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S.M.S.L
**RAW-DAC1
Digital to
Analog
Convertor**

S M S L RAW-DAC1 Digital to Analog Convertor User Manual

Contents

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S M S L RAW-DAC1 Digital to Analog Convertor

Product Information

Product Specifications

- **Model:** RAW-DAC1
- **Version:** 1.0
- **Chipset:** AK4191+AK4499EX
- **THD+N:** 0.00006% (-124dB)
- **USB Interface:** XMOS XU-31632bit
- **Supported Formats:** MQA, MQA-CD, DoP, DSD, PCM
- **Sampling Rates:** PCM 44.1~768kHz (32bit), DSD 2.8224~22.5792MHz (1bit)
- **Output Level:** 5 Vrms, 2.5Vrms
- **Supported OS:** Windows 7/8/8.1/10/11, Mac OSX 10.6, iOS, Linux
- **Wireless Codecs:** aptX, aptX HD, LDAC, AAC, SBC

Product Usage Instructions

1. **Connection**

   Connect the RAW-DAC1 to your device using the provided USB cable.

2. **Power On**

   Power on the RAW-DAC1 by pressing the power button located on the unit.

3. **Audio Playback**

   Select the desired audio source on your device and start playback.

4. **Format Selection**

   Use the appropriate software on your device to select the desired format (MQA, DoP, DSD, PCM).

Frequently Asked Questions (FAQ)

- **Q: What operating systems are supported by the RAW-DAC1?**

  A: The RAW-DAC1 supports Windows 7/8/8.1/10/11, Mac OSX 10.6, iOS, and Linux.

- **Q: What are the supported wireless codecs for the RAW-DAC1?**

  A: The RAW-DAC1 supports aptX, aptX HD, LDAC, AAC, and SBC wireless codecs.

The contents of this manual may be changed with the edition, and are subject to change without notice.

Safety Notes

- Install this unit in a well-ventilated, cool, dry, clean place away from direct sunlight, heat sources, vibration, dust, moisture, or cold.
- Use the voltage specified on this unit Only. Using this unit with a higher voltage than specified is dangerous and may cause fire, damage to this unit, or personal injury. Our company will not be held responsible for any damage resulting from the use of this unit with a voltage other than that specified.
- Do not attempt to modify or fix this unit by yourself. Contact a salesperson or customer service when any service is needed. The cabinet should never be opened for any reason.
- When not planning to use this unit for long periods (i.e. when going on vacation), disconnect the power cable from the AC wall outlet.

Important note:
The product specifications and information mentioned in this manual are for reference only. The content of this manual is subject to change without notice.

Warranty Terms

1. **The Term of Service**

   Foshan Shuangmusanlin Technology Co., Ltd promises to offer good-quality products. If the product is broken within 7 days after purchasing when you use it normally, you can choose to send it back for return, replacement, or repair (only the product does not affect the second sale can be returned). Repairing for free in one year if you use it normally.

2. The date of purchase is under the date on the invoice or receipt used by the seller, and if you buy it online, you can show the screenshot of the trade.

3. If inappropriate usage causes the unit damaged, the warranty will be void. As below.
   - All damages by inappropriate use, including using it under a non-normal working environment or without following the instructions.
   - Dismantling, refitting, and repairing by users in private.
   - Causing damage by using some fittings instead of the designative or accredited ones.
   - Cannot provide credible proof of purchase.

4. Sending it back to our company for repairing.

5. Contact your S.M.S.L Audio reseller for a return or replacement.

Features

- Both USB, optical, and coaxial support MQA and MQA-CD;
- Using AK4191+AK4499EX to play the full performance of Chips, the distortion is as low as 0.00006%(-124dB);
- XMOS XU-316, true 32bit USB processing, supports DoP and Native DSD, and PCM reach up to 768kHz and DSD512;
- The newly self-developed CK-03 clock processing circuit greatly reduces the clock jitter;
- USB, Optical and Coaxial support DSD transmission, Coaxial, Optical support DOP64;
- Use tempered glass display panel for higher light transmission and longer service life;
- Built-in shielding, low noise power supply processing, while improving power supply efficiency, lower power consumption;
- Specially designed discrete component linear regulated power supply and multiple low noise regulated power supplies to provide low noise power for analog circuits;
- The latest Bluetooth supports LDAC, APTX/HD, SBC, AAC;
- High-quality gold-plated input and output jacks;
- Using a fully laminated 2.33-inch LCD screen;
- JAS Hi-Res certification;
- Equipped with remote control and full-featured remote control

