



BY PRO-JECT AUDIO SYSTEMS

INSTRUCTIONS FOR USE Pro-Ject DAC Box DS2 Ultra

Dear music lover,

thank you for purchasing this Pro-Ject Audio DAC Box DS2 Ultra.

In order to achieve maximum performance and reliability you should study these instructions for use carefully.



Warning of a hazard for the user, the unit or possible misuse



Important notice

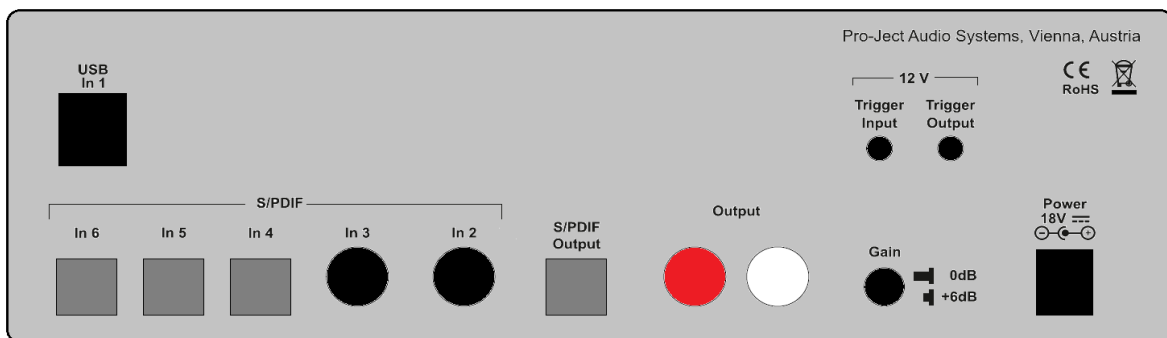
Safety instructions

AC outlet voltages vary from country to country. Before connecting to the mains, make sure that the voltage in your area meets the voltage requirements printed on the power supply. The power cord is used to disconnect the unit from the mains. Make sure that the power cord is easily accessible at all times. Never handle the device, the power cord/power supply while your hands are wet or damp.



Avoid letting liquids enter the device or the power supply. Never place any item containing liquid, such as a flower vase on or near the device. Never spill any liquid on the device or the power supply. Never place any naked flame sources, such as lighted candles on or near the device. The product shall not be used in damp or wet locations, next to a bathtub, sink, swimming pool or any other similar conditions.

Connectors



Make all connections, **except the connection to the computer**, whilst the unit is disconnected from the power supply. Connect the unit to the mains and switch it on before connecting it to the computer.



Take care to connect the left and right channels correctly. The right channel is usually marked red, the left channel black or white.

Never use any other power supply than the one supplied with the unit.

Connection to the amplifier

Connect the **Output** RCA socket to a line input (such as **AUX**) on your amplifier. Pressing the **Gain** button on the back panel raises gain by 6dB.

Digital inputs

Sources with a digital output such as a CD player can be connected to the digital inputs (coaxial and optical). A computer can be connected to the USB input.



The DAC supports PCM (LPCM) and DSD format only. The DAC does not work with audio formats like DTS™ or Dolby® Digital. If the DAC is used with a TV satellite/cable receiver or a TV sets with an integrated satellite/cable receiver, make sure that in the set-up menu of your receiver/TV set, the format of the digital signal, relayed to the digital output used is set to PCM.

Connecting to a Computer

Connect the USB-input of the DAC (unit must be switched on) to a free USB-socket on your computer and turn it on/make sure it is powered on.

* For Windows® operating systems an USB driver (supplied on CD) has to be installed. Mac OS® operating systems do not need an additional driver.



Please note: Connection should be made to an USB-socket of your computer directly. Connecting to USB-hubs can cause problems.

Mains power connection and methods to switch the unit on and off

Connect the low voltage plug from the power supply to the **Power 18V** socket of the unit **before** connecting the power supply to the mains. The unit can be switched on and off by using 2 different methods which are equal in priorities.

1. Using front pushbutton to switch on or into standby

The pushbutton on the front panel of the unit alternately turns the power on or returns it to standby mode. The blue LED on the front panel shows that the unit is powered on. If a trigger signal is present the unit can't be switched off by the pushbutton.

