

# Hybrid Digital Video Recorder, Player and Streamer (HDVR-100ST)

## Overview

Streaming Networks offers an OEM ready, stand-alone, network enabled hybrid digital video recorder (HDVR-100ST) for security and surveillance applications, supporting both analog and IP cameras.

The HDVR-100ST hardware includes analog audio/video (A/V) interfaces, two port ethernet switch, two USB ports, RS232/RS485 ports, I2C and optocoupler isolated I/O lines. The USB host port allows external storage devices of any capacity to be attached. One of the ethernet ports can be used for a network connection (may be a cellular modem) while the other port can be used to connect an IP camera or any other IP enabled device.

HDVR-100ST converts any analog camera to an intelligent, high resolution surveillance system. The analog A/V signal from the camera is captured, compressed and stored to an external USB storage media using H.264 video and MP3 audio formats.

When an IP camera is connected to a HDVR-100ST, all of its features are retained, and the IP camera can be fully controlled through its own PC/Mac application in a transparent manner. HDVR-100ST further adds to the functionality of the IP camera by offering the store and forward A/V stream feature. It records the Motion JPEG video stream of an IP camera along with its audio footage to an external USB storage device connected to HDVR-100ST. The stored contents can be streamed in H.264 format, for remote viewing.

A HDVR-100ST can be operated locally using the front panel switches or remotely, using an internet browser. Authorized users can login to configure and control a HDVR-100ST system. Users can watch a live feed or a pre-recorded A/V file, start and stop recording, delete/rename files, download a file or segment of a file. The Pre-view feature of the HDVR-100ST application allows a user to identify a segment of interest, extract it and subsequently download it to a PC /Mac.

A HDVR-100ST is also a stand-alone player, with standard play back features that allow access to the recorded contents quickly and efficiently for local viewing. A HDVR-100ST operates just like an analog VCR; the entire recording on the storage media is treated as a virtual tape where multiple digitally recorded files can be seamlessly played and traversed backwards and forwards. The recorded files can also be played by event types, such as motion detection, camera tampering, and audio monitoring. During playback, a video segment of interest can easily be extracted from a recording.

A HDVR-100ST multiplexes video and audio data using transport stream (TS) protocols. The resultant data can be directly streamed on the internet over TCP or UDP using the streaming feature of the HDVR-100ST application. The streamed video can be played back by a remote computer using any off-the-shelf media player, such as VLC.

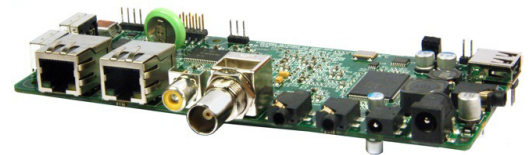
A HDVR-100ST uses RTMP protocol to stream live or recorded video and audio contents. The A/V data can therefore be viewed by any device supporting Flash player. A proprietary bandwidth adaptation mechanism ensures smooth playback over the internet.

A HDVR-100ST player offers a powerful search and retrieval function to quickly locate a selected event or a group of events within a specified time period. A 'jump to time' feature jumps to the desired point in the file to start playback immediately. The power fail-safe feature of the recorder ensures data loss to be no more than 10MB, which translates to roughly 25 seconds of an extended recording.

Several stand-alone HDVR-100ST units can form a symmetric, decentralized monitoring system (patent pending) on a network. Each HDVR-100ST can access another HDVR-100ST for system configuration, monitoring, recording, and playback purposes. All communication and features used over the network are secured via authentication. In case of remote viewing via a PC/Mac, HDVR-100ST supports most of the standard web browsers for the purpose. No additional software required.

## Main Features

- Stand-alone system
- Supports both analog and IP cameras
- Easy to use, one touch recorder and player
- Network enabled, plug and play
- Add and remove a DVCR node on the fly
- Symmetric decentralized monitoring, recording and playback (patent pending)
- Patented H.264 & MPEG-2 video compressions
- Industry standard transport stream (TS) video and audio multiplexing for universal playback on any computer
- RTMP streaming
- Tape mode; view entire recording as a virtual tape
- Patented smooth reverse play and other playback modes
- Video segment extraction
- Event based recording support
- User defined pre and post event recording durations
- Smart search by event type
- Jump to time
- Minimizes data loss on power failure



## HDVR-100ST SPECIFICATIONS

Video	Video encoding	H.264, MPEG-2 (Analog camera)
	Video capture	MJPEG (IP camera)
	Video transcoding (decode/encode)	Real time conversion of MJPEG to H.264 for store and forward
	Resolution	Full D1 (720x480) for recording QVGA (320x240) to Full D1 (720x480) for transcoding
	Frame rate	30 fps (NTSC), 25 fps (PAL)
	Video signal format	NTSC, PAL and SECAM
	Video input / output	S-video input, CVBS input(BNC), S-video output, CVBS output(RCA), RJ45 input for IP camera
	Video tagging	Date, timestamp, frame number and user ID data
Audio	Audio compression	MP3(16kbps, 8KHz)
	Audio input / output	Stereo Line-in (3.5mm jack), Mono microphone input (PC-compatible), Stereo Line-out (3.5mm jack)
Mux	Multiplexing	Transport stream(TS) for analog camera AVI container for IP camera
Recording	Circular mode	Non-stop recording by overwriting the oldest data first
	Linear mode	Recording stops when storage media is full
	Event mode	Recording starts and stops based on events: motion detection, video signal loss, audio loudness detection and camera tampering
	Event recording history	Pre-event buffer (0-3 seconds), Post-event buffer (1-10 seconds)
	Continuous mode	Continues recording until manually stopped
	IP camera mode	MJPEG recorded in real-time at highest resolution supported by the camera
Playback	Tape mode	Seamless transition between recorded files Playback: play till end of recording Rewind : traverses backwards to the beginning of the recording Forward : traverses forward to the end of the recording
	Control modes	Pause, Fast Fwd (16x, 32x, 64x, 90x) , Fast Rwd (1x, 16x, 32x, 64x, 90x), Reverse Play
	Segment extraction	Save a segment of interest during playback
	TV or computer	Playback on a TV or on a computer using off the shelf media players like VLC as well as via standard browsers with a flash player plug-in
	Smart Search & Play	Timestamp based or event based
Protocol	Streaming	Location free monitoring (Live streaming), Stream and store video simultaneously, Pre-recorded files
	Protocols supported	HTTP, RTMP, TCP, UDP, DHCP, SMTP
	Web server	File management ( rename/delete/download/update list/download )
Connectivity	Ethernet switch	2 10/100 Base Ethernet ports (RJ45)
	USB connectivity	USB 2.0 host port (Type A connector) for external USB storage devices USB OTG port (Type AB connector)
	Serial interface	RS-232 or RS-485 (on header)
Control/ Power	Alarm input/output	2 inputs, 2 outputs (optocoupler isolated) 1 buzzer alarm output (on header)
	Switches	6 control switches & one power switch (on header)
	Power input	8 - 30 V DC range (2mm Barrel connector)
	Power output	12VDC, 500mA (1.65mm Barrel connector) Regulated power output for external cameras

Streaming Networks, Inc. 1765 Scott Boulevard, Santa Clara, CA 95050 USA. Phone +1 (408) 727-3904