Specifications

Input		USB/Optical 1/Coaxial 1/Optical 2/Coaxial 2/I²S/Bluetooth	
Output		RCA / XLR	
Line output amplitude	XLR	5Vrms	
	RCA	2.5Vrms	
THD+N		0.00006%(-124dB)(UN-WTD)	
Dynamic range.	XLR	132dB	
	RCA	127dB	
SNR	XLR	132dB	
	RCA	127dB	
USB Spec		USB 2.0 Asynchronization	
USB compatibility		Windows 7 / 8 / 8.1 / 10(Needs Driver)	
		Mac OSX 10.6 above, Android system, iOS,Linux(Driveless)	
MQA decoder		USB / Optical / Coaxial	
Sampling rate & Bit Width	USB	PCM	44.1~768kHz(32bit)
		DSD	2.8224~22.5792MHz(1bit)
		DoP	2.8224~11.2896MHz(1bit)
	Optical / Coaxial	PCM	44.1~192kHz(24bit)
		DoP	2.8224MHz(1bit)
Bluetooth specification		5.1(support SBC,AAC,aptX,aptX HD,LDAC)	
Power Consumption		<10W	
Standby power		<0.5W	
Size		219x180x45mm (WxHxD)	
Weight		1.33kg/2.93lbs	

SMSL reserves the right to make improvements that may result in specification or feature changes without notice.
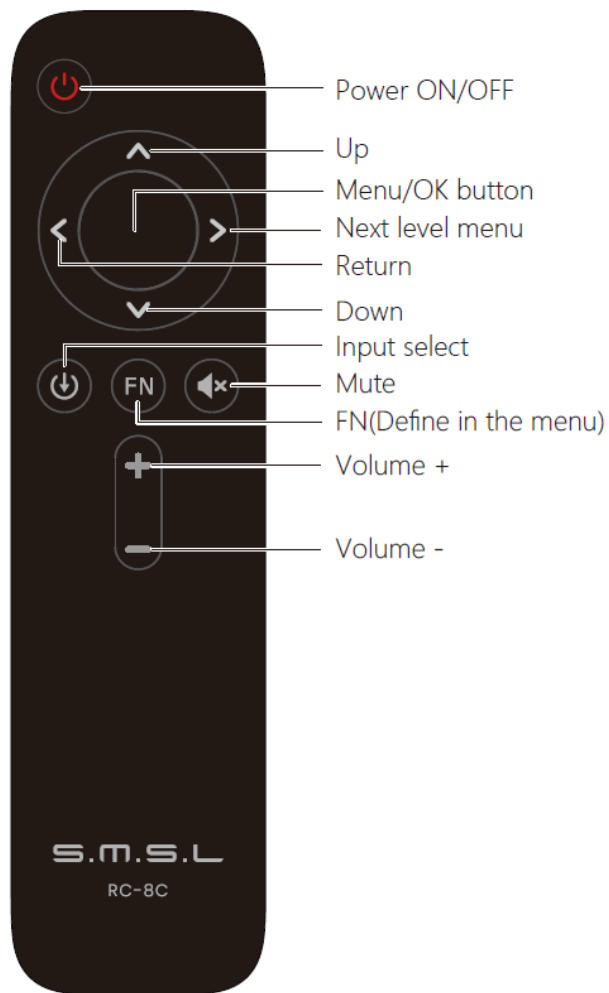
Remote control