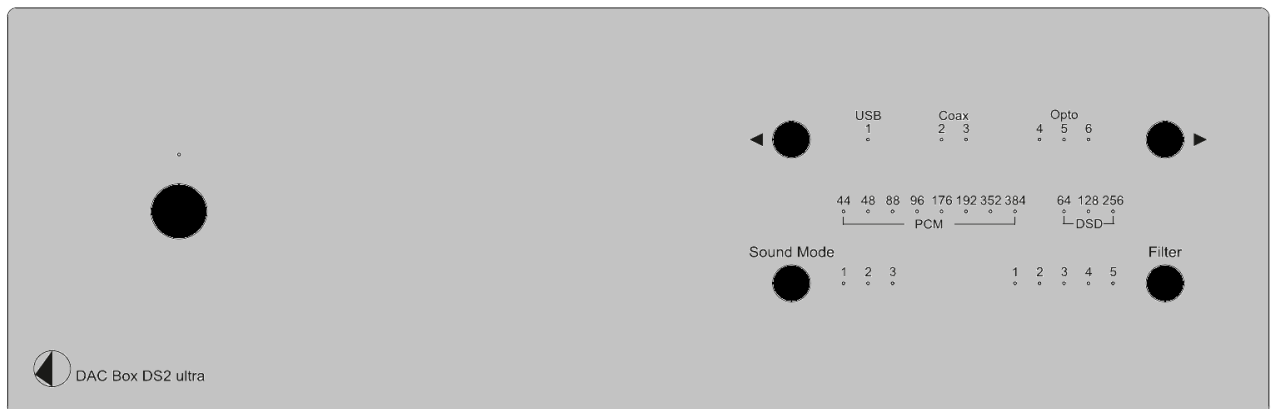
2. Remote power on - triggers

The unit can be switched on via other Box Design components when a 12V trigger voltage is present at the 2.5mm socket marked **Trigger Input**. Special power-on cables (polarity $\ominus \oplus$) in diverse lengths are available as accessories. The remote power-on signal can be relayed to further units via the **Trigger Output** socket. When the 12V trigger signal is switched off, the unit will also switch off.



Trigger cables may only be plugged into the sockets when the unit is disconnected from the power supply and from the mains. Failure to do so may result in damage of the unit.

Front panel controls



Input selector

Operating $\blacktriangleleft/\blacktriangleright$ repeatedly selects the inputs in turns. The selected input, the sampling frequency and the DSD mode of the digital input signal will be indicated by the corresponding LED.

Sound mode

Mode 1:

Upsampling to highest possible rate:

Sound Mode 1			
input	input rate [kHz]	output rate [kHz]	available filters
USB	44	705	1,2
	48	768	1,2
	88	705	1,2
	96	768	1,2
	176	705	1,2,3,4
	192	768	1,2,3,4
	352	705	1,2,3,4
	384	768	1,2,3,4
	705	705	1,2,3,4
	768	768	1,2,3,4
S/PDIF	44	768	1,2
	48	705	1,2
	88	768	1,2
	96	705	1,2
	176	768	1,2,3,4
	192	705	1,2,3,4
	input DSD format	output DSD format	
USB DSD	64	256	1,2,3,4
	128	256	1,2,3,4
	256	256	1,2,3,4

Mode 2:

Conversion to DSD

Sound Mode 2			
input	input rate [kHz]	output DSD format	available filters
USB	44-48	128	1,2
	88-96	256	1,2
	176-768	256	1,2,3,4
S/PDIF	44, 48, 88	128	1,2
	176	128	1,2,3,4
	96	256	1,2
	192	256	1,2,3,4
USB DSD	consistent with Sound Mode 1		

Mode 3:

USB Upsampling bypass:

USB Input sampling rate remains the same as USB output sampling rate.

Sound Mode 3	
USB input	
sample rate [kHz]	available filters
44-96	1,2,3,4
176-768	1,2,3,4,5

DSD input format remains the same as DSD output format.

