MATRIX

2-Channel 24-bit 192-kHz ASRC

Desktop Digital Audio Processor

CUBE

User Guide

Thank you for purchasing MATRIX digital audio processor!

This manual booklet provides you with general information that you need before installing and using your audio processor.

Enjoy the infinite pleasure brought you by the remarkable performance of CUBE.

Be sure to keep all user documentation handy for future reference, including the Model No. & Serial No.

CAUTION: For the prevention of fire and electric shock, do NOT let the appliance deteriorate in damp conditions!

CONTENTS

● Features

All the following features enable CUBE to explore every small detail in the music for you, and provide you a tactile sensation of its sound performance, with its ultra-high resolution and signal-to-noise ratio, to fully meet your demands for a high-quality Hi-Fi.

- Top 24Bit/192kHz D/A converting units，WM8740 of Wolfson
- High-end TI digital Sampling Rate Increase processing chip -- SRC4382
- ASRC(Asynchronous Sample Rate Converter) – the technique of separating the internal and external clock and resampling, which effectively reduces the timing jitter generated by the former sources and transmission lines.
- A professional digital receiver chip of ultra-low jitter and a high-precision clock independent system clock.
- USB, OPTICAL, and coaxial digital signal input modes, and a coaxial output.
- Up to 24BIT/192kHz digital signal input
- ASRC Sampling Rate can be increased to 174.6 KHz /192KHz and putout through digital channel
- Its internal headphone amp unit can easily drive any headphones of 300 ohms and below.
- Headphone amplifier can work independently when it is connected to external signal
- A professional stereo OP-Amp, OPA2134/LM833, to provide you with the best signal playback effect.
- Its internal circuit units adopt the multi-stage stabilized voltage supply respectively.

● Introduction

Please put CUBE in a well-ventilated place away from heat source, and avoid dust accumulation and excessive vibration.

For the prevention of fire, please reserve some secure space around CUBE according to the following requirements:

- at least 5cm on both sides and its back,
- at least 10cm from its top.

Do not stack CUBE with other equipment which generate lots of heat, otherwise it may lead to the decline of CUBE's working stability. It may even damage CUBE, or cause other serious accidents.
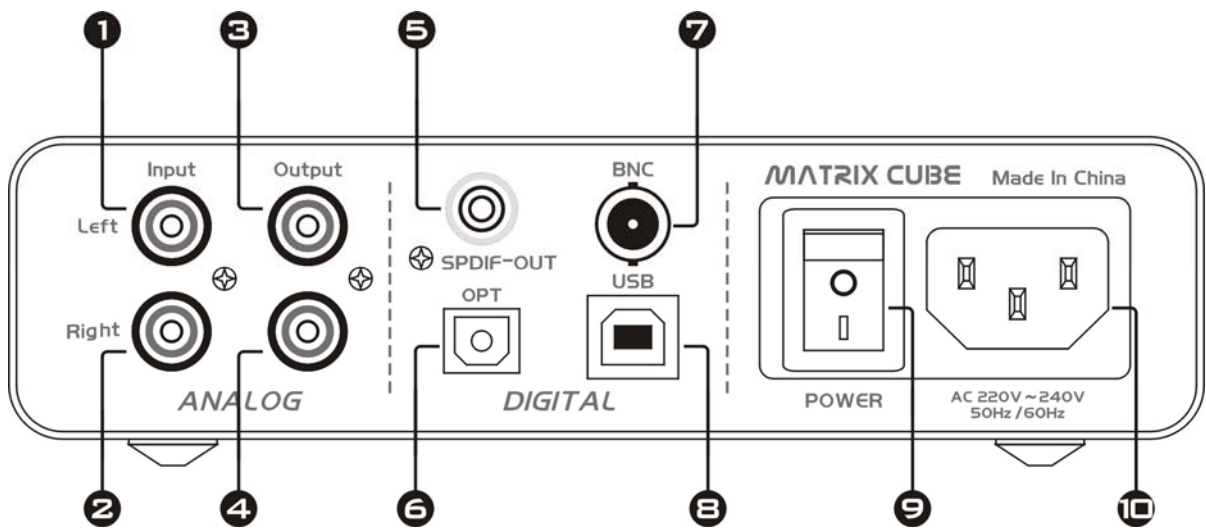
CUBE cannot bear fierce collisions. Please handle it gently while carrying so as not to cause unnecessary damage.

