S.M.S.L

DO200
USER MANUAL

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 alesperson 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 of time (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 in 7 days after purchasing when you use it normally, you can choose to send it back for return, replacement or repairing (only the product does not affect the second sales can be returned). Repairing for free in one year if you use it normally.

2.Date of purchase is in accordance with the date on invoice or receipt uesd by seller, and if you buy it on line, you can show the screenshot of trade.

3.If an inappropriate usage causes the unit damaged, the warranty will be void. As below.
- All damages by inappropriate use, including using it under non-normal working environment or without following the instructions.
- Dismantling, refitting, repairing by user 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 and SPDIF support MQA decoding function, and support MQA-CD;

- 2x advanced ES9068AS D/A chips, fully optimized to THD+N as low as -122dB, far exceeding the official specifications;

- 5x High-End dual op amp OPA1612A and a large number of audio grade components;

- XMOS XU-216, a true 32bit USB solution, supporting DoP256 and native DSD512, PCM supports up to 768kHz;

- All input ports support DSD(Except BT), coaxial, optical and AES support DoP64;

- Qualcomm's latest Bluetooth chip supports LDAC 24bit/96kHz, APTX/HD, SBC, AAC;

- Ultra-low phase noise and optimized clock system to achieve ultra-low clock jitter;

- Tempered glass display panel, higher light transmittance, longer service life;

- Low-noise power supply, while improving power efficiency and lower power consumption;

- Discrete component linear power supplies and multiple low-noise power supplies specially designed for analog circuits;

- High-quality gold-plated input and output connection terminals;

- Full-view color IPS display with dimmer function;

- Japan Audio Association (JAS) Hi-Res certification;

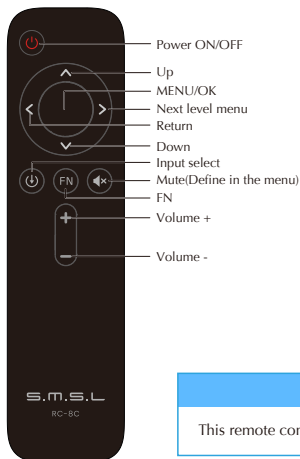- Equipped with remote control and full-function remote control.

Specifications

Input .... USB / Optical / Coaxial / AES/EBU / Bluetooth / I²S

Output .... RCA /XLR

Output Level ....XLR   4.0Vrms

                                                              RCA   2.0Vrms

THD+N ....0.00008%(-122dB)

Dynamic range ....XLR   129dB

                                                              RCA   125dB

SNR 128dB

Output impedance 100Ω

USB transmission ....Asynchronization

USB compatibility ....Windows 7 / 8 / 8.1 / 10 / 11, Mac OSX、Linux

Bit depth ....USB   1bit,   16 ~ 32bit

           Optical / Coaxial / AES/EBU   1bit,   16 ~ 24bit

Sampling rate ....USB / I²S   PCM   44.1 ~ 768kHz

                                          DSD   2.8224 ~ 22.5792MHz

           Optical / Coaxial / AES/EBU   PCM   44.1 ~ 192kHz

                                          DSD   DSD64(DoP)

Bluetooth specification........................BT 5.0(support SBC,AAC,aptX,aptX HD,LDAC)

Power Consumption 5W

Standby power .... <0.5W

Size ....210X43X185mm (WxHxD)

Weight 1.2kg

Specifications are subject to change without notice.

Remote control

- Install 2 x AAA batteries as instructions.

- When using the remote control, point it toward the remote con-trol signal receiver on the main unit from a distance of 5 m (16 ft) or less. Do not place obstructions between the main unit and the remote control.

- The remote control might not work if the remote control signal receiver on the unit is exposed to direct sunlight or bright light. If this occurs, try moving the unit. Beware that use of this remote control could cause the unin-tentional operation of other devices that can be controlled by infra.

Operating the remote control

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

Note

This remote controller use 2 x R03/AAA batteries.