S/PDIF input rates are upsampled to PCM352kHz / PCM384kHz

Sound Mode 3			
input	input rate [kHz]	output rate [kHz]	available filters
S/PDIF	44	384	1,2
	48	352	1,2
	88	384	1,2
	96	352	1,2
	176	384	1,2,3,4
	192	352	1,2,3,4

Filter

Filter button toggles between 5 filter. Availability of filters depends on input format and frequency shown in previous article:

Filter	Sound type	Filter name	Remarks	Sound source positioning	Edge
1	Traditional sound	Sharp Roll-off FIR filter	No echo, natural sound	Close	Ultra sharp
2	Acoustic sound	Short Delay Sharp Roll-off FIR filter	Minimal echo, original sound		Sharp
3	Traditional tone	Slow roll-off FIR filter	Minimal echo, original sound		Middle
4	Acoustic tone	Short Delay Slow Roll-off FIR filter	Post echo, bass sound		Slow
5	Natural tone	Super Slow Roll-off FIR filter	Pre and post echo, powerful sound	Far	Super Slow

Driver installation (Windows® operating systems only)

* For Windows® operating systems a USB driver (supplied on CD) has to be installed.

Insert the included CD into the drive of you PC and follow the instructions.

Complete the installation by restarting the computer.

After installing the driver, some settings have to be checked/done.

For example - Windows 7® and newer operating system:

→ Control Panel → Hardware and Sound → Sound → Playback:

select **Speaker/Project DAC Box DS2 Ultra USB 2.0 Audio Out**

→ Properties → Supported formats: **make sure nothing is assigned**

→ Level → Sound: setting must be **100**

→ Enhancements: **disable all enhancements** → Advanced → Default Format: set to **studio quality 24/192**



Using Windows 8®, the driver has to be installed in Windows 7® compatibility mode.

DSD playback

Up to now DSD playback on a computer using a Windows® operating system is only reliably possible with the PC software player Foobar2000.

Nevertheless, this player has to be prepared, out of the box it is not capable to play DSD. Please read the following instructions how to prepare the player.

You will need to download the following software and drivers from the internet:

The software player Foobar2000 <http://www.foobar2000.org/download>

The Foobar2000 for ASIO playback http://www.foobar2000.org/components/view/foo_out_asio

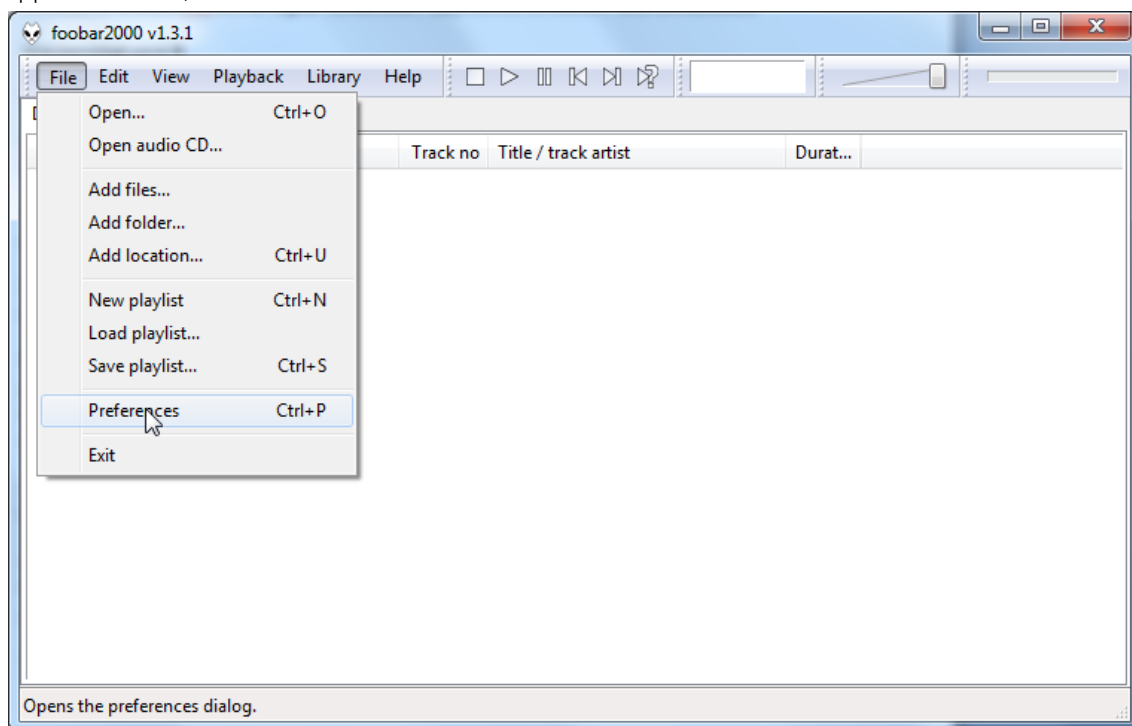
The Foobar2000 for SACD playback http://sourceforge.net/projects/sacddecoder/files/foo_input_sacd/.
Unzip the enclosed files and store into a folder of your choice.

