miniDSP Flex HTx Audio Science User Guide

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miniDSP Flex HTx Audio Science

Technical Specifications

- Digital Signal Processing Engine: Analog Devices Floating point SHARC DSP – ADSP21489 @ 400MHZ

- Processing Resolution / Sample Rate: 32-bit / 48 kHz
- USB Audio Support: UAC2 Audio – ASIO driver provided (Windows) – Plug&Play (Mac/Linux)
- Multichannel USB Audio interface (8ch) for up to 7.1 configurations / 32bit / 44.1~96kHz
- Input/Output DSP Structure: 8ch IN (USB/HDMI/Analog) or 2ch IN (Toslink/SPDIF) => DSP => 8 channels OUT (Analog)
- Digital Stereo Audio Input Connectivity:
  - HDMI connectivity
  - 1 x SPDIF (stereo) on RCA connector
  - WARNING: No onboard Dolby/DTS decoding. Use your source (E.g. TV) to output in PCM mode.
- Analog Audio Input Connectivity:
  - 8 x Balanced TRS
  - 8 x Unbalanced RCA
- Analog Audio Input Impedance: 200 kΩ
- Analog Audio Output Impedance: 300 Ω
- Analog Input/Output Max Level Frequency Response: Digital to Analog (input 1 kHz, 0 dBFS) / AES17 20kHz LPF
- SNR: 127 dB(A)
- THD+N / SINAD: -120 dB (0.0001 %) / 120dB SINAD
- Crosstalk: -132 dB
- TRS Analog to Analog (input 1 kHz, 4 V RMS) / AES17 20kHz LPF
- SNR: 120 dB(A)
- THD+N / SINAD: -114 dB (0.0002 %) / 114dB SINAD
- Crosstalk Filtering Technology: -130 dB
- DSP Presets: Up to 4 presets
- Dimensions (HxWxD): 41.5 x 429 x 236 mm
- Accessories: IR Remote, Power Supply (Including external switching Power Supply 12V/1.6A – US/UK/EU/AU plugs), Trigger out (12V trigger out controls external ON/OFF powering of amplifiers, 3.5mm jack), CEC control
- Power Consumption: HDMI CEC command for Mute/Volume/Standby – 16.5 W (idle), 3.7 W (standby)

Product Usage Instructions

Connecting the Flex HTx

1. Connect the audio source to the Flex HTx using one of the following options:
   - **HDMI:** Connect the HDMI cable from your audio source to the HDMI port on the Flex HTx.
   - **SPDIF:** Connect the SPDIF cable from your audio source to the RCA connector on the Flex HTx.
2. If using HDMI, ensure that your audio source is set to output in PCM mode. The Flex HTx does not support Dolby/DTS decoding.
3. Connect your speakers to the Flex HTx using either balanced TRS or unbalanced RCA cables.
4. Connect the included power supply to the Flex HTx and plug it into a power outlet.
5. If you have external amplifiers, you can control their powering using the 12V trigger out. Connect the 3.5mm jack to the trigger input of your amplifiers.

Using the Flex HTx

The Flex HTx provides advanced audio processing capabilities. To use the Flex HTx, follow these instructions:

Setting Up DSP Presets

The Flex HTx allows you to save up to 4 DSP presets. To set up DSP presets:

1. Using the included IR remote, navigate to the DSP preset menu.
2. Select an empty preset slot.
3. Adjust the audio parameters according to your preferences.
4. Save the preset for future use.

Adjusting Audio Settings

To adjust audio settings on the Flex HTx:

1. Using the included IR remote, navigate to the audio settings menu.
2. Choose the desired audio input (USB, HDMI, Analog, etc.).
3. Configure the audio parameters such as volume, balance, and equalization.
4. Save the settings if needed.

Frequently Asked Questions (FAQ)

Q: Does the Flex HTx support Dolby/DTS decoding?

- **A:** No, the Flex HTx does not support bitstream (e.g. Dolby/DTS) decoding. The audio source must be able to output linear PCM (LPCM) for multichannel support over HDMI.

Q: What is the power consumption of the Flex HTx?

- **A:** The Flex HTx has a power consumption of 16.5 W when idle and 3.7 W in standby mode.

