

## SAM-3101 1-channel H.264 encoder<sup>1</sup>



- ▶ 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 (VVMS) Virtual Video Matrix Switchers. VVMS 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.

**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**.

<sup>1</sup> While Cathexis has made every effort to ensure the accuracy of this document, there is no guarantee of accuracy, neither explicit, nor implied. Specifications are subject to change without notice.

## Ordering information

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

## Specifications

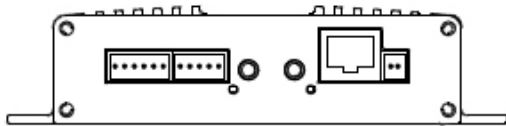
<b>Video format</b>	NTSC or PAL
<b>Video Compression</b>	JPEG & H.264
<b>Video connection</b>	BNC, 1 composite video baseband signal (CVBS)
<b>Channels</b>	Single channel PAL/NTSC 1V PTP output  1x Y8 channel
<b>Video output Channel</b>	1x PAL/NTSC video output for ease of installation purposes. Example: Focussing the camera input. 1V PTP output
<b>Audio output*</b>	1x 200-300mW Speaker output at RL = 8Ω using 3.5mm Audio Jack
<b>Audio input</b>	1x Microphone input with differential Microphone Amplifier via 3.5 mm Audio Jack
<b>Ethernet</b>	1x 100BaseT RJ45   single RJ11 connector   Ethernet mac supports 10/100 Mbit/s Ethernet   TCP/IPV4 protocol stack embedded in the encoder
<b>Power Over Ethernet</b>	Yes
<b>Power consumption while powered by external source</b>	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.)
<b>Power input when not using PoE</b>	12V DC (8 to 36V)
<b>Power consumption while powered by PoE</b>	During operation < 2.2W (no load on external PoE output)
<b>Power output (only usable while</b>	Power output is 5.5W (sustained) Fold Back current limiting to 8W

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

**\*Note on Output Connectors, and amplification**

	<p>1. <b>Sleeve:</b> usually ground                  2. <b>Ring:</b> Right-hand channel for stereo signals, negative polarity for balanced mono signals, power supply for power-requiring mono signal sources                  3. <b>Tip:</b> Left-hand channel for stereo signals, positive polarity for balanced mono signals, signal line for unbalanced mono signals                  4. <b>Insulating rings</b></p>	<ul style="list-style-type: none"> <li>• The Audio Output of the SAM3101 encoders is designed to drive an 8Ω loudspeaker.</li> <li>• 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.</li> <li>• On all units:                         <ol style="list-style-type: none"> <li>a. when connecting to an Amplifier, connect the cable shield to the Jack-plug sleeve</li> <li>b. when connecting to a loudspeaker, do NOT connect the cable shield to the Jack-plug sleeve</li> </ol> </li> </ul>
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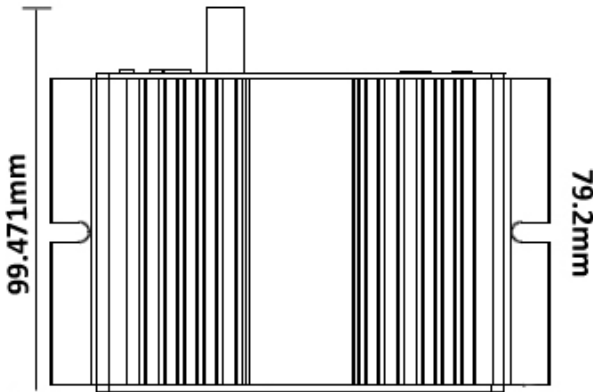
## SAM-3101 Dimensions



Front View



Side View



129.5mm  
Top View

