



SAM-3101 1-channel H.264 encoder

Features

- Power Over Ethernet (POE) Class 3 device
- Optimized H.264 video compression algorithm to facilitate transmission of High Quality video over low network bandwidth
- Built in monitoring function
- Supports PAL/NTSC
- Provides RS422/RS485 serial port
- 12V DC Output (if PoE is active)
- Audio input and output
- Dual streaming – unicast and multicast
- Fully integrated within the Cathexis Network Video Recorder, up to 64 encoders per NVR unit
- Hardware watchdog and Built-in-tests
- Mini USB interface
- Opto-isolated inputs and relay output

The Sam3 products integrate analogue cameras into security systems by means of an Ethernet network. In applications where an Ethernet network already exists, this is a significant cost-saver as it does away with the requirement for cabling. With the Power over Ethernet option there is also no need for external power feeds to the encoders.

Conveniently, there is no hardware installation on the NVR (Network Video Recorder) – each SAM-3 encodes an analogue camera feed, converting it to a high quality digital format, which is transmitted as a digital feed to the DVR.

The encoders integrate seamlessly into the NVR user interface so that each appears as simply another camera on the site.

With “IP-based” cameras, it is possible to implement (VMS) Virtual Video Matrix Switchers. VMS is an IP-based video matrix switch that enables the operator to quickly display any site camera on any monitor on a video wall.

The compression ratio and resolution can be scaled independently for each encoder, providing optimum image quality under all conditions. This also enables flexible customisation of encoders to optimise the network bandwidth.

The SAM-3 uses advanced dual streaming technology making it possible to multicast the video feed to multiple users without compromising the network bandwidth.

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Ordering information

SAM-3101 1-channel H.264 encoder with I/O, RS422/RS485, audio, PoE

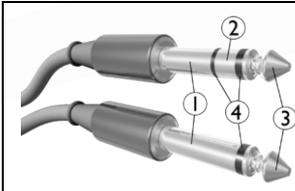
Specifications

Video format	NTSC or PAL
Video Compression	JPEG & H.264
Video connection	BNC, 1 composite video baseband signal (CVBS)
Channels	Single channel PAL/NTSC 1V PTP output 1x Y8 channel
Video output Channel	1x PAL/NTSC video output for ease of installation purposes. Example: Focussing the camera input. 1V PTP output
Audio output*	1x 200-300mW Speaker output at RL = 8Ω using 3.5mm Audio Jack
Audio input	1x Microphone input with differential Microphone Amplifier via 3.5 mm Audio Jack
Ethernet	1x 100BaseT RJ45 single RJ11 connector Ethernet mac supports 10/100 Mbit/s Ethernet TCPIPv4 protocol stack embedded in the encoder
Power Over Ethernet	Yes
Power consumption while powered by external source	12V is ~1.8W Max output current limited to 1A. (Some devices draw greater than 1A at start-up. The unit may experience problems should such a device be connected.)
Power input when not using PoE	12V DC (8 to 36V)
Power consumption while powered by PoE	During operation < 2.2W (no load on external PoE output)
Power output (only usable while)	Power output is 5.5W (sustained) Fold Back current limiting to 8W

encoder is powered by PoE)	with auto retry Output voltage is 12V +-5% Cannot use USB and PoE power output simultaneously.
RS422 serial ports	1x (with DB9 interconnects Tx and Rx, supporting a maximum bit rate of 230kbit/s)
Opto-isolated alarm inputs	1x (debounced with a 200 ms period, reporting edge changes back to the NVR)
Relay outputs	1x (permits a maximum of 1 Amp at 12 volts across the non-polarized NO and NC outputs)
Software	Software release 5042d1 or later, on NetBSD 3.0 or later Configuration via catPro professional software, operation via CatVision site management software
Physical dimensions	Extruded Aluminium housing L,W,H of 80mm x 106mm x 30mm Flange mounts on either bottom edge of 12mm wide will bring the total width including flange mountings to 130mm
Mounting options	Flanges with 2x slotted mounting holes and DIN rail mounting option
Operating temp	SAM2: 0°C to 55°C Ambient (32°F to 131°F)
Enclosure / Environment	IP rating 50. The enclosure is not waterproof. The encoder should only be installed indoors.
Maximum encoders per NVR	Up to 48
USB interface	Mini USB connection port. <u>Note:</u> Only USB or Power output is allowed at a time.