Features

- Floating point SHARC DSP
- Flexible and powerful multichannel audio processor
- Dirac Live 3. x upgrade option
- Class-leading analog I/O noise and distortion specifications
- Full suite of miniDSP processing
- Upgradeable with Dirac Live

Hardware

- ADI ADSP21489 @400MHz
- Multichannel USB audio (8ch)
- EARC/ARC HDMI input (8ch PCM)

- 8ch AD/DA with audiophile specs
- SPDIF/optical stereo inputs
- OLED front panel with IR control
- 12V trigger output

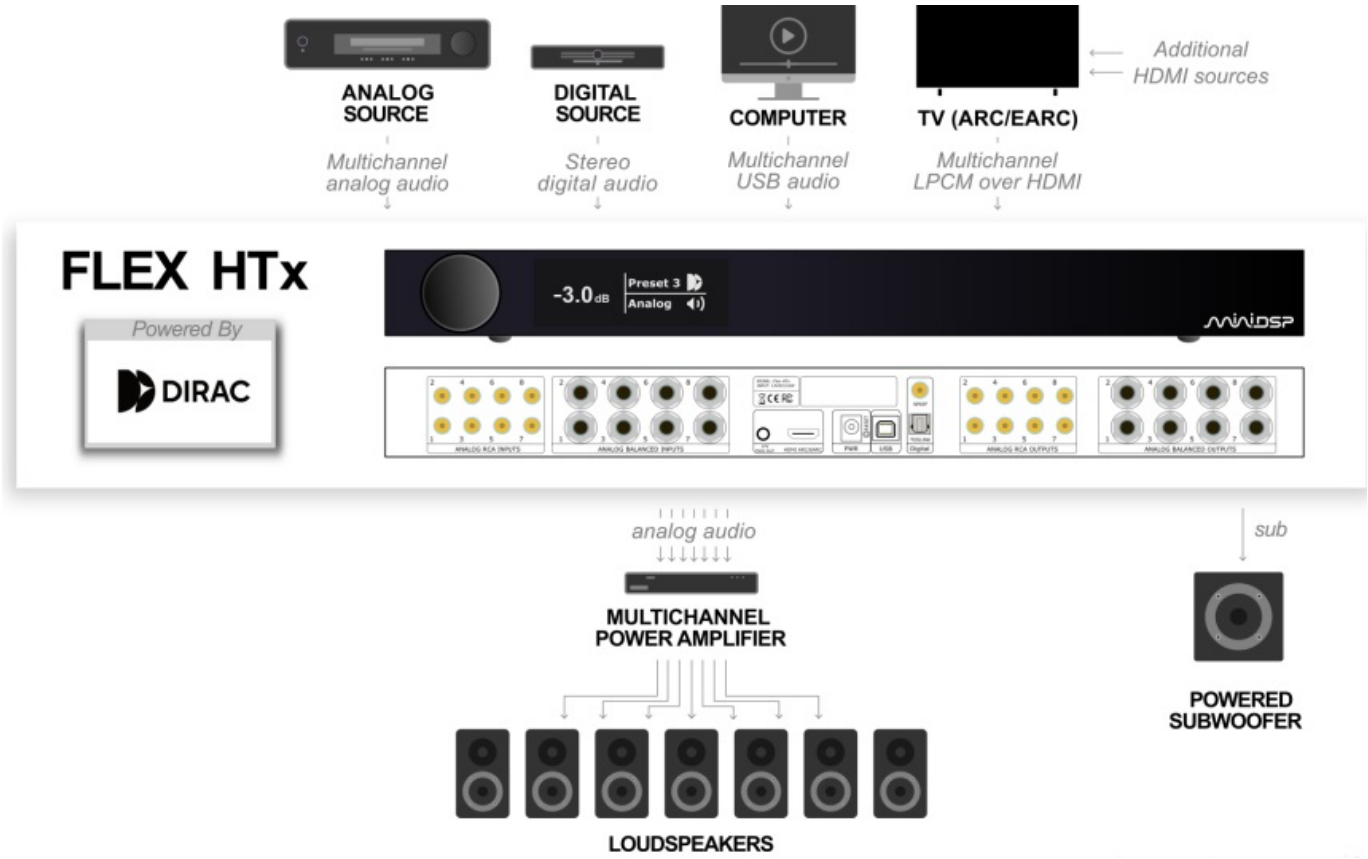
Software Control

- Real-time live control
- Win & Mac compatible
- Firmware upgradeable
- 4 preset memories
- CEC control from TV

