BOX•DESIGN

BY PRO-JECT AUDIO SYSTEMS

INSTRUCTIONS FOR USE
Pro-Ject Phono Box DS2 USB

Dear music lover,

thank you for purchasing this Pro-Ject Audio phono amplifier.
In order to achieve maximum performance and reliability you should study these instructions for use carefully.

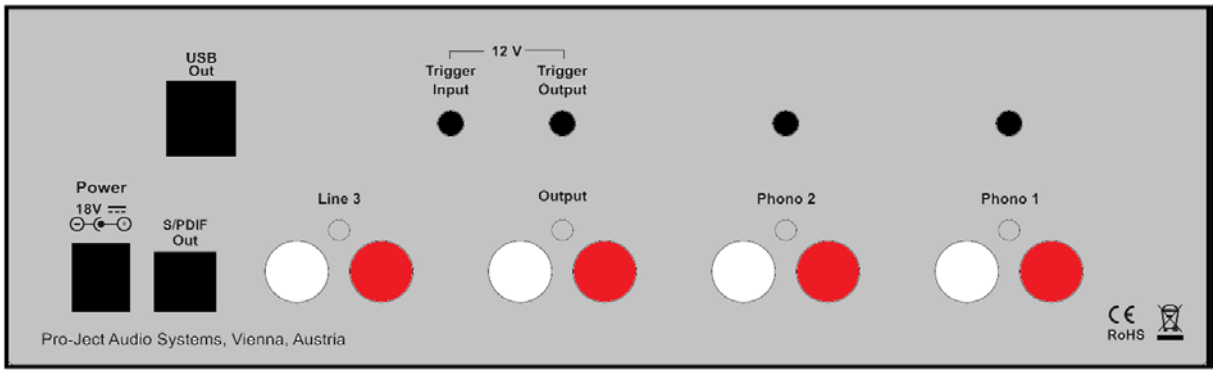
Warning of a hazard for the user, the unit or possible misuse

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 supply is used to disconnect the unit from the mains. Make sure that the power supply is easily accessible at all times. Never handle the device, the 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 whilst the phono amplifier is disconnected from the power supply.
Take care to connect the left and right channels correctly. The right channel is usually marked red, the left channel black or white.
Do not connect the phono amplifiers output to a phono input (sometimes labelled gram, disc *or* RIAA*) on the amplifier.*
Never use any other power supply than the one supplied with the unit.

Connecting of record players

Connect left and right channels of the tonearm signal lead to the sockets marked phono 1 or Phono 2 of the phono amplifier. It is possible to connect 2 record players at once or connect 2 tonearms from a turntable equipped by 2 tonearms. The earthing wire(s) may be connected to the screw terminal if you encounter hum problems when using the record player.

Line level input

Any line level source of signal can be connected to the preamplifier using Line 3 socket on the backpanel and then converted to digital data using coaxial S/PDIF output or USB output.

Connection to the amplifier

Connect the **Output** of the phono amplifier to a line input (such as **AUX**, **CD**, **Tuner**, **Tape** or **Video**) on your amplifier.
Alternatively connect the S/PDIF digital output to the corresponding digital input of the amplifier or soundbar.

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 preamplifier **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