The actual windows® USB driver comes with the units on CD. Store all files on the CD into a folder of your choice.

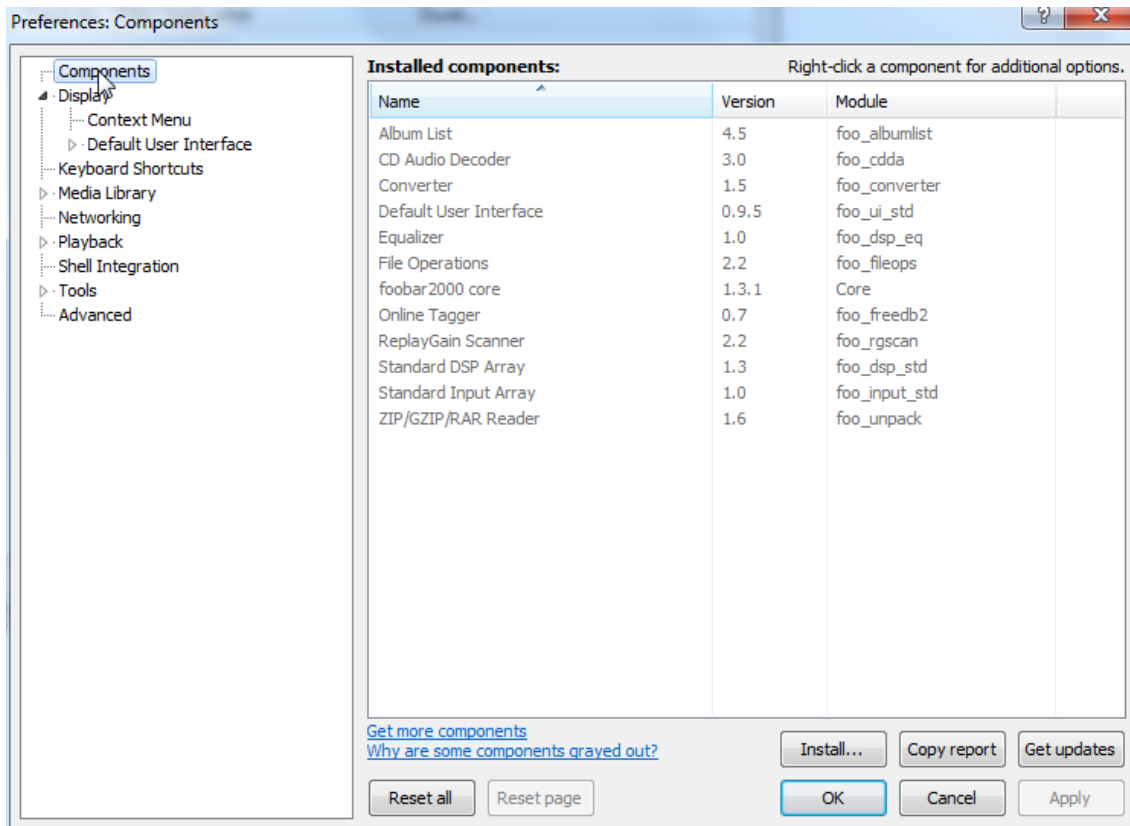
Please install the USB driver first. To do that, in the folder, where you stored the files to, start the installation by double clicking on **Setup.exe**. Follow the instructions of the installation program.

Please install Foobar2000 now by double clicking on the downloaded file. Please start Foobar2000 after that.

Now you have to integrate the downloaded components into Foobar2000. Please do the following: In the upper menu bar, click on **File** and then on **Preferences**.



In the window that now opens, please click on **Components**.



