664

SOUND DEVICES

12-Input Field Production Mixer with 16-Track Recorder

Description

The 664 Field Production Mixer is the flagship in Sound Devices' line of portable audio mixers. It has 12 analog inputs, four output buses, and records these 16 tracks to both CF and SD cards. This unprecedented amount of I/O connectivity and recording capability makes the 664 perfect for a wide range of production applications.

Inputs

The 664 has six ultra-low noise, high-dynamic-range mic/line inputs. These transformer-less preamps offer analog peak limiters, high-pass filters, input trim controls, and direct outputs. Input connectors 1 and 6 can be selected to accept AES42 or AES3 digital signals. Six line-level inputs, 7 through 12, are available by reassigning direct outputs as inputs from the Input Setup Menu. With an attached CL-6 Input Controller, inputs 7-12 have dedicated fader control.

Output Flexibility

In complex, multi-camera productions, output flexibility is essential. The 664 offers three sets of balanced left/right outputs. Two additional output buses, X1 and X2, appear on balanced TA3 connectors. XLR and multi-pin outputs are selectable to AES3 digital.

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664 Key Features

- 12 analog inputs, inputs 1-6 offer mic/line inputs with phantom, limiters, high-pass, pan, 7-12 line-leve menu-controlled
- Four output buses, Left, Right and Aux 1, Aux 2; transformer-balanced for freedom from ground loops; multiple output connectors, including dual multi-pins
- Built-in production recorder, all inputs and output buses selectable, 16 available tracks
- Broadcast WAV (monophonic or polyphonic) and MP3 recording to dual memory card slots, CF and SD
- Record different track combinations to each card type
- High-accuracy, Ambient Recording-based time code generator/reader with auto-recharging of internal TC battery
- Time code compare tool to measure offset from internal and external time code
- Quick, intuitive interface via transflective LCD menu control; metering on LCD and CL-6
- Main controls on dedicated knobs and switches
- Two AES42/AES3 digital inputs (input connectors 1 and 6)
- AES3 output selection, up to eight channels of AES out (XLR, multi-pin)
- Expanded return monitoring capabilities, with three camera returns
- Dedicated communication circuit (PL)
- Built-in slate microphone and external slate microphone input connector
- Powered by AA-battery x5 or isolated (floating) external DC, 10-18V
- Metalized, gasketed carbon-fiber chassis panels for light weight and durability

CL-6 Input Controller

For applications requiring fader control of inputs 7-12, the available CL-6 Controller adds six dedicated, rotary faders with PFL switches. It also offers additional LED output metering and recording transport controls.

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INPUT PANEL

OUTPUT PANEL

Specifications

Frequency Response
20 Hz to 50 kHz, ± 0.5 dB (analog-to-analog)

THD + Noise
0.09% max (50 kHz, +18 dBu at line out, fade fully up)

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 ≤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 ≤2k ohm outputs, 10k ohm actual
TA3 Line (7-12): active-balanced for use with ≤2k ohm outputs, 10k ohm actual
RTN A,B,C (3.5 mm/10-pin): unbalanced stereo for use with ≤2k ohm outputs, 30k ohm actual

Maximum Input Level
XLR Mic: 0 dBu (0.78 Vrms)
XLR Line: +40 dBu (80 Vrms)
RTN A,B,C (3.5 mm/Multi-pin): +24 dBu (12.4 Vrms)

High-Pass Filters
Sweepable 80 Hz to 240 Hz, 12 dB/oct at 80 Hz, 6 dB/octave at 240 Hz

Input Limiters
Individual limiters at both trim and fader stages, +16 dBu threshold, 20:1 limiting ratio, 1 mS attack time, 500 mS release time

Link I/O:
Unbalanced stereo for linking to MixPre, 302, 442, 552, and 664; 2k ohm impedance

Maximum Gain
Mic-In-to-Line-Out: 93 dB
Mic-In-to-Aux-Out, -10 Out: 79 dB
Line-In-to-Line-Out: 39 dB

Output Type
Line: transformer-balanced for use with ≥600 ohm inputs, 100 ohms
-10: transformer-balanced for use with ≥10k ohm inputs, 3.2k ohm
Mic: transformer-balanced for use with ≥600 ohm inputs, 150 ohms
TA3 Mic/Line: active-balanced, pin-2 and 3 driven, for use with ≥3k ohm inputs, 1k ohm
TA3 Direct Outs Mic/Line: active-balanced, pin-2 and 3 driven, use with ≥3k ohm inputs, 1k ohm
Tape Outs (3.5 mm and TA3-type): unbalanced, stereo, use with ≥6k ohm input, 1.8k ohm actual
Headphones (3.5 mm and 1/4"): unbalanced, stereo, use with 8-2k ohm headphones, 50 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 Outs: +6 dBu (1.5 Vrms)

Output Limiters
Affects analog output. Threshold selectable from +4 dBu to +20 dBu, 1 dB steps, 20:1 limiting ratio, 1 mS attack time, 500 mS release time.

Recording Tracks
16 tracks (12 inputs, 4 output buses), monophonic or polyphonic Broadcast WAV or timecode-stamped MP3

A/D
24-bit, 114 dB, A-weighted dynamic range typical; 44.1 kHz, 47.952 kHz, 48 kHz, 48.048 kHz SR

Digital Outputs
AES3 transformer-balanced, in pairs; 1-2 XLR-L, 3-4 XLR-R, 5-6, multi-pin 1, 7-8, multi-pin 2, 110 ohm, 2 V p-p, AES and S/PDIF compatible

Recording Storage Type
SDHC, SD, SDXC - exFAT for cards >32 GB, FAT32 for <32 GB; CompactFlash (CF) FAT32, will format memory cards in unit

Sample/Timecode Accuracy
± 0.2 ppm (0.5 frames per 24 hours)

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
Accuracy: Ambient generator, 0.5 frame in 24 hr
Time Code Input: 20k ohm impedance, 0.3 V - 3.0 V p-p (–17 dBu - +3 dBu)
Time Code Output: 1k ohm impedance, 3.0V p-p (+12 dBu)
Word In/Out: square wave; 10k/75 ohm, 1-5V p-p input; 75 ohm, 3.3V p-p output, at SR

Power
External: isolated 10-18 V on locking 4-pin Hirose connector, pin-4 = (+), pin-1 = (-).
Internal: accepts 5 AA-sized (LR6) batteries, 1.2-1.5V nominal (NiMH rechargeable compatible).

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

Dimensions and Weight
Dimensions: 5.3 cm x 32 cm x 19.8 cm (H x W x D)
2.1" x 12.6" x 7.8"
Weight: 4 lbs. 12 oz. (unpackaged, without batteries)

Description (continued)

Recording

The 664 can record all inputs and output buses, for 16 record tracks. Recordings are saved to CompactFlash and SD cards as either 16- or 24-bit Broadcast WAV files. Scene, take, track, notes, and timecode metadata are recorded with the file. All popular production sampling rates are supported. MP3 recording is available for transcription applications.

Integrated Time Code

With the mixer's built-in, rock-steady Ambient time code generator, multiple devices can operate in synchronization. The 664 operates as either a time code master clock or its clock can be jammed from external time code. A helpful time code compare utility shows the difference between internal and external time code.

Ease-of-Use

The 664 was designed with knowledge gained from the industry's top engineers and from Sound Devices' expertise in portable mixers. Important controls are on dedicated knobs and switches, while additional features are quickly accessed through the intuitive LCD-based menu control.