

# 970

## 64-Track Dante and MADI Audio Recorder



The Sound Devices 970 simplifies production that requires high-quality, high-track-count audio recording. This comprehensive 64-track Dante and MADI-equipped multi-track audio recorder provides performance, quality, and reliability.

The 970 records up to 64 channels of monophonic or polyphonic 24-bit WAV files from any of its 144 audio inputs. Connections include 64 channels of Ethernet-based Dante, 64 channels of optical and coaxial MADI, eight channels of line-level analog, and eight channels of AES digital. Any input can be assigned to any track. The recorder also supports 32-track recording at 96 kHz.

The 970 records audio on up to four SSD drives, two in removable drive caddies held in front-panel drive bays and two connected through back-panel eSATA ports. With four available

drives, the 970 can record material simultaneously to multiple drives, creating backups and eliminating time-consuming post-record copying.

With its built-in rock-steady Ambient Lockit timecode technology, the 970 operates as a master clock and also accepts jammed timecode from cameras and other sources. The 970 supports all common production time-code rates and modes, and offers word-clock synchronization from external word clock, video sync, MADI, and AES. Sample rate converters on each input simplify connecting multiple digital channels.

If all external power sources deplete or fail, PowerSafe circuitry keeps the 970 operating for up to 10 seconds, cleanly closes all file operations, and then safely shuts down the recorder.

### KEY FEATURES

- Up to 64-track WAV mono or WAV poly recording to removable solid-state drives
- 64 channel Dante audio I/O (32 channels at 96 kHz SR)
- 64 channel MADI optical and coaxial I/O (32 channels at 96 kHz SR)
- 8 line-level analog inputs and outputs
- 8 channel AES3 digital audio I/O
- PowerSafe circuitry provides complete file protection from power loss. Ten second internal power reserve safely closes files and shuts down unit
- Rock-steady Ambient Lockit time code master clock built in
- Format conversion between analog, AES digital, MADI, and Dante
- Simultaneous and sequential recording to four drives, two in internal removable drive caddies and two via eSATA
- Fast file transfer over SMB Ethernet
- Large 5-inch screen provides metering and intuitive menu control
- External RS-422 control
- Embedded web-server control panel allows machine control through web browsers over Ethernet-based networks
- Compact half-rack, 2RU chassis
- Dual DC power connections, 4-pin XLR @ 10-27 VDC



Back Panel

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## 64-Track Dante and MADI Audio Recorder



### SPECIFICATIONS

#### Frequency Response (System)

10 Hz to 40 kHz  $\pm$  0.5 dB, -3 dB @ 65 kHz  
(96 kHz sampling rate reference 1 kHz)

#### THD + Noise (System)

0.004% max  
(@ 1 kHz, 22 Hz–22 kHz)

#### Equivalent Input Noise (Analog)

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

#### Inputs

**Analog Line:** active-balanced for use with  $\geq$ 600 ohm mics, 4k ohm actual;

**AES:** AES3, balanced, 110 ohm, 2 V p-p, accepts 32k, 44.1k, 48k, 192 kHz, SRC per input

**DANTE:** Ethernet primary and secondary, auto network configuration or fixed IP address, 44.1, 48, 96 kHz input support

**MADI (AES 10):** optical and coaxial, 44.1, 48, 96 kHz input support

#### Channel Gain

-25 db to +6 Mic-In-to-Line-Out: 91 dB

#### Maximum Input Level (Analog)

0 dBu (0.78 Vrms)

#### Digital Delay

Up to 400 ms per input in 1 ms increments

#### Output Type (Analog)

**Line (DB25):** active-balanced for use with  $\geq$ 600 ohm inputs, 100 ohms

**Headphones (1/4"): unbalanced, stereo, use with 8-2k ohm headphones, 100 ohms**

#### Line Output Clipping Level (Analog) 1% THD)

20 dBu minimum with 10k load

#### Maximum Output Level (Analog)

+18 dBu (6.15 Vrms)

#### Recording Tracks

64 tracks maximum at 48 kHz SR, 32 tracks at 96 kHz SR.

WAV (broadcast Wave file format) monophonic and polyphonic

#### A/D

24-bit, (16-bit selectable) 114 dB, A-weighted dynamic range typical; sampling rates of 44.1 kHz, 47.952 kHz, 48 kHz, 48.048 kHz, 88.2 kHz, 96 kHz

#### Digital Outputs (AES3)

AES3 transformer-balanced, 2 V p-p, AES and S/PDIF compatible

#### Recording File Type

Monophonic or polyphonic WAV file with Broadcast WAV metadata

#### Recording Storage Type

SATA interface via PIX-CADDY to SD-approved 2.5-inch drives (front panel)  
eSATA connections (rear panel)  
exFAT volume formatting

#### Sample/Timecode Accuracy

$\pm$  0.2 ppm (0.5 frames per 24 hours)

#### Sync Output

Analog bi-, tri-level sync / genlock, word clock (square wave, 48 kHz sampling rate, 3.3 Vp-p, 75 ohm)

#### Sync Input

Analog bi-, tri-level sync / genlock, word clock (square wave, 48 kHz sampling rate, 3.3 Vp-p, 75 ohm),

#### Timecode

**Modes Supported:** Off, Rec Run, Free Run, 24h Run, External, LTC Halt,

**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)

#### Control

RS-422 Machine control

Ethernet Web-based control of setup menu and transport, auto assignment or IP address or manual fixed IP address

GPIO on 3 pins, Phoenix connector

#### Keyboard

Front-panel USB host. Keyboards without hubs acceptable.

#### Powering

PowerSafe circuitry 10-27 VDC on dual / redundant 4-pin XLR connector, pin-4 = (+), pin-1 = (-)

#### Dimensions and Weight

Size (H x W x D): 3.3" x 8.6" x 10.3" (8.4 cm x 21.8 cm x 26.2 cm)

Weight: 7.5 lbs (3.4 kg)

Operating Temperature: -10 C to +40 C

**SOUND DEVICES**

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