- If the remote control is still ineffective when it is close to the machine, replace it with a new battery.
- If the user does not use the remote control for a long time, remove the battery of the remote control.
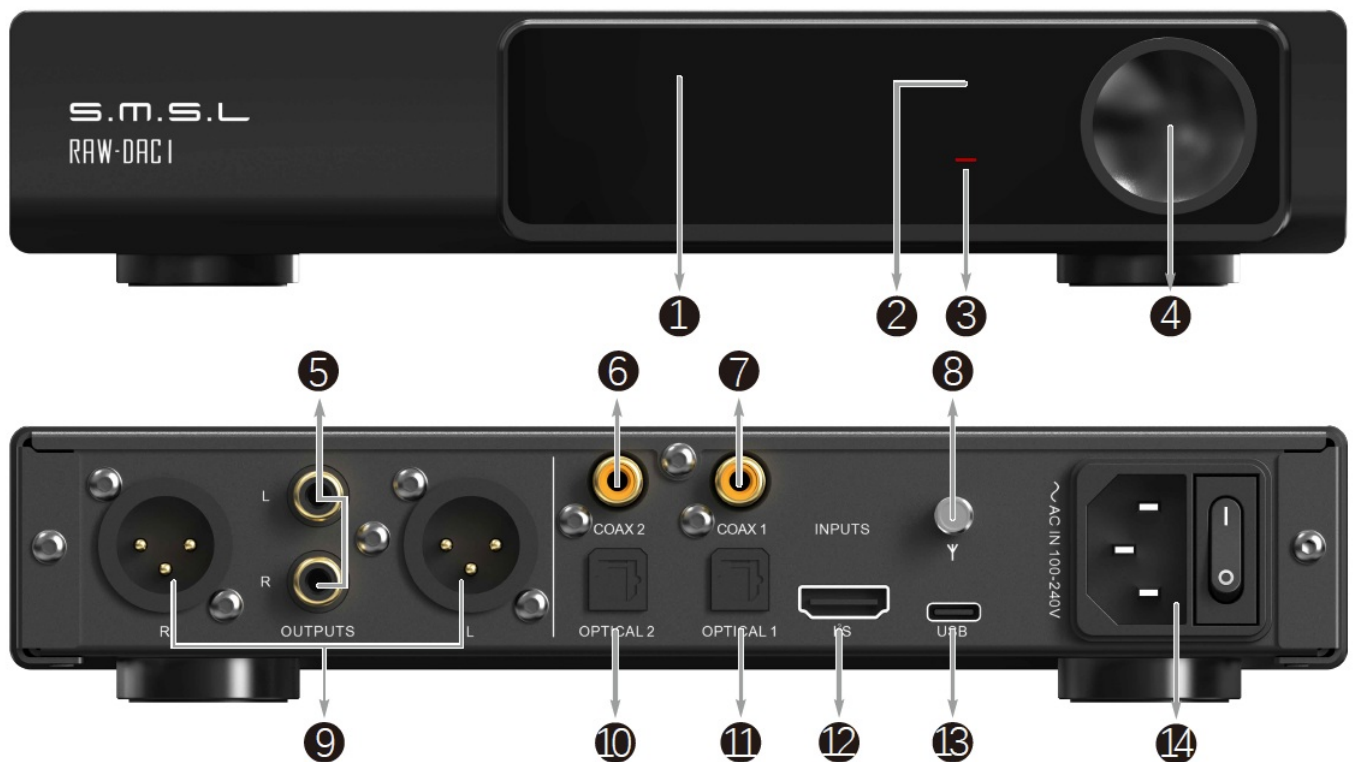- Dispose of used batteries per local regulations on battery disposal.

Operating the remote control
This remote controller uses 2 x R03/AAA batteries.

	Power ON/OFF
	Up
	Menu/OK button
	Next level menu
	Return
	Down
	Input select
	Mute
	FN(Define in the menu)
	Volume +
	Volume -

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RC-8C

PARTS

1. Display
2. Remote window

3. Indicator light
4. Knob
5. RCA outputs
6. Coaxial input 2
7. Coaxial input 1
8. Bluetooth antenna
9. XLR output
10. Optical input 2
11. Optical input 1
12. I2S input
13. USB input
14. AC IN

Knob

- **Konb:** Volume +/-, menu switching, function selection.
- **Button:** Short press to enter the menu and confirm; long press to exit the menu and switch the machine on and off.

