the i-Volution™ VSG 1000

ENCODER/DECODER

The i-Volution VSG 1000 Video-over-IP networking solution provides multi-channel transport capability for advanced surveillance applications requiring high resolution, full motion video. Each VSG 1000 codec module can encode/decode two MPEG-1/MPEG-2 video streams and two serial data channels over a standards-based IP network. A maximum of (12) VSG 1000 modules can be supported within a Video Surveillance Gateway.

The VSG 1000 codecs are available as dual port video encoders or decoders. The VSG chassis is sold separately.

VSG 1000 Encoder

VSG 1000 Decoder

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 i-Volution series of codec products provide 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.

Multi-channel Capacity

The VSG represents one of the highest density MPEG concentrator systems in the industry. Within a compact 7RU (12 slot) chassis, up to 24 video and serial data channels can be digitized & compressed using MPEG-1 or MPEG-2 for transport over a standards-based IP network. When used in combination with the i-Volution 1400 QuadriMedia encoder, the VSG can decode up to 96 simultaneous video streams.

The VSG-L is a scaleable, mid-size concentrator for applications requiring lower channel capacity. It's 2RU (3 slot) chassis can transport up to 6 MPEG-1 or MPEG-2 video channels with serial data over an IP network. When used in combination with i-Volution 1400 QuadriMedia encoder, this VSG-L can decode up to 24 simultaneous video streams.

Both chassis variants can be provisioned with any combination of VSG concentrator modules.

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.

Network Reliability

The VSG & VSG-L are designed to meet high availability network requirements. Each chassis supports redundant power & hot-swappable modules that operate independently of one another. With no single points of failure, the VSG is ideal for mission critical applications.

Standards Compliant

Video is encoded using standard MPEG-1 or MPEG-2 compression. The video stream/s can be viewed by Impath software/hardware decoders and/or 3rd 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 VSG modules can be managed both locally and remotely using Telnet, i-Volution NMS or via 3rd Party SNMP network management systems.

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