HS-20

Professional Stereo Audio Recorder

The HS-20 is based on Tascam's robust range of broadcast recorders, but built for the needs of contractors. The stereo recorder captures audio to SD or CompactFlash media and makes recordings available on a network for instant remote access. The unit's network functionality is designed for automated recording and delivery without supervision.

The HS-20 can function as a file server so that recordings can be manually downloaded over a network. There is also client software to automatically upload files to a server on the user's schedule, with the option to delete the files when finished. Automated recording and playback are available, while the internal clock is synchronized to any internet time server.

The HS-20 is equipped with solid transport buttons, a weighted jog/shuttle wheel, and a colour TFT touchscreen display. The rear panel includes balanced and unbalanced analogue connectors as well as SPDIF and AES/EBU digital inputs and outputs. RS-232C and parallel control interfaces are also provided. The unit records audio material to broadcast wave format files with resolutions up to 192 kHz at 24 bit.

Ideal for installations managed over a network, the HS-20 can automate and deliver your recordings to any server.

Details

FTP client and time synchronisation included

- The included FTP client function allows the user to move files using a network computer, or from the HS-20 unit itself.
- After recording, the HS-20 can automatically upload recorded files to a designated server. This enables simple archive creation for recorded data. This is important for archiving regularly scheduled events like classes, lectures and performances. Since uploading occurs in the background, recording and playback operations are not interrupted.
- The SNTP client functions of the HS-20 enable automatic synchronization of the date and time with an NTP server over the Internet. Automatic time synchronization can be set to occur whenever the unit is started, and every (24) hours.

Time-based event management

Event lists enable the automatic playback of files such as background music and announcements – useful in retail stores and restaurants. Utilize the event lists for scheduled recording, playback, downloading and other events. By combining playback events with download events, audio files can be automatically retrieved from a server for playback. The HS-20 FTP server functions also enable centralized file management from a corporate headquarters to multiple locations - perfect for playing files simultaneously in a chain of retail stores.

Touchscreen TFT color display allows intuitive operation

This unit features a touchscreen color display. The graphical user interface (GUI) is intuitive and easy to understand. Menus for inputs, outputs, and other settings are simple and on one screen. All parameters can be accessed by touching the screen and changing the settings. Compared to earlier displays that could only show small bits of information, this interface is complete and easy to use.

Support for 1000BASE-T gigabit Ethernet allows a wide range of operations

The HS-20 supports 1000BASE-T gigabit LAN and uses FTP (File Transfer Protocol) as its work protocol. It can be accessed from any system, including Windows, Macintosh and UNIX. Inclusion of FTP functions allows file transfers between CF/SD cards and servers. This enables various applications, including the loading of files onto a transfer system. In addition, this also provides an environment for remote control over a network. These features contribute to making systems and workflows more efficient. Since VNC (Virtual Network Computing) is also supported, you can use a VNC viewer application to operate the system from a computer by viewing the screen shown on this unit’ s LCD.

Features at a glance

- High-quality stereo audio recorder for professional broadcast and recording applications
- Two operation modes:
  - Timeline mode: Use the unit like a tape recorder
  - Take mode: Record/play separate audio takes, use playlists and flash start
- Ideal replacement for current DAT, MD, MO or other recorders
- Easy to read and operate through TFT colour touch screen interface
- Dual card slot for use with SD/SDHC media and CF media (UDMA support)
- Mirroring over two cards
- Supports WAV format and BWF format with mark function
- Sample rates: 44.1/48/88.2/96/176.4/192 kHz at 16/24-bit resolution
- Pre-recording up to 5 seconds (audio is captured before the record button is actually pressed)
- Flash start with optional flash start controller RC-HS20PD or RC-SS20
- Built-in FTP client allows automatic uploading of recorded files to an FTP server or downloading audio files from an FTP server
- Time-controlled execution of tasks such as recording, playback, uploading, downloading
- Locate marker function (auto/manual)

