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# ***X-SABRE Pro** MQA Version*

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Manual

[www.matrix-digi.com](http://www.matrix-digi.com)



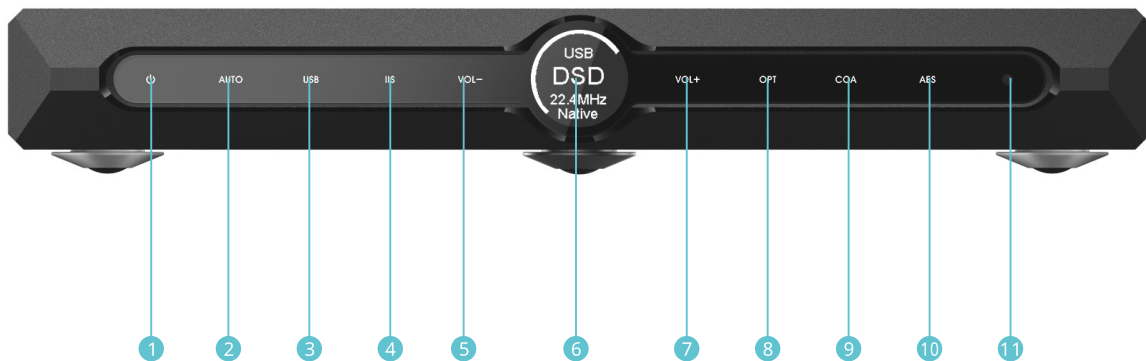
## Overview

- ESS SABRE PRO series ES9038PRO flagship D/A chip
- Up to -134dB SNR and dynamic range, THD+N as low as 0.00012%
- Full MQA (Master Quality Authenticated ) decoder
- Support up to 32Bit/768kHz PCM digital audio stream playback
- Support up to 1Bit/22.5MHz DSD digital audio stream playback
- The new dynamic display interface, display the different status information separately, to make it clear and intuitive
- Sample rate, bit rate and DSD transmission mode real-time display
- Support remote control
- The top-level high precision Crystek audio dedicated crystal oscillators
- ES9311Q ultra-low noise LDO chip
- NORATEL audio dedicated transformer, Nichicon audio capacitors
- Multiple groups low noise LDO, two of them is ultra-low-noise LDO
- The internal firmware (XMOS, MCU, and FPGA) can be updated via USB port by client-side

\* The product with this logo is conformed to High-Resolution Audio standard defined by Japan Audio Society. This logo is used under license from Japan Audio Society.

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## Front Panel



1 Standby

2 Auto scan mode

3 USB input

4 IIS input

5 Volume -

6 LCD screen

7 Volume +

8 Optical input

9 Coaxial input

10 AES input

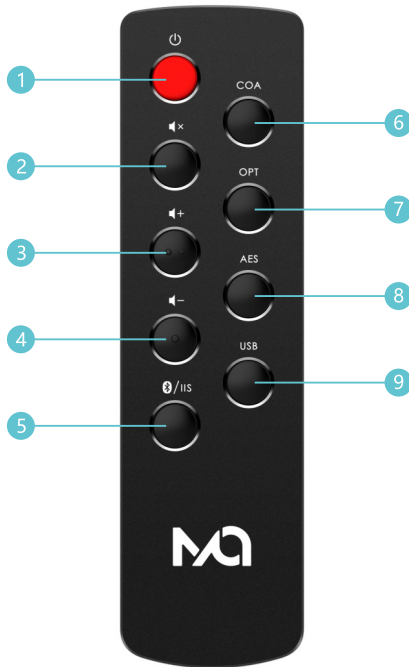
11 IR remote receiver

## Rear Panel



- 1 Right channel analog XLR output
- 2 Right channel analog RCA output
- 3 Left channel analog RCA output
- 4 Left channel analog XLR output
- 5 AES input
- 6 Coaxial input
- 7 Optical input
- 8 IIS input
- 9 USB input
- 10 M-link input
- 11 M-link output
- 12 Update mode switch
- 13 AC power input

## RM2 Remote Control



- 1 Standby
- 2 Mute
- 3 Volume+
- 4 Volume -
- 5 IIS channel
- 6 Coaxial channel
- 7 Optical channel
- 8 AES/EBU channel
- 9 USB channel

Long press any channel button for 2 seconds to access the auto scan mode.  
RM2 remote control use a CR2032 battery which can work for about 1 year.  
Please replace the battery if the remote operation distance is becoming shorter.