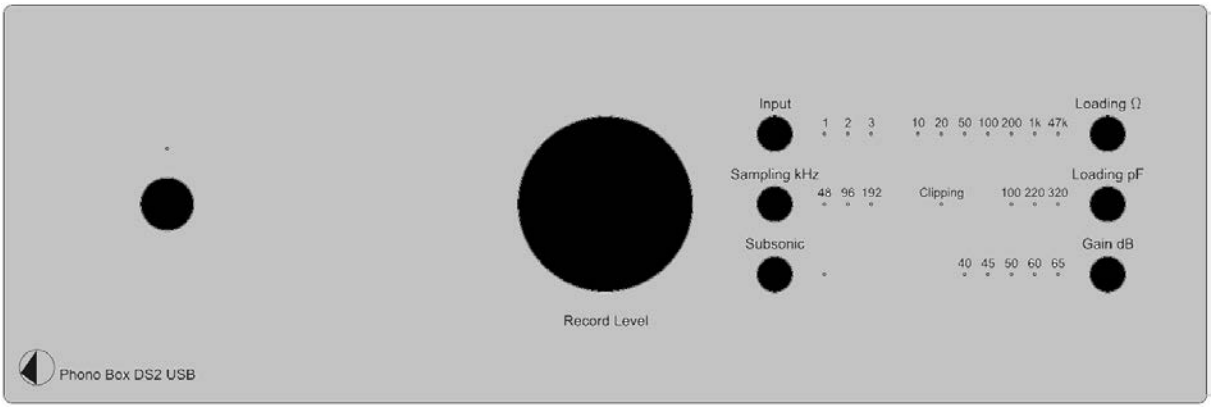
The pushbutton on the front panel of the unit alternately turns the power on or returns it to standby mode. The blue LED on the front panel shows that the unit is powered on. If a trigger signal is present the unit can't be switched off by the pushbutton.

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 −⊙+) 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



Settings

The three function keys **Loading Ω**, **Loading pF**, **Gain dB** on the right hand side are used to set input impedance, input capacitance and input gain. All settings are stored automatically.

To find out which type your cartridge is, please consult the literature accompanying your cartridge. The literature for cartridges should also specify the correct input impedance (low-output MC cartridges) and the correct input capacitance (high-output MC and MM cartridges), into which the cartridge is designed to work. If in doubt please consult your dealer.

Loading Ω (input impedance)

The button **Loading Ω** sets the input impedance to desired value (low output MC cartridges: 10Ω-20Ω-50Ω-100Ω-200Ω-1kΩ or 47kΩ for high output MC and MM cartridges)

Loading pF (input capacitance)

The button **Loading pF** sets the capacitance for high output MC and MM cartridges. (Input capacitance is irrelevant for low-output MC cartridges)

pF - all LEDs off = 47pF. LEDs pF 100, 220 and 320 - readout always + 47pF

Gain dB

Gain for the outputs can be set from 40dB to 65dB in steps of 5dB or 10dB. Any change will be automatically stored for the chosen input, when input is changed or the unit is switched into standby mode.

Examples of typical settings

Ortofon 2M Red (MM)	➢ input impedance: 47kohms ➢ input capacitance: 100pF ➢ input gain: 40dB
Ortofon X5-MC (High-Output MC)	➢ input impedance: 47kohms ➢ input capacitance: 320pF ➢ input gain: 50dB
Ortofon Rondo Red (Low-Output MC)	➢ input impedance: 10ohms. ➢ input capacitance is irrelevant ➢ input gain: 60dB

Input selector

After the unit is powered on, operating the push button **Input** selects the inputs. The selected input will be indicated by the corresponding LED:

1 – Phono 1
2 – Phono 2
3 – Line 3

Sampling frequency

If **USB Out** is not in use: The push button **Sampling kHz** selects the frequency of digital output signal for **S/PDIF Out.** Available settings are 48/96/192kHz. The selected frequency will be indicated by the corresponding LED.

If **USB Out** is connected and active, sampling rate is set from computer. If frequency is set to 48, 96 or 192kHz, then **S/PDIF Out** is active and is set to the same frequency as **USB Out.** Setting computer to higher frequency (352,8kHz or 384kHz) deactivate S/PDIF Out and allows to record in DSD128 format. (frequency always indicated by corresponding LED´s).

Subsonic

The push button turns on and off subsonic filter

Setting the record level

Record level knob on a front panel set the level of analogue signal going to the A/D converter. Clipping LED indicates when the level is too high and signal is distorted.

Connecting to a Computer

Connect the USB Out of the unit to a free USB-socket on your computer and turn it on/make sure it is powered on.

