WEISS DSP501 Network Renderer User Guide

Contents

WEISS DSP501 Network Renderer

The first steps with your DSP50x
Software Version: 2.4.1r2830
Date: August 23, 2021

The DSP501/DSP502

Congratulations on purchasing the DSP501 or DSP502 Signal Processor!

Figure 1: The front panel of the DSP502

The DSP501/DSP502 are our new state-of-the-art Signal Processors with an unprecedented level of sophistication and versatility. With the DSP50x we are creating a new type of equipment for your HiFi chain. It adds a number of interesting signal processing features and sports a variety of digital inputs as well as AES/EBU and S/PDIF outputs.
Weiss Engineering has a 30-year history in Digital Signal Processor design. In that time span we have learned a thing or two about algorithm design. The DSP50x is the essence of our experiences.

Figure 2: The front panel of the DSP501

The DSP502 uses a larger frame but else sports the same features as the DASP501. The front of the DSP502 is displayed at the top and the DSP501 in the middle of this page. The term DSP50x refers to both models. The basic operation of the DSP50x is outlined in this Quick Start Guide. For all the powerful features of the DSP50x refer the DSP50x User Manual and White Papers mentioned below.

Quick Start Guide

This Quick Start Guide presents the first steps to set up the DSP50x unit. Further and more detailed informations about the DSP50x and its features can be found in the DSP501/DSP502 User Manual and White Papers.

Setting up the DSP50x hardware

Carefully unpack the DSP50x unit. The following items should be included:

- The DSP50x unit
- This quick start guide with a warranty card
- An IR remote control unit

Figure 3: The back panel of the DSP501

After unpacking the DSP50x connect the necessary input/output cables at the back of the unit.
Also connect the mains cable. The mains voltage is automatically sensed by the DSP50x. Mains voltages between 90V and 240V are allowed. No manual mains voltage selection is necessary.
To switch on the unit press on the rotary knob on the faceplate or press the power on/off button on the IR remote (upper/left corner). Wait for about half a minute for the unit to boot.

Note: Most of the parameters mentioned below can also be set via the DSP50x's web interface. If you have connected your DSP50x with an Ethernet cable to a router unit you may access the DSP50x via web browser. Enter this URL into your browser:

- dsp501-nnnn.local (for a DSP501 unit) or dsp502-nnnn.local (for a DSP502 unit)
- "nnnn" is the serial number of your DSP50x unit. You see that number on the back of the unit.

Selecting the output
The DSP50x has two outputs, XLR and RCA number 1 and XLR and RCA number 2. With the current software only one of the two outputs is active at any time. The output not active is muted.
Which one is active can be selected either with the remote control (two keys in the middle/top) or via the touch.

Figure 4: The back panel of the DSP501

screen by pressing on the red 1 or 2 figures to toggle between them. Most of the parameters in the DSP50x can be set differently between outputs 1 and 2, e.g. the output volume, equalizer settings etc..
This allows to use the two outputs for different purposes. E.g. one output for the speakers and the other output for the headphones.
The active output can be assigned to either headphones or speakers, via a button on the right in the DSP plugin section of the web interface. Each output selection has its own exclusive plugins. The choice of the headphones or speaker output can also be defined via the LCD display in menu section Setup > Output Termination.

Selecting the output level
Be careful with the output level upon first operation. Best is to lower the level to a very low value with the rotary knob or via the remote control. The DSP50x has an additional level control to match the basic output level with the amplifiers at hand.

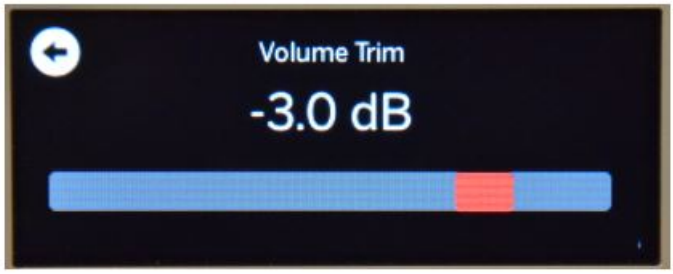


Figure 5: *Volume Trim* menu section on the LCD

This can be useful e.g. for speakers with a digital input which may play too loud when fed with a full-scale digital signal. The outputs 1 and 2 can be set to different levels. Proceed as follows:

- Select the output you would like to set (1 or 2).
- Tap on the Setup pad on the touch screen.
- With the knob scroll the display such that you can see the Volume Trim entry.
- Tap on the Volume Trim pad in order to set the basic output level with the knob. 0dB is the highest level while -30dB is the lowest level.