Display Interface and Instructions

1 Knob	**2** Remote window	**3** Display
4 RCA output	**5** Bluetooth antenna	**6** Optical input
7 Balanced output	**8** AES/EBU input	**9** I²S input
10 Coaxial input	**11** USB input	**12** AC IN(100-240VAC)
13 Power switch		

Package list

1* SMSL DO200   1* Remote control   1* Bluetooth antenna
1* USB cable   1* AC power cable   1* User manual
1* Warranty card
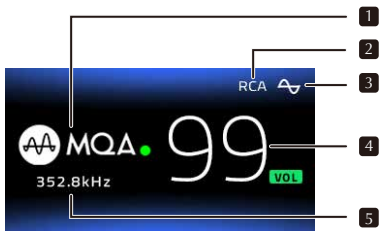
User interface

1、Audio format

2、Output interface, when blank, two interfaces output at the same time.

3、Output phase mark, ⌒ Normal phase, ⌒ Inverted.

4、Volume Level

5、Sampling rate,When Bluetooth input, display the decoding format
   (SBC, AAC, APTX, APTX HD, LDAC)

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 DO200 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.

MQA files playback

- DO200 has only USB, optical, coaxial and AES interfaces, supports MQA decoding.

- DO200's MQA playback does not require additional software. You can use foobar2000 or Audirvana for MQA playback as it supports ASIO or WASAPI audio output. When playing MQA audio, it is suggested to adjust the volume of the computer to the maximum for the best audio output.

- The DO200 LED next to MQA logo glows green or blue to indicate that the unit is decoding and playing an MQA stream or file, and denotes provenance to ensure that the sound is identical to that of the source material. It glows blue to indicate it is playing an MQA Studio file, which has either been approved in the studio by the artist/producer or has been verified by the copyright owner.

- When playing an MQA file, the sampling rate of the original master recording is displayed.
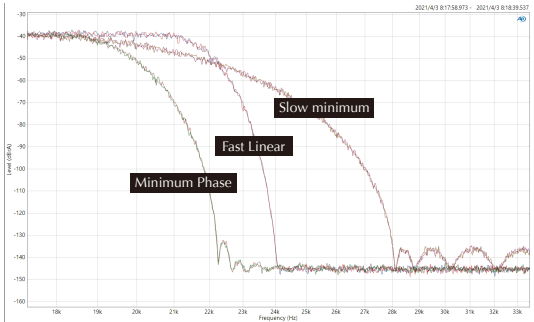
Instructions

■ **INPUTS**

- USB
- OPTICAL
- COAXIAL
- AES/EBU
- I2S(HDMI)
- BLUETOOTH

■ **OUTPUTS**

- ALL Normal
- XLR Normal
- RCA Normal
- ALL Inverted
- XLR Inverted
- RCA Inverted

■ **PCM FILTER**

- Fast Linear
- Slow minimum
- Minimum Phase

SPDIF MODE

This setting is only valid for optical/coaxial and AES interfaces which using SPDIF protocol;

- NORMAL MODE

NORMAL mode, only use the digital receiver chip (DIR) to process the SPDIF signal, used in most occasions, in this mode supports MQA renderer and DoP playback, but at this time due to the limitation of the ES9068AS chip, it cannot display that the current playing is DoP, and only 176.4kHz input can be displayed. This is normal, and the internal will still decode DoP and output normal audio.

- PROCESSOR MODE

PROCESSOR mode, in this mode DO200 will use the XMOS processor to process the optical/coaxial signal, so that it can have more powerful computing power and can handle various complex tasks including MQA, DoP, in this mode , Play DoP audio, the DSD icon will be displayed correctly on the display.

Note: do not switch this mode frequently, try to restart the machine after switching this mode, otherwise it may cause output noise.

SOUND COLOR

There are 9 sound color settings in DO200.

- Rich1、 Rich2、 Rich3
- Tube1、 Tube2、 Tube3
- Crystal1、 Crystal2、 Crystal3

This setting is usingthe DSP of ES9068AS,to make some different sound color, all of these settings will not change the frequency response curve.When set to "Standard", this setting will be bypassed.

