

CMA Twelve User Manual

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About CMA Twelve

Congratulations to you for being the owner of Questyle Audio CMA Twelve DAC/Headphone Amplifier.

CMA Twelve is the new flagship DAC/Headphone Amplifier of Questyle Audio. It inherits Questyle's classic desktop design style and marks the anniversary of the revolutionary Current Mode Amplification technology invented 12 years ago.

CMA Twelve adopts Questyle's core patented technologies of Current Mode Amplification, True DSD and 3X Clock Asynchronous Transmission, which allows the CMA Twelve to have outstanding performance from its DAC and pre-amplifier. Together with the DAC chip AK4490, CMA Twelve processes DSD signals without any PCM converting, providing the original DSD signal processing. The pre-amp out is user switchable between Fixed and Adjustable mode to match it with power amplifiers or active speakers.

CMA Twelve supports 4-PIN balanced output. It is designed with four groups of Current Mode amplifiers, exhibiting forceful driving power and an ultra-low distortion level of a mere 0.0005%. Plus the high-performance BIAS Control System, it will bring you an exceptional listening experience. CMA Twelve is Questyle's first device to feature the 4.4mm jack and Questyle is committed to continue with this trend.

In addition to S/PDIF, Optical and USB inputs, CMA Twelve supports professional interfaces of AES and XLR that are used in professional recording studios, and the live recordings can be monitored in real time via its 6.5mm headphone output. It is user switchable between Studio and Standard mode. In the Studio mode, the power level will change from 14dBu up to 20dBu instantly, matching it with studio-level professional equipment.

To avoid resonance, CMA Twelve chassis is made of 10mm-thick aircraft-grade Aluminum 6063 with high precision machining technique of 0.02mm. Especially the "mutual-bit" structure, silicone material and pure aluminum help to reduce resonance to a lowest level.

There are two versions of CMA Twelve, the first is the CMA Twelve Standard, the other being the CMA Twelve Master. The CMA Twelve Master has a "MASTER" laser marking, and it features the ROGERS Ceramic PCB and selected components to ensure the ultimate performance on sound quality and specifications.

In the Box

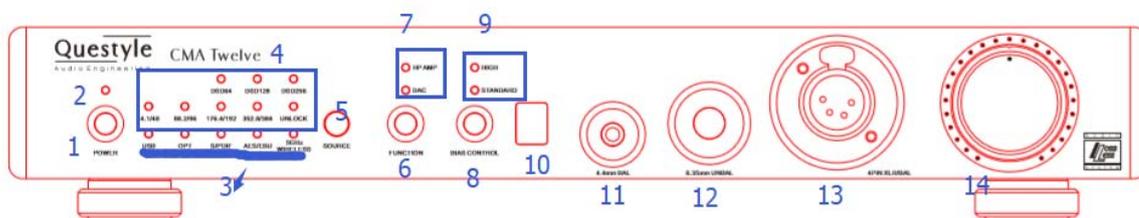
CMA Twelve 1pc

Power Cord 1pc

Remote Control 1pc

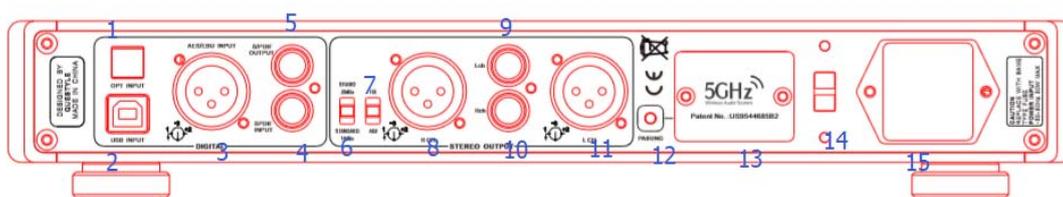
- CMA Twelve User Manual 1pc
- CMA Twelve Test Report 1pc
- CMA Twelve Driver CD 1pc

Front View



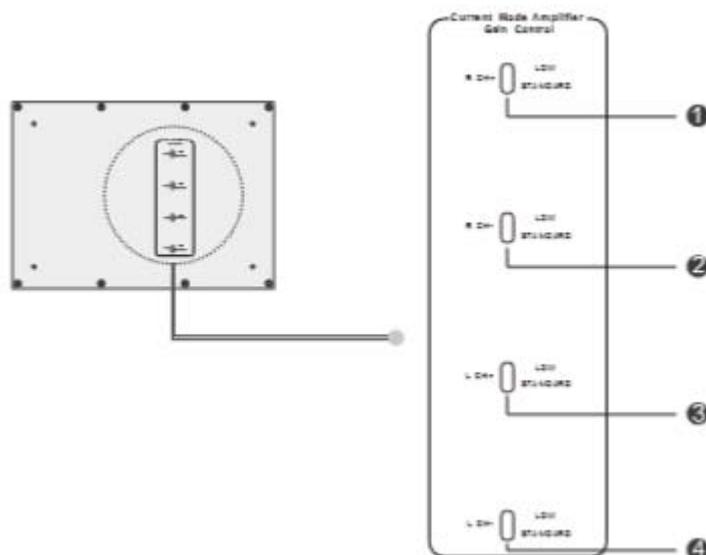
- ① Power switch
- ② Power indicator: it flashes quickly with orange light to show the system is starting and stays the orange light on to show the system has successfully started. It flashes slowly to show the system is in mute. If the indicator flashes quickly with red light, it means the system is in malfunction and you need to switch off the CMA Twelve, unplug your headphone and restart the CMA Twelve. If the problem is not solved, please contact your dealer or the After-Sales Support.
- ③ Source indicators: USB, OPT, S/PDIF, AES/EBU and 5G Wireless signals
- ④ Sample rate indicators
- ⑤ Source switch
- ⑥ Function switch between Headphone Amplifier and Pre-amplifier mode
- ⑦ Function indicators of Headphone Amplifier and Pre-amplifier (DAC) mode
- ⑧ BIAS Control switch
- ⑨ Indicators of High BIAS and Standard BIAS mode
- ⑩ Remote Control signal receiving zone
- 11 4.4mm balanced headphone output
- 12 6.35mm headphone output
- 13 4-PIN balanced headphone output
- 14 Volume control

Rear View



- ① OPT input
- ② USB type B input
- ③ AES/EBU input
- ④ S/PDIF input
- ⑤ S/PDIF output
- ⑥ Pre-amp output switch between Studio and Standard mode
- ⑦ Pre-amp output volume switch between Fixed and Adjustable. When you switch it to Fixed, the output will be at max level and the volume is unadjustable.
- ⑧ Pre-amp right channel balanced output
- ⑨ Pre-amp left channel unbalanced output
- ⑩ Pre-amp right channel unbalanced output
- 11 Pre-amp left channel balanced output
- 12 5G Wireless Pairing switch
- 13 Antenna housing. In order to get clear signals, please DO NOT use metal or other shielding materials to cover this part.
- 14 220V/110V voltage switch (Please make sure the indicated voltage is in accordance with the local voltage)
- 15 AC power supply

Bottom View



Headphone Amplifier Gain Control switch: the default setting is “Standard” mode. When you use IEMs, please set it to “Low” mode. Make sure the four switches are at the same mode setting.

Remote Control



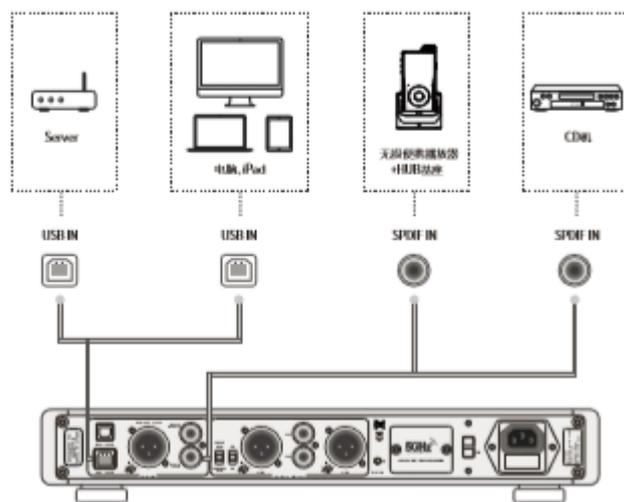
1. Mute
2. Source selection backward
3. Source selection forward
4. S/PDIF input signals
5. OPT input signals
6. Volume down
7. Volume up

Note: this is an all-in-one remote for Questyle products. When you pair the remote with CMA Twelve, only some of the buttons on the remote are available.

How to Match with CMA Twelve

1. Digital Input

CMA Twelve has OPT, S/PDIF, AES/EBU and USB inputs. Digital audio signals from your PC, music server, CD or Blu-ray can be sent to CMA Twelve (CMA Twelve supports USB Audio Class 2.0 standard driver). The core patented technologies of Current Mode Amplification, True DSD and 3X Clock Asynchronous Transmission allow the CMA Twelve to have outstanding performance from its DAC and pre-amplifier.

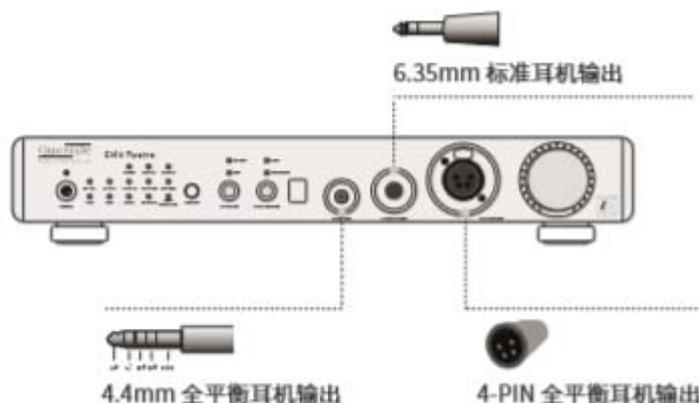


Note: you don't have to install a USB driver if your music player is Linux system supporting UAC 2.0.

2. Used as a DAC/Headphone Amplifier

CMA Twelve has a 6.35mm headphone jack, a 4-PIN balanced headphone jack and a 4.4mm balanced headphone jack. When you switch the "Function" to HP AMP (Headphone Amplifier) mode, the CMA Twelve can be used as a DAC/Headphone Amplifier and it will easily match with different headphones.

耳机与CMA十二



Note:

- ① Headphone jacks on the front panel include a 6.35mm headphone jack, a 4-PIN balanced headphone jack and a 4.4mm balanced headphone jack. You are NOT allowed to plug in all of the three jacks at the same time. With the 4-PIN balanced headphone jack plugged in, the other two jacks are NOT allowed to be used.
- ② CMA Twelve has DC output protection which will be enabled to cut off the output automatically and protect your headphones if a malfunction or error is found.
- ③ CMA Twelve has Headphone Amplifier Gain Control switch. The default setting of the Gain Control is “Standard” mode. When you use IEMs, please set it to “Low” mode.

3. Used as a Pre-amplifier

CMA Twelve can be used as a Pre-amplifier only and drive various active speakers.

- Switch the “Function” to DAC mode.
- When you switch the Pre-amp output to Standard mode, the max output level will be 14dBu. When you switch it to Studio mode, the max output level will be 20dBu.
- The Pre-amp output volume can be switched to Fixed or Adjustable. When you switch it to Fixed, the output will be at max level and the volume is unadjustable.

chart: CMA Twelve+ Active Speaker

5GHz Wireless Mode

CMA Twelve can be matched with Questyle Super Hub SHB2. They will communicate with each other via 5G Wireless transmission and bring you a wonderful music listening experience.

chart: SHB2+CMA Twelve

- Switch the “Source” to 5G Wireless.
- Press and hold the Pairing switch and the 5G Wireless indicator will flash quickly, then press the pairing button on the transmitter (SHB2). CMA Twelve and the transmitter are successfully paired when the indicator stays light on. (Once the pairing is done, the 5G Wireless will start working every time the 5G Wireless mode is on, so you don't have to do the pairing every time.) When the indicator is red, it indicates signals of high sample rate. When it is orange light, it indicates signals of general sample rate.
- You can match the CMA Twelve with headphones, speakers or other output devices depending on your needs.

PC System Requirements

1) Operation System

CMA Twelve's driver and hardware support Win XP/Vista/Win7/Win8/Win8.1/Win10. For Apple Mac OS, later versions than the 10.5.7 are well matched without installing any driver.

2) Media Player

CMA Twelve is not limited to any special media player. Any PC compatible player (including video players) is well matched.

3) File Format

File format is up to the media player on your PC. CMA Twelve can decode any file format that the media player supports.

4) Requirements for PC Configuration

At least one USB port is required. An acceptable USB2.0 high-speed cable of type A-to-B plug. We suggest using the high-quality USB cable to ensure the stability and reliability of data transmission and guarantee the best performance of CMA Twelve.