● Front Panel
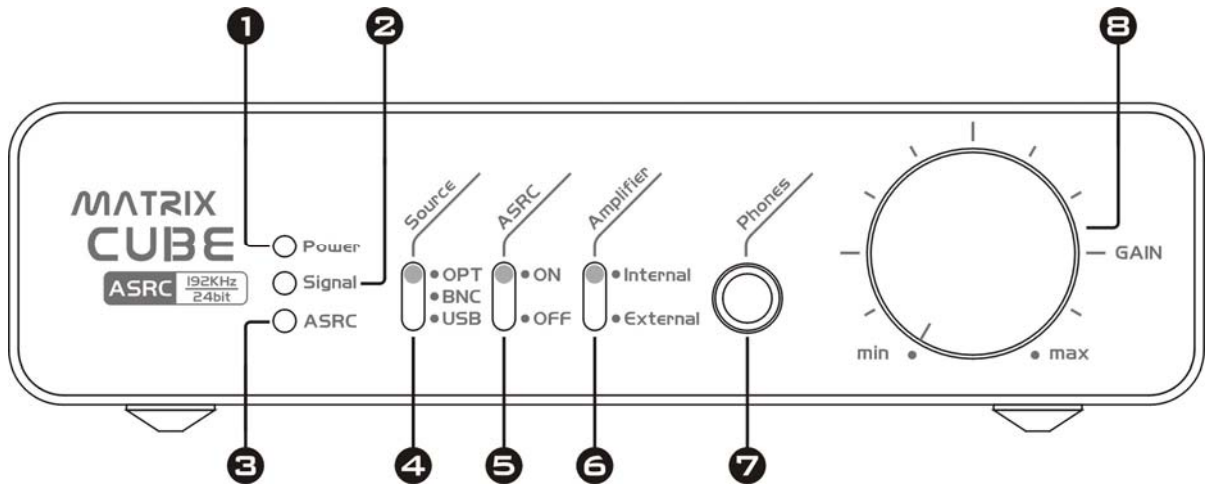
● ❶ Power Light   ❷ Signal Indicator

❸ ASRC Sampling Rate Increase Indicator   ❹ Input Channel Switch

❺ ASRC Sampling Rate Increase Switch   ❻ Amplifier Switch

❼ Headphone Plug-jack   ❽ Volume Control Knob

● Back Panel

❶ Amplifier L Analog Input   ❷ Amplifier R Analog Input

❸ L Analog Output   ❹ R Analog Output

⑤ Coaxial Digital Output   ⑥ Optical Digital Input

⑦ Coaxial Digital Input   ⑧ USB Input

⑨ Power Switch   ⑩ AC Power In

● Settings & Usage

Power On

Turn on the power on the back panel, and the power LED will turn red. The initialization completes after about 0.3 second. Then it will enter into the normal working state.

If you don't use CUBE for a long time, please turn it off and unplug the power cable.

LED Display

- RED: Power light.   Power's on and CUBE is in the state of working.
- GREEN: Signal Indicator.   CUBE has located the input signal.
- ORANGE: ASRC Sampling Rate Increase Indicator.   ASRC's switched on.

Input Channels

You can choose among the OPTICAL, coaxial and USB digital signal input channels by switching. And once the signal is detected, the GREEN LED will light up.

ASRC Sampling Rate

When the ASRC on the front panel is switched ON, CUBE will resample the input signal at 176.4/192kHz according to an high-precision internal clock, shutting away the original clock of the signal, which effectively reduces the timing jitter generated by the former sources and transmission lines.

When ASRC is turned OFF, the function of the ASRC Sampling Rate Increase is shut down, so CUBE will convert D/A according to the original input sampling rate.

The frequency of ASRC output depends on the sampling rate of the input signal. When the sampling rate of the input signal is 44.1kHz or its integral multiple, the ASRC output sampling rate will be 176.4kHz; when it is 48kHz or its integral multiple, the ASRC output sampling rate will be 192kHz.