Bluetooth operating instructions

- **Connection:**
  Switch the input source to Bluetooth, turn on the Bluetooth function of the phone, search for SMSL RAW-DAC1″, click Pair Connection after searching, and when the phone shows "Connected", the connection is successful.
- **Re-connection:**
  During the use of Bluetooth, if the connection is lost, eg: going out, and then coming back, some phones will not automatically reconnect, at this time, a short press of the Bluetooth button on the remote control can reconnect.
- **Clear pairing:**
  Press and hold the Bluetooth Control button on the remote control. After clearing the pairing, some phones may no longer be able to search for "SMSL RAW-DAC1", in which case you need to delete the Bluetooth device "SMSL RAW-DAC1" saved by the phone and then search for pairing.

Using Instructions

- **INPUTS**
  - USB TYPE C
  - BLUETOOTH
  - COAXIAL 1
  - OPTICAL 1
  - COAXIAL 2
  - OPTICAL 2
  - I2S HDMI

- **OUTPUTS**
  - ALL LINE OUT
  - BALANCED
  - UNBALANCED
- **SOUND COLOR**
  - SOUND 1(5.6M)
  - SOUND 2(5.6M)
  - SOUND 3(11M)
  - SOUND 4(11M)
    - The AK4499EX operates at a sampling rate of 5.6448MHz.
    - The AK4499EX operates at a sampling rate of 11.2896MHz.
- **PCM FILTER**
  - SHARP ROLL-OFF
  - SLOW ROLL-OFF
  - SHORT SHARP
  - SHORT SLOW
  - SUPER SLOW
  - LOW DISPERSION
- **DSD FILTER**
  - WIDE
  - NARROW
- **PRE MODE**

  PRE MODE is the volume adjustment function switch for the output interface.
  - **VARIABLE:** The output interface volume is controlled.
  - **FIXED:** The output interface volume is fixed.
  - **FIXED DSD BYPASS:**

    Open the DSD direct access function. At this time, the volume of PCM or DSD is not adjusted. The output amplitude is fixed to about 3.7VRMS. When this function is opened, the DSD is not processed at all, and the output is directly output.
- **FN KEY FOR**
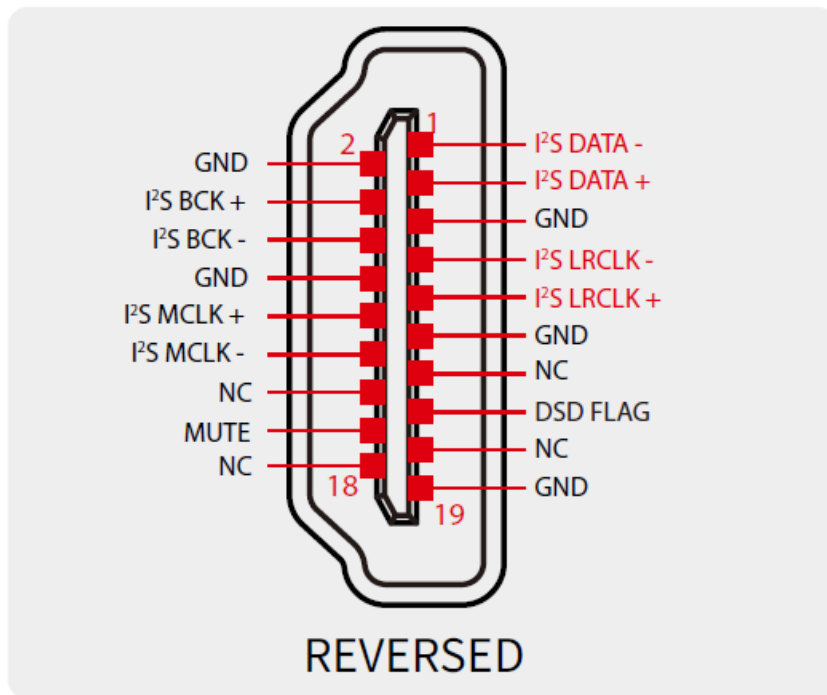 - OUTPUTS
  - BLUETOOTH
  - PHASE
- **LANGUAGE**
  - ENGLISH
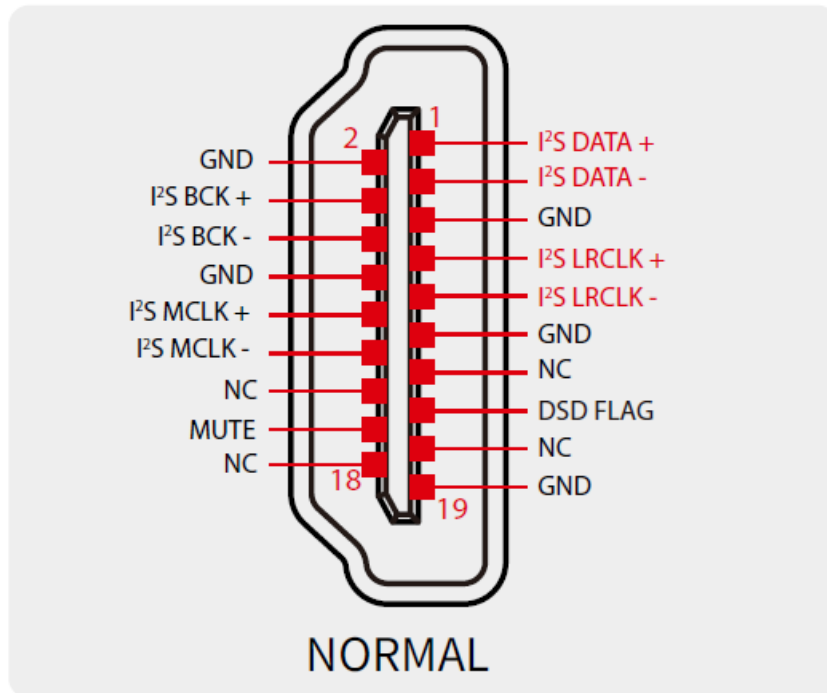 - CHINESE
  - JAPANESE
  - RUSSIAN
- **I2S MODE**
  - NORMAL (NORMAL, PS AUDIO FORMAT)