## AC Power

X-SABRE Pro is compatible with AC100-120V and AC220V-240V voltage specifications, please make sure to set the bottom power voltage switch of X-SABRE Pro according to your local voltage environment before using.



The two sections of the voltage switch are 115V and 230V, as shown below:

115V section is fit for AC100V-120V 50/60Hz

230V section is fit for AC220V-240V 50/60Hz

Please ensure the input power is in the right section before using, the incorrect voltage input can damage your X-SABRE Pro.

For reducing the noises and get the best playback quality, please use the three-phase power cable which includes the ground terminal, and ensure the ground is reliable connected.

## Usage and Settings

- Power On/Off

Connected the power plug, the red LED indicator will be lit up and device is initializing. Do not operate during this time, the red indicator light will turn off after 5 seconds and into standby. Touch the standby touchpad to power on, and press the standby touchpad about 2 seconds to go back the standby status.

- Switching Input Channels

1. Manual Selection Mode:

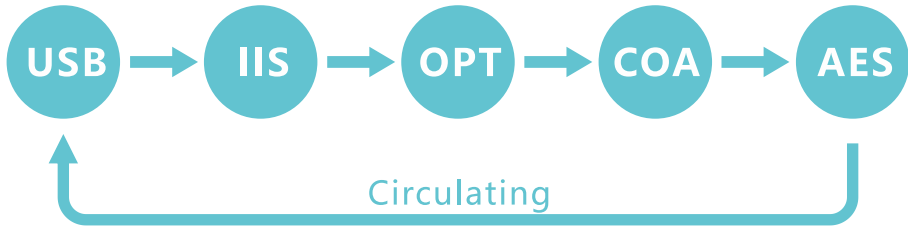
Touch the corresponding channel touchpad to switch input channel between Coaxial, Optical, AES, USB and IIS. The screen will show the current chosen input channel accordingly. As shown:



## Usage and Settings

### 2.Auto Scan Mode

At this mode, X-SABRE Pro will automatically scan 5 input channels. The first one connected to it will be locked immediately. It will continue to scan other channels until the current channel signal is lost. X-SABRE Pro always lock the signal which scanned at first when there are several inputs been connected. The order of input channel scanning is as shown :



Touch the "Auto" touchpad to enter the auto scan mode. The screen will display the "Scanning", as shown below:





## Usage and Settings

### 3.Signal Lock

When current selected channel has no signal, it would shown below:



When current selected channel signal is locked, it would shown below:



When the DSD audio streaming playback, the screen will display the DSD playback method(DoP or dCS or Native ), as shown below:



## Usage and Settings

The screen will display an auto scan logo at both sides of channel's name when this channel is locked in auto scan mode.



### 4. Channel Memory

X-SABRE Pro will automatically memorize the currently selected channel. When you power on next time, it will return to the channel which is memorized.

## Usage and Settings

- MQA (Master Quality Authenticated)

MQA is an award-winning British technology that delivers the sound of the original master recording. X-SABRE Pro includes MQA technology, which enables you to play back MQA audio files and streams, delivering the sound of the original master recording. The master MQA file is fully authenticated and is small enough to stream or download.

Visit [mqa.co.uk](http://mqa.co.uk) for more information.

'MQA' or 'MQA.' text appearing on the X-SABRE Pro screen panel indicates that the product 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. 'MQA.' indicates 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.

## Usage and Settings

The "MQA" text indicates that X-SABRE Pro is playing genuine MQA format streaming media or files.



The "MQA." text indicates that, in addition, the source has either been approved in the studio by the artist/producer or has been verified by the copyright owner.



