SOUND DEVICES

Sound Devices

8-Series

833

Technical Datasheet

Analog Inputs

- Frequency Response: 10 Hz to 80 kHz ± 0.5 dB (192 kHz sample rate, re 1 kHz)
- THD + Noise: 0.005% max (mic in, 1 kHz, 22 Hz–22 kHz BW, trim at 20, fader at 0, -10 dBu in)
- Equivalent Input Noise: -131 dBV (-129 dBu) max (mic in, A-weighting, 76 dB gain, 150 ohm source impedance)

Processing Engine

- Highly extensible, full FPGA-based audio processing, 3 FPGAs
- Six-way ARM multiprocessor system
- 64-bit audio processing precision

Mic/Line inputs

- 6 total, all fully featured; 3 on full-size XLR, 3 on TA3

Inputs

- Mic-level inputs: (XLR, TA3): Class-A, discrete differential long-tail pair, 4k ohm input impedance
- Line-level inputs: (XLR, TA3): active-balanced, 4k ohm input impedance
- 48 V phantom: full 10 mA to all 6 inputs simultaneously
- 8 Total analog inputs: 6 mic-line inputs, 2 on returns
- AES3 or AES42 available on XLR input 1
- AES42: +10 V, 250 mA available, mode-1, auto-ASRC
- USB Audio: 2 Inputs
- Aux (3.5 mm): unbalanced 2-channel, 4k ohm input impedance
- Com Rtn (TA3, 3.5 mm) balanced, 1-channel, 8k ohm input impedance
- External Slate Mic (TA5): balanced, 8k ohm input impedance, menu-selectable 12 V phantom

Maximum Input Level

- Mic: +8 dBu (2.0 Vrms)
- Line: +28 dBu (19.5 Vrms)
- Aux: +18 dBu (6.2 Vrms)
- Com Rtn: +24 dBu (12.3 Vrms)
- External Slate Mic: +12 dBu (3.2 Vrms)

Buses

- 6 Buses (L, R, 1-4)
- Left and Right Mix Bus receives post-fade isolated channels. Optional NoiseAssist plugin instances can be applied to any bus. Buses 1-4 can receive pre-fade, post-fade, or independent send level from isolated channels, Return and Com Return.

High-Pass Filters

- Adjustable 10 Hz to 320 Hz, 18 dB/oct. 1st stage analog (before preamp), 2nd stage digital.

Limiters

- Limiters available at all channels, buses, headphones, for all sample rates
- Analog first stage, all subsequent stages digital
- Attack time: adjustable 1 to 200 ms
- Release time: adjustable, 50 ms to 1000 ms
- Threshold: adjustable, -2 dBFS to -12 dBFS
- Selectable ratio: inf:1, 20:1, 18:1, 16:1, 14:1, 12:1, 10:1
- Knee: soft, hard

Compressors

- Compressors available at all channels (pre or post-fade) and buses for all sample rates
- Attack time: adjustable, 1 to 200 ms
- Release time: adjustable, 50 ms to 1000 ms
- Threshold: adjustable, 0 dBFS to -40 dBFS
- Selectable ratio: adjustable, 1:1 to 20:1
- Knee: soft, hard

Delay

- Channel Adjustable 0-50 ms
- Output Adjustable 0-500 ms

Maximum Gain

- Trim stage (mic input): 76 dB
- Trim stage (line input): 50 dB
- Fader stage: 16 dB
- Bus stage: 16 dB
- Headphone stage: 20 dB
- Mic-to-Line: 108 dB
- Mic-to-Headphone: 112 dB
- TA5 (along with mic input pins) for single connection to headset + mic High output, 4 ohm output impedance, 400 mW + 400 mW at each connector, all individually driven Compatible with headphones of any impedance

Outputs

- XLR (L, R) active-balanced, 250/3.2k/120 ohms (mic/-10/line)
- TA3 (X1-X4) active-balanced, 250/3.2k/120 ohms (mic/-10/line)
- 3.5mm (X3/X4): unbalanced, stereo, 1.8k ohms

Maximum Output Level (all into 10k load)

- Line: +20 dBu (7.8 Vrms)
- "-10": +6 dBu (1.5 Vrms)
- Mic: -20 dBu (0.078 Vrms)
- X3/X4 Out: +6 dBu (1.5 Vrms)
- Headphone outputs (¼", TA-5): +14 dBu (4.0 Vrms)