Applications

- Home theater
- PC-based multichannel audio
- Low latency gaming
- Subwoofer integration
- The Flex HTx is the bigger brother of the Flex HT, targeting the need for a multichannel processor with HDMI ARC/eARC capabilities and stellar analog and USB audio capabilities. Within a single rack unit, we packed all the possible connectivity we could fit.
- Eight-channel audio input is via analog audio (RCA and TRS), eARC linear PCM over HDMI1, or USB Audio. Additional digital stereo input is supported over SPDIF and TOSLINK optical. Internally, we've provided a full suite of mini DSP's flexible routing and audio processing features: bass management, parametric EQ, crossovers, advanced biquad programming, and delay/gain adjustments. In addition, the miniDSP Flex HTx is software-upgradable with full-frequency Dirac Live®, the world's premiere room correction system.
- Continuing miniDSP's focus on affordable high-performance audio, the Flex HTx features class-leading low noise and distortion figures. An OLED front panel display and volume control/encoder knob provide easy control.
- The miniDSP Flex HTx is the perfect solution for a modern compact process for home theater and multichannel sound.
- The Flex HT does not support bitstream (e.g. Dolby/DTS) decoding. The audio source must be able to output linear PCM (LPCM) for multichannel support over HDMI.

TYPICAL APPLICATION



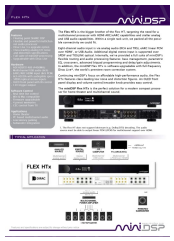
TECHNICAL SPECIFICATIONS

	Description	
Digital Signal Processing Engine	Analog Devices Floating point SHARC DSP: ADSP21489 @ 400MHZ	
Processing resolution / Sample rate	32-bit/48 kHz	
USB Audio support	UAC2 Audio – ASIO driver provided (Windows) – Plug&Play (Mac/Linux) Multichannel USB Audio interface (8ch) for up to 7.1 configurations / 32bit / 44.1~96k Hz	
Input/Output DSP stru cture	8ch IN (USB/HDMI/Analog) or 2ch IN (Toslink/SPDIF) => DSP => 8 channels OUT (A nalog)	
Digital Stereo Audio In put Connectivity	1 x SPDIF (stereo) on RCA connector, 1 x OPTICAL (stereo) on Toslink connector Supported sample rates: 20 – 216 kHz / Stereo source will be automatically assigned to Input 1&2	
HDMI connectivity	ARC/EARC compliant for up to 8ch of LPCM audio streaming Supported sample rates: 32 – 96 kHz / Supported sample sizes: 16-24bits **WARNING**: No onboard Dolby/DTS decoding. Use your source (E.g. TV) to output in PCM mode.	
	Balanced 6.35mm TRS	**Unbalanced RCA**

Analog Audio Input Connectivity	8 x Balanced TRS	8 x Unbalanced RCA
Analog Audio Input Impedance	200 kΩ	100 kΩ
Analog Audio Output Impedance	300 Ω	150 Ω
Analog Input/Output Max Level	4 Vrms/4 Vrms	2 Vrms/2 Vrms
Frequency Response	20 Hz – 20 kHz ± 0.1 dB	20 Hz – 20 kHz ± 0.1 dB
Digital to Analog (input 1 kHz, 0 dBFS) / AES17 20kHz LPF		
SNR	127 dB(A)	124 dB(A)
THD+N / SINAD	-120 dB (0.0001 %) / 120dB SINAD	-117 dB (0.00014 %) / 117dB SINAD
Crosstalk	-132 dB	-120dB
TRS Analog to Analog (input 1 kHz, 4 V RMS) / AES17 20kHz LPF		
SNR	120 dB(A)	118 dB(A)
THD+N / SINAD	-114 dB (0.0002 %) / 114dB SINAD	-112 dB (0.00025 %) / 112dB SINAD
Crosstalk	-130 dB	-120 dB
Filtering Technology	miniDSP DSP toolbox (routing, bass management, parametric EQ, crossover, gain/delay). Optional software upgrade to multichannel Dirac Live® 3. x Full Range correction (20 Hz – 20 kHz)	
DSP Presets	Up to 4 presets	
Dimensions (HxWxD)	41.5 x 429 x 236 mm	
Accessories	IR Remote	
Power Supply	Included external switching Power Supply 12V/1.6A (US/UK/EU/AU plugs)	
Trigger out	12V trigger out controls external ON/OFF powering of amplifiers, 3.5mm jack	
CEC control	HDMI CEC command for Mute/Volume/Standby	
Power Consumption	16.5 W (idle) 3.7 W (standby)	

www.minidsp.com

Documents / Resources

	**miniDSP Flex HTx Audio Science** [pdf] User Guide Flex HTx Audio Science, Flex HTx, Audio Science, Science

References

- **User Manual**