  Now you may want to repeat that with the other output selected as the active output.

Selecting the output samplerate
The output sampling frequency can be set to any of the following frequencies:

- 88.2 kHz
- 96 kHz
- 176.4 kHz
- 192 kHz

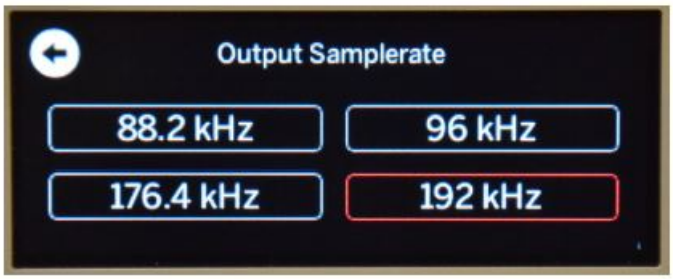


Figure 6: Selecting the *Output Samplerate* via the LCD

Depending on the D/A Converter connected to the DSP50x output one may prefer one sampling frequency over the other. Also some D/A converters may not be able to handle the high sampling frequencies (176.4 kHz / 192 kHz).

Selecting the input
The input source can be selected by either tapping on the input pad on the touch screen or via the remote control. The following inputs can be selected:

- XLR (XLR socket)
- RCA (RCA socket)
- TOS (optical socket)
- USB (USB type B socket (quadratic shape), the type A socket is used for other purposes)
- UPnP (Ethernet socket)
- Roon Ready (Ethernet socket)*

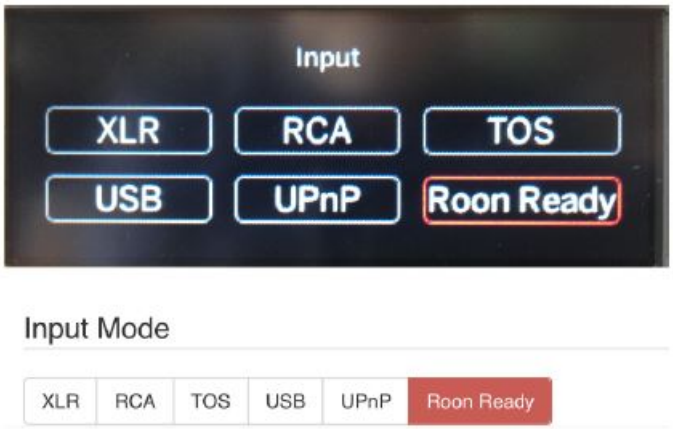


Figure 7: Input selection of *Roon Ready* via LCD and Web interface menu

The XLR, RCA and TOS inputs are self-explanatory. For the USB input, when used with:

- a MacOS system, no driver is required
- a Windows-based system needs a driver which can be downloaded from here:

https://www.weiss.ch/files/downloads/dac501-dac502/WeissEngineering_USBAudio_v4.67.0_2019-07-04_setup.exe
For the UPnP input an application running on a tablet can be used to transfer files from a NAS unit to the DSP50x or to stream from e.g. Tidal directly to the DSP50x or to listen to web based radio stations. Suitable apps are:

- for iPad: mconnectHD or Creation 5
- for Android: BubbleUPnP

Roon Ready
The Roon Core will acquire the Roon Ready Certified DSP501/DSP502 when required and automatically select its Roon Ready input. No further user input is required.