Digital Outputs

- AES3 transformer-balanced, in pairs; 1-2 (XLR-L), 3-4 (XLR-R), 110 Ohm, 2 V p-p, AES and S/PDIF compatible

Headphone Outputs

- ¼", 3.5 mm
- TA5 (along with mic input pins) for single connection to headset + mic
- High output, 4 ohm output impedance, 400 mW + 400 mW at each connector, all individually driven
- Compatible with headphones of any impedance

Recording

A/D Converters

- 32-bit, 120 dB, A-weighted dynamic range typical
- Sampling rates 44.1 kHz, 47.952 kHz, 48 kHz, 48.048 kHz, 96 kHz, 192 kHz

Bit Depth

- 16, 24, 32-bit float

Recording

- Internal 256 GB SSD; two removable SD Cards, 10% over-provisioned for optimum performance
- Simultaneous recording to internal SSD and the two SD cards
- exFAT formatting
- 12 tracks (16 iso channels, 4 buses)
- Broadcast WAV monophonic and polyphonic file format
- 64-bit WAV (RF64) monophonic and polyphonic; support for files > 4 GB
- AAC 2 track at 48 kHz, selectable bit rate 32, 64, 128, 192, 256 kbps

Automatic Mixing

- Dugan Automixer/MixAssist up to 8 channels on Left and Right Mix bus
- MixAssist up to 8 channels on Left and Right Mix bus

Noise Suppression

- Via optional paid Sound Devices NoiseAssist or CEDAR sdnx Plugins
- Two, four, or eight instances of Noise Suppression can run on any combination of isolated channels (excluding 17-32 on Scorpio), or buses.
- Attenuation range: 0-20 dB
- NoiseAssist operates with sampling rates of 44.1 kHz to 48.048 kHz.
- CEDAR sdnx operates with sampling rates of 44.1 kHz to 96 kHz.
- NoiseAssist audio path latency: 0.77 ms @ 48kHz
- CEDAR sdnx audio path latency: 0.27 ms @ 48kHz, 0.14ms @ 96kHz

USB

- USB-C (USB 3.1 type 1) for file transfer of internal SSD, both SD Cards
- USB-C 2-in/2-out USB audio interface
- USB-A host for keyboard, external controller, external USB hubs supported for connecting multiple devices

Timecode and Sync

- Modes Supported: Off, Rec Run, Free Run, 24h Run, External, including External Auto-Record and Continuous modes.
- Frame Rates: 23.98, 24, 25, 29.97 DF, 29.97 ND, 30 DF, 30 ND
- Sample/Timecode Accuracy: 0.1 ppm (0.25 frames per 24 hours)
- Timecode Input: 20k ohm impedance, 0.3 V – 3.0 V p-p (–17 dBu – +3 dBu)
- Timecode Output: 75 ohm impedance, 5 V p-p (+7 dBu)
- Word Clock Input: 10k/75 ohm selectable impedance, 1-5 V p-p input sensitivity
- Word Clock Output: 75 ohm impedance, 5 V p-p output, at SR

Remote Control

- Sound Devices CL-12 Linear Fader Controller
- USB MIDI MCU Control – supported 3rd party fader controller
- SD-Remote Android Tablet app via USB or Bluetooth LE
- SD-Remote Android Phone app via Bluetooth LE
- SD-Remote iPad and iPhone app via Bluetooth LE
- USB Keyboard
- External Timecode Record Trigger

File Delivery to Cloud

- Compatible with Viviana Cloud

LCD

- 320×240, Transflective, excellent sunlight visibility
- Larger touchscreen display available via USB-connected SD-Remote app

Power

- External: 10-18 V input on locking TA4 connectors, (pin 4 positive, pin 1 ground), supports Smart Battery telemetry
- Dual rear-mount Sony-style L-mount batteries with chargers

Current Draw, at 12 V no battery charging

- All mic preamps off: 730 mA
- All mic preamps on: 920 mA
- All mic preamps on, 192 kHz sample rate, recording to internal SSD and 2 SD Cards: 1.07 A
- Intelligent power-down of unused mic preamps and other internal circuits

Environmental

- Operating: -20° C to 60° C, 0 to 90% relative humidity (non-condensing)
- Storage: -40° C to 85° C

Dimensions (H x W x D)

- 5.1 cm x 22 cm x 17 cm
- 2.0 in. x 8.7 in. x 6.6 in

Weight

- 2.75 lbs (unpackaged, without batteries)
- 1.25 kg (unpackaged, without batteries)