Install CMA Twelve Driver on Windows OS

Your CMA Twelve can be recognized by PC after installing the CMA Twelve Driver on Windows OS. We take Win7 64bit OS for an example to show the Driver installation.

- 1) Connect your CMA Twelve to its power supply and switch it on;
- 2) Connect your CMA Twelve to PC with a USB cable;
- 3) Put the provided CMA Twelve Driver disc into your PC and open the folder labeled "CMA Twelve Driver/For Windows 7, 8, 8.1 and 10/" and then

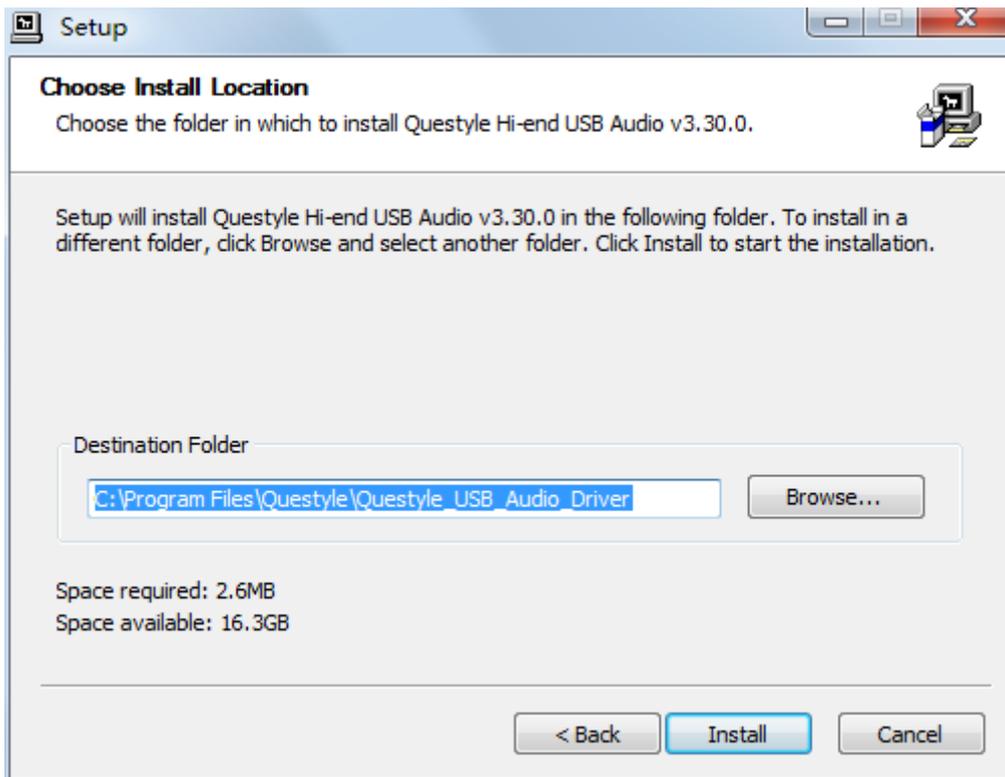


double click "Setup.exe".

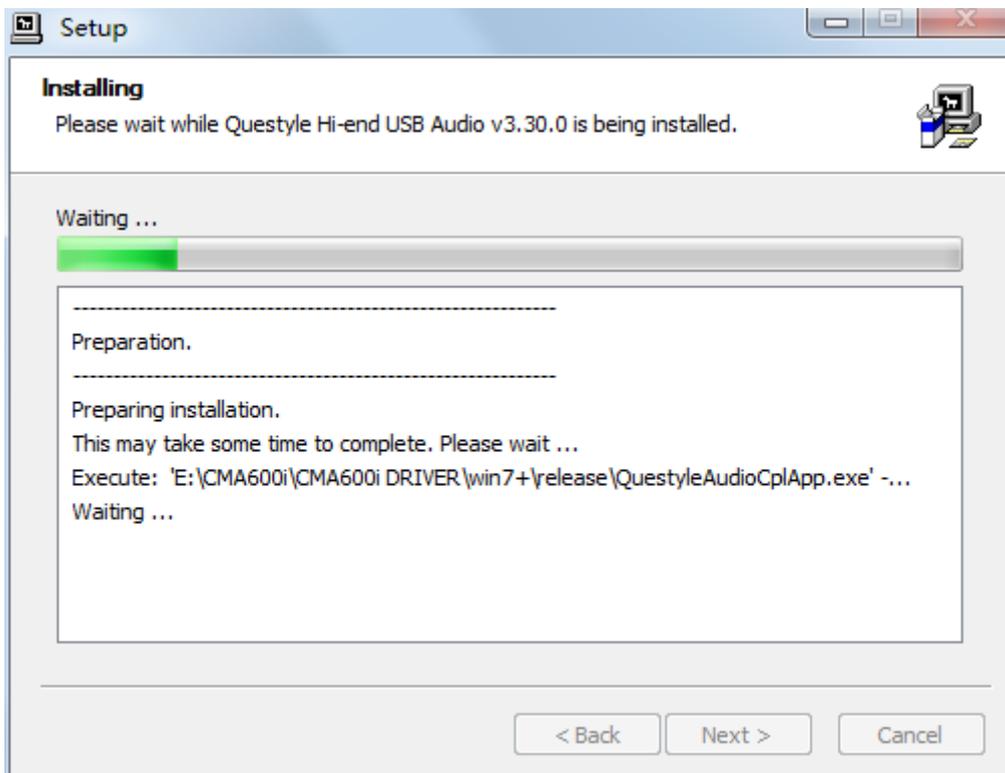
- 4) Then follow the steps below:



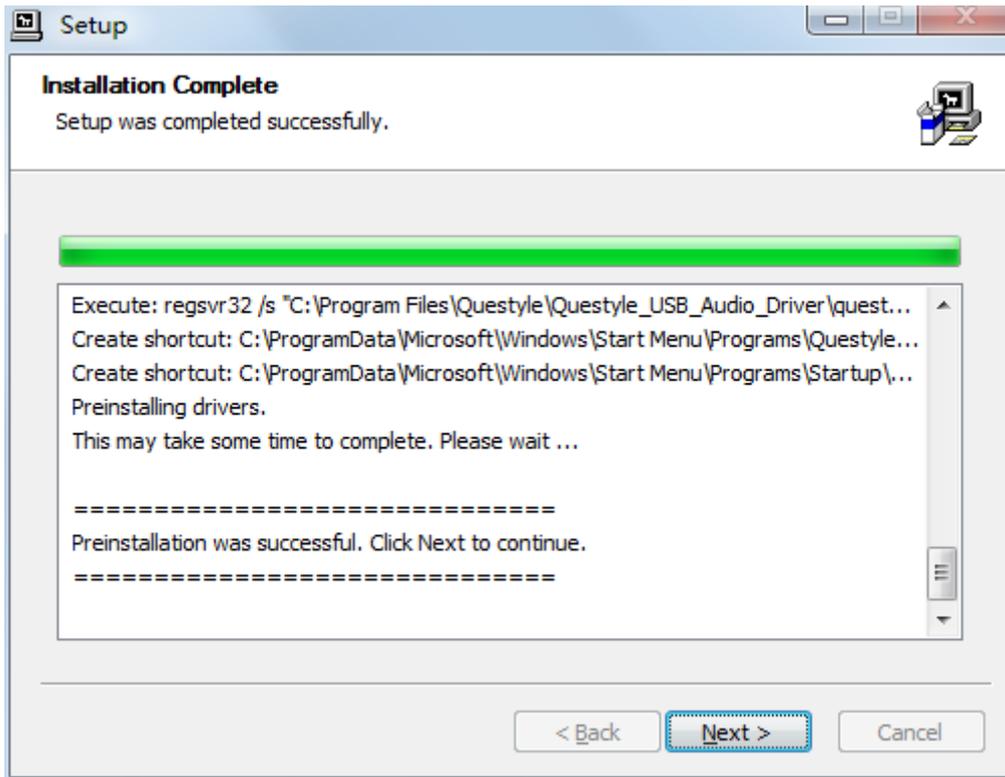
Click "Next"



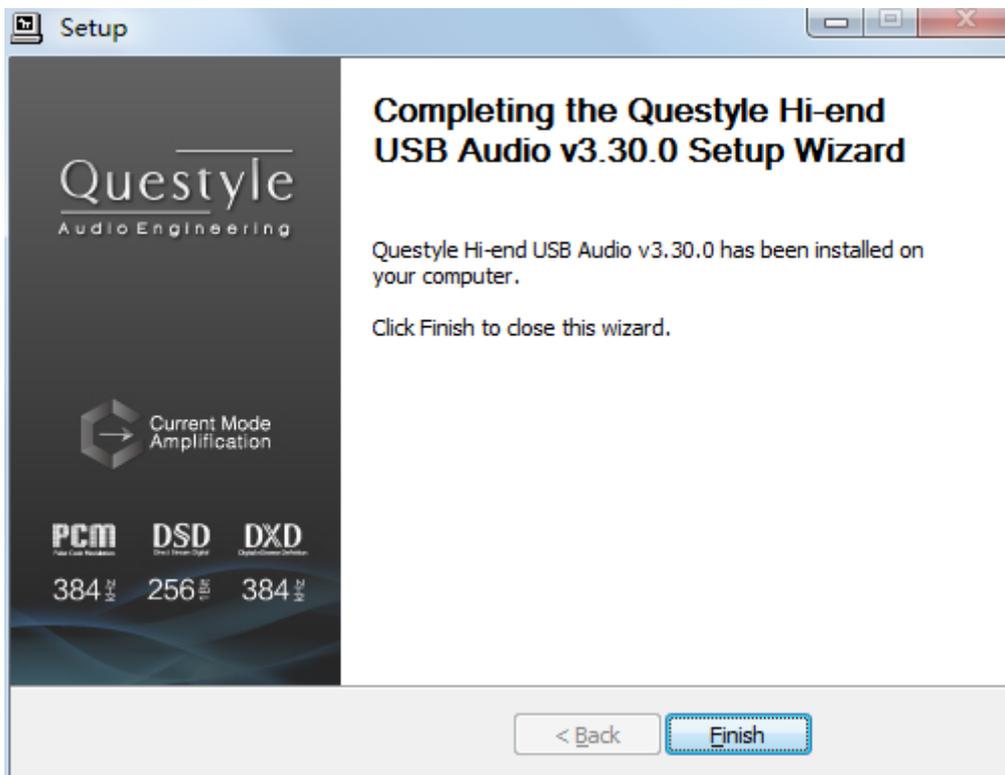
Click "Install" (Default install location is C drive)



Installation will take 3 or 5 minutes



Installation is completed, click “Next”



Click “Finish” to exit the installation

- 5) Restart your PC and the CMA Twelve Driver is finished installation;
- 6) Installation on Win XP, Vista is similar to the above.

Core Audio Stream Introduction

Core Audio Stream has formats of ASIO, KS and WASAPI, all of which can be supported perfectly by CMA Twelve. Besides, CMA Twelve supports DSD format.

According to general audio processing procedures of PC, all the sound from applications and systems is processed by SRC, going through the lengthy system processing and hardware layer transmission, and then output to the external device. The output data are totally different after all those procedures. To output the pure, original and “bit-perfect” data, we must open a high-speed and dedicated channel for audio device, which is the core audio stream technology.

CMA Twelve supports ASIO and KS on Win XP systems, and supports ASIO and WASAPI on Vista, Win7, Win8, Win10 systems. For example, when you enable WASAPI + Exclusive Mode between CMA Twelve and player software (like JRiver), you can't control the volume through system controller, the sound from the system or any other application will not be heard at the CMA Twelve output, which is because the system has opened the Core Audio Stream channel for CMA Twelve and the audio data directly get to the DAC of CMA Twelve with high-speed.

Setup Core Audio Stream on JRiver Media Center

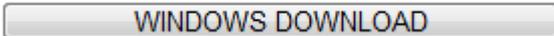
We recommend using Jriver Media Center 20 for getting the best performance.

JRiver Media Center is a fully functional media management and playback software. It can manage your music in groups and can stream music from the Internet. It also can be used for MP3 or DVD burning. JRiver can support kinds of audio files including MP3, MusicEx, WAV, OGG, RealAudio, RealVideo, AVI, QuickTime etc.

Let's take JRiver Media Center player 20 on Win7 32bit OS for an example to explain how to setup WASAPI.