If "OFS" is displayed, it means that X-SABRE Pro is receiving MQA signal which is unfolded by some upstream decoder or software where the media source is initially handled.




# Usage and Settings

- Volume Control

### 1. Work Modes

X-SABRE Pro has two work modes of DAC and PRE. In DAC mode, the output amplitude is the standard level (RCA output is 2.25Vrms, XLR output is 4.5Vrms); in PRE mode, touch the volume touchpad to increase or decrease the output amplitude, the screen will display the decibel of current volume, as shown below:





"DAC Mode" means that the device outputs a signal with a maximum level of 0dB. Before selecting this mode, make sure that your power amplifier or active speaker has volume control function and that the volume has been adjusted to a small level. If the amplifier or the speakers do not have volume control, do NOT set the product to "DAC mode" as this may result in hearing loss or equipment damage.

### 2. Gain Control

In the PRE mode, the gain of PCM audio streaming output can be configured to +18 dB, as shown below:



### 3. Volume Memory Function

X-SABRE Pro can automatically memorize the volume. When power on next time, it will return to the volume you chosen last time.

In order to protect your hearing and avoid the too loud volume, when the volume is above 0dB, it will return to 0dB after reboot next time; when the volume is below 0dB, it will return to the actual volume which you set last time.

### 4. Mute Control

In playback status, you can touch the standby touchpad to activate mute, and touch the standby touchpad again to unmute. Mute can also be activated by mute button on remote control, there will have a mute icon "M×" on the screen when mute is activated, switch the input channel or adjust the volume will exit the mute status.

- Auto Sleep And Wake Up

X-SABRE Pro will enter sleep mode when the selected channel no signal input and without any operation for more than 5 minutes. X-SABRE Pro will automatically wake up when the signal recovered.

Under the "Auto Scan" mode, X-SABRE Pro will enter sleep mode when all the input channels are no signal and without any operations for more than 5 minutes, X-SABRE Pro will automatically wake up when the signal of any input channel is recovered.

The X-SABRE Pro can also be woken up by touching the standby touchpad under sleep mode. When you power off X-SABRE Pro manually, the automatic wake up function of X-SABRE Pro will be invalid.

# Usage and Settings

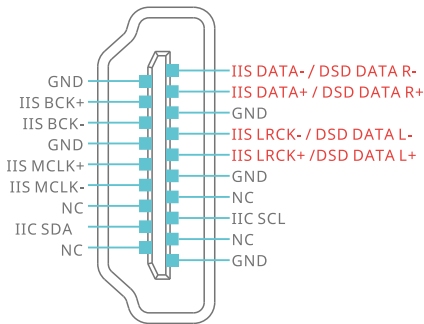
- M-Link Port

This port is for other products of Matrix Audio which have the M-Link port, in order to achieve the communication and joint control with other devices.

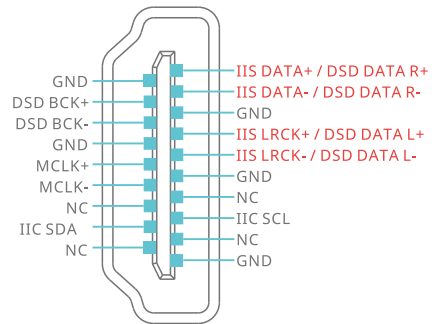
- IIS Port

The IIS port of X-SABRE Pro can support the PCM signal input at the maximum 32Bit/768kHz and the DSD signal input for 1Bit/45.1MHz, which uses the standard 19 needle HDMI connector to transfer the IIS data through 4 pairs of LVDS differential signal. PCM data is standard IIS signal format. DSD data format can support the native DSD data and use the DSD data of DoP or dCS.

The following is the definition of HDMI connector's stitch:



IIS standard phase definition



IIS reverse phase definition

## Usage and Settings

The IIS input requires MCLK when in synchronous mode, the MCLK should equal 128FS when the input sample rate is 384kHz or below, when the input sample rate is above the 384kHz, MCLK should equal 64FS. It is unnecessary to access an external MCLK from the IIS input under the asynchronous mode.