- Editing fuctions (divide, combine, erase)
- Projects can be exported in AES31 format
- Auto Cue, Auto Ready, Incremental Play and Repeat
- Playlist function
- Jog/Shuttle function
- 2U rack-mount size

Inputs and Outputs

- Balanced analogue inputs and outputs (XLR)
- Unbalanced analogue inputs and outputs (RCA)
- AES/EBU input and output
- RS-232C serial control port
- RS-422 serial control port (with optional SY-2 sync extension)
- Parallel control port
- SMPTE Timecode input/output (with optional SY-2 sync extension)
- Word/video sync input/output (BNC)
- Gigabit Ethernet connection for data transfer or remote control
- Remote connector for optional flash start controller
- USB connector for data exchange with external storage devices
- Computer keyboard (PS/2) connector for easy naming of files and folders

Options

RC-HS20PD: Flash Start Remote Control for HS-20/HS-8

RC-900: Remote control unit

RC-SS20: Flash Start Remote Control

Related products

SS-R250N: Networkable Solid-State Audio Recorder

SS-CDR250N: Networkable Solid-State/CD Audio Recorder

DA-6400: 64-track Audio Recorder

Specifications

General

Recording media	SD card / SDHC card CompactFlash (CF) card
File system	FAT32 (4 GB or more) FAT16 (2 GB or less)
File format	BWF (Broadcast Wave Format) WAV (Waveform Audio Format)
Number of channels	2 channels
Quantization bit rate	16-bit, 24-bit
Sampling frequency	44.1/48/88.2/96/176.4/192 kHz
Clock reference	INTERNAL, WORD IN, VIDEO IN, DIGITAL IN
Time code frame rates	23.976, 24, 25, 29.97DF, 29.97NDF, 30DF, 30NDF

Analog audio inputs and outputs

The error for nominal and maximum levels is ±1 dB for all input and output jacks except the PHONES jack.

ANALOG INPUTS L / R (BALANCED	XLR–3–31 (1: GND, 2: HOT, 3: COLD)
Input impedance	4.3 kΩ
Nominal input level	+4 dBu (1.23 Vrms) ±1 dB (+6 dBu when maximum input level is set to +15 dBu an Digital Ref. Level is set to –9 dB)
Maximum input level (selectable)	+15 dBu (4.36 Vrms) +18 dBu (6.16 Vrms) +20 dBu (7.75 Vrms) +22 dBu (9.76 Vrms) +24 dBu (12.3 Vrms)
ANALOG INPUTS L / R (UNBALANCED)	RCA pin jack
Input impedance	3.9 kΩ
Nominal input level	–10 dBV (0.316 Vrms) ±1 dB
Maximum input level	+6 dBV (2.0 Vrms) ±1 dB
ANALOG OUTPUTS L / R (BALANCED)	XLR–3–32 (1: GND, 2: HOT, 3: COLD)
Output impedance	100 Ω or less
Nominal output level	+4 dBu (1.23 Vrms) ±1 dB (+6 dBu when Digital Ref. Level is set to –9 dB)
Maximum output level (selectable)	+15 dBu (4.36 Vrms) +18 dBu (6.16 Vrms) +20 dBu (7.75 Vrms) +22 dBu (9.76 Vrms) +24 dBu (12.3 Vrms)
ANALOG OUTPUTS L / R (UNBALANCED)	RCA pin jack
Output impedance	100 Ω or less
Nominal input level	–10 dBV (0.32 Vrms) ±1dB
Maximum input level	+6 dBV (2.0 Vrms) ±1dB
PHONES jack	6.3-mm stereo jack
Maximum output power	45 mW + 45 mW or more (THD+N 0.1% or less, into 32 Ω)

Digital audio inputs and outputs

DIGITAL IN (S/PDIF)	RCA pin jack
Input signal voltage amplitude	200 mVpp to 600 mVpp
Input impedance	75 Ω
Format	AES3-2003 / IEC60958-4 (AES/EBU) IEC60958-3 (SPDIF)

Digital audio inputs and outputs

Supported sampling frequencies	44.1/48/88.2/96/176.4/192 kHz (Single / Double / Quad) When SRC is ON, the receivable range is 32–192 kHz.
DIGITAL IN (AES/EBU)	XLR–3–31
Input signal voltage range	200 mVpp to 10 Vpp
Input impedance	110 Ω ±20%
Format	AES3-2003/IEC60958-4(AES/EBU) IEC60958-3(SPDIF)
Supported sampling frequencies	44.1/48/88.2/96/176.4/192 kHz (Single/ Double/ Quad) When SRC is ON, the receivable range is 32–192 kHz.
DIGITAL OUT (S/PDIF)	RCA pin jack
Output voltage	0.5 Vpp ±20%
Input impedance	75 Ω
Format	IEC60958-3 (SPDIF)
Supported sampling frequencies	44.1/48/88.2/96/176.4/192 kHz (Single/ Double/ Quad)
DIGITAL OUT (AES/EBU)	XLR–3–32
Output voltage	2–5 Vp–p/110 Ω
Output impedance	110 Ω ±20%
Format	IEC60958–4 (AES3–2003, AES/EBU)
Supported sampling frequencies	44.1/48/88.2/96/176.4/192 kHz (Single/ Double/ Quad)

Control inputs and outputs

RS–422 (attached with Option SY-2 board)	D–sub 9-pin
RS–232C	D–sub 9-pin
PARALLEL	D–sub 25-pin
TIME CODE IN (attached with Option SY-2 board)	BNC connector
Signal voltage amplitude	0.5–5 Vpp
Input impedance	10 kΩ
Format	SMPTE 12M–1999 compliant
TIME CODE OUT (attached with Option SY-2 board)	BNC connector
Signal voltage amplitude	2 Vpp
Output impedance	600 Ω
Format	SMPTE 12M–1999 compliant
WORD/VIDEO IN	BNC
Input voltage	5 V TTL equivalent (WORD IN)
Signal voltage amplitude	1 Vpp (VIDEO IN)
Input impedance	75 Ω ±10%
Allowable frequency deviation of external synchronization	±100 ppm
Input frequencies (WORD)	44.1/48/88.2/96/176.4/192 kHz
Input signal (VIDEO)	24/25/29.97/30 Frame (NTSC/PAL Black burst, HDTV Tri–Level)
WORD/VIDEO THRU/OUT	BNC (OUT/THRU switch included (OUT is only for WORD OUT)
Signal voltage amplitude	5 V TTL equivalent
Output impedance	75 Ω ±10%
Output frequency (WORD)	44.1/48/88.2/96/176.4/192 kHz
Frequency stability	±10 ppm or less (Ta = 20º C)
ETHERNET	RJ45
Compatibility	100BASE-TX, 1000BASE-T
KEYBOARD	Mini-DIN (PS/2)
USB	USB A-type 4-pin

Control inputs and outputs

Protocol	USB2.0 HIGH SPEED (480 Mbps) compliant
REMOTE	RJ45
Supply voltage	13 V
Signal	LVDS serial
Transmission contents	LCD display DATA, asynchronous serial transmission control signals, port control signals

Audio performance

Frequency response, ANALOG IN to ANALOG OUT	20 Hz – 20 kHz ±0.5 dB (Fs = 44.1/48 kHz, JEITA, recording and playback) 20 Hz – 40 kHz +0.5 dB/−2 dB (Fs = 88.2/96 kHz, JEITA, recording and playback) 20 Hz – 80 kHz +0.5 dB/−5 dB (Fs = 176.4/192 kHz, JEITA, recording and playback)
Distortion, ANALOG IN to ANALOG OUT	0.005% or less (JEITA, recording and playback)
S/N ratio, ANALOG IN to ANALOG OUT	100 dB or more (JEITA, recording and playback)

Power supply and other specifications

Power	AC 100-240 V, 50–60 Hz
Power consumption	22 W
External dimensions (W x H x D)	483 mm x 94 mm x 314 mm
Weight	4.9 kg
Operating temperature range	5–35 °C

Design and specifications subject to change without notice.

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