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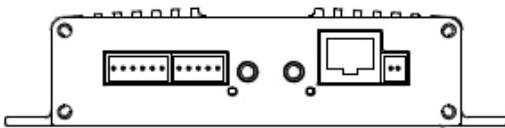
*Note on Output Connectors, and amplification



1. **Sleeve:** usually ground
2. **Ring:** Right-hand channel for stereo signals, negative polarity for balanced mono signals, power supply for power-requiring mono signal sources
3. **Tip:** Left-hand channel for stereo signals, positive polarity for balanced mono signals, signal line for unbalanced mono signals
4. **Insulating rings**

- The Audio Output of the SAM3101 encoders is designed to drive an 8Ω loudspeaker.
- From serial numbers 000550 – 649 (HDE 1001 000671 – 870) onward modifications have been done to enable the unit to be connected to an Audio Amplifier as well.
- On all units:
 - a. when connecting to an Amplifier, connect the cable shield to the Jack-plug sleeve
 - b. when connecting to a loudspeaker, do NOT connect the cable shield to the Jack-plug sleeve

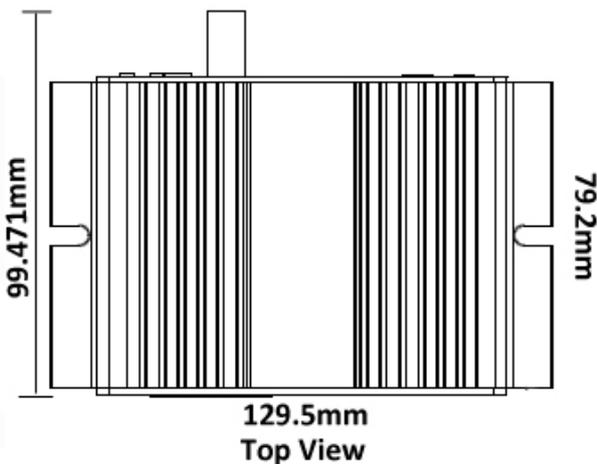
SAM-3101 Dimensions



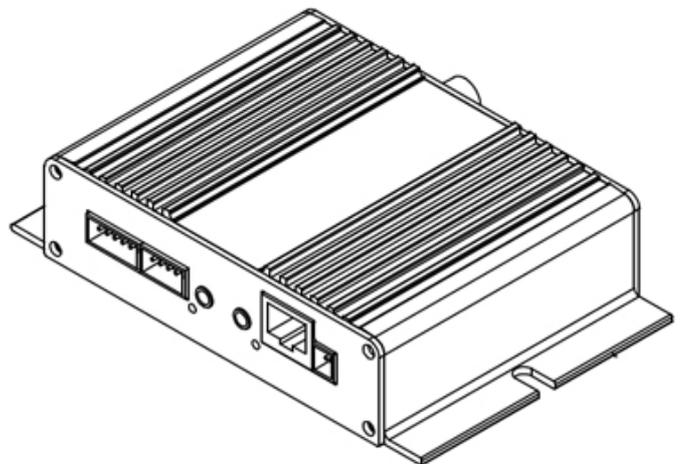
Front View



Side View



Top View



Note: The SAM units also come in a Rackmount version, which fits into the RCK310x Rackmount chassis.

They have a different faceplate attached, to allow a proper fit into the rack. The ordering code for the SAM3101 rackmount version will be SAM3101-RCK.