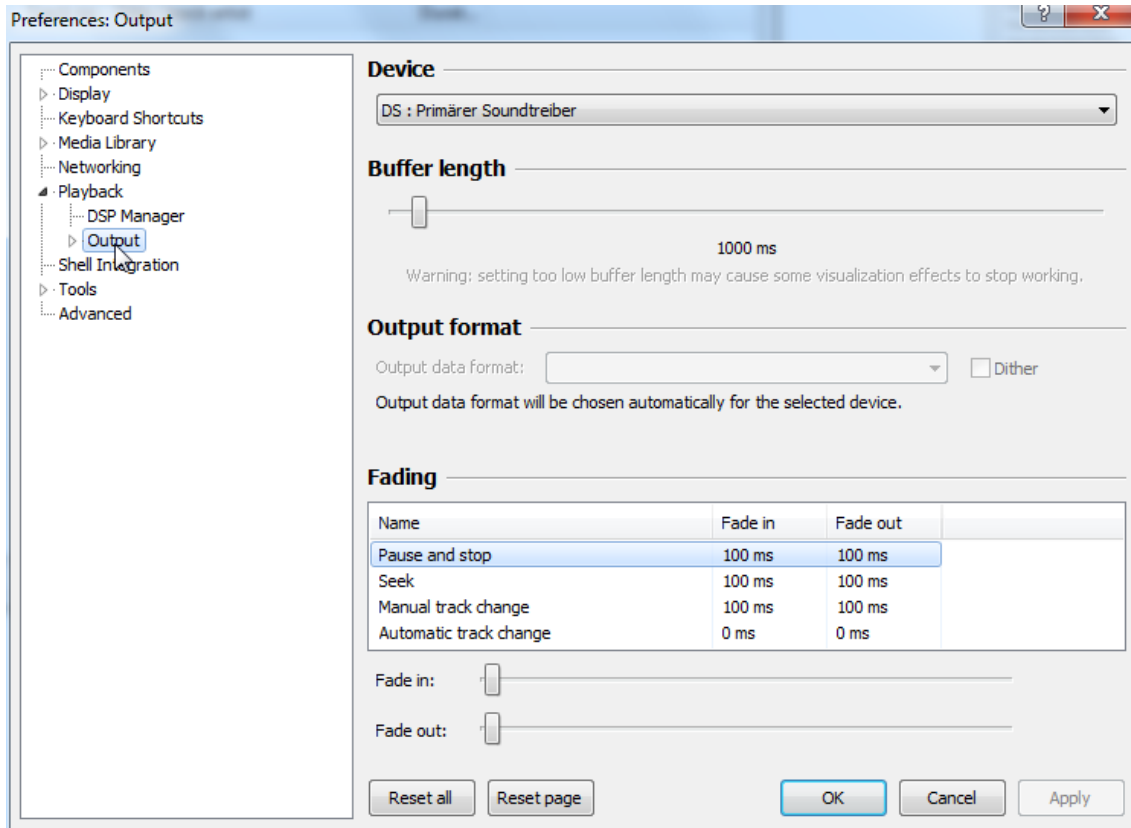
Now click on **Install...** (lower right) and search for **foo_out_asio.fb2k-component** in the opened explorer window. Click on it and after that on **Apply** to activate the Component. Foobar2000 asks now, if you agree to start, restart the program to activate the changes. Confirm with **Yes**. Foobar2000 restarts.

Now exit Foobar2000 and double click on the program **ASIOProxyInstall-0.6.5.exe** in the folder, where you unzipped the Component **foo_input_sacd** to. Follow the instructions of the installation program.

