



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 (Will only sync with Video Channel 1)
- 4x Analogue Video Inputs
- 4x Audio Input (Line In/MIC In) and 1x Audio Output
- Dual streaming
- Fully integrated within the CathexisVision VMS
- Hardware watchdog and Built-in-tests
- 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-3204 encodes an analogue camera feed, converting it to a high quality digital format, which is transmitted as a digital feed to the DVR/NVR.

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.

Note: The SAM3204 can be directly inserted into a 1U chassis. This must be ordered separately.

¹ 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.

Differences between SAM3204 and SAM3104

- Significant improvement in audio quality.
- Audio sampled at double the rate, thus improving sound quality.
- Improved video capture performance.
- Ability to mix NTSC and PAL camera feeds.
- Improved I/O isolation.
- 2 relay outputs as opposed to 1.
- 4 audio channel inputs (1 per video channel) as opposed to 1.

Ordering information	
SAM-3204	4-channel H.264 encoder with I/O, RS422/RS485, audio, PoE
Specifications	
Video format	NTSC or PAL
Video Compression	H.264
Video connection	BNC, 1 composite video baseband signal (CVBS)
Channels	4 channel PAL/NTSC 1V PTP input
Audio output	1x 200-300mW Speaker output at RL = 8Ω using 3.5mm Audio Jack*
Audio input²	4 x Audio input (Line In/MIC In) 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	12V is ~1.8W Max output current limited to 1A.

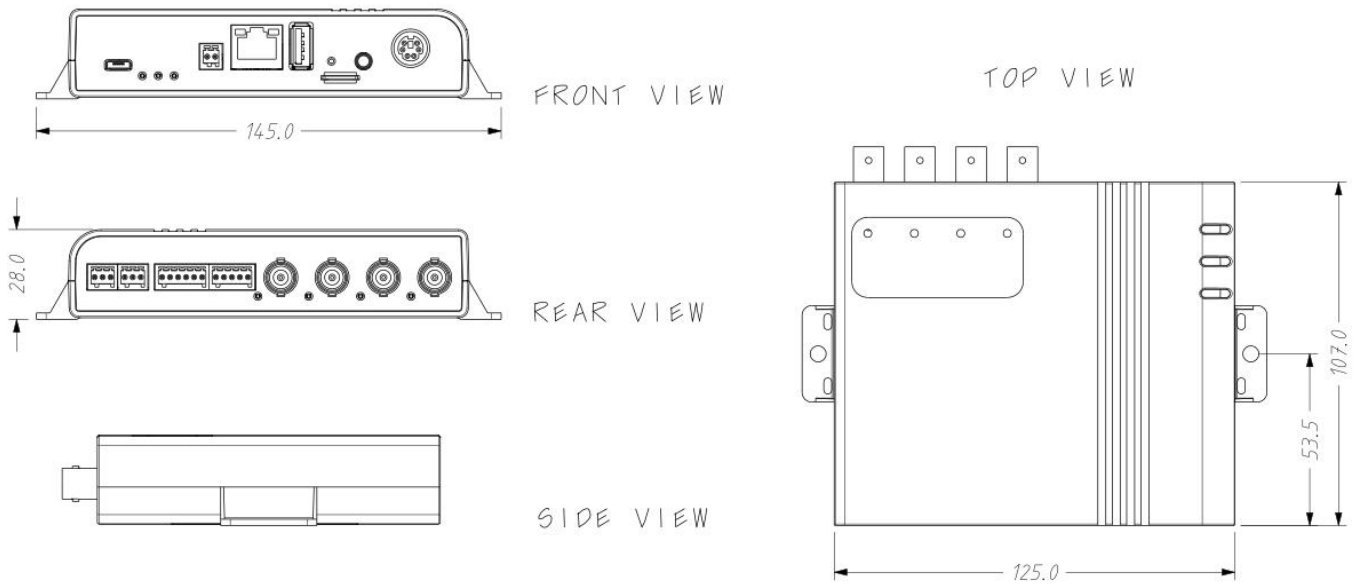
powered by external source	
Power consumption while powered by PoE	During operation < 2.2W
RS422 serial ports³	1x (with DB9 interconnects Tx and Rx)
Opto-isolated alarm inputs	4x (debounced with a 200 ms period, reporting edge changes back to the NVR)
Relay outputs	2x (permits a maximum of 1 Amp at 12 volts across the non-polarized NO and NC outputs)
Software	SAM 3204 is supported from CathexisVision software version 2017.2 onwards, on all platforms
Physical dimensions	L,W,H of 120 x 105 x 25 (mm)
Mounting options	Flanges with 2x slotted mounting holes and DIN rail mounting option
Operating temp	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.

* Note: Audio adapter cable is supplied with device.

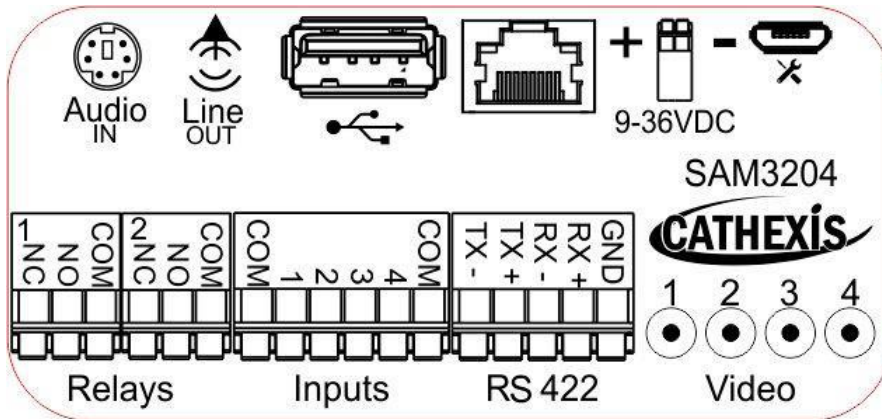
² Only syncs with Video Channel 1

³ PTZ control will only sync with Video Channel 1

Encoder dimensions



Connections



Frame Rate Performance

The performance test results for the SAM3204 encoder are presented in the tables below.⁴

4 channels Active	Configuration Parameters		Frame Rate Achieved PAL / NTSC
	Configuration 1:	Primary Stream	
	Secondary Stream	N/A	N/A
Configuration 2:	Primary Stream	4CIF; 1Mbps; 25fps	22 / 26

⁴ Performance tests were conducted under ideal conditions. Actual results may vary depending on usage environment

	Secondary Stream	CIF; 100Kbps; 5fps	5 / 5
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3 Channels Active*	Configuration Parameters		Frame Rate Achieved PAL/NTSC
Configuration 1:	Primary Stream	4CIF; 1Mbps; 25fps	25 / 30
	Secondary Stream	N/A	N/A
Configuration 2:	Primary Stream	4CIF; 1Mbps; 25fps	25 / 30
	Secondary Stream	CIF; 100Kbps; 5fps	5

*Note: The camera must be physically unplugged from the encoder.