

688 Specs

Frequency Response

10 Hz to 40 kHz \pm 0.5 dB, -3dB @ 65 kHz (192 kHz sample rate, re 1 kHz)

THD + Noise

0.09% max (1 kHz, 22 Hz-22 kHz BW, fader at 0, 0 dBu output)

Equivalent Input Noise

-126 dBu (-128 dBV) maximum. (22 Hz - 22 kHz bandwidth, flat filter, trim control fully up)

Inputs

XLR Mic: Active-balanced for use with \leq 600 ohm mics, 4k ohm actual; 12V or 48V phantom power, 10 mA max

XLR AES: AES3 or AES42 (10 V power), SRC

XLR Line: active-balanced for use with \leq 2k ohm outputs, 10k ohm actual

TA3 Line: active-balanced for use with \leq 2k ohm outputs, 10k ohm actual

RTN A,B,C (3.5 mm/10-pin): unbalanced stereo for use with \leq 2k ohm outputs, 6.5k ohm actual

Slate Mic (TA3): 6.5k ohms

Input Clipping Level

0 dBu minimum

Maximum Input Level

XLR Mic: 0 dBu (0.78 Vrms)

XLR Line: +40 dBu (80 Vrms)

RTN A, B, C (3.5 mm/10-pin): +24 dBu (12.4 Vrms)

High-Pass Filters

Adjustable 80 Hz to 240 Hz, 18 dB/oct (up to 96 kHz)

Fixed 50 Hz, 6 dB/oct (192 kHz)

Input Limiters

Pre-fade (Inputs 1-6): +16 dBu threshold fixed, soft knee/ hard knee, 20:1 ratio, 1 mS attack, 500 mS release

Post-fade (Inputs 1-12): Adjustable threshold +4 dBu to +18 dBu, 20:1 ratio, 1 mS attack, 500 mS release

Input Delay

Adjustable 0-30 mS for each input in 0.1 mS steps

Maximum Gain

Mic-In to L/R/X1/X2/X3/X4 (Line): 91 dB

Mic-In to X5/X6 (Line): 88 dB

Mic-In to L/R/X1/X2/X3/X4 (-10): 77 dB

Mic-In to X5/X6 (-10): 74 dB

Mic-In to L/R/X1/X2/X3/X4 (Mic): 51 dB

Mic-In to X5/X6 (Mic): 48 dB

Headphone Max. Gain

63 dB (Line 1-6 input)

44 dB (Line 7-12 input)

103 dB (Mic input)

Outputs

Line (XLR and 10-pin): transformer-balanced, 120 ohms

-10 (XLR and 10-pin): transformer-balanced, 3.2k ohm

Mic (XLR and 10-pin): transformer-balanced, 150 ohms

TA3 (X1-X4) Mic/Line/-10: active-balanced, 240/3.2k/120 ohms

TA3 (X5/X6) -10: unbalanced, 100 ohms

Tape Out (3.5 mm): unbalanced, stereo, 1.8k ohms

Headphones (3.5 mm and 1/4"): unbalanced, stereo, 60 ohms

Line Output Clipping Level (1% THD)

20 dBu minimum with 10k load

Maximum Output Level

Line: +20 dBu (7.8 Vrms)

-10: +6 dBu (1.5 V rms)

Mic: -20 dBu (0.078 Vrms)

Tape Out: +6 dBu (1.5 Vrms)

Output Limiters

L/R and X1/X2, adjustable threshold +4 dBu to +18 dBu, soft knee/hard knee, 20:1 ratio, 1 mS attack, 500 mS release.

Output Delay

Adjustable 0-417 mS (0-12.5 frames @ 30fps) for each output in 1 mS steps

Recording Tracks

16 tracks (12 inputs, 4 output buses L/R, Aux 1/2)

Broadcast WAV monophonic and polyphonic file format, MP3 with time code metadata

A/D

24-bit, 114 dB, A-weighted dynamic range typical

Sampling rates 44.1 kHz, 47.952 kHz, 48 kHz, 48.048 kHz, 88.2 kHz, 96 kHz, 192 kHz

Digital Outputs

AES3 transformer-balanced, in pairs; 1-2 (XLR-L), 3-4 (XLR-R), 5-6, (Hirose 10-pin RTN A), 7-8, (Hirose 10-pin RTN C)

110 ohm, 2 V p-p, AES and S/PDIF compatible

Recording Storage Type

SD, SDHC, SDXC Card, CompactFlash (CF)

FAT32 formatted (<32GB), exFAT for (>32GB), on-board memory card formatting

Timecode and Sync

Modes Supported: off, Rec Run, Free Run, 24h Run, External

Frame Rates: 23.976, 24, 25, 29.97DF, 29.97ND, 30DF, 30ND

Sample/Timecode Accuracy: Ambient generator, \pm 0.2 ppm (0.5 frames per 24 hours)

Timecode Input: 20k ohm impedance, 0.3 V - 3.0 V p-p (-17 dBu - +3 dBu)

Timecode Output: 1k ohm impedance, 3.0V p-p (+12 dBu)

Wordclock In/Out: square wave; 10k/75 ohm, 1-5V p-p input; 75 ohm, 5V p-p output, at SR

Wordclock Termination: 75 ohm, Off

Power

External: 10-18 V on locking 4-pin Hirose connector, pin-4 = (+), pin-1 = (-).

Internal: accepts 5 AA-sized (LR6) batteries, nominal (NiMH rechargeable compatible)

PowerSafe: 10 second power reserve

Idle Current Draw

680 mA @ 12V (8.16W) - inputs 1-6 powered on, CF and SD media inserted

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)

5.3 cm x 32 cm x 19.8 cm;

(2.1 in. x 12.6 in. x 7.8 in)

Weight

4 lbs. 14 oz. (unpacked, without batteries)

2.21 kg (unpacked, without batteries)