lock: Reconnect the digital cable, switch the input source, confirm the input signal format is within the supported range.

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Unbalanced Left/Right Channel: Check analog cable connection for looseness, replace the cable, confirm the rear-end device is working normally.

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9. Warranty & Additional Notes

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The SMSL SU2 comes with a **1-year limited manufacturer warranty** from the original purchase date, covering manufacturing defects and workmanship issues. Damage caused by improper use, incorrect power supply, unauthorized disassembly, accidental damage, or normal wear is not covered by the warranty.

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Retain the original warranty card and valid purchase proof for warranty services; no warranty service will be provided without relevant documentation.

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This product is designed for indoor desktop audio use only, not for industrial, automotive, or outdoor harsh environments.

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Product specifications and design are subject to change without prior notice for product optimization and upgrading.

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For after-sales support, technical inquiries, or troubleshooting assistance, please contact SMSL official customer service or your authorized local retailer.

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