REVERSED

○ REVERSED (INVERTED, DATA AND LRCK INVERTED)

NORMAL

  ○ **Note:** This option is used to match different I2S interface standards, please check the interface definition of the signal source before use
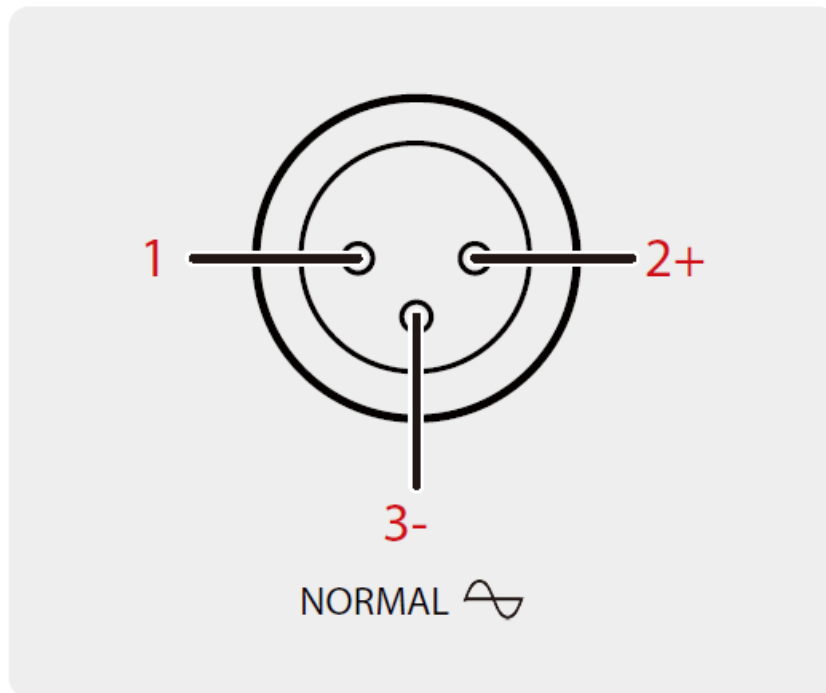
- **I2S DSD CHANNEL**
  - ○ DSDL=PCM DATA (The DSD left channel using the PCM DATA pin)
  - ○ DSDL=PCM LRCK (The DSD left channel using the PCM LRCK pin)

