

ION-E1600 Video Encoder Appliance

High Quality H.264 Video Encoding with Recording on the Edge

IONODES



> The **IONODES ION-E1600** video encoder appliance is the ideal video encoding solution for high quality video surveillance applications.

Highlights

- Benefit from broadcast quality video on every input using H.264 High Profile compression at 4CIF 30 fps.
- Save valuable storage space for your video archives by using H.264 compression.
- Customize your live streaming and recording scenarios by creating up to three different compression profiles per video stream.
- Apply your preferred storage strategy by opting for internal (HDD) or external (iSCSI / eSATA) storage options.
- Ensure high availability through the use of redundant power supplies and network connections.
- Protect your video data through encryption and digital signatures.
- Detect camera tampering, enable privacy regions and benefit from object-based real-time motion detection.
- Easily integrate the appliance into your existing video management solution through the ION API.

Modular by Design

Built-in hot-swappable expansion ports allow the ION-E1600 to host up to four video encoder modules for a total of up to 16 analog video channels.

High-Quality Video Compression

Using the H.264 high profile compression codec (MPEG4 Part 10), the ION-E1600 can reduce storage requirements by over 50% when compared to a compliant MPEG4 SP codec. It also supports MJPEG compression profiles.

Triple-Encoding

The ION-E1600's powerful video encoding engine can generate up to three different compression profiles per analog video input, allowing it to adapt to various streaming and recording environments. For example, one high-quality stream could be used for recording, while two lower-quality streams could be used simultaneously to serve various live clients.

Flexible Storage Options

To ensure important data is never lost, the ION-E1600 supports "recording at the edge" scenarios through its dual internal SATA storage drives. For more advanced storage scenarios and longer retention times, the appliance can also be connected to external network storage.

Reliable and Secure

The feature-rich ION-E1600 appliance provides high-availability by offering redundant power supplies, redundant gigabit network connections and support for fault-tolerant RAID5 external storage. Security and tamper protection is also ensured through authenticated access, encrypted communication channels and digital video signatures. As an option, AES-based full video stream encryption is also offered for more demanding applications.

Intelligence at the Edge

Optional advanced analytic capabilities of the ION-E1600 include digital image stabilization, multi-zone motion detection and object-based behavior tracking (crowd detection, virtual tripwires, object left behind, people counting, loitering, etc.) with privacy masking, object left behind, people counting, loitering, etc.) with privacy masking.

Easy to Manage

The ION-E1600's GUI-based web interface makes set-up and management of the appliance nearly effortless. In addition, integration of the ION-E1600 into new or existing video management software is simple thanks to the intuitive ION API. The ION API exposes management and streaming functions through standard HTTP and RTSP interfaces.



IONODES ION-E1600 Video Encoder Appliance Specifications

Standard / Integrated Interfaces

Network	Dual 10/100/1000 Base-T Ethernet ports half/full duplex, auto-sensing, RJ-45
USB	Four USB ports (Mouse, keyboard, expansion)
HDMI output	High definition display for administrative interface and local viewing (camera, tour or sequence driven by Omnicast / VMS) (up to 1080p resolution)
COM Port 1	RS-232 port for interfacing alarm equipment or POS terminals via a DB-9 connector
COM Port 2	Configurable RS-232/422/485 port for PTZ support via terminal strip

Video Encoder Module Details (ION-E1600-AVM1)

Video In	Four analog video inputs: NTSC or PAL
Audio In	Single line level analog audio input
Audio Out	Single line level analog audio output
Alarm In	Four dry contacts (1 per video input)
Relay Out	Single output relay contact

Video Output Module Details (ION-E1600/H)

Video Out	Single SD analog video output : DVI Single HD: DVI																											
Resolutions	<table border="0"> <tr> <td>SD</td> <td>NTSC/PAL</td> <td>525/625 TV Lines</td> </tr> <tr> <td>HD</td> <td>1080i lines</td> <td>Interlacing</td> </tr> <tr> <td></td> <td></td> <td>1920 Columns</td> </tr> <tr> <td></td> <td></td> <td>(540 lines per field-60</td> </tr> <tr> <td></td> <td></td> <td>Fields/sec =</td> </tr> <tr> <td></td> <td></td> <td>30 Frame/sec</td> </tr> <tr> <td></td> <td>1080p lines</td> <td>Progressive</td> </tr> <tr> <td></td> <td></td> <td>1920 Columns</td> </tr> <tr> <td></td> <td></td> <td>60 frame/sec</td> </tr> </table>	SD	NTSC/PAL	525/625 TV Lines	HD	1080i lines	Interlacing			1920 Columns			(540 lines per field-60			Fields/sec =			30 Frame/sec		1080p lines	Progressive			1920 Columns			60 frame/sec
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Video Compression

Standards	H.264 high, main and baseline profiles Motion JPEG
Data Rate	64 kbps – 6 Mbps per channel (H.264 requires less than 1 Mbps @ 4CIF/30fps)
Resolutions	4CIF/D1, 2CIF, 2/3 D1, 1/2 D1, CIF, QCIF
Performance	<p>Example 1:</p> <p>4 output profiles at High Profile H.264 with all options turned on (except no B frames) @ 30 fps 4CIF</p> <p>4 output profiles at low profile H.264 @ 30 fps at CIF</p> <p>4 output profiles at JPEG @ 30 fps at CIF</p> <p>Example 2:</p> <p>4 output profiles at High Profile H.264 with all options on @ 15 fps- 4CIF</p> <p>4 output profiles at low profile H.264 @ 30 fps – 2CIF (for local viewing)</p> <p>4 output profiles at MJPEG @ 10 fps – 2CIF</p>

Protocols

Networking	IPv4/v6, UDP, TCP, IGMP, ICMP, ARP, DHCP, DNS, RTP, HTTP, RTSP, HTTP, HTTPS, Bonjour, NTP, FTP
Security	Password protection Basic / digest authentication Digital signatures Full stream encryption (Optional)

General Features

Software	Embedded Linux based firmware loaded from internal flash memory
System Monitoring	Video input signals, disk subsystem, fans, power supplies, temperature, network monitor
Access Control	SSL, basic and digest authentication
Media Recording	Digitally signed media recording
Software Update	Fault-tolerant, remote accessible
Alarm Events	Triggered by external input or internal event monitoring HTTP and email notification
Video Analytics	Video motion detection, object based behavior tracking, etc. (Optional)
Video Delay	< 150 ms

Mechanical / Environmental

Dimensions	Height: 1.75 in Width: 17 in Depth: 14 in
Enclosure	Fits into a standard 19-in rack
Input Voltage	Dual 12V DC, unit comes with (1) 12 VDC power supply
Operating Temperature	0°C - 50°C
Approvals	FCC, UL, CE

Storage

Internal	Dual internal SATA HDD (2.5-in or 3.5-in) (Capacity of up to (2) x 1.5 TB = 3 TB) ION-E1600-Base-1.5TB ION-E1600-Base-3TB
External	Network Attached Storage (NAS), iSCSI

Audio Compression

Standards	Uncompressed PCM High-fidelity AAC-LC
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