### ● Setup Menu

Touch and hold the standby touchpad on the unit body, hold down for about 2 seconds after the unit turned off, until the setup menu appears, touch the standby touchpad to switch configuration items.

A total of 12 configuration items, as follows:

#### 1. Work Mode

The line output gain can be adjusted in PRE mode. The line output gain is fixed in DAC mode.

PRE: PRE mode (default)

DAC: DAC mode





# Usage and Settings

## 2.Dither

Configure to turn on the dither function, it can effectively reduce the quantizing distortion.

ON: open the dither function(default)

OFF: close the dither function



## 3.PCM Filters

Seven different digital filters of frequency response curve can be configured; set filters to get a different sound performance, the frequency response curve of them as follows:

MOD1: fast roll-off, minimum phase filter (default)

MOD2: slow roll-off, minimum phase filter

MOD3: fast roll-off, linear phase filter

MOD4: slow roll-off, linear phase filter

MOD5: brickwall filter

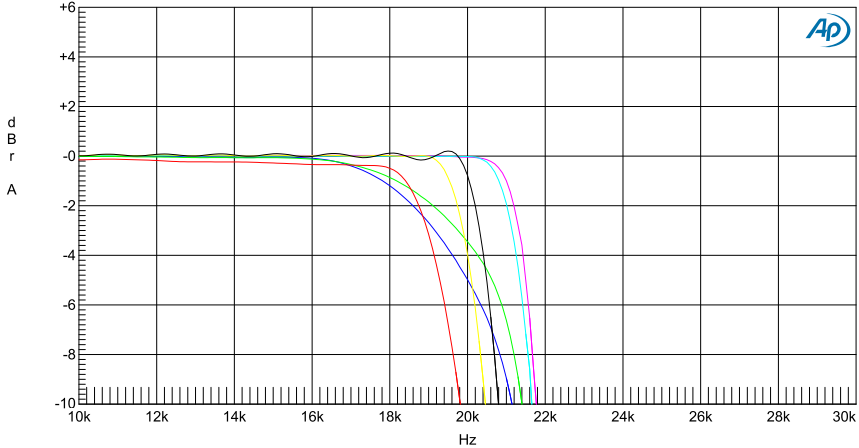
MOD6: hybrid, fast roll-off, minimum phase filter

MOD7: apodizing, fast roll-off, linear phase filter



# Usage and Settings

The frequency response curve of 7 kinds of filter as follows:



| Sweep | Trace | Color   | Line Style | Thick | Data             | Axis | Comment   |
|-------|-------|---------|------------|-------|------------------|------|---|
| 1     | 1     | Magenta | Solid      | 1     | DSP Anlr.Level A | Left | mod1_fast roll-off,minimum <span style="color: magenta;">●</span> |
| 2     | 1     | Blue    | Solid      | 1     | DSP Anlr.Level A | Left | mod2_slow roll-off,minimum <span style="color: blue;">●</span>    |
| 3     | 1     | Cyan    | Solid      | 1     | DSP Anlr.Level A | Left | mod3_fast roll-off,linear <span style="color: cyan;">●</span>     |
| 4     | 1     | Green   | Solid      | 1     | DSP Anlr.Level A | Left | mod4_slow roll-off,linear <span style="color: green;">●</span>    |
| 5     | 1     | Yellow  | Solid      | 1     | DSP Anlr.Level A | Left | mod5_brickwall <span style="color: yellow;">●</span>              |
| 6     | 1     | Red     | Solid      | 1     | DSP Anlr.Level A | Left | mod6_hybrid <span style="color: red;">●</span>                    |
| 7     | 1     | Black   | Solid      | 1     | DSP Anlr.Level A | Left | mod7_apodizing <span style="color: black;">●</span>               |

(Tested at 44.1 kHz)

These filter settings are only valid for PCM audio playback. The X-SABRE pro automatically enables the MQA dedicated filters when it receives MQA audio and these filter settings will have no effect.