  Note: When using the I2S input to stream DSD audio, if you find that the left and right channels are incorrect, you can use this option to correct it.
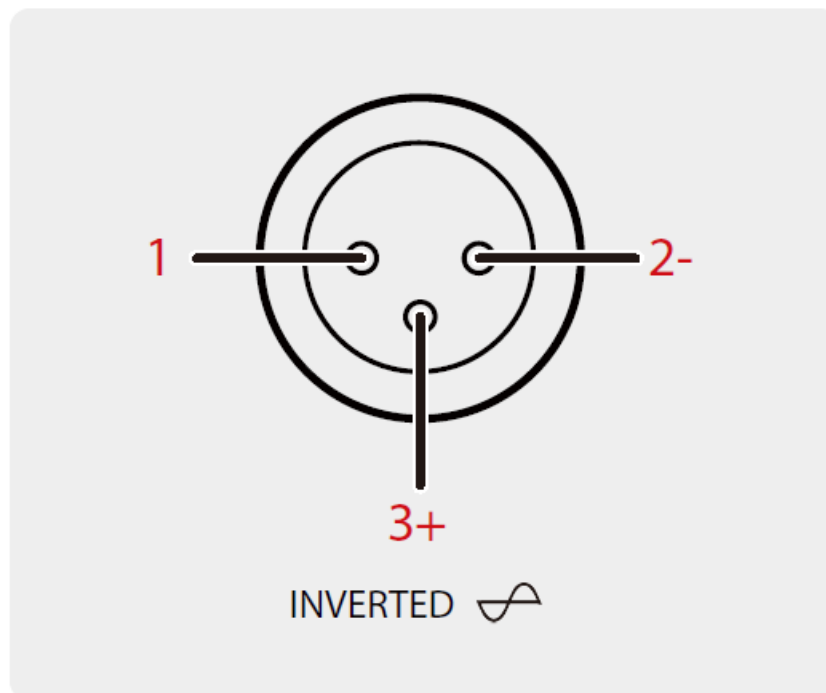
- **AUDIO PHASE**
  - ○ NORMAL (2+,3-)

NORMAL

- INVERTED (2-,3+)

INVERTED

- **NOTE:** When inverting the XLR phase, the RCA phase will also be inverted.
- **DIMMER**
  - **5 second ~ 60 second**

    (The range is 5 seconds to 60 seconds. After setting, the screen will automatically go off within this time, and the screen will re-light up if you operate the remote control or the knob at any time.)
- **BRIGHTNESS**
  - LEVEL 1 ~ LEVEL 6
- **UI STYLE**
  - UNIVERSAL
  - GRAPHICS
- **RESET**
  - During Bluetooth input, long press the middle button of the knob, the system will only reset the Bluetooth pairing status;

○ During other input, long press the middle button of the knob, the system will clear all settings, including Bluetooth.

About MQA

MQA (Master Quality Authenticated) is an award-winning British technology that delivers the sound of the original master recording. The master MQA file is fully authenticated and is small enough to stream or download. The SU-9 ULTRA includes MQA technology, which enables you to playback MQA audio files and streams, delivering the sound of the original master recording. Visit How it works **https://www.mqa.co.uk/how-it-works** for more information.

How to play MQA

- SMSL RAW-DAC1 supports MQA decoding with USB, optical fiber, and coaxial!
- SMSL RAW-DAC1 's MQA playback does not require the use of special playback software, such as foobar2000, Audirvanaplus only needs to support ASIO or WASAPI audio output, and when playing MQA audio, it is best to adjust the volume of the computer to the maximum, so that the audio output of the computer is in the best condition.
- When playing an MQA file, the sampling rate of the original master recording is displayed.
  ○ (MQA logo) MQA and the Sound Wave Device are registered trademarks of MQA Limited.© 2016

Notes on playing MQA-CD

- Please make sure that what is being played is a genuine MQA-CD.
- Verify that the optical or coaxial signal output of the CD player is an unprocessed source code.

Documents / Resources

(S.M.S.L RAW-DAC1 manual cover image)	**S M S L RAW-DAC1 Digital to Analog Convertor** [pdf] User Manual RAW-DAC1 Digital to Analog Convertor, RAW-DAC1, Digital to Analog Convertor, Analog Convertor, Convertor

References

- (MQA logo) **How it Works - MQALabs**
- **User Manual**