



## the i-Volution™ 4100 HARDENED ENCODER

The i-Volution 4100 (i4100) Video-over-IP encoder delivers outstanding performance for advanced surveillance applications requiring high resolution, full motion video. The i4100 can encode a single MPEG-1/MPEG-2 video stream and two serial data channels for transport over a standards-based IP network. The MPEG video stream can be viewed simultaneously from any PC and/or CCTV monitor in the network.

The i4100 is available as a stand-alone single port video encoder.



Front View



Back View

### applications

- Security Surveillance
  - Airports
  - Military
  - Industrial Complexes
  - Hospitals
  - Campuses
  - Detention Centers
- Transportation Monitoring
  - Road (ITS)
  - Rail/Light Rail
  - Subway/Metro
- Industrial Process Control

### High Resolution - Full Motion Video

Impath Networks i4100 provides the highest digitized video quality over standard IP Ethernet networks. Every image is encoded in real-time and displayed at 30/25 (NTSC/PAL) frames per second. This advanced capability provides full motion DVD quality video for digital CCTV surveillance applications.

### Single Channel Capacity

The i4100 provides single-channel video for surveillance applications supporting dispersed video cameras over an IP network. The two serial data ports provide additional support for PTZ, NMS and Point of Sales applications.

### Network Scalability and Flexibility

The stand-alone i4100 encoder is ideal for a multitude of surveillance applications requiring single channel flexibility and high quality full motion video. Advanced features such as On-Screen-Display (OSD) allows network administrators to display camera name, date, time, resolution, bit rate and other related information onto any video monitor in the network. When used in combination with the Video Motion Detection feature, the i4000 provides effective, real-time surveillance and alarm notification.

### Enhanced IP Multicast Capability - Video & Data

i-Volution simplifies network connectivity via standards-based multicast technology for streaming video and data within an IP network. IP Multicasting provides the ability to distribute information efficiently to an unlimited number of remote locations via a single communications interface at the central site. This flexibility reduces hardware and bandwidth requirements while optimizing the overall network.

### Temperature Hardened

The i4100 is designed to meet high availability network requirements. The unit is environmentally hardened to operate over extended operating ranges and is conformal coated to ensure maintenance free operation.

### Standards Compliant

Video is encoded using standard MPEG-1/MPEG-2 compression. The video stream(s) can be viewed by iMPath software/hardware decoders and/or 3 Party products. The video and serial data can be transmitted over any standard IP network. This includes Ethernet, Gigabit Ethernet, SONET/SDH and ATM networks.

### Network Manageability

The i4100 can be managed both locally and remotely using Telnet, i-Volution NMS or via 3 Party SNMP network management systems.