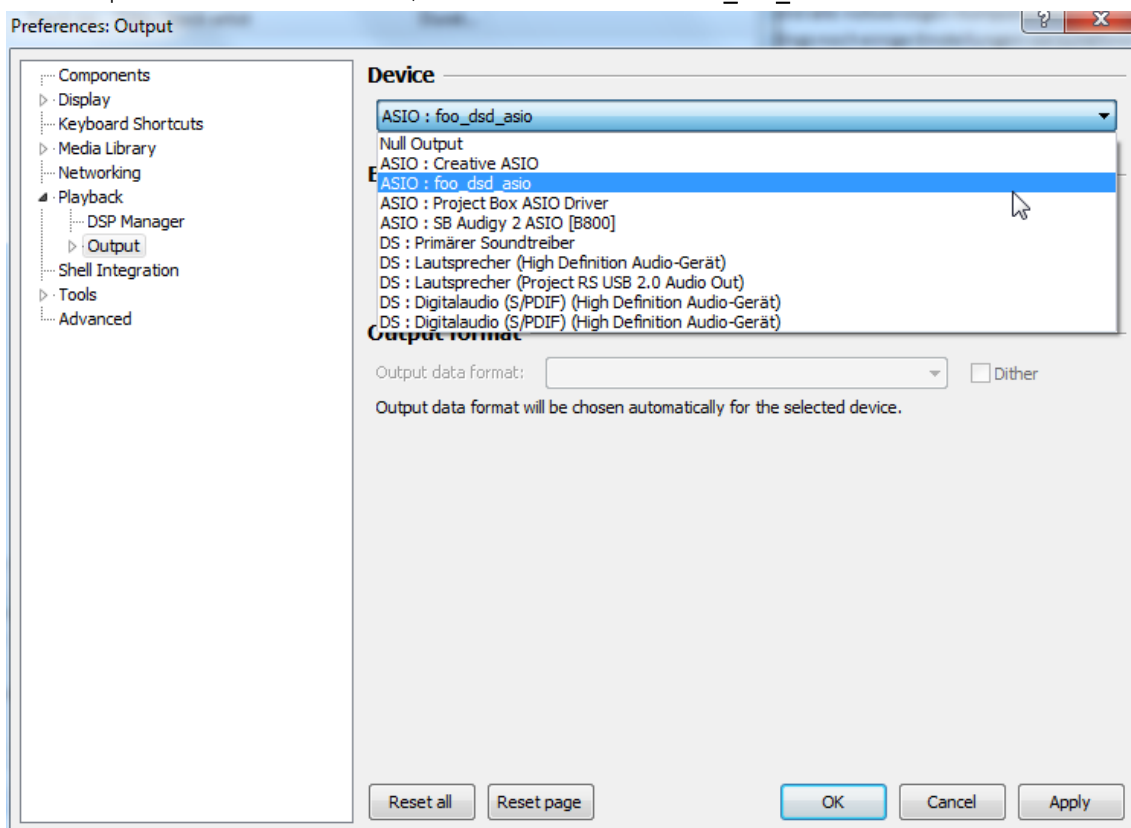
Now please start Foobar2000 again and open the **Preferences** Box by clicking on **File/Preferences**. Click on **Install** and go the folder where you unzipped **foo_input_sacd** to. Click on **foo_input_sacd.fb2k-component** and confirm with **Apply**. Foobar2000 asks once again, if you agree to start restart the program to activate the changes. Confirm with **Yes**. Foobar2000 restarts.

Now you have installed all necessary components. Before you can start to playback DSD files however, you have to carry out some settings. For that please open the **Preferences** Box by clicking on **File/Preferences** again.

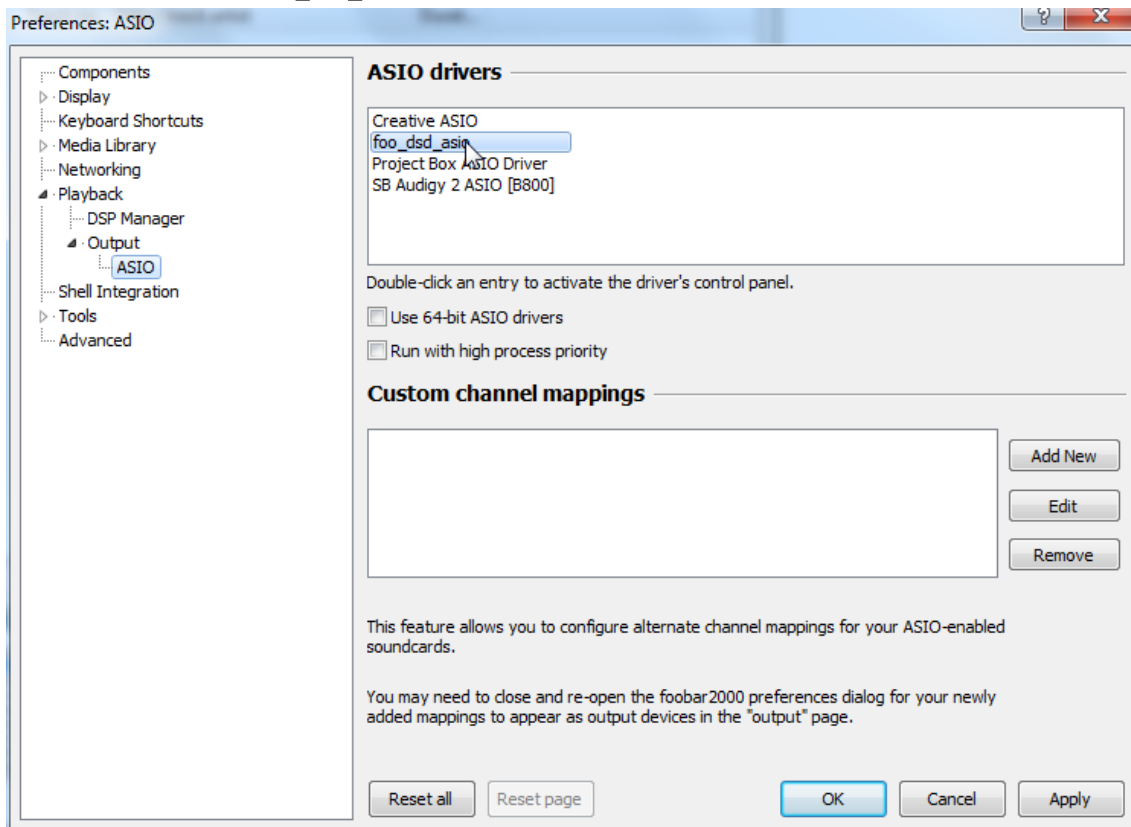
Click on the small triangle to the left of **Playback** now and after that on **Output**.



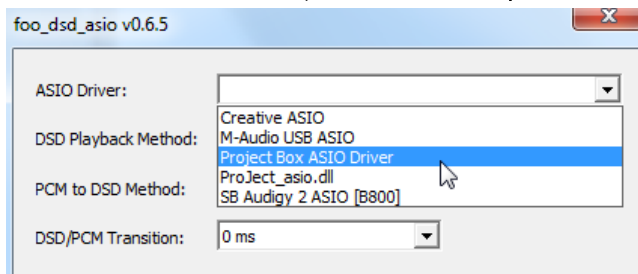
In the dropdown menu below **Device**, choose the driver **Asio: foo_dsd_asio**.



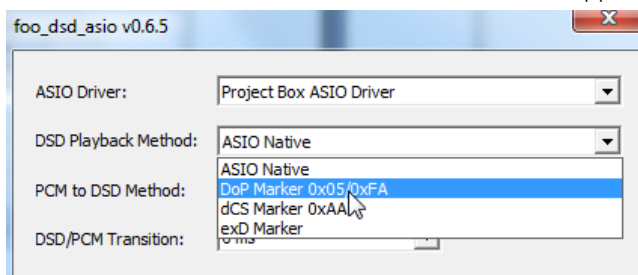
Click **Playback** and the small triangle on the left side of **Output** and then on **ASIO**. Below **ASIO Drivers** please double click on **foo_dsd_asio**.



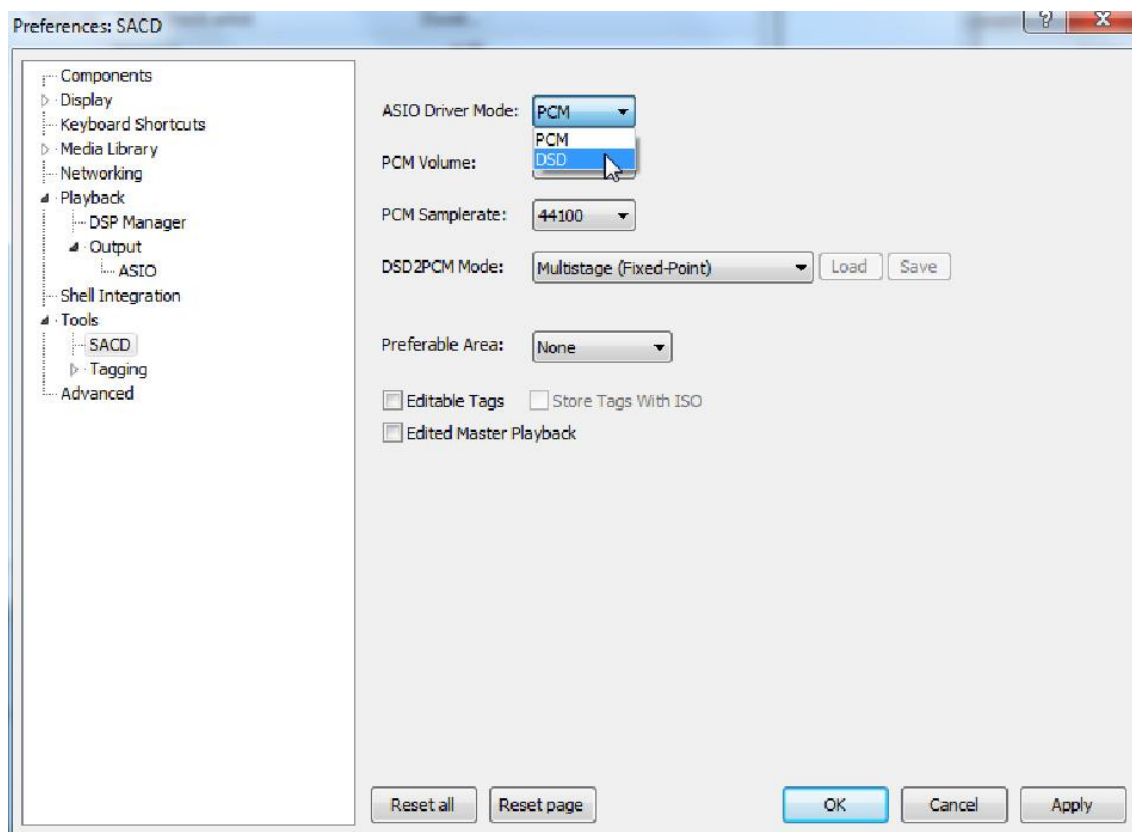
In the window that follows, please choose **Project Box Asio Driver** and in the dropdown menu **ASIO Driver**.