* For Windows® operating systems an USB Class 2 driver (supplied on CD) has to be installed.

Mac OS® operating systems do not need an additional driver or setup.

Linux operating systems include an USB Audio Class 2 driver from Linux Kernel 2.6.35 and higher.

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

Vinylstudio settings

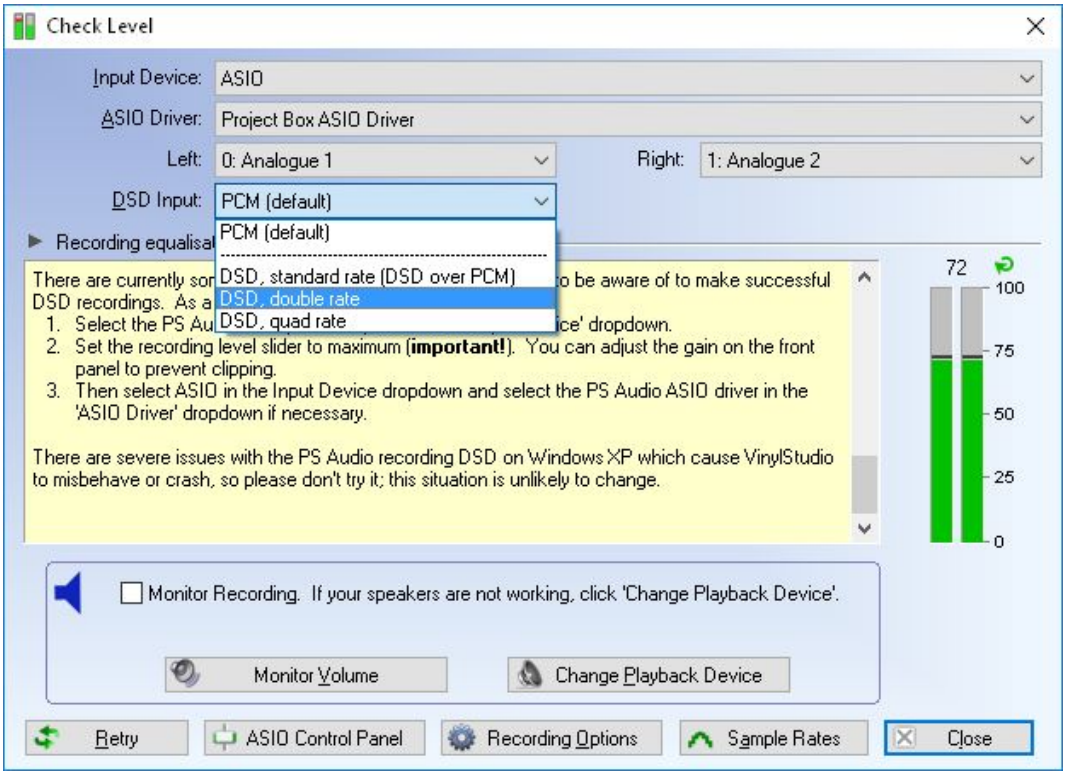
- Phono Box DS2 USB allows following record settings:

1. Pulse-code modulation (PCM):
   - 16/24/32-bits at 44.1k / 48k / 88.2k / 96k / 192kHz / 384kHz

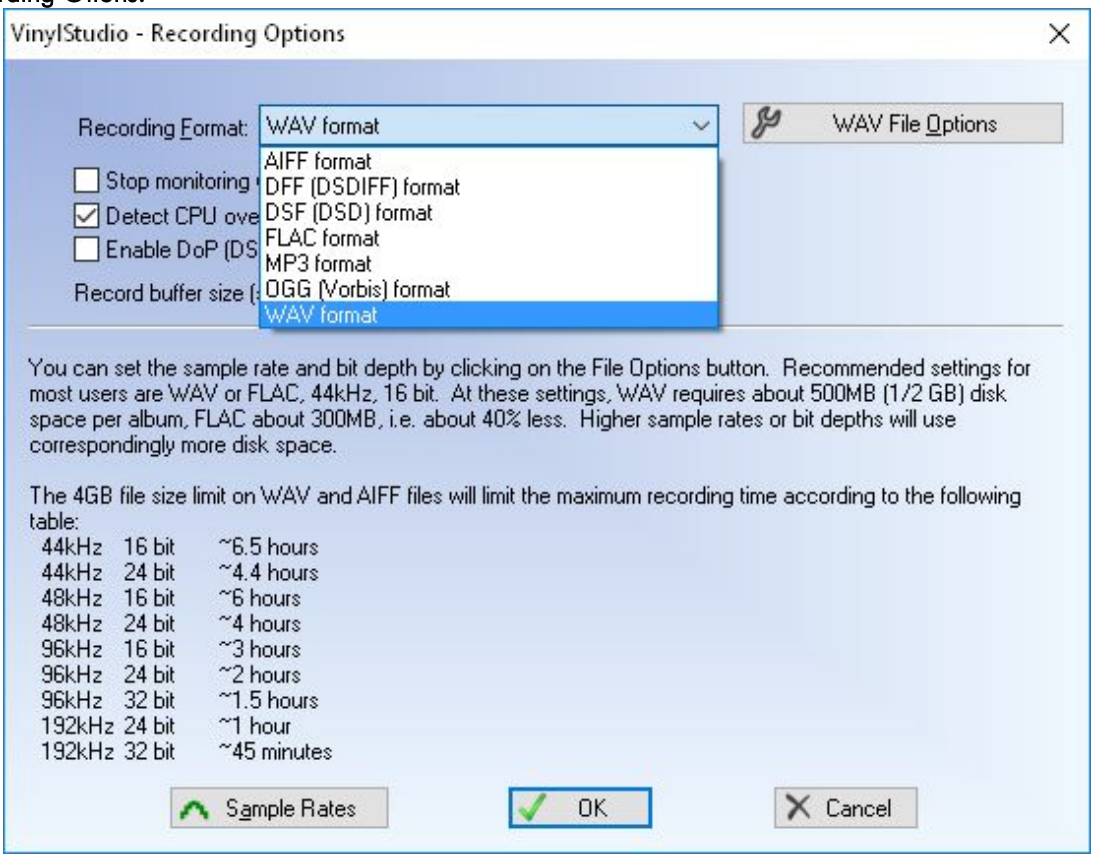
2. Direct Stream Digital (DSD) over PCM (DoP):
   - DSD standard rate: DSD64 at sample rate 176.4kHz
   - DSD double rate: DSD128 at sample rate 352.8kHz
   - DSD quad rate: DSD256 at sample rate 705.6kHz

- VinylStudio Lite record setting:

Check Level:
- **Input Device:** ASIO
- **ASIO Driver:** Project Box ASIO Driver
- **DSD Input:** PCM or DSD (depends on Recording **Options)**



Recording Otions:



- AIFF format:
  - AIFF PCM format:
    - **Check Level:** DSD Input: PCM
    - **Recording Options:**
      - Disable DoP detection
      - Sample Rate: 44.1k / 48k / 88.2k / 96k / 192kHz / 384kHz
      - Bit Depth: 16/24/32-bits
  - AIFF DSD format:
    - **Check Level:** DSD Input: DSD standard / double / quad rate
    - **Recording Options:**
      - Enable DoP detection
      - Sample Rate: DSD standard / double / quad rate
      - Bit Depth: N/A (24-bits PCM)

- DFF format:
  - **Check Level:** DSD Input: DSD standard / double / quad rate
  - **Recording Options:**
    - Enable DoP detection
    - DSD Rate: DSD standard / double / quad rate

- DSF format:
  - **Check Level:** DSD Input: DSD standard / double / quad rate
  - **Recording Options:**
    - Enable DoP detection
    - DSD Rate: DSD standard / double / quad rate

- FLAC format:
  - Available with full license only!