## Usage and Settings

### 4.DSD Filters

Set the cut-off frequency of DSD digital filter.

47K(default), 50K, 60K, 70K



### 5.Line Output Gain

Set the PCM line output gain.

0dB(default)

+18dB



## Usage and Settings

### 6. Jitter Reducer

Set the internal time-base jitter elimination circuit to on or off.

ON: turn on the jitter reducer (default)

OFF: turn off the jitter reducer



### 7. Switch Between Synchronous And Asynchronous Mode

Set the work mode of ES9038PRO to synchronous or asynchronous mode.

ASYNC: use the internal 100MHz ultra-low phase noise clock (default)

SYNC : use the clock which is recovered from the input signal



## Usage and Settings

### 8. DPLL Bandwidth

The recommended DPLL bandwidth is NORMAL by default, If the digital signal from the music source device is not good enough, X-SABRE Pro could not lock the signal stably, please select HIGH bandwidth. The sound quality may be reduced in the HIGH bandwidth mode.

NORMAL: Standard DPLL bandwidth (default)

HIGH: High DPLL bandwidth



### 9. IIS Data Phase

Set the differential signal data phase of IIS port.

NATIVE: standard data phase

REV: reverse data phase



## Usage and Settings

### 10. Touch Buzzer

Configure the key tone on or off. (only effective for the touchpads except STANDBY)

ON: open the touch sound (default)

OFF: close the touch sound



### 11. LCD Brightness

Set up for 3 level of luminance.

H: high

M: middle (default)

L: low



## Usage and Settings

### 12. Auto Key Light

Set the backlight of the touchkeys turn off automatically or not.

ON: The backlight turn off after 30 seconds of inactivity.

OFF: The backlight always turn on.



### 13. Load Default

Touch the standby touchpad in this option, the user settings, boot channel and the boot volume in the storage will be cleared; all the settings ( input channel and volume ) will be cleared and restore to the default.



## Usage and Settings

### 14. Firmware Version

Display the current firmware version.



### 15. Exit

Save the settings above and exit setup menu.

In this option touch the standby touchpad, all of these settings are saved to storage and reboot.



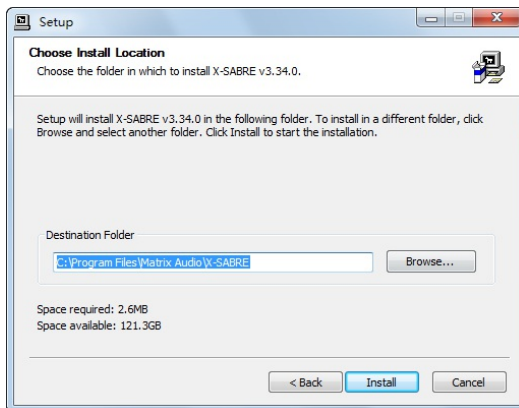


# Driver Installation and Software Configuration

1. The Windows driver installation of X-SABRE Pro  
Double-click the driver installation file, and select "Next".



Please select the installation path and select "Install".

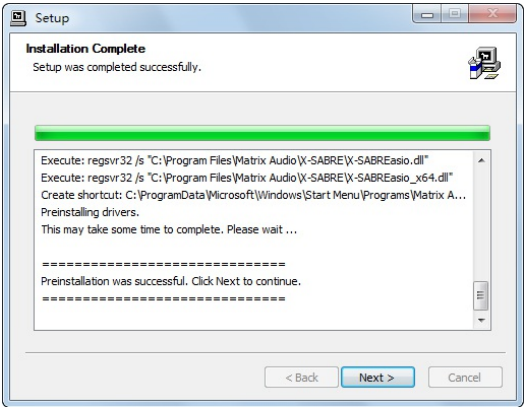


## Driver Installation and Software Configuration

Choose “Always trust the software from Matrix Electronic Technology Co., LTD” in the pop-up dialog box and select “installation” .