# the i-Volution™ 4100

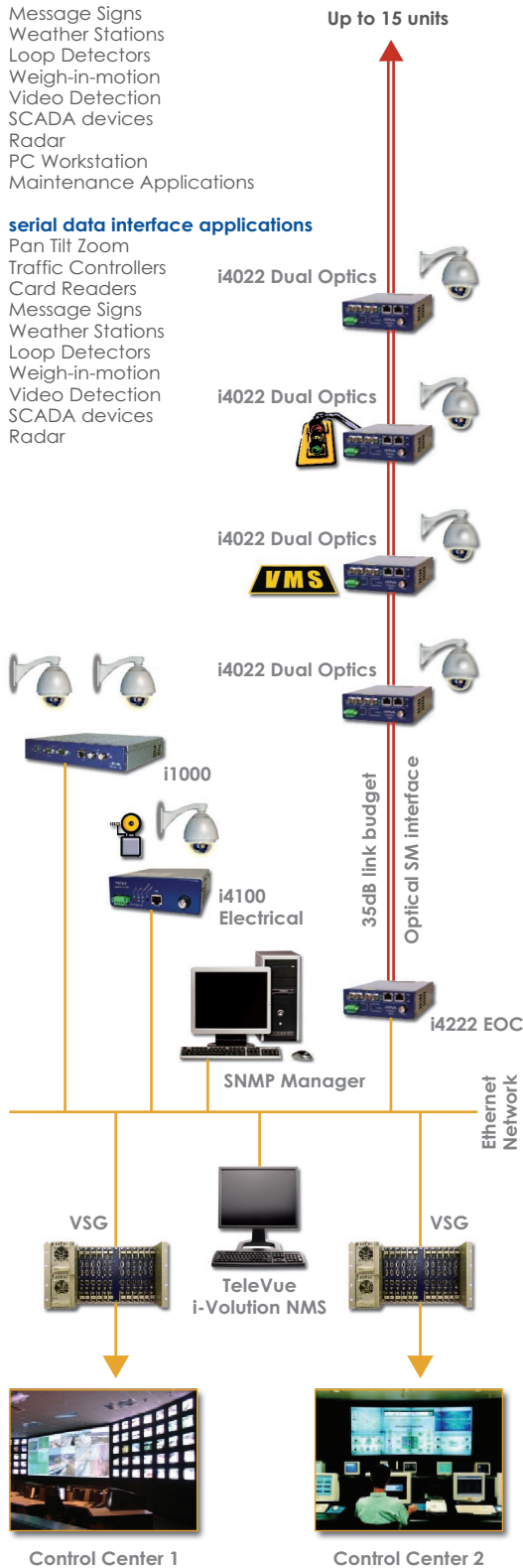
## HARDENED ENCODER

### ethernet interface applications

- Pan Tilt Zoom
- Traffic Controllers
- Card Readers
- Message Signs
- Weather Stations
- Loop Detectors
- Weigh-in-motion
- Video Detection
- SCADA devices
- Radar
- PC Workstation
- Maintenance Applications

### serial data interface applications

- Pan Tilt Zoom
- Traffic Controllers
- Card Readers
- Message Signs
- Weather Stations
- Loop Detectors
- Weigh-in-motion
- Video Detection
- SCADA devices
- Radar



### Video

Analog Video Connector	NTSC (30 fps), PAL (25 fps)	
IP connectivity	BNC, 75 ohm	
Digital Encoding	Unicast and Multicast (UDP)	
Data Rate	MPEG-1 (ISO/IEC 11172-2) and MPEG-2 (ISO/IEC 13818-1 Transport Stream or ISO/IEC 13818-2 Elementary Stream) MP@ML	
	128 kbps to 8 Mbps in Transport Stream and up to 12 Mbps in Elementary Stream	
Resolution	<b>NTSC</b>	<b>PAL</b>
Full	720 x 480	720 x 576
HHR	352 x 480	352 x 576
SIF	352 x 240	352 x 288
QSIF	192 x 128	160 x 128
Latency	170ms with Optimal Setting	

### Data

Format	Serial / Asynchronous
IP Connectivity	Unicast and Multicast (UDP)
Connectors	(2) DB9-F
Interface	EIA-232, EIA-422/485 - 2 or 4 Wire, Half or Full Duplex software programmable
Data Rate	300bps to 115.2 kbps

### LAN

LAN Format	IEEE 802.3 Ethernet
Interface	RJ 45 10/100 Base-T Ethernet, Half/Full Duplex, Auto-Sensing
Protocol	TCP, UDP, IPv4, IGMPv2, RTP, Diffserv, SAP, SNMPv2

### Motion Detection

Zone	Full Screen
Sensitivity	User Selectable: Low to High (1 to 10)
Re-Arm Delay	User Selectable: 100ms to 25 seconds

### Contact Sense & Closure

Connector	Terminal Block
Contact Sense	Output Voltage: +5 VDC, Maximum Resistance: 1.2 K Ohms
Dry Contact	Off Leakage: < 1 nA, On Resistance: 1.5 Ohms
Maximum Rating	250 Vp / 150 mA
Re-Arm Delay	User Selectable: 100ms to 25 Seconds

### Alarms

Via NMS/SNMP	Video Loss Detection
	Video Motion Detection
	Contact Sense & Closure
	Unit Configuration Change / Unit Reset

### Management

Local Management	Via Serial (Console) Maintenance Port, LED Status Display
Remote Management	Via i-Volution NMS (TeleVue), Telnet, SNMPv2
Software Updates	Via Network Download - One or multiple units simultaneously

### Power

Input Voltage	11.4 - 15 V DC (.100" center pin diameter lock type connector.)
	AC Power Adaptor included
Consumption	8.5 W (typical)

### Physical

Size/Weight	W 5.0" (12.7cm) x H 1.72" (4.37 cm) x L 7.5" (19 cm) / 1.34 lbs (0.6 kg)
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### Environmental

Operating Temperature	-34°C to +74°C
Relative Humidity	5% to 95%, Non-Condensing
Environmental Protection	PCB Conformal Coating
RoHS Compliance	EU directive 2002/95/EC
	Available on request

### Regulatory Approvals

Emissions	
Europe	EN55022: 1998 For Class A, EN61000-3-2: 1995 & EN6100-3-3: 1995
North America	FCC47 CFR Part 15, Subpart B: 1999 Class A
Australia/New Zealand	AS/NZS 3548: 1995 for Class A
Immunity	EN55024

Variant	Video port	Data port	Ethernet ports	Optical ports
i4110	1	2	1	0

### Other i4000 Variants - Refer to individual datasheets

i4020 Dual Ethernet	1	2	2	0
i4021 Single Optics	1	2	2	1
i4022 Dual Optics	1	2	2	2
i4221 Single EOC	0	0	2	1
i4222 Dual EOC	0	0	2	2

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