

HD-R1

Solid-State Audio Recorder



The HD-R1 is a two-channel, single rack-mount recording and playback device created with the sound contractor in mind. Utilizing the highly reliable CompactFlash card, the HD-R1 records PCM files at up to 96 kHz or MP3 files at 44.1/48 kHz both with 16/24-bit resolution. File transfer can be accomplished via Ethernet, USB, or a card reader. The ability to control the unit remotely is provided via RS-232, Parallel, and RJ45 100-Mbit Ethernet.

To further enhance the HD-R1's feature set, mic preamps with 20-dB PAD and phantom power (rear-panel selectable) have been included. A variety of contractor-friendly I/O options, such as unbalanced RCA, balanced XLR and Euroblock, and SPDIF digital (coaxial and optical) are also available.

And of course ... the HD-R1 offers traditional source device features like power-on play, front panel rotary input level controls, a headphone jack with level control, and a variety of playback modes.

Main Features

- **1-U rack-mount solid-state audio recorder**
- **Uses popular, secure CompactFlash card as recording media**
- **USB host interface for USB flash cards**
- **Audio data formats: PCM (16-/24-bit), MP3**
- **Samplig rates supported:**
 - PCM: 44.1/48/88.2/96 kHz
 - MP3: 44,1/48 kHz
- **XLR balanced mic/line I/O with switchable 20-dB PAD**
- **Phantom power (switchable on rear panel, front LED indicator)**
- **Euroblock terminal I/O**
- **Unbalanced RCA I/O**
- **Rotary analogue input level controls on front panel**
- **SPDIF Digital I/O (coaxial and optical)**
- **RJ-45 Ethernet interface (100-Mbit/s) for file transfer and control**
- **RS-232 interface for control**
- **D-sub 25-pin parallel remote control interface**
- **Direct Play via parallel interface**
- **Power-on play (start playback when power comes up)**
- **Headphones jack with level control on front panel**
- **Input Through and Auto Fade functions**
- **Input monitoring/mixing of live stereo input along with playback**
- **Play modes: Program, Folder, Shuffle, Interval, and more**
- **Pre-record buffer (up to 20 seconds at 44.1 kHz)**
- **Available as an option: RC-SS20 Direct Play Controller for instant access to 16 tracks, announcements or effects**

Specifications

General	
Recording Media	Type I and Type II Compact Flash media
File Systems	FAT16 and FAT32
File Formats	Broadcast Wave (WAV) and MPEG 1 Audio Layer 3 (MP3) files)
Recording Time	6 hours 40 minutes (4 GB Compact Flash Card, 44.1 kHz, 16-bit stereo, WAV) about 70 hours (4 GB Compact Flash Card, 44.1 kHz, 16-bit stereo, MP3 128 kb/s)
Sampling Rates	44,1 kHz, 48 kHz, 88,2 kHz, 96 kHz The sampling rate for MP3s is 44.1 or 48 kHz.
Quantization	16 or 24 bits
MP3 Bit Rates	Stereo 64/80/96/112/128/160/192/224/256/320 kb/s Mono 32/40/64/80/96/112/128/160 kb/s Variable Bit Rate (VBR) files can be played but not recorded.
Pre-record buffer	Up to 20 seconds (at 44.1 kHz)

Audio Performance

Frequency response, nominal level (MIC to LINE OUT)	20 Hz to 20 kHz \pm 1.0 dB (44.1 kHz / 48 kHz) 20 Hz to 40 kHz +0.5 dB / -4 dB (88.2 kHz / 96 kHz)
Noise level at maximum trim (MIC to LINE OUT)	< -55 dBu (22 Hz to 22 kHz, 150 Ω input termination)
Dynamic range at minimum trim (MIC to LINE OUT)	105 dB(A) (44.1 kHz, 22 kHz LPF)
Total harmonic distortion + noise (MIC to LINE OUT)	<0.01 % (min trim, 22 kHz LPF, 1 kHz tone)
Crosstalk at 1 kHz (MIC to LINE OUT)	> 80 dB (150 Ω input termination)
Delay	44.1 kHz < 0.6 ms 96 kHz < 0.6 ms

Analogue audio inputs and outputs

Microphone/Line input	XLR-3-31 (1 = ground, 2 = hot, 3 = cold (-))
Impedance	2.4 k Ω
Nominal level	-63.8 dBu (max trim) to -7.78 dBu (min trim)
Nominal level with pad	-43.8 dBu (max trim) to +12.2 dBu (min trim)
Maximum level	+28.2 dBu
Maximum gain	56 dB
Phantom Power	2 x +48 V, 10 mA
Line Input	RCA
Impedance	10 k Ω
Nominal level	-66.0 dBV (max trim) to -10 dBV (min trim)
Maximum level	+6 dBV
Maximum gain	56 dB
Balanced Line output	XLR-3-32 (1 = ground, 2 = hot (+), 3 = cold (-))
Impedance	100 Ω
Operating Level (adjustable)	+4 dBu nominal / +24 dBu maximum +4 dBu nominal / +22 dBu maximum +4 dBu nominal / +20 dBu maximum +4 dBu nominal / +18 dBu maximum +6 dBu nominal / +15 dBu maximum
Unbalanced Line output	RCA
Impedance	100 Ω
Operating Level (adjustable)	-10 dBV nominal / +10 dBV maximum -10 dBV nominal / +8 dBV maximum -10 dBV nominal / +6 dBu maximum -10 dBV nominal / +4 dBu maximum -8 dBV nominal / +1 dBu maximum
Headphones Output	6.3-mm phone jack (tip = left, ring = right, sleeve = ground)
Minimum load impedance	32 Ω
Maximum level	+4.7 dBu (at 1% distortion)
Maximum power	50 mW + 50 mW

Digital audio inputs and outputs

Digital input and output	Coaxial RCA phono jack)
Impedance	75 Ω
Format	SPDIF (IEC 60958-2)
Quantization	16-bit or 24-bit

Other connectors

RS-232C	9-pin D-sub (female)
Clearance	Accepts D-sub plugs with housings < 15mm high
Data rate	9600 bps
Parallel control port	25-pin D-sub (female)
Clearance	Accepts D-sub plugs with housings < 15mm high
Input level	0 V to 3.3 V (logic low < 0.8 V, logic high > 2.0 V) Inputs have internal pull-ups and can be activated by shorting to ground.
Busy current loop rating	60 V DC (relay open), 1.5 A DC (relay closed)
LAN	RJ45
Data rate	10/100 Mbps
Format	100Base-TX (IEEE 802.3)
USB	USB A-type 4-pin
Format	USB 2.0

Power supply and other specifications

Mains power	100 VAC, 50/60 Hz 120 VAC, 60Hz 230 VAC, 50Hz 240 VAC, 50Hz
In-rush current	700 mA
Power consumption	10 W
Display	192 x 32 pixel, white LED backlight
Operating Temperature	5°C to 35°C

Dimensions (W x H x D)	483 x 280 x 44 mm (fits in a 1U 19" rack space)
Weight	3.2 kg

Design and specifications subject to change without notice.

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