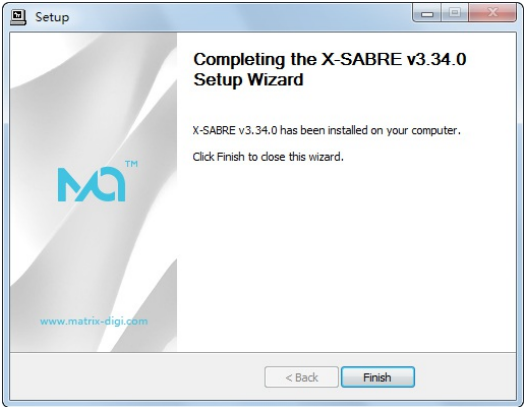


Installation is completed, select "next".



## Driver Installation and Software Configuration

Select "Finish", the driver installation is completed.



2. Mac OS X without having to install drivers. Please select the audio device directly to "Matrix Audio X-SABRE Pro" in System Preferences for using.



## Technical Specifications

### Digital Input

AES: PCM 16-24Bit/44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz

DSD DSD 64(DoP/dCS)

Coaxial: PCM 16-24Bit/44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz

DSD DSD 64(DoP/dCS)

Optical: PCM 16-24Bit/44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz

DSD DSD 64(DoP/dCS)

IIS: PCM 16-32Bit/44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz,

352.8kHz, 384kHz, 705.6kHz, 768kHz

DSD DSD 64/128/256(DoP/dCS)

DSD 64/128/256/512 (Native DSD)

USB: PCM 16-24Bit/44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz,

352.8kHz, 384kHz, 705.6kHz, 768kHz

MQA 16-24Bit/44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz,

352.8kHz, 384kHz

DSD DSD 64/128/256(DoP)

DSD 64/128/256/512(ASIO Native)

# Technical Specifications

## System Support

Windows 7/8/8.1/10 systems need to install the supplied drivers.

Mac OS X 10.6.4 and above version without installing drivers.

Most Android devices can be used via OTG cable.

The iOS devices can be used via the Apple Camera Connection Kit.

## Analog Output

### XLR

|                     |   |
|---------------------|---|
| SNR:                | 134dB A-Weighting   |
| THD+N:              | <0.00012% at 1kHz A-Weighting<br><0.00015% at 20Hz-20kHz A-Weighting      |
| Frequency Response: | 20Hz-20kHz(+0.01dB/-0.02dB)   |
| Channel Crosstalk:  | >-151dB at 1kHz   |
| Output Level:       | 4.5Vrms Fixed at 0dBFS DAC Mode<br>0-4.5Vrms Adjustable at 0dBFS PRE Mode |

### RCA

|                     |   |
|---------------------|---|
| SNR:                | 129dB A-Weighting   |
| THD+N:              | <0.00018% at 1kHz A-Weighting<br><0.00030% at 20Hz-20kHz A-Weighting        |
| Frequency Response: | 20Hz-20kHz(+0.01dB/-0.02dB)   |
| Channel Crosstalk:  | >-143dB at 1kHz   |
| Output Level:       | 2.25Vrms Fixed at 0dBFS DAC Mode<br>0-2.25Vrms Adjustable at 0dBFS PRE Mode |

## Technical Specifications

### Power

Power Voltage: 230V position is fit for AC220V-240V 50/60Hz

115V position is fit for AC100V-120V 50/60Hz

Standby Consumption: <1W

Sleeping Consumption: <4W

Power Consumption: <10W

### Other Specifications

Dimension: 300x218x45mm(L×W×H, including the protruding part)

Weight: 3.7 kg

## Customer Service

From the purchase date, we provide one-year limited warranty, warranty does not contain accessories.

Any fault caused by product quality problems during the warranty period, we will provide free maintenance, not including fault caused by wrong use, negligence, accidental damage and unauthorized modifications or replace components.

For more information, please visit [www.matrix-digi.com](http://www.matrix-digi.com).



**MATRIX**<sup>TM</sup>  
**AUDIO**

Ver.202211

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