I Download and Install

1) Go to JRiver website (<http://www.jriver.com/download.html>), and click

 to download JRiver Media Center 20.0.131;

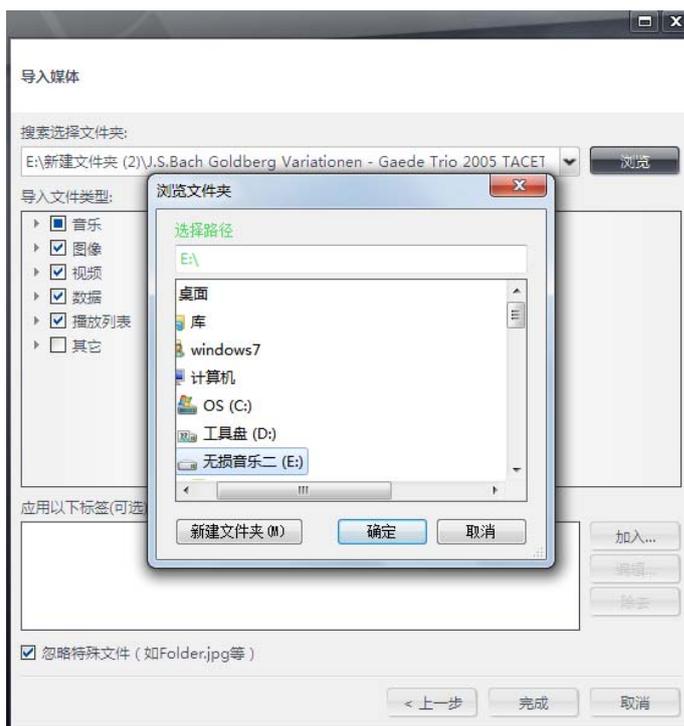
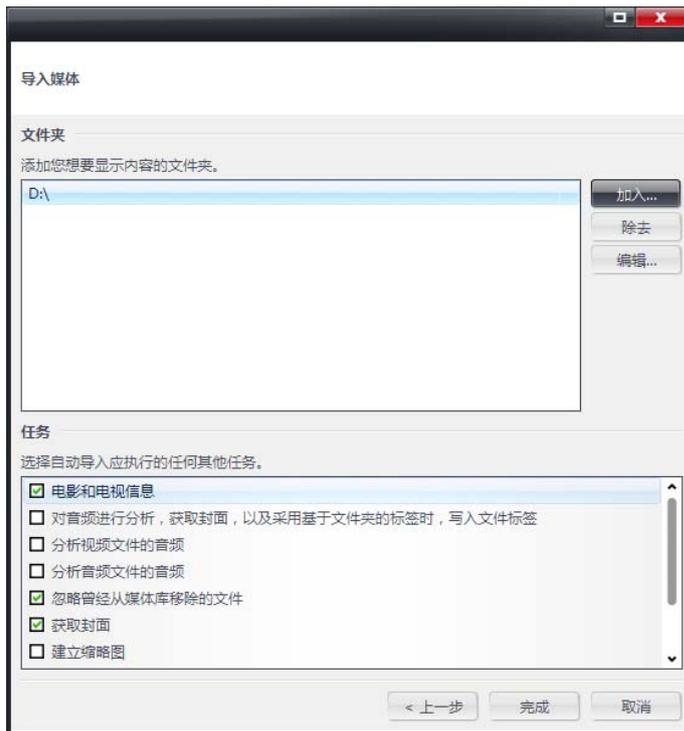
2) Install JRiver Media Center 20.

II Import Songs

1) Open “JRiver Media Center”, click ”Tools”-”Import” and select “Configure Auto Import ”, and then click “Next”;



2) Click “Add”-”Browse”, select the folder that contains songs, and then click “OK”-”Finish”.

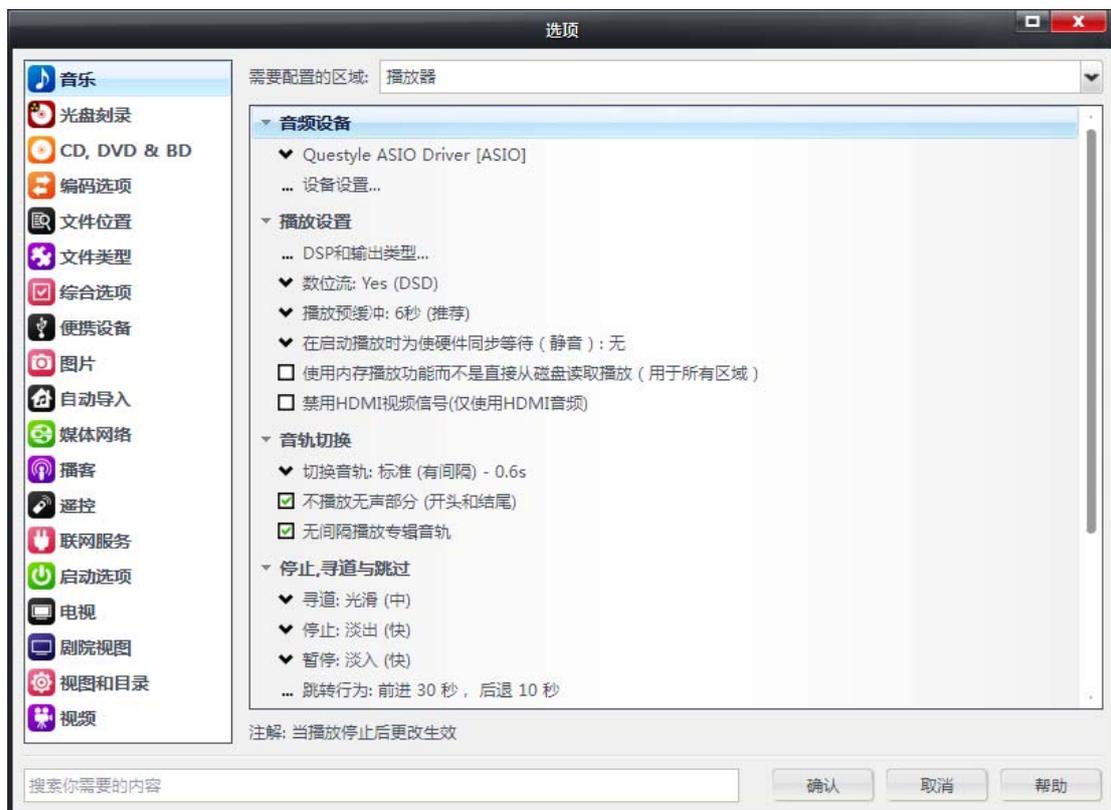


III JRiver Output Setup

- 1) Click "Tools" and select "Options";



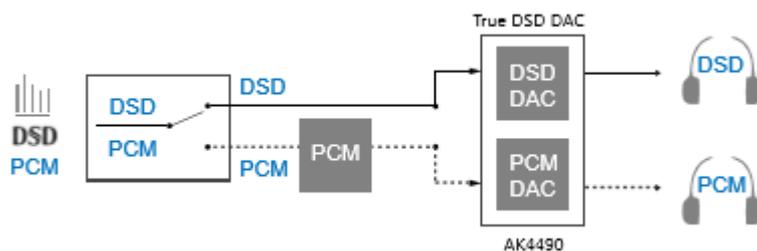
2) Select “Audio Device” under “Options”, and click ”Questyle ASIO Driver[ASIO]” and select “Default Audio Device”, and then click “OK”.



True DSD (Direct Stream Digital) Technology (China Intellectual Property Office Patent No. 201520211945.X)

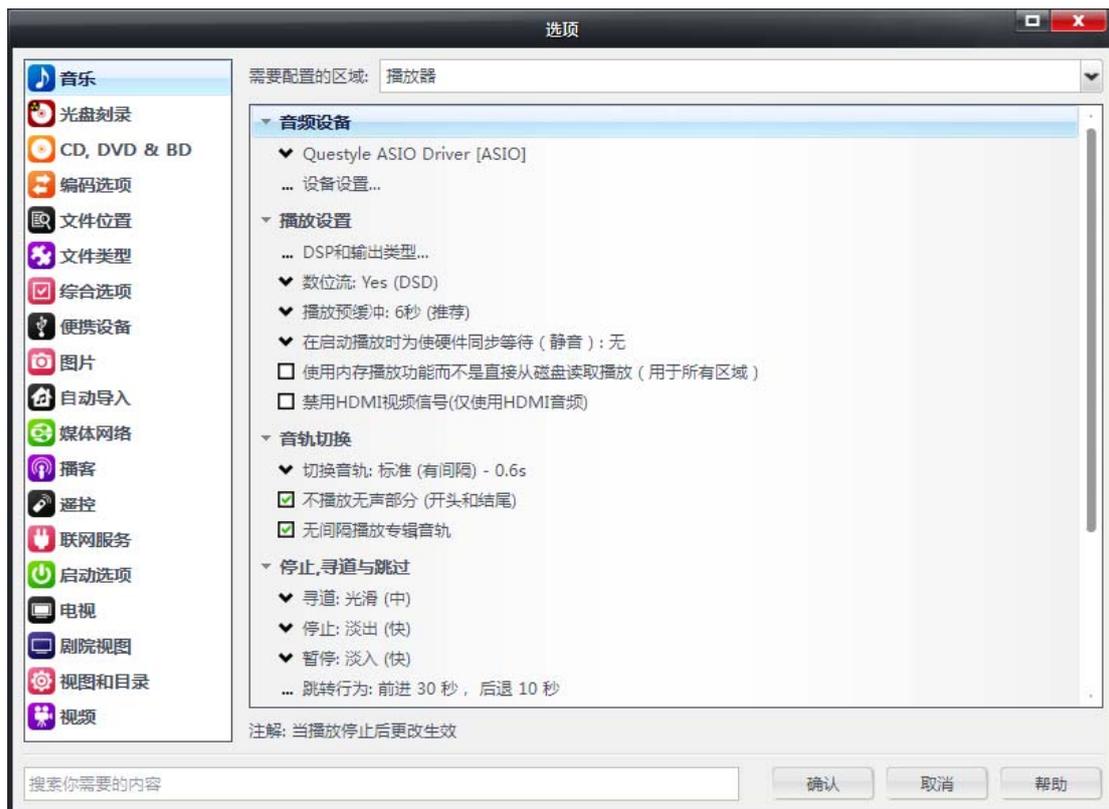
Nothing is better than the true. The True DSD technology is one of the core patented technologies of Questyle Audio. It processes DSD signals without any PCM converting and provides True DSD, which is fundamentally different from DoP and Native DSD.

When the system processes DSD signals, hardware mode switches to the True DSD channel. In this case, options for digital filter and digital volume control fail, strictly following the process of SACD playback.