PRE MODE

Volume control enable or disable.

- Vol Fixed : In this mode, volume is fixed on max output level, and the DO200 will ignore the volume operations.
- Vol Variable: In this mode, volume can be adjust, and make DO200 a pre-amplifier.

FN KEY FOR

- Switch XLR/RCA
- ALL Outputs
- Bluetooth
- Switch Phase

DPLL

- MIN ~ MAX

(A total of 15 kinds, the default is 5 kinds. The larger the number is, the stronger the range to adapt to jitter, and the smaller the number, the better the performance against clock jitter.)
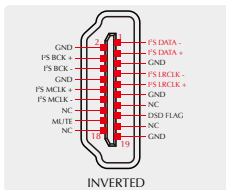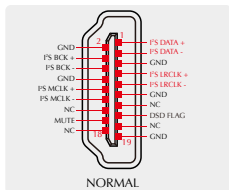
This DPLL setting is a special function of ESS series products. It can adjust the internal DPLL digital phase locked loop circuit Bandwidth, so that the chip achieves a balance between anti clock jitter and input tolerance.

Its function:

- When the clock stability of the input signal is good, this value can be reduced, so that the clock performance of the system is better;

- When the clock stability of the input signal is not good, the sound may be interrupted. Increase this value can avoid the sound interruption! Especially when using TV as signal source!
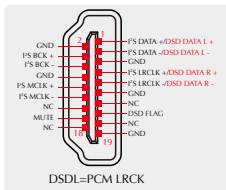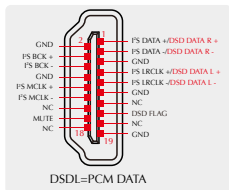
I²S MODE

- NORMAL

- INVERTED

NORMAL

GND	I²S DATA +
I²S BCK +	I²S DATA -
I²S BCK -	GND
GND	I²S LRCLK +
I²S MCLK +	I²S LRCLK -
I²S MCLK -	GND
NC	NC
MUTE	DSD FLAG
NC	NC
	GND

INVERTED

GND	I²S DATA -
I²S BCK +	I²S DATA +
I²S BCK -	GND
GND	I²S LRCLK -
I²S MCLK +	I²S LRCLK +
I²S MCLK -	GND
NC	NC
MUTE	DSD FLAG
NC	NC
	GND

Note: This option is used to match different I2S interface standards, please check the interface definition of the signal source before use

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)

DSDL=PCM DATA

GND	I²S DATA +/DSD DATA R +
I²S BCK +	I²S DATA -/DSD DATA R -
I²S BCK -	GND
GND	I²S LRCLK +/DSD DATA L +
I²S MCLK +	I²S LRCLK -/DSD DATA L -
I²S MCLK -	GND
NC	NC
MUTE	DSD FLAG
NC	NC
	GND

DSDL=PCM LRCK

GND	I²S DATA +/DSD DATA L +
I²S BCK +	I²S DATA -/DSD DATA L -
I²S BCK -	GND
GND	I²S LRCLK +/DSD DATA R +
I²S MCLK +	I²S LRCLK -/DSD DATA R -
I²S MCLK -	GND
NC	NC
MUTE	DSD FLAG
NC	NC
	GND

Note: When using the I2S input to streaming DSD audio, if you find that the left and right channels are incorrect, you can use this option to correct it.

DSD FLAG

- DSD FLAG=PIN15
- DSD FLAG=PIN14

DSD FLAG 15

DSD FLAG 14
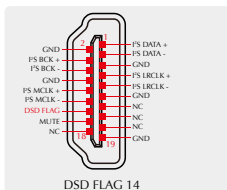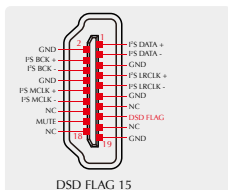
DIMMER

- 5 second ~ 60 second

(The range is 5 seconds-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

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.