In the same window, please choose **DoP Marker 0x05/0xFA** in the dropdown menu **DSD Playback Method**. Close the window with a click on the small X in the upper right corner.



Select **Tools**, click the small triangle to the left and then **SACD**. Choose **DSD** in the dropdown menu **ASIO Driver mode**.



Now you have completed all necessary settings. Close the **Preferences** window with a click on **OK**. Now you can playback DSD files with the extensions **DSF** and **DFF**. You can open the files in Foobar2000 either with your mouse via drag and drop or with the **File** menu in the upper menu bar.



Please be aware that downloads from the Internet are made entirely at your own risk. Under no circumstances can we carry responsibility or provide support for software products sourced from the internet or for any damage or problems arising from the use thereof. All downloads should be checked with an up-to-date anti-virus programme.

Technical specifications Pro-Ject DAC Box DS2 Ultra

Frequency response:	20Hz - 50kHz (0dB/-1dB)
SNR:	113dB (20Hz-20kHz)
THD:	0,00085% (20Hz-20kHz)
THD+N:	0,0009% (20Hz-20kHz)
Crosstalk:	-117dB (10kHz@0dB)
Digital inputs:	2 x coaxial 3 x optical (TOSlink®) 1 x USB (B socket)
USB input:	digital serial data protocol USB 2.0
Operating systems	
24Bit/kHz192 playback:	Windows VISTA®, Windows 7®, Windows 8®, Windows 10®, Mac OS®
DSD playback:	Windows VISTA®, Windows 7®, Windows 8®, Windows 10®, Mac OS®
D/A converter:	AK4490 32-bit PCM 768kHz / DSD256
Sampling rates	
Coaxial inputs:	up to 192kHz/24bit
Optical inputs:	up to 192kHz/24bit
USB input:	up to 768kHz/32bit + DSD64, DSD128 and DSD256
USB mode:	asynchronous data transfer with DoP
Line-level outputs:	1 pair RCA/phono sockets
Digital output:	1x optical (TOSlink®)
Output voltage typically:	RCA/phono sockets 2,2Vrms / +6dB active: 4,4Vrms
Outboard power supply:	18V/1A DC; suitable for your country's mains supply
Power consumption:	300mA DC, < 1W in standby
Dimensions W x H x D (D with sockets):	206 x 71 x 200 (220) aluminium 240 x 72 x 199 (220) wood
Weight (without power supply):	1.410 aluminium 1.880g wood

Service

Should you encounter a problem which you are not able to alleviate or identify despite the above information, please contact your dealer for further advice. Only when the problem cannot be resolved there should the unit be sent to the responsible distributor in your country.

Warranty



The manufacturer accepts no responsibility for damage caused by not adhering to these instructions for use. Modification or change to any part of the product by unauthorized persons, release the manufacturer from any liability over and above the lawful rights of the customer.

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