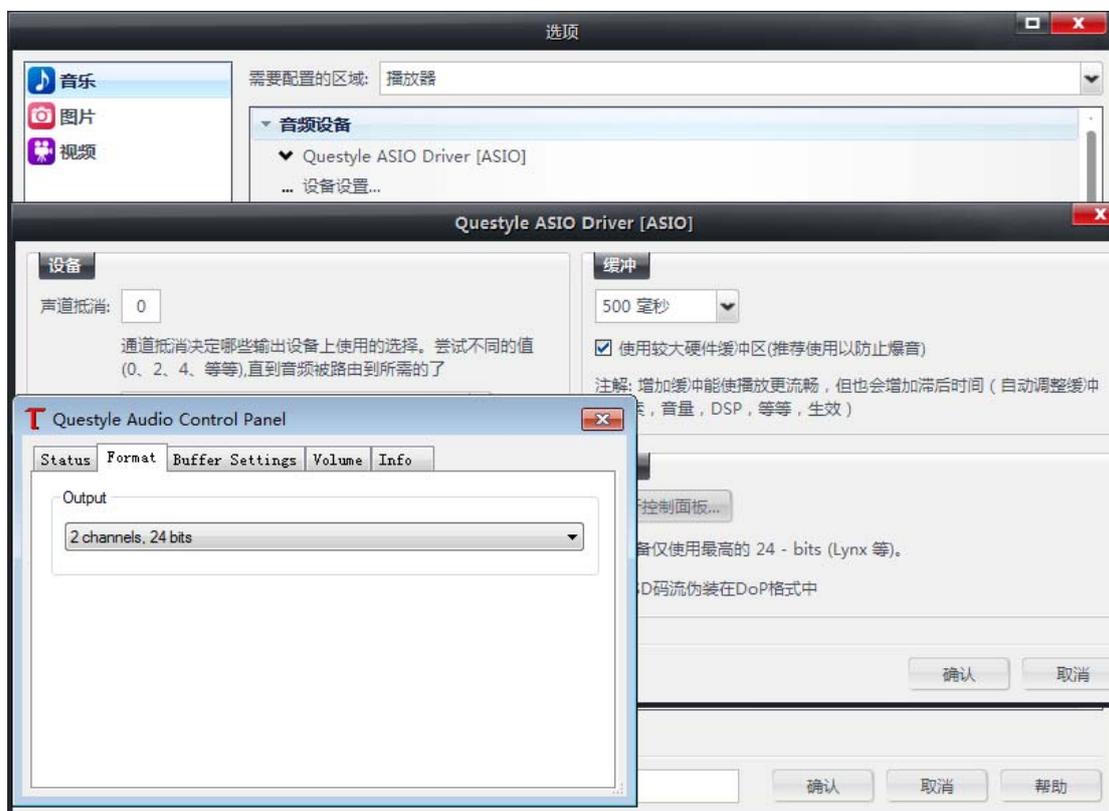


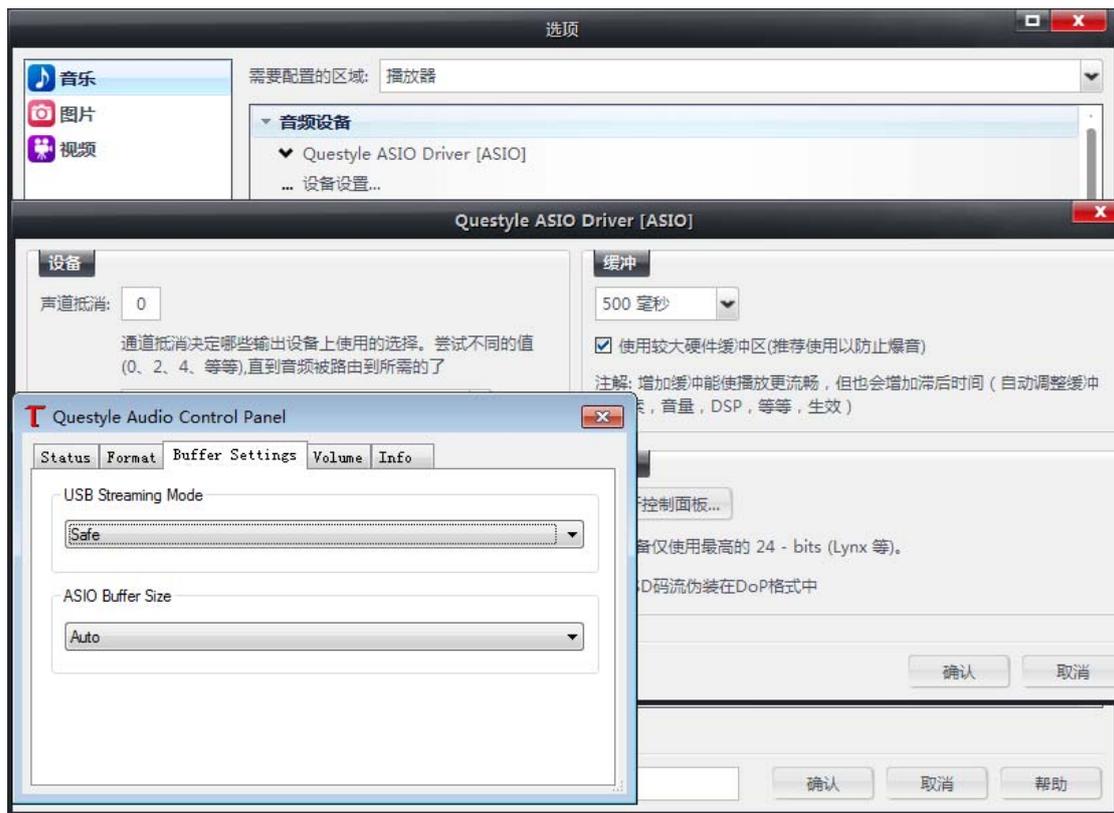
Setup DSD on JRiver Media Center

- 1) Connect your CMA Twelve to its power supply and switch it on;
- 2) Connect your CMA Twelve to PC with a USB cable;
- 3) Open JRiver Media Center, click “Tools” and then select “Options”;
- 4) Select “Questyle ASIO Driver[ASIO]” under “Audio Device”;

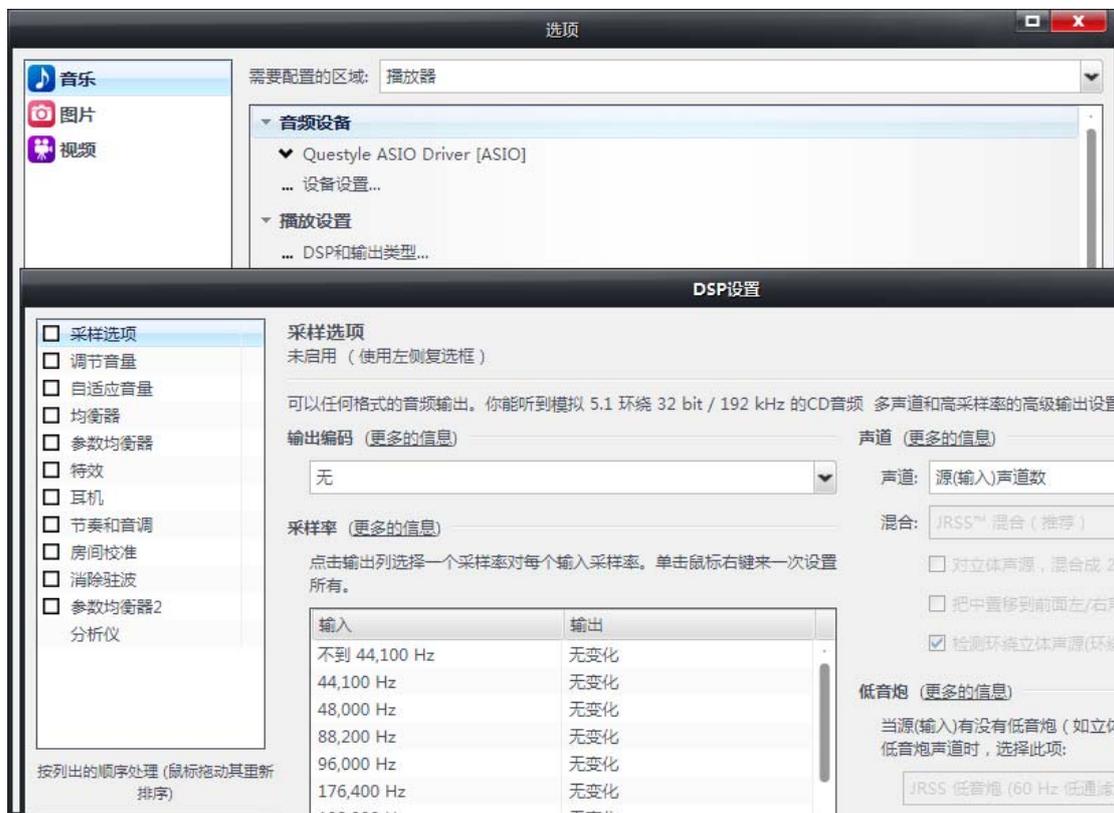


5) Select “Device Settings” under “Audio Device” and click ”Open Driver Control Panel” under the ASIO, then select “Format”-“2Channels,24Bits”; select “Buffer Settings”-”Safe”,”Auto”; then close and click “OK” .

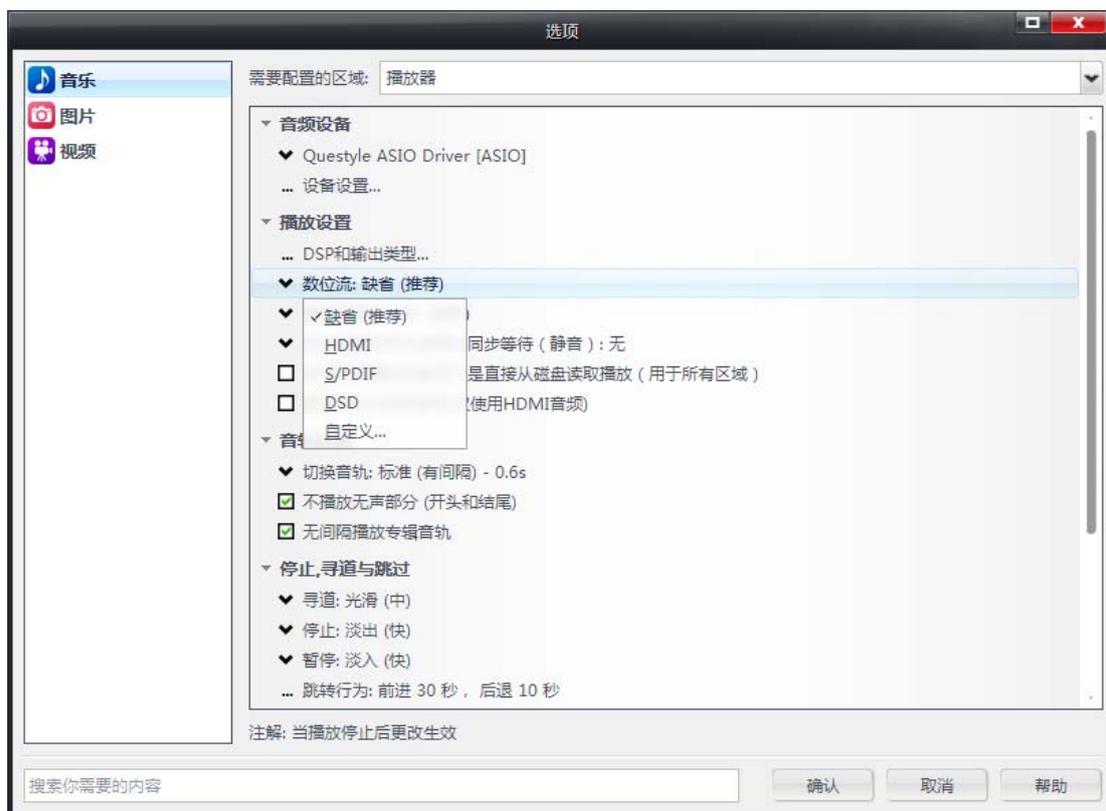




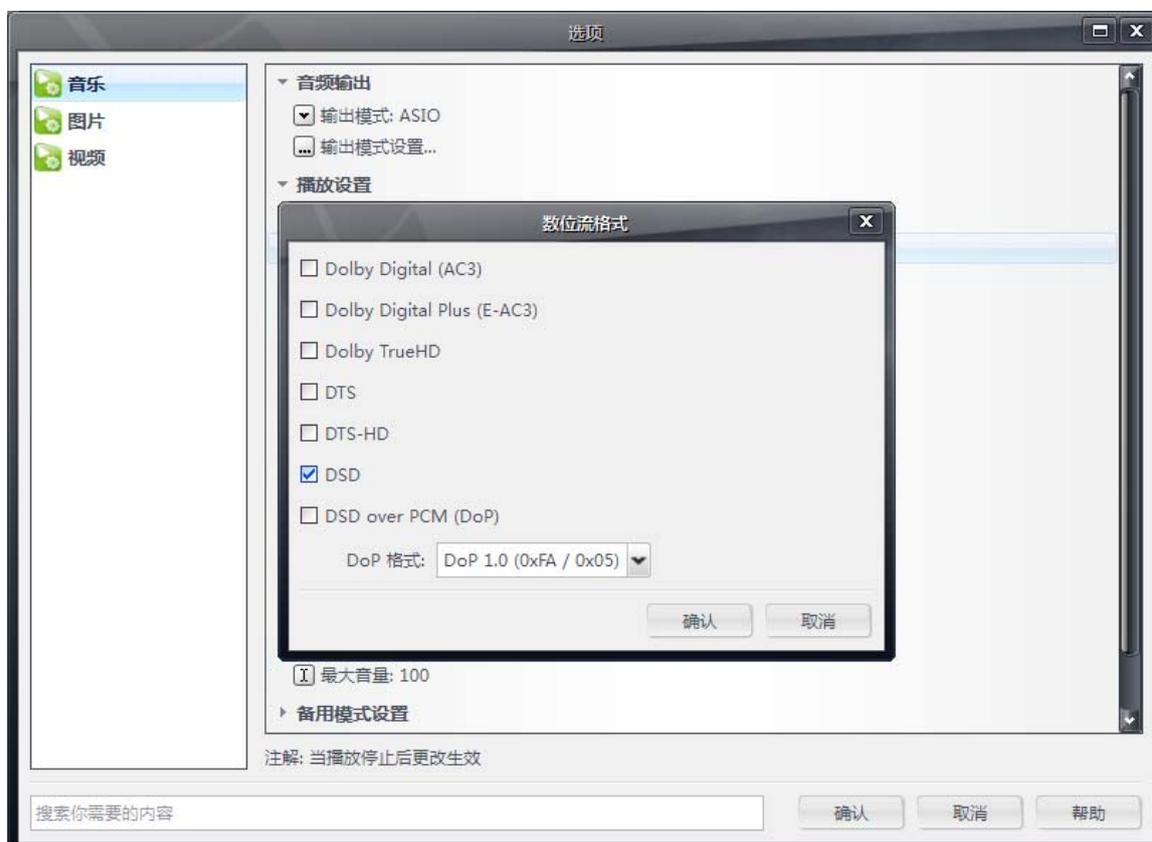
6) Click “DSP & output format” under “Settings”. Make sure nothing on the left row is ticked. (To wit: without any processing to DSD data, ensuring original sound.)



7) Select “Custom” under “Bitstreaming: Yes(DSD)”



8) Tick “DSD” and then click “OK”.



Save and exit. The setup is completed.

9) With a song playing, put the mouse pointer at where the arrow is pointing to view current input and output.



