miniDSP Flex Balanced TRS 2x4

Flex Balanced TRS 2x4 Digital Signal Processor User Manual

Model: Flex Balanced TRS 2x4

Brand: miniDSP

1. Introduction

The miniDSP Flex Balanced TRS 2x4 is a versatile digital signal processor designed for a wide range of audio applications. It functions as a compact digital stereo preamplifier, an optimizer for subwoofers, an enhancer for active speakers, and a core component for home theater and recording studio setups. Its flexible design allows for extensive customization and integration into various audio systems.

2. Key Features

- Processor: 32-bit floating-point 400MHz Analog Devices SHARC DSP
- Multi-Core USB Audio processor (XMOS)
- Bluetooth streaming: LDAC/aptX HD/aptX/AAC/SBC
- Audiophile performance: SNR@120dB(A), THD+N @ -110dB (0.0003%)
- White/Black OLED front panel controller with IR control
- Compatible with miniDSP's Device Console

3. Package Contents

Before proceeding with installation, please verify that all items listed below are present in your package.

- miniDSP Flex Balanced TRS 2x4 Unit
- Power Adapter with interchangeable international plugs
- USB Cable
- Remote Control
- User Manual (this document)

4. Product Overview

4.1 Front Panel

Figure 4.1: Front view of the miniDSP Flex Balanced TRS 2x4

This image displays the front of the miniDSP Flex unit. It features a prominent rotary encoder for volume control and menu navigation, along with a clear OLED display that shows current volume level, active input, and selected preset.

4.2 Rear Panel

Figure 4.2: Rear view of the miniDSP Flex Balanced TRS 2x4

This image illustrates the rear panel of the miniDSP Flex, detailing its connectivity options. It includes the DC power input, power switch, USB port for audio and control, S/PDIF coaxial and optical digital inputs, and four balanced TRS outputs, along with two balanced TRS inputs.

4.3 Power Adapter

Figure 4.3: Power Adapter with International Plugs

This image shows the universal power adapter supplied with the miniDSP Flex, complete with various

interchangeable plug adapters to ensure compatibility with different regional power outlets.

5. Setup Guide

5.1 Step 1: Unpacking and Placement

Carefully remove the miniDSP Flex unit and all accessories from the packaging. Place the unit on a stable, flat surface away from direct sunlight, heat sources, and excessive moisture. Ensure adequate ventilation around the unit.

5.2 Step 2: Power Connection

Connect the provided power adapter to the "DC 12V" input on the rear panel of the miniDSP Flex. Select the appropriate international plug adapter for your region and attach it to the power adapter. Plug the power adapter into a suitable wall outlet. Do not power on the unit yet.

5.3 Step 3: Audio Connections

Identify the audio sources and destinations for your setup.

Input Connections

- For digital sources, connect your S/PDIF coaxial or TOSLINK optical cables to the corresponding inputs on the rear panel.
- For analog sources, connect your balanced TRS cables to the "INPUTS 1-2" ports.
- For USB audio from a computer, connect a USB cable from your computer to the "USB Audio & Control" port.

Output Connections

- Connect your powered speakers, amplifiers, or other audio destinations to the "OUTPUTS 1-4" using balanced TRS cables.

5.4 Step 4: Initial Power On

Once all connections are secure, flip the "PWR" switch on the rear panel to the ON position. The OLED display on the front panel should illuminate.

6. Operating Instructions

6.1 Front Panel Controls

Rotary Encoder

The large rotary knob on the front panel serves multiple functions:

- Rotate to adjust the master volume level.
- Press to mute/unmute audio.
- Press and hold to enter the menu system for input selection, preset recall, and other settings.

OLED Display

The OLED display provides real-time information on volume, active input, selected preset, and menu navigation.

6.2 Remote Control

The included IR remote control allows for convenient operation from a distance, including volume adjustment, input switching, and preset recall. Refer to the remote's specific button layout for detailed

functions.

6.3 Input Selection

To change the active audio input, press and hold the rotary encoder to enter the menu, then navigate to "Input Select" and choose your desired source (e.g., USB, S/PDIF, TOSLINK, Analog 1-2).

6.4 Preset Management

The miniDSP Flex supports multiple user-definable presets. These presets store configurations such as equalization settings, crossover points, and volume levels. Access and recall presets via the front panel menu or remote control.

7. Software Configuration (Device Console)

The full potential of the miniDSP Flex is unlocked through the miniDSP Device Console software, available for download from the official miniDSP website.

- Connect the miniDSP Flex to your computer via the USB cable.
- Install the miniDSP Device Console software on your computer.
- Launch the software and connect to your Flex unit.
- The Device Console provides a graphical interface for:
    - Parametric Equalization (PEQ)
    - Crossover configuration
    - Gain adjustments
    - Delay and phase alignment
    - Input/output routing
    - Saving and loading configurations (presets)

For detailed instructions on using the Device Console, please refer to the software's dedicated user guide available on the miniDSP website.

8. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the unit. Do not use liquid cleaners or aerosols.
- **Ventilation:** Ensure that the ventilation slots on the unit are not blocked to prevent overheating.
- **Firmware Updates:** Periodically check the miniDSP website for firmware updates. Updates can provide new features, performance improvements, or bug fixes. Follow the instructions provided with the firmware update carefully.

9. Troubleshooting

9.1 No Power

- Ensure the power adapter is securely connected to the unit and the wall outlet.
- Verify the "PWR" switch on the rear panel is in the ON position.
- Check if the wall outlet is functional.

9.2 No Audio Output

- Verify that the correct input source is selected on the miniDSP Flex.

- Check all audio cable connections (inputs and outputs) for secure fit.
- Ensure the volume level is not muted or set too low.
- Confirm that your connected amplifier/speakers are powered on and functioning correctly.
- Check the routing within the miniDSP Device Console software.

9.3 Distorted Audio

- Check for proper gain staging throughout your audio chain to avoid clipping.
- Ensure all cables are in good condition and properly connected.
- If using digital inputs, verify the sample rate and bit depth compatibility.

9.4 Unit Not Recognized by Computer (USB)

- Ensure the USB cable is securely connected to both the miniDSP Flex and your computer.
- Try a different USB port on your computer.
- Reinstall the miniDSP Device Console software and any necessary USB drivers.
- Restart your computer.

10. Specifications

Feature	Detail
Processor	32-bit floating-point 400MHz Analog Devices SHARC DSP
USB Audio Processor	Multi-Core XMOS
Bluetooth	LDAC/aptX HD/aptX/AAC/SBC
Signal-to-Noise Ratio (SNR)	>120dB(A)
Total Harmonic Distortion + Noise (THD+N)	<-110dB (0.0003%)
Front Panel	White/Black OLED with IR control
Inputs	Balanced TRS (2), S/PDIF Coaxial (1), TOSLINK Optical (1), USB Audio
Outputs	Balanced TRS (4)
Power Supply	12V DC
Compatibility	miniDSP Device Console

11. Safety Information

- Do not expose the unit to water or excessive moisture.
- Do not attempt to open the unit's casing. There are no user-serviceable parts inside.
- Use only the provided power adapter.
- Keep the unit away from strong magnetic fields.
- Disconnect power during lightning storms or when unused for long periods.