IR Remote Control
Most of the keys on the IR remote control are self-explanatory. Here are some additional remarks:

Figure 8: IR remote control

- The ”polarity” key changes the absolute polarity of the output signal. If this is engaged (i.e. signal is inverted), the level figure on the LCD display turns yellow.
- The ”polarity” key changes the absolute polarity of the output signal. If this is engaged (i.e. signal is inverted), the level figure on the LCD display turns yellow.

- The ”mute” key when engaged mutes the output signal completely and the level figure on the LCD turns red.
- The DSP presets keys select one of the presets stored in the DSP. Cur-rently we do not have yet assembled any factory DSP presets, but you are welcome to do your own. More information on the DSP presets is given in the web interface chapter.

The Web Interface
As mentioned above you may access the DSP50x via a web browser provided you have connected your DSP50x with an Ethernet cable to a Router unit. Enter this URL into your browser:

- dsp501-nnnn.local (for a DSP501 unit) or dsp502-nnnn.local (for a DSP502 unit)
- nnnn is the serial number of your DSP50x unit. You see that number on the back of the unit.

  The web interface is described in more detail in the User Manual and White Papers.

Renaming of your Weiss DSP50x
You may rename your Weiss DSP50x via the web inter-face, specifically to either DSP01 or DSP502. This is particularly useful in case your device is still subject to the old naming convention DSP50x and thereby is not recognized as a Roon Ready Certified device by the Roon Core. Click the Rename button in the Device section of the web interface and select one of the two options DSP501 or DSP502. Confirm your selection and restart your device in order for the rename to take effect.
You may repeat this procedure several times.

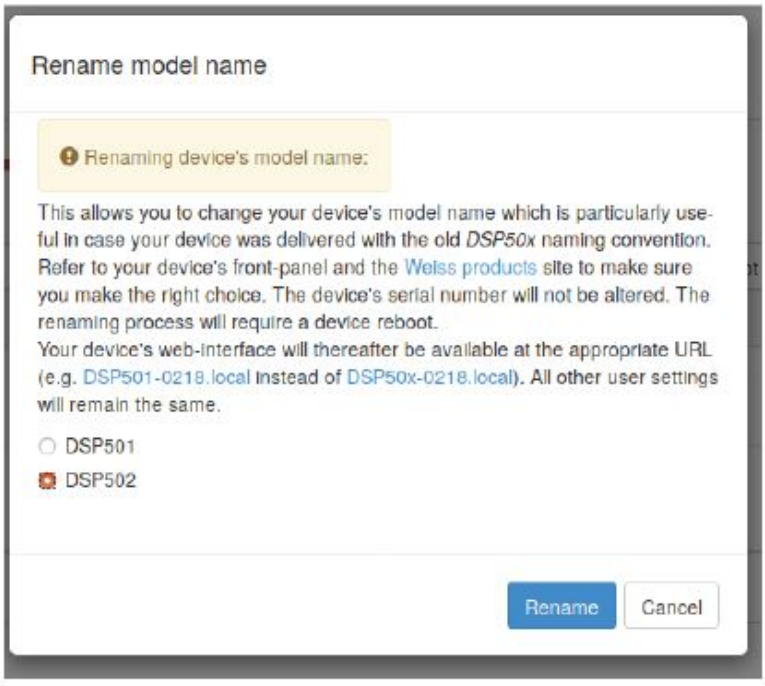


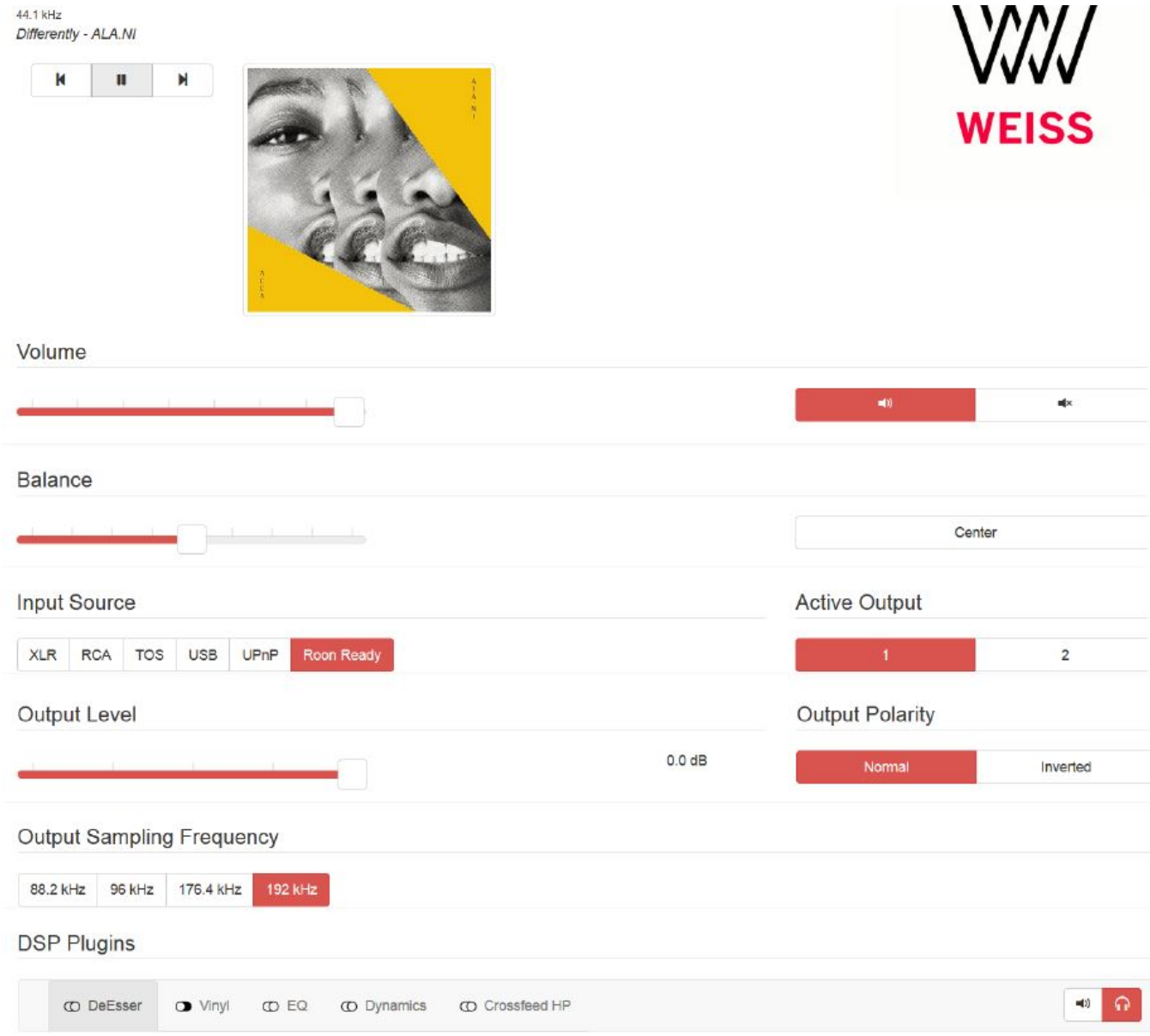
Figure 9: Pop-up window for renaming your device via the web interface

Software Updates

In the figure below you see a screen shot of the web interface. At the bottom there is a pad named Check for Update. If you tap on that the DSP50x checks whether there is any new firmware available to be downloaded. If this is the case the new firmware is listed and the pad changes to Download Update. If you tap on the pad the update will be downloaded. This may take some time depending on the speed of your Internet connection. Once the download has finished, the pad changes to Install Update. Again tap on the pad to install the down-loaded firmware.
This again takes a minute or two, just wait until the pad changes to Reboot with Update. Again tap on the pad to start rebooting the DSP50x unit.

Files to download (drivers, manuals) for the DSP50x can be found here:

- **https://www.weiss.ch/download/dsp501-dsp502**
- Manual: **https://www.weiss.ch/files/downloads/dsp501-dsp502/dsp50x-user-man-1-0.pdf**
- USB driver for Windows: **https://www.weiss.ch/files/downloads/dac501-dac502/WeissEngineering_USBAudio_v4.67.0_2019-07-04_setup.exe**



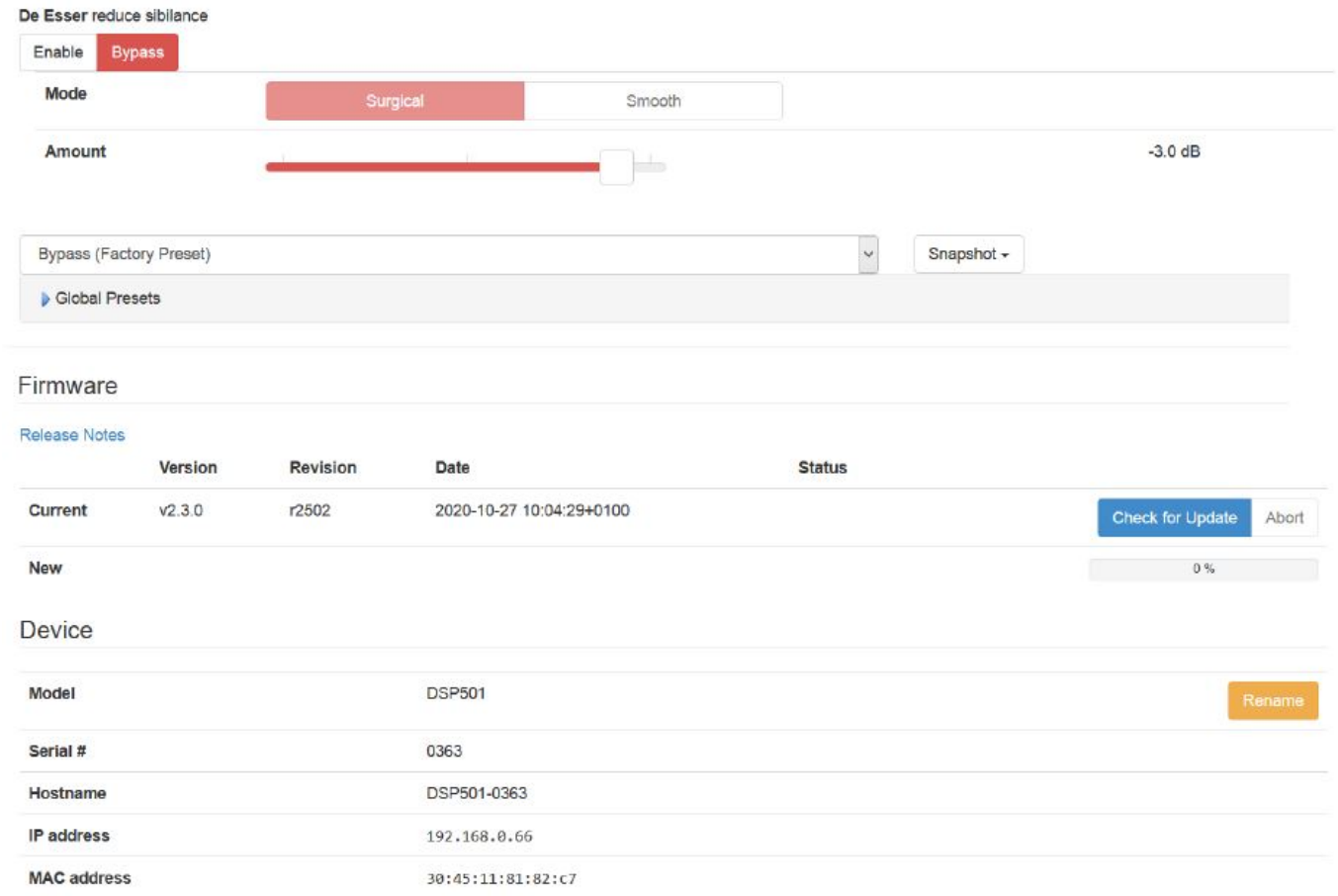


Figure 10: Screenshot of the DSP50x web interface

The first steps with your DSP50x

List of Figures

Documents / Resources

WEISS DSP501 Network Renderer [pdf] User Guide
DSP501, DSP502, Network Renderer