Install Foobar2000

Foobar2000 is a free and multifunctional audio player as well as a powerful tool for audio processing.

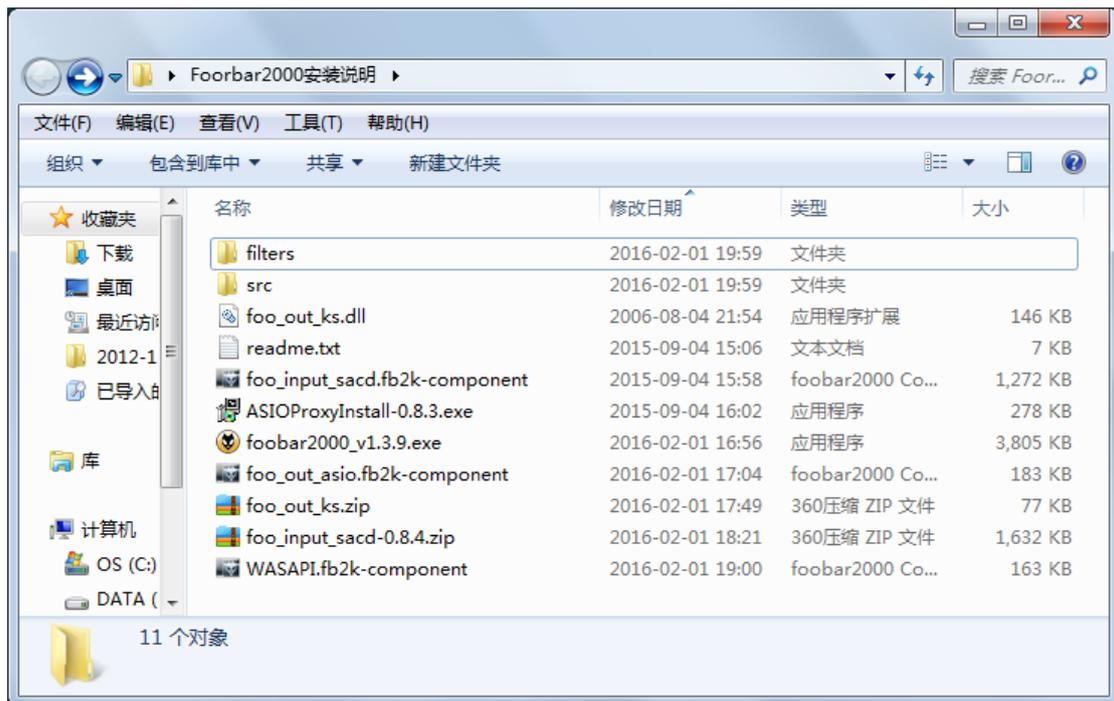
I Download the Following Software and Plugins

1. Take Foobar2000 V1.3.9 for an example
<http://www.foobar2000.org/download>
2. ASIO channel plugin
http://www.foobar2000.org/components/view/foo_out_asio
3. WASAPI channel plugin (no need for higher versions than WIN7)
http://www.foobar2000.org/components/view/foo_out_wasapi
4. Core Audio Stream channel plugin (no need for WINDOWS XP)
http://www.foobar2000.org/components/view/foo_out_ks
5. ASIO driver (take ASIOProxyInstall-0.8.4 for an example)
http://sourceforge.net/projects/sacddecoder/files/foo_input_sacd/

You will get 5 files after the above download (as shown below):



After the unzipping, you will see the following:



II Install Foorbar2000 V1.3.9

1. Double click  foobar2000_v1.3.9.exe to install Foorbar2000, and then click “Next”.

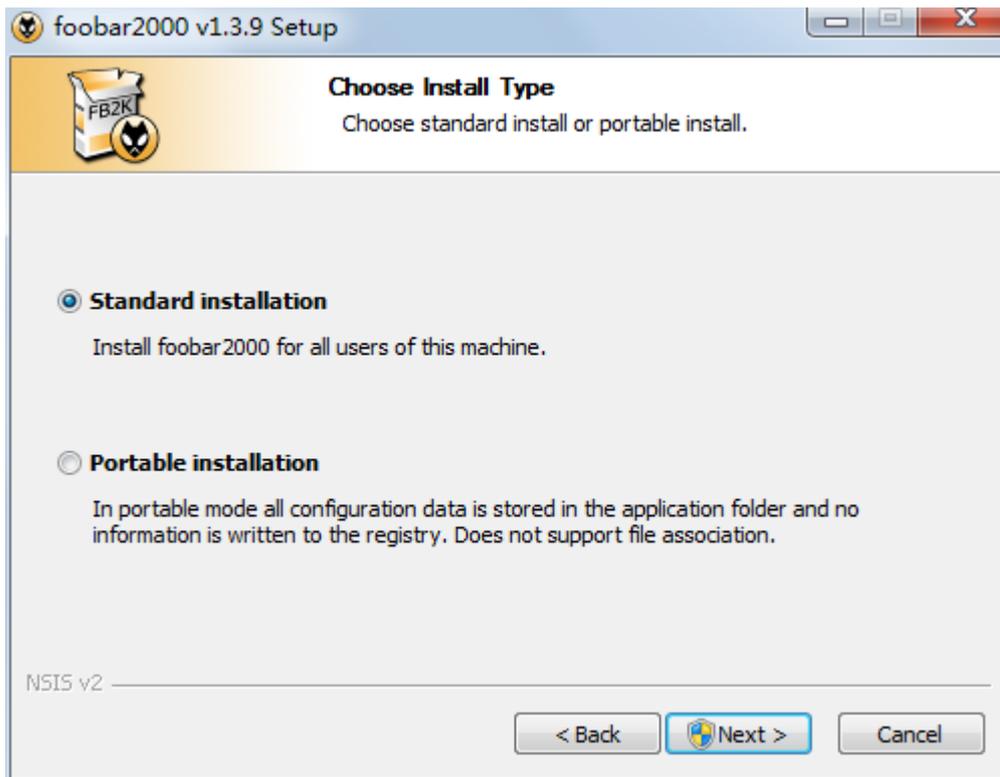


2. Click "I Agree".

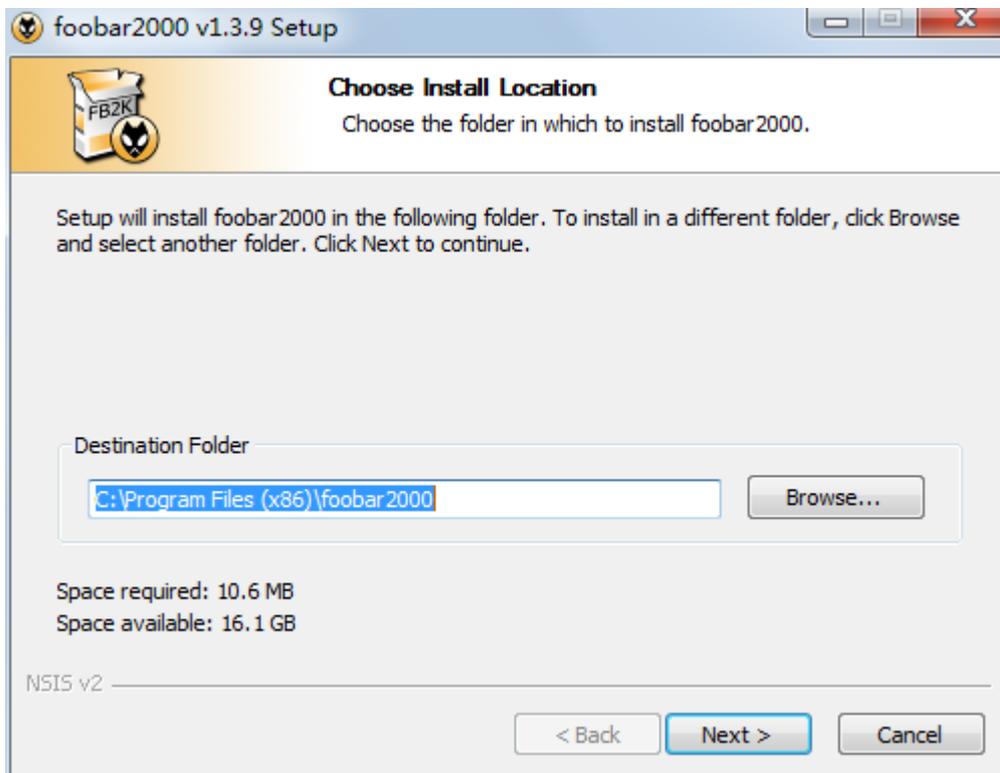


3. Select "Standard installation".

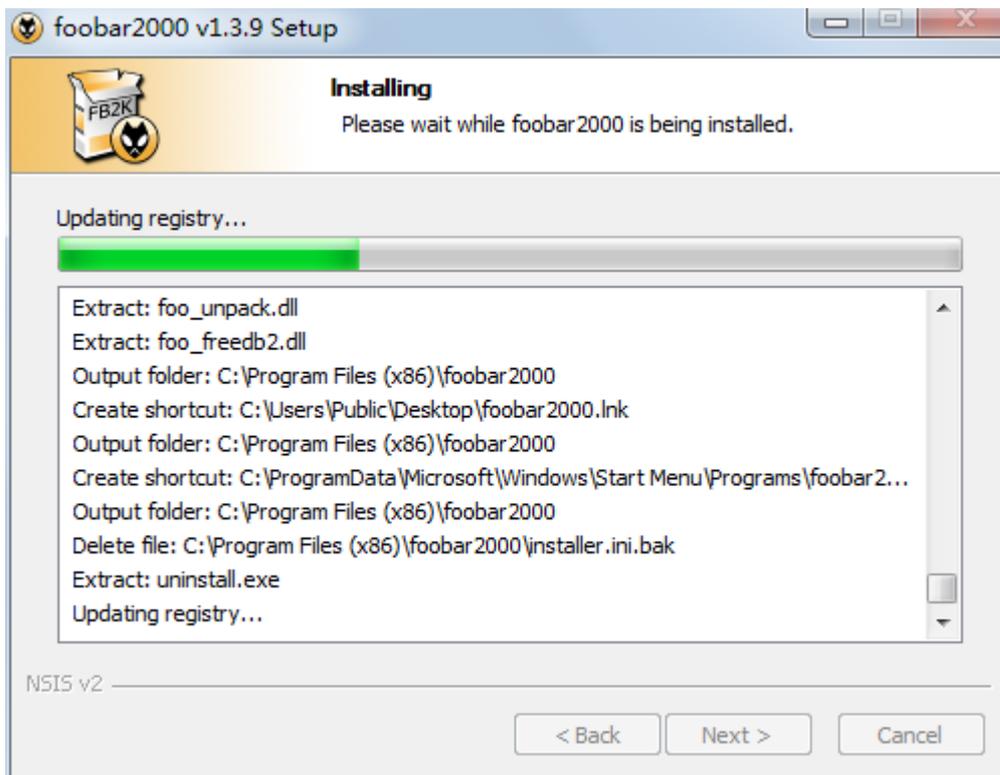
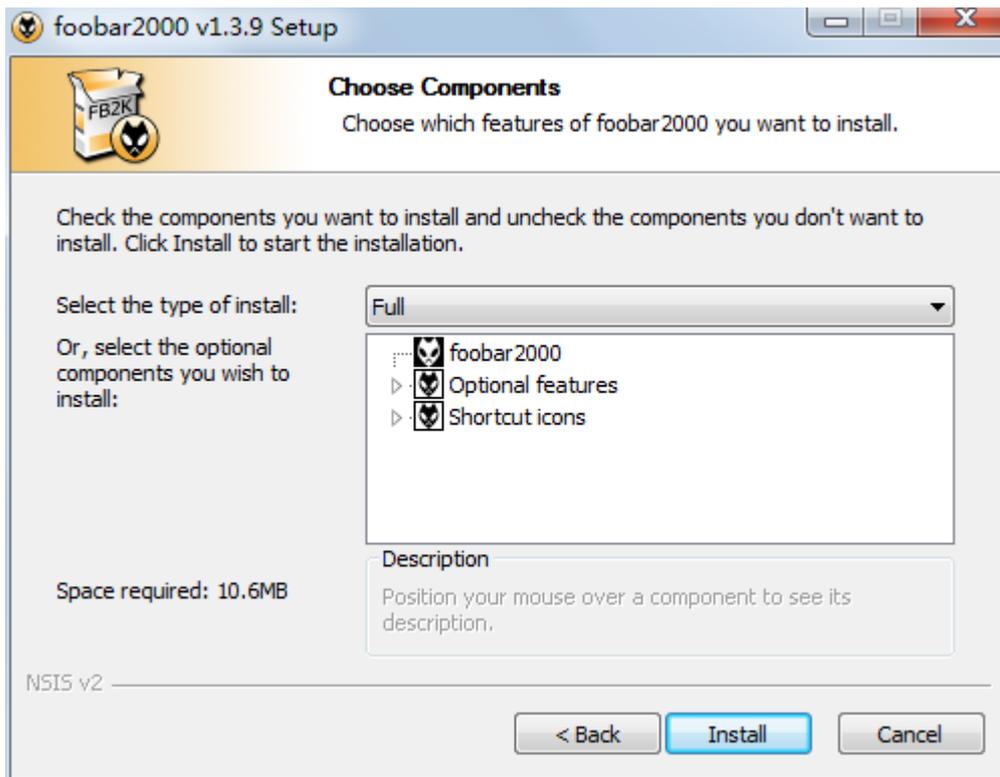
4. Click "Next" to choose Foobar2000 install location. (Default install location is C drive)