- FLAC PCM format:
  - **Check Level:** DSD Input: PCM
  - **Recording Options:**
    - Disable DoP detection
    - Sample Rate: 44.1k / 48k / 88.2k / 96k / 192kHz / 384kHz
    - Bit Depth: 16/24/32-bits
    - Compression: 0-8

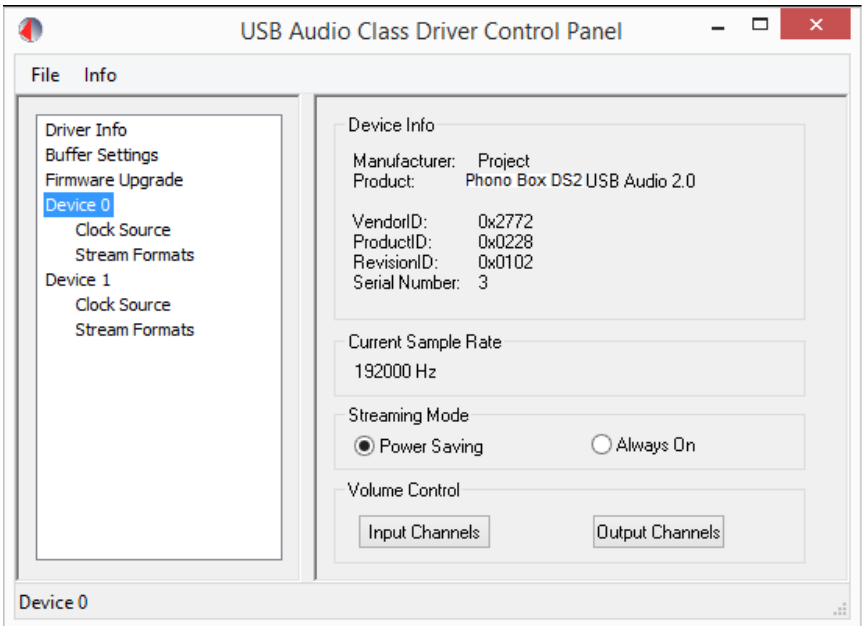
- FLAC DSD format:
  - **Check Level:** DSD Input: DSD standard / double / quad rate
  - **Recording Options:**
    - Enable DoP detection
    - Sample Rate: DSD standard / double / quad rate
    - Bit Depth: N/A (24-bits PCM)
    - Compression: 0-8

- MP3 format:
  - LAME MP3 Encoder installation and localization required!
  - **Check Level:** DSD Input: PCM
  - **Recording Options:**
    - Disable DoP detection
    - Sample Rate: 44.1k / 48kHz
    - MP3 Quality: CBR@16-320kbps, ABR@16-320kbps, VBR@0-9

- OGG format:
  - **Check Level:** DSD Input: PCM
  - **Recording Options:**
    - Disable DoP detection
    - Sample Rate: 44.1k / 48kHz
    - Quality: ABR@48-448kbps, VBR@0-10

- WAV format:
  - WAV PCM format:
    - **Check Level:** DSD Input: PCM
    - **Recording Options:**
      - Disable DoP detection
      - Sample Rate: 44.1k / 48k / 88.2k / 96k / 192kHz / 384kHz
      - Bit Depth: 16/24/32-bits

  - WAV DSD format:
    - **Check Level:** DSD Input: DSD standard / double / quad rate
    - **Recording Options:**
      - Enable DoP detection
      - Sample Rate: DSD standard / double / quad rate
      - Bit Depth: N/A (24-bits PCM)

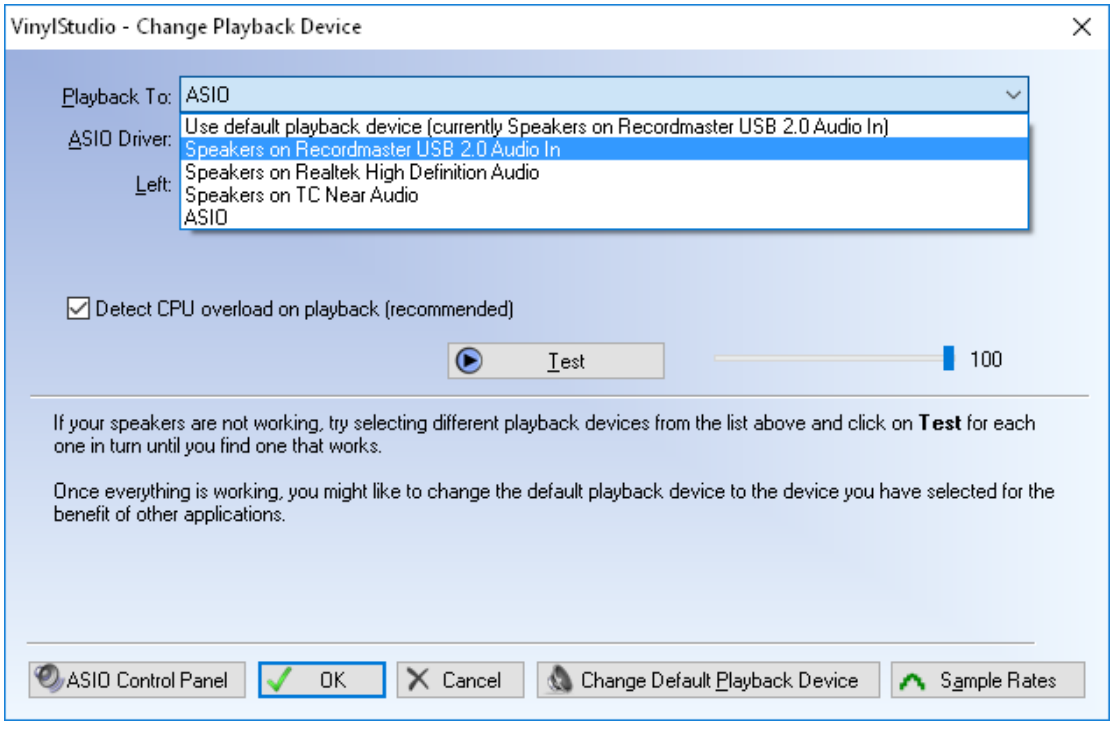


Change Playback Device:

- If ASIO is used as input device, then playback device can´t run on the same driver. i.e.: if Pro-Ject USB audio driver shows more connected devices (on the screenshot below is Device 0 – Recordmaster, Device 1 Maia DS) Then the second device can´t be selected as a playback device for **Monitor Recording**.
- Do not use ***Monitor Recording***, if playback device is Phono Box DS2 USB to avoid mixing signals in optical output
- ***Monitor Recording*** can be used for any other playback device available in **Playback To** list (except the case of ASIO described above):

In case of no sound of Monitor Recording try to restart playback USB device. (Do not reconnect USB cable when units are powered on).

DSD records playback:

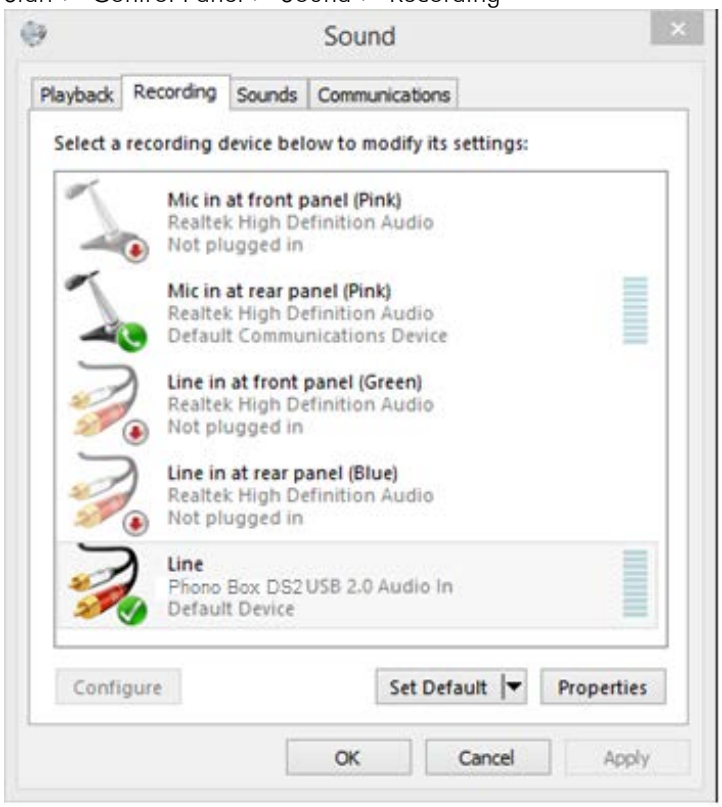


- AIFF, FLAC, WAV format:
  - These DSD files with DSD data and DoP markers are possible to play on DACs with ASIO DoP Marker 0x05/0xFA support

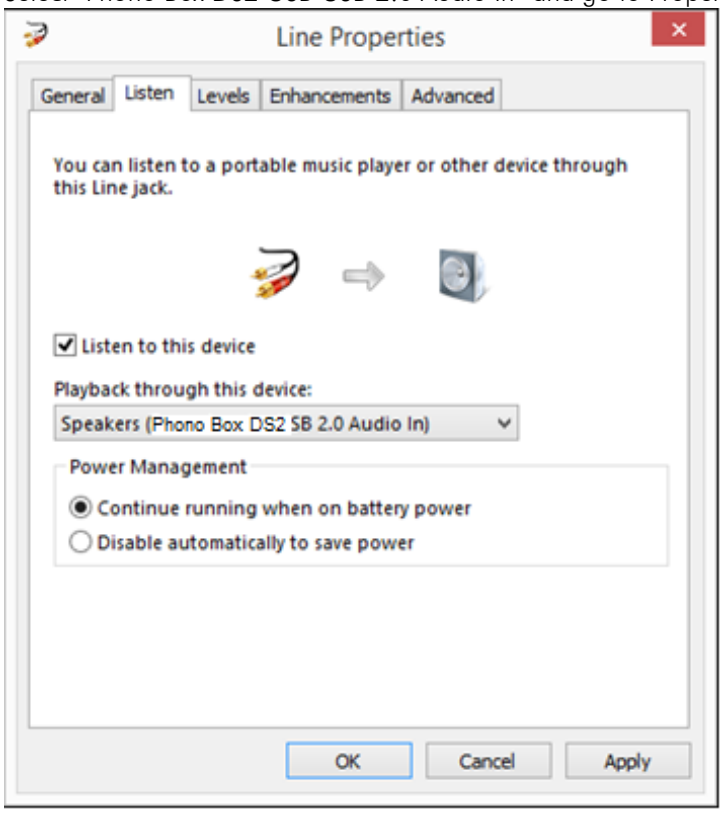
- DFF, DSF format:
  - These files don´t contain DoP markers (Native DSD format), playback is possible with suitable DAC´s with ASIO Native DSD support and also with DAC´s with ASIO DoP Marker 0x05/0xFA support if playback software allows this (e.g.: J-River or Foobar2000 with plugin foo_dsd_asio)

Setting of a recording device in Windows 7/8/10:

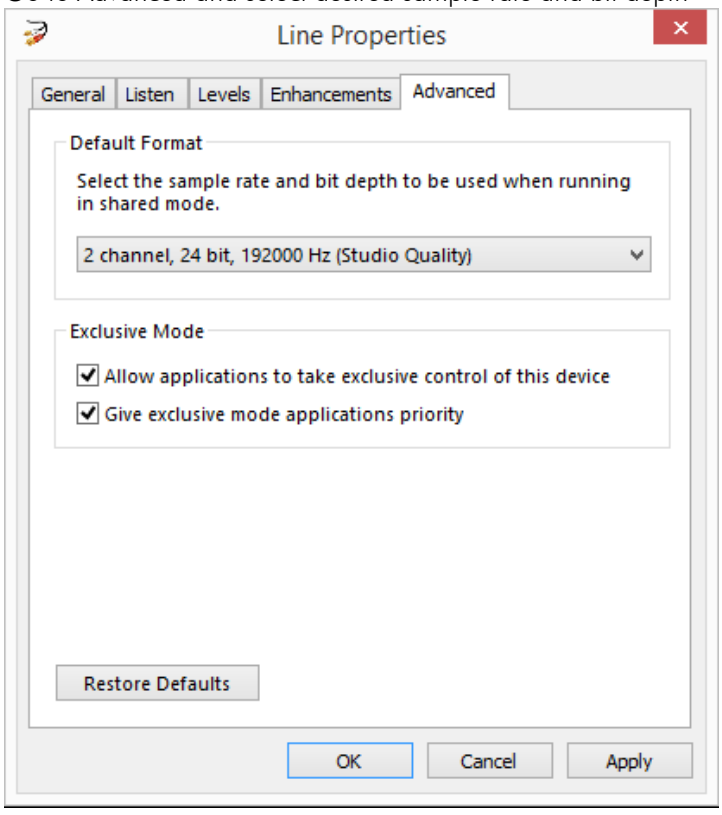
Start > Control Panel > Sound > Recording



Select -Phono Box DS2 USB USB 2.0 Audio In- and go to Properties > Listen



Go to Advanced and select desired sample rate and bit depth



Technical specifications Pro-Ject Phono Box DS2 USB

[A] Typical for low output MC cartridges, [B] typical for MM or high output MC cartridges
* Input capacitance is irrelevant for low-output MC cartridges

Input impedance:	10, 20, 50, 100, 200ohms, 1000 ohms and 47kohms[A]
Input capacitance/impedance:	100pF, 220pF and 320pF */47kohms [B]
Input gain:	40, 45, 50, 60, 65dB
Noise floor:	80dB (A weighted) at 40dB input gain
THD:	<0,02%
RIAA-equalisation curve accuracy:	20Hz - 20kHz / max. 0,3dB
Subsonic filter:	at 20Hz with 12dB/octave
Phono Inputs:	2 pairs RCA/phono sockets
Line input:	1 pair RCA/phono sockets
Line output:	1 pair RCA/phono sockets
Digital outputs:	1x USB B-type
	1x S/PDIF optical
Outboard power supply:	18V/500mA DC, suitable for your country's mains supply
Power consumption:	100mA DC, <1W in standby
Dimensions W x H x D (D with sockets):	206 x 71 x 226 aluminium
	240 x 72 x 227 wood
Weight:	1340g aluminium, 1780g wood (without any accessories)

Potential incorrect use and fault conditions

No signal on one or both channels:

No connection between player and phono amplifier or amplifier. This could be due to a faulty plug, broken wire or solder joint or simply loose plug/socket connection.

Strong hum:

No earth connection from cartridge or arm, or arm cable to phono amplifier, or earth loop.

Output too quiet or too loud, or distorted:

Input gain incorrectly set - input overloading or insufficiently amplified.

Service

Should you encounter a problem which you are not able to alleviate or identify, please contact your dealer for further advice. Only if the problem cannot be resolved there, the unit should 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 changes 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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