Headphone Output

The high-quality standard 1/4" stereo headphone plug-jack on the front panel can drive any headphone of 300 ohms and below, which makes it very convenient to use your headphone. Use the Volume Control Knob on the front panel to adjust the volume.

When the Amplifier on the front panel is switched to the position of Internal, the Amplifier will be connected to the internal output of CUBE and directly monitor the output signal.

When it is switched to External, the Amplifier will be connected to the external input and monitor external input audio signal. Meanwhile, the circuit units of CUBE work unaffectedly.

Coaxial Digital Output

CUBE possesses a coaxial digital output. The output state depends on the condition of the output channel. This channel directly outputs current digital signals. When the ASRC on the front panel is switched off, CUBE will output the original code such as AC-3, DTS and so on. When the ASRC is turned on, Cube will increase the sampling rate to 176.4KHz/192KHz. It is also very convenient to connect it with other digital audio equipment or AC-3, DTS decoders.

USB Driver

CUBE's USB interface works under Win 2K / Win XP / Vista / 7, Linux, Mac OS X, but it does not support AC-3, DTS stream signal transmission. To improve this, installation of the USB driver provided by MATRIX is suggested. By doing so, you can also set Xear™ Virtual 3D processing and 10-band equalizer.

● Trouble shooting

Check the following before calling for service:
- Whether all the connections have been done correctly or not
- Whether your CUBE is properly operated or not

If your problems cannot be solved by the remedies listed in the following table, it might due to the malfunction of CUBE's internal circuitry. In this case, please immediately unplug the power cable and contact the MATRIX distributor.

PROBLEMS	CAUSES	SOLUTIONS
Power OFF	● Unplugged into a proper AC ● Power is turned off	Make sure the power cable is connected to a proper AC and turn it ON
No Signal	● Digital input cable disconnected or no input signal ● Digital signal outputs abnormally	● Make sure the digital input cable is linked up correctly ● Check the digital signal output
No analog output	Analog port disconnected	Connect the audio cable correctly
No Headphone output	● It might be working under the DAC Mode ● Volume has been turned to minimum	● Switch to the INTERNAL mode ● Adjust the volume

 Common Malfunction

Common breakdowns might be caused by an interrupted AC power. Or the device is troubled by static electricity. Under these circumstances, turn it off and unplug the main power at least for a minute, then reconnect and restart.

● Technical Specifications

Digital Interface：
Input：

OPTICAL：	Sealed Optical Input	
	Sampling Rate : 32kHz~192kHz	
BNC :	Standard BNC 75 ohm	
	Sampling Rate : 32kHz~192kHz	
USB :	Standard USB Connector	
	Sampling Rate : 44.1kHz~48kHz	

Output：
Coaxial Output:

Standard RCA jack

Sampling Rate: 32kHz~192kHz，

Supports AC-3, DTS data output

Output Level :0.5Vp-p (75 ohm)

Analog Interface：

RCA Output Level：	2.0VRMS
RCA Input Impedance：	47kΩ
Frequency Response：	20Hz~20KHz
SNR：	109dB
Dynamic Range：	107dB
Distortion：	＜0.0005%（1KHz）

Power Requirements：
    Power： AC 220V 50/60Hz   （AC110V 50/60Hz）
    Power Consumption： ＜15W
Other Specifications：
    Operating Temperature： 0~+40℃
    Weight： 1.1kg
    Dimension(L×W×H)： 160×145×44 (mm)

NOTE: Specifications subject to changes without prior notice.

● Customer Service

From the date of purchase, MATRIX provides you a one-year warranty.

This warranty only covers the malfunction of our products caused by the quality problems of the original components or manufacturing issues.

Any failure and losses result from ignoring the cautions mentioned in this instruction and misusing as follows are NOT covered by the warranty and any liability:
- Inappropriate power connection
- Attempts to disassemble the product
- Circuit modification by the customer
- Unauthorized replacement of the original components
- Other unauthorized changes done by the customer

● Accessories
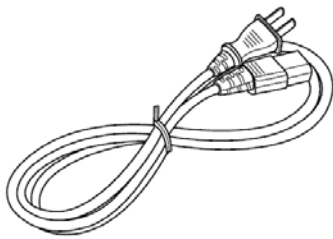
Power cable   User guide   BNC/RCA Adaptor

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