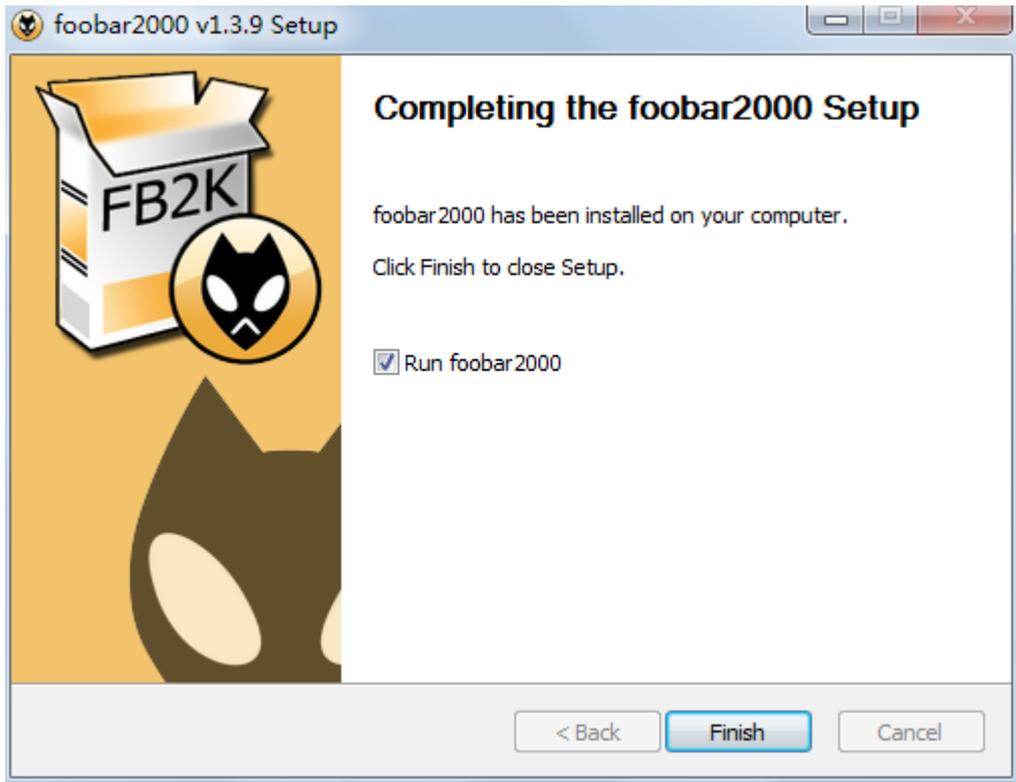
5. Click "Next".



6. Click "Install". (Default installation of all the components)

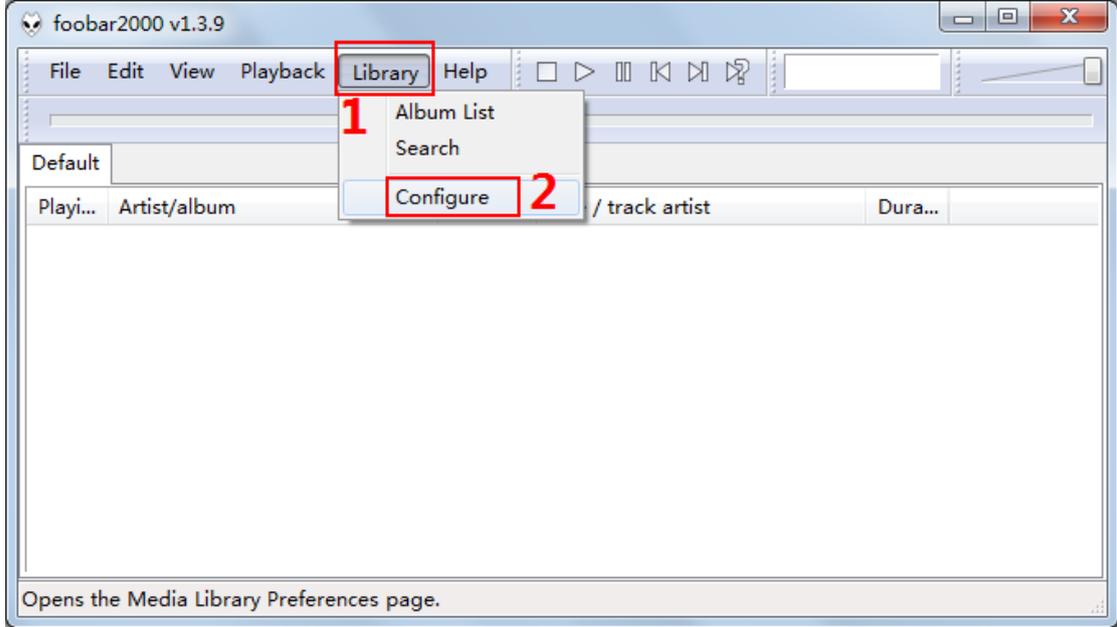


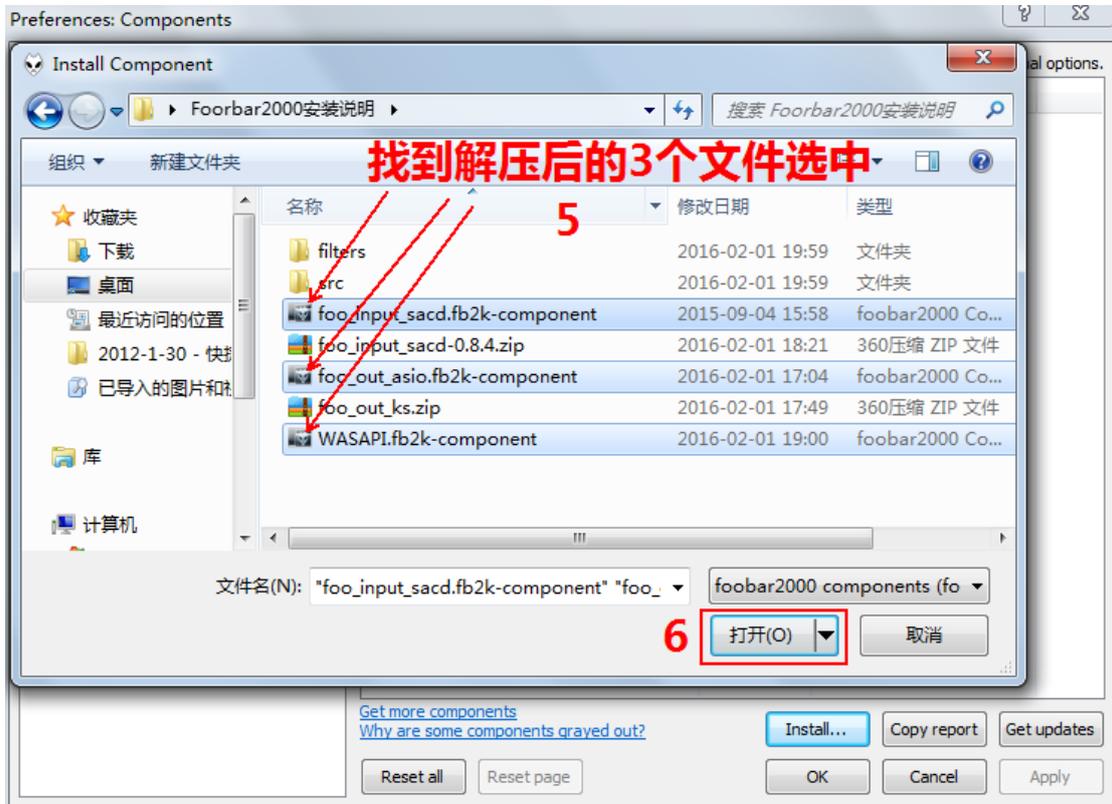
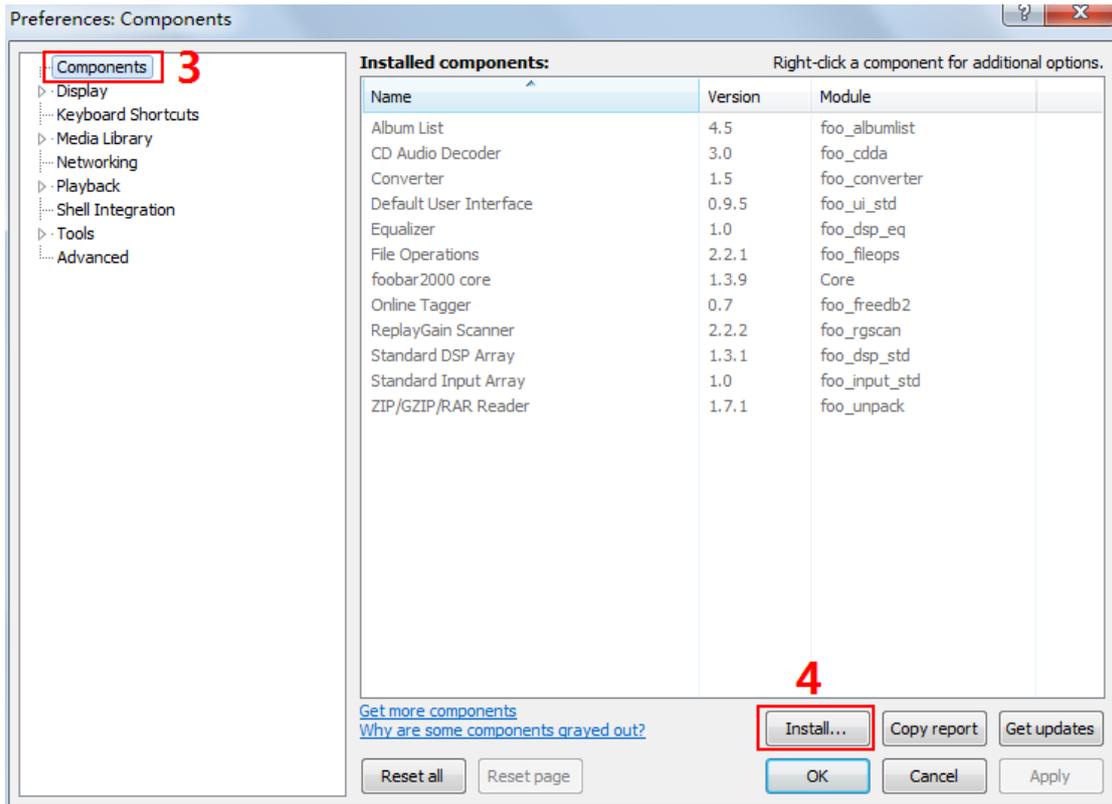
7. Click “Finish” and run Foorbar2000.



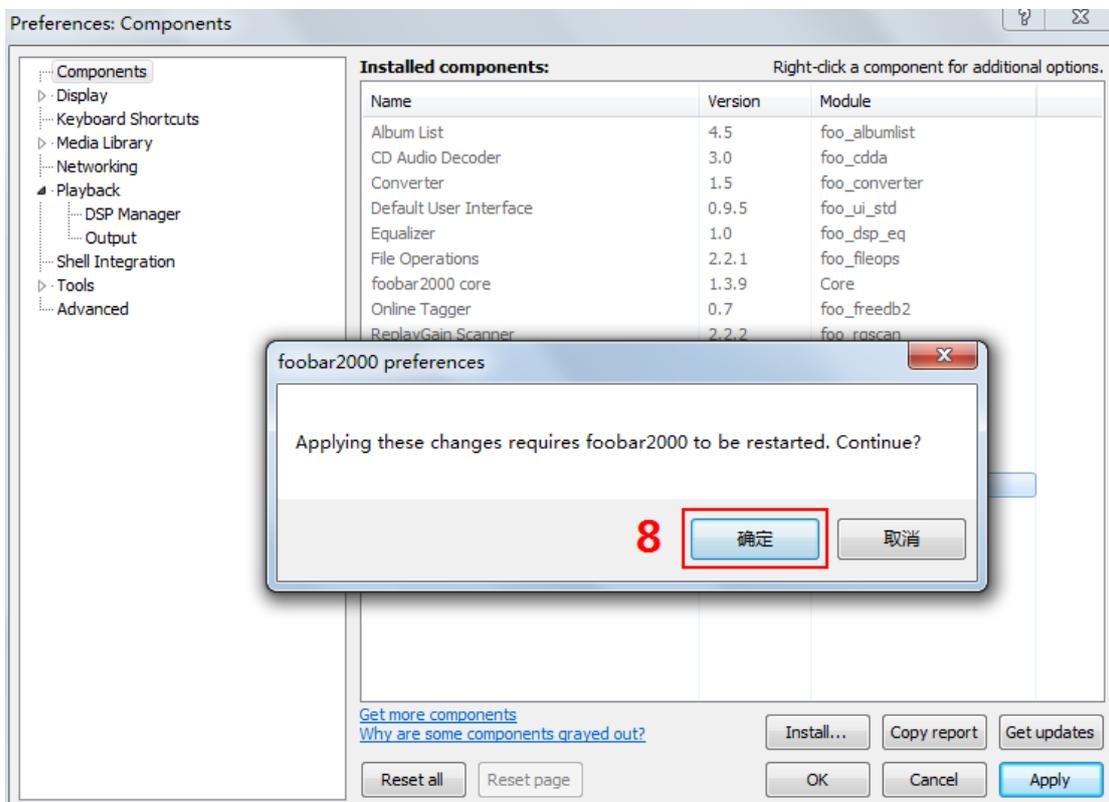
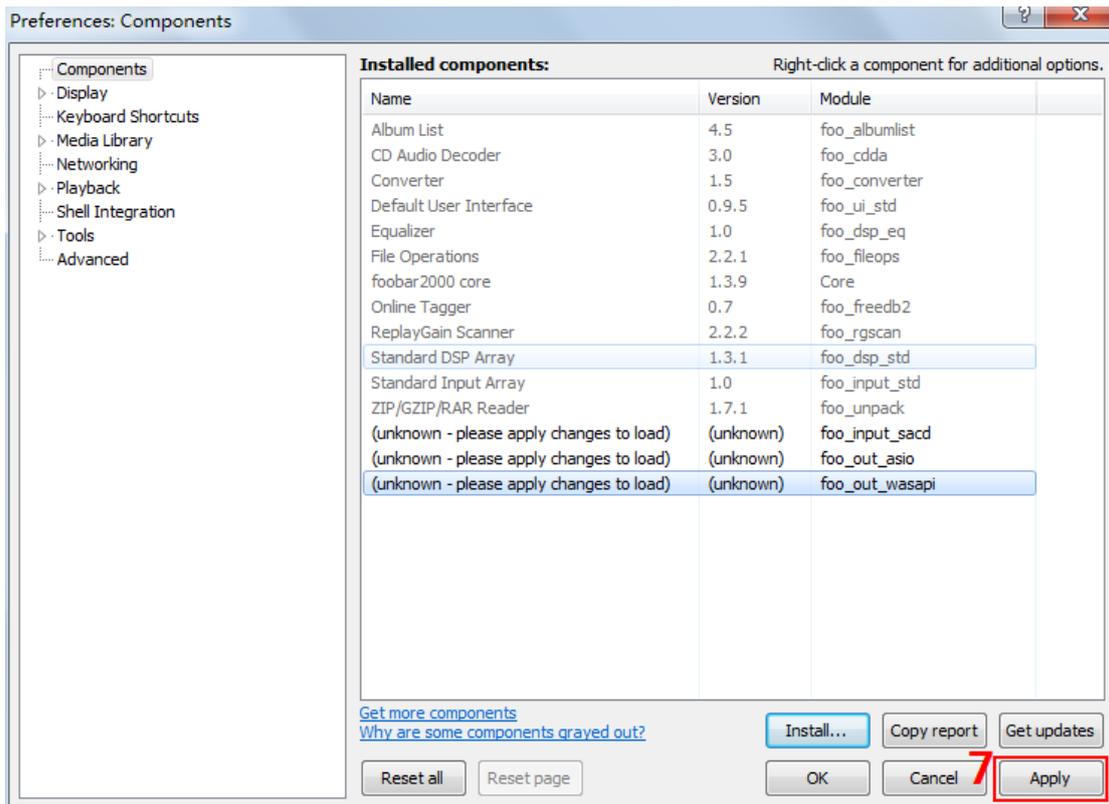
III Install Plugins

1. Install plugins according to the following steps highlighted from 1 to 8.



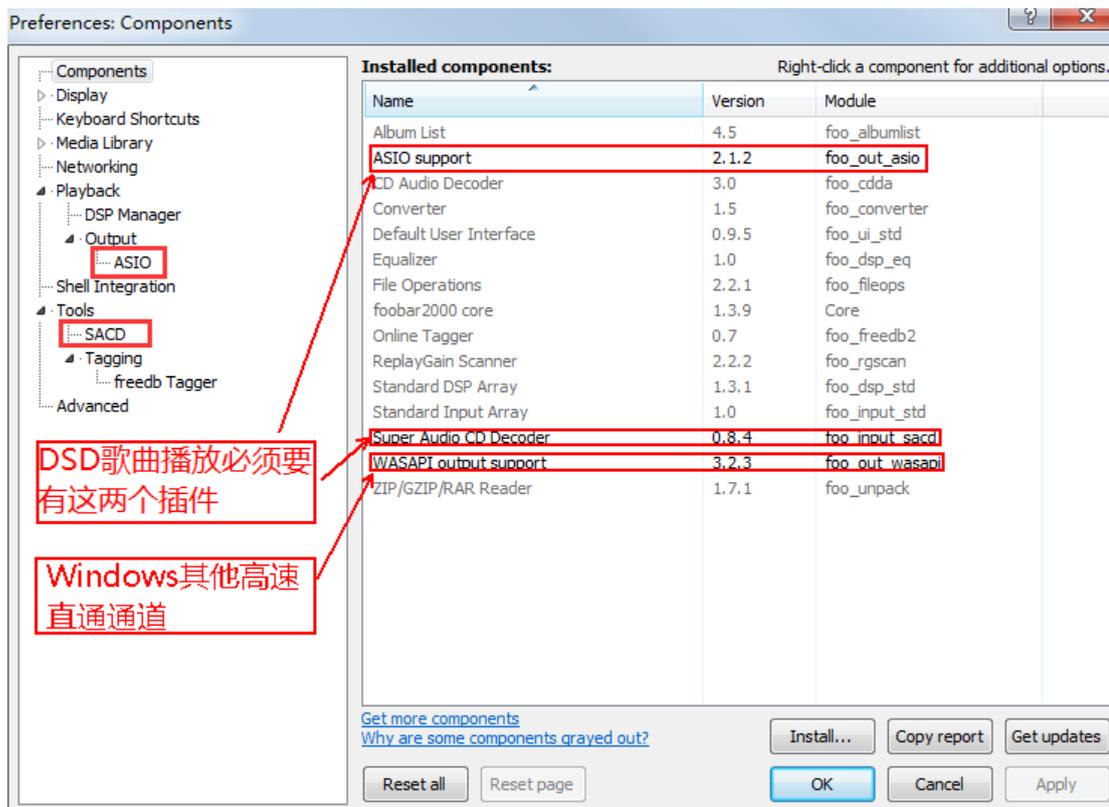


(上图中的文字)Find the 3 unzipped files and select them.



2. Restart Foobar2000 and go to the install location to confirm that the three plugins highlighted in

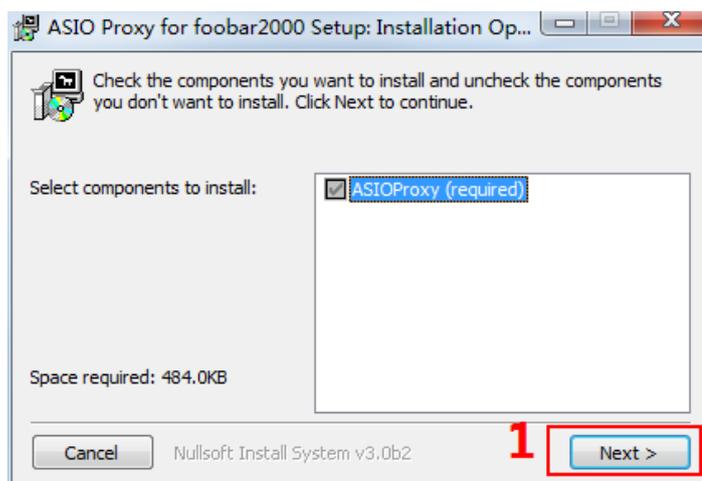
the following figure are installed successfully. If so, you will see two more options on the left of the interface. (as shown in the figure below)

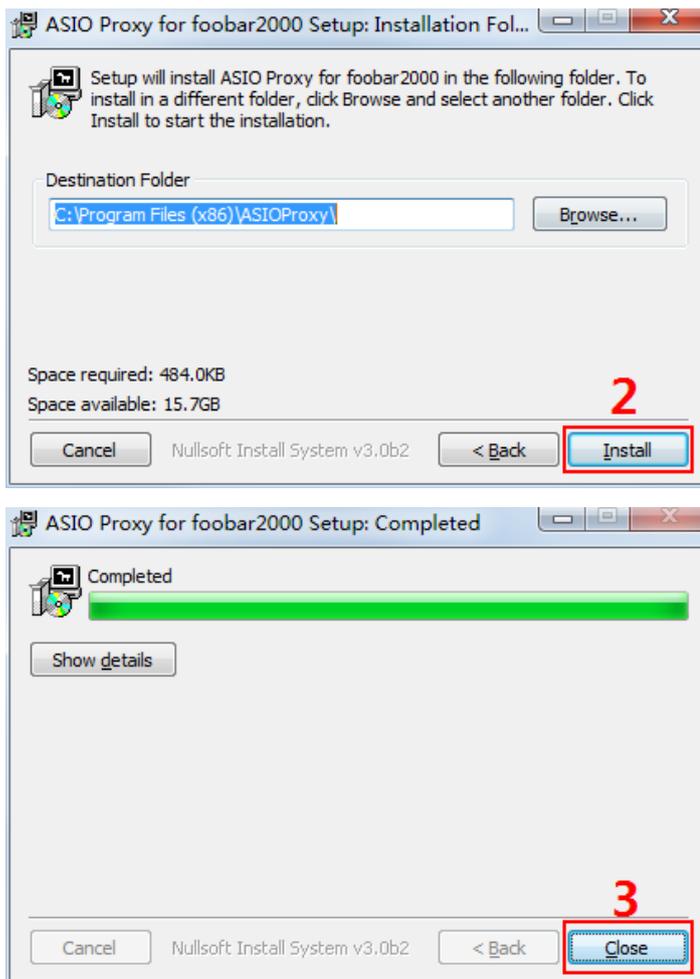


(上图中的文字)

These two plugins are needed for playing DSD files.
Other high-speed channel on Windows

3. Install ASIO driver: double click ASIOProxyInstall-0.8.3.exe in the unzipped folder and then install the three components one by one.

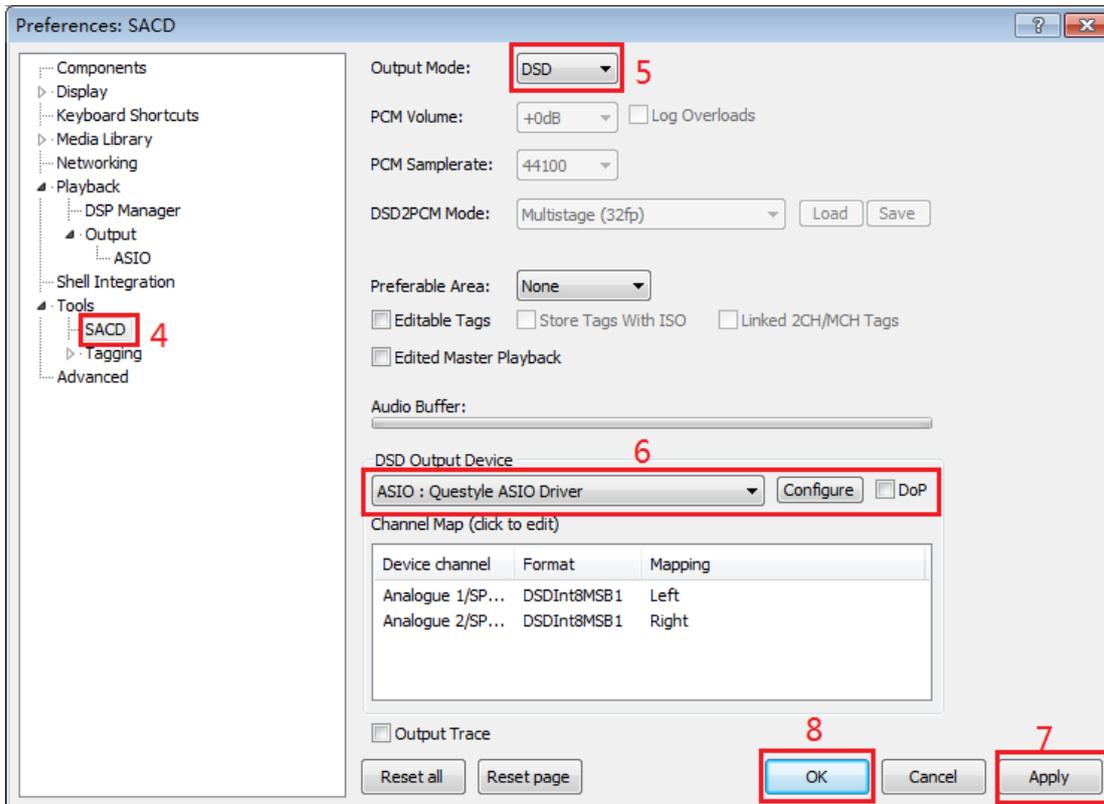
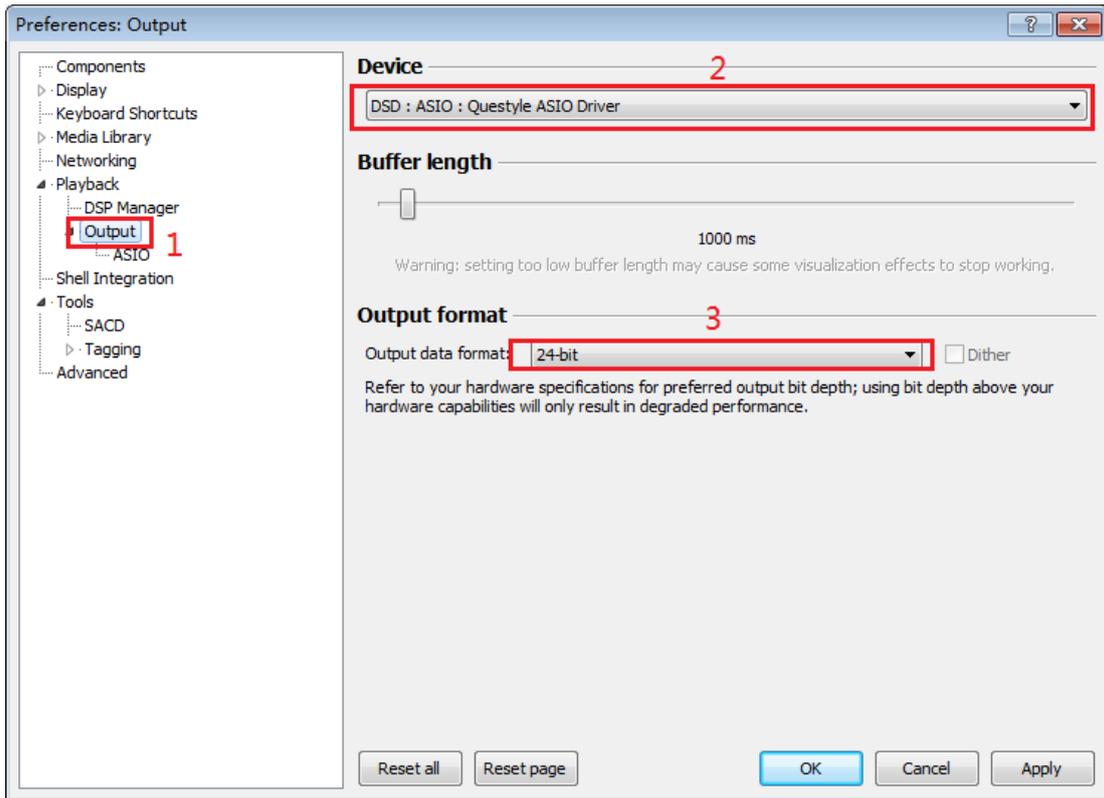




If you come to this step, you have completed all the preparations.

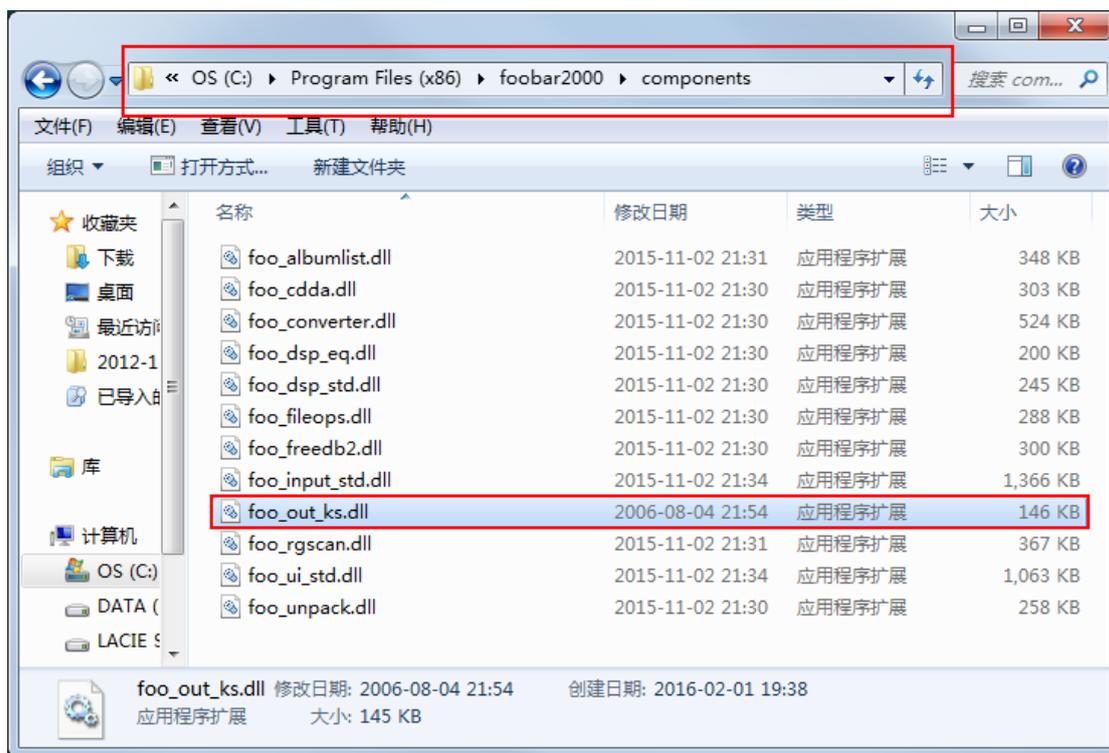
IV Setup the Software

1. Connect your CMA Twelve to a PC with a USB cable and finish the software setup according to the following steps highlighted from 1 to 9. Close and restart the software, then Foobar2000 is ready for playing PCM and DSD files.



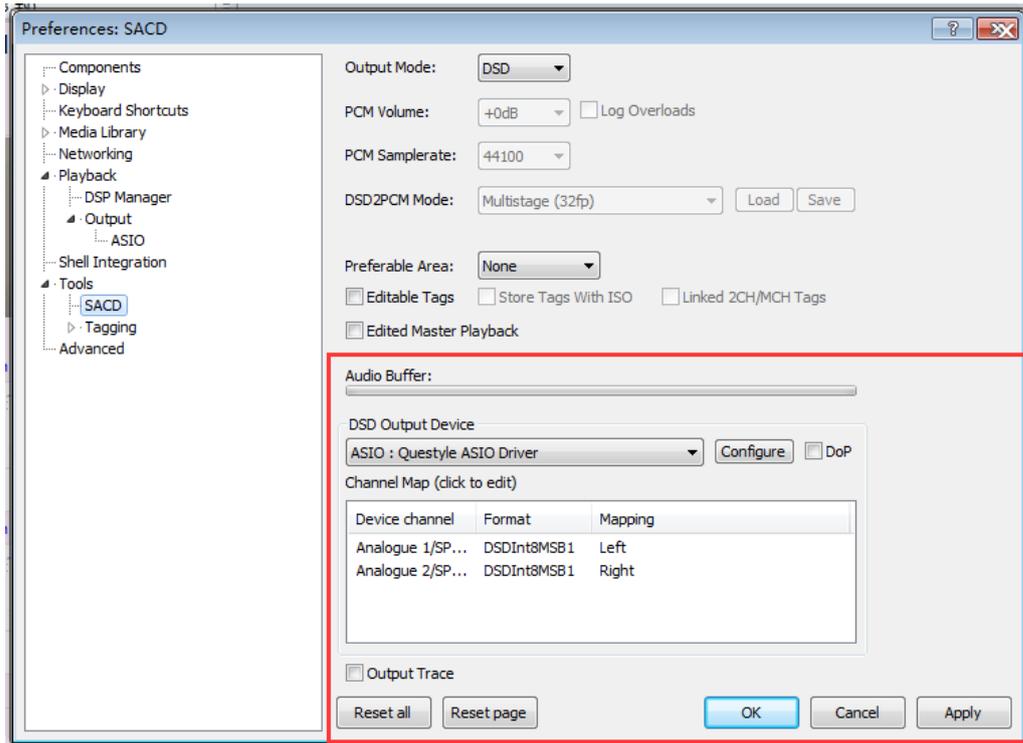
2. In addition, installing plugins for Core Audio Stream channel requires copying the

“foo_out_ks.dll” (highlighted in the figure below) to “components” under installation directory. Then restart the software and it is ready for playing files.



If the DSD files fail to play, please try the following:

1. Exit the antivirus software and reinstall the CMA Twelve Driver. Maybe the CMA Twelve program is mistakenly deleted by the antivirus software.
2. Every time you finish setting Foobar2000, please restart the Foobar2000 software.
3. Foobar plugins have different versions and their compatibility is different with different PC operation system. When the DSD files fail to play, please download another version of the plugin on Foobar website, then repeat the above installation steps. The installation succeeds until you see the following options.



Setup on Mac OSX

For Mac OSX, no special drivers are needed for later versions than OS 10.5.7. The performance of CMA Twelve remains the same on Mac OS with the standard asynchronous transmission via USB.

Make sure your CMA Twelve is selected as the default output device in the system preferences. When you see the following interface after going to “System Preferences”-“Sound”(as shown below), your CMA Twelve is ready to work.



Specifications

DAC and Headphone Amplifier Section	
Gain	8.6dB (2.7, Standard) / -1.4dB (0.85, Low)
Max Output Power(Po)	247mW @ 300Ω; 1W @ 32Ω (6.35mm headphone jack) 825mW @ 300Ω; 2W @ 32Ω (balanced headphone jack) To enhance the reliability of CMA Twelve, we have designed a power-limiting circuit for low impedance, the output power is limited to 1.2W@32Ω for balanced headphones.
THD+N	0.00070% @Po=100mW, 300Ω
	0.00167% @ Po=50mW, 32Ω
SNR	112 dB, non-weighting
Frequency Response	DC-20kHz (+0,-0.4dB) @ 0dBFS, 24Bit, 192kHz DC-80kHz (+0,-3dB) @ 0dBFS, 24Bit, 192kHz
Output	a 6.35mm jack, a 4-PIN balanced headphone jack and a 4.4mm balanced headphone jack
DAC and Pre-Amp Output Section	
Signal	S/PDIF input and output, PCM 44.1k-192k/16-24Bit standard
	USB: 44.1k-384k/16Bit-32Bit PCM and DSD Native, DSD64, DSD128, DSD256, as well as DSD64, DSD128, DSD256 of DoP format
PC OS to Match USB Input	Win XP, Vista, Win7, Win8, Win10, MAC OS and Linux (supporting UAC 2.0)
Digital Input & Output	SPDIF input and output, Optical input, AES/EBU input Support 44.1kHz-384kHz/16Bit-32Bit PCM
Core Audio Stream Supported by USB	WASAPI, ASIO, KS
Analog Output	Balanced XLR x1 pair, unbalanced RCA x1 pair
Max Analog Output Amplitude	Standard 14dBu: XLR: 5.084V RCA: 2.549V Studio 20dBu: XLR: 8.887V RCA: 4.475V
Analog Output THD+N	Studio 20dBu: RCA: minimum at 0.00115% XLR: minimum at 0.00085%
Analog Output SNR	RCA: >109dB XLR: >112dB (non-weighting)

Whole Device	
Voltage	100-120V or 220-230V switchable
Power Consuming	<30W
Size	330*200*55mm (jacks are not included)

The information in this manual is subject to change without notice. All right reserved.

Cautions

1. Do not use your CMA Twelve in a hot or humid environment.
2. Unplug your CMA Twelve in lightning weather or during a long period without using.
3. Do not have your CMA Twelve covered by anything.
4. Only the specified or manufacturer-supplied power cord can be used for your CMA Twelve.
5. Clean your CMA Twelve with a piece of dry cloth or the special detergent.
6. If your CMA Twelve fails to work, please contact your dealer or manufacturer.

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 Questyle Audio Technology Co.,Ltd.
 CODE: CE-UM011-CMATV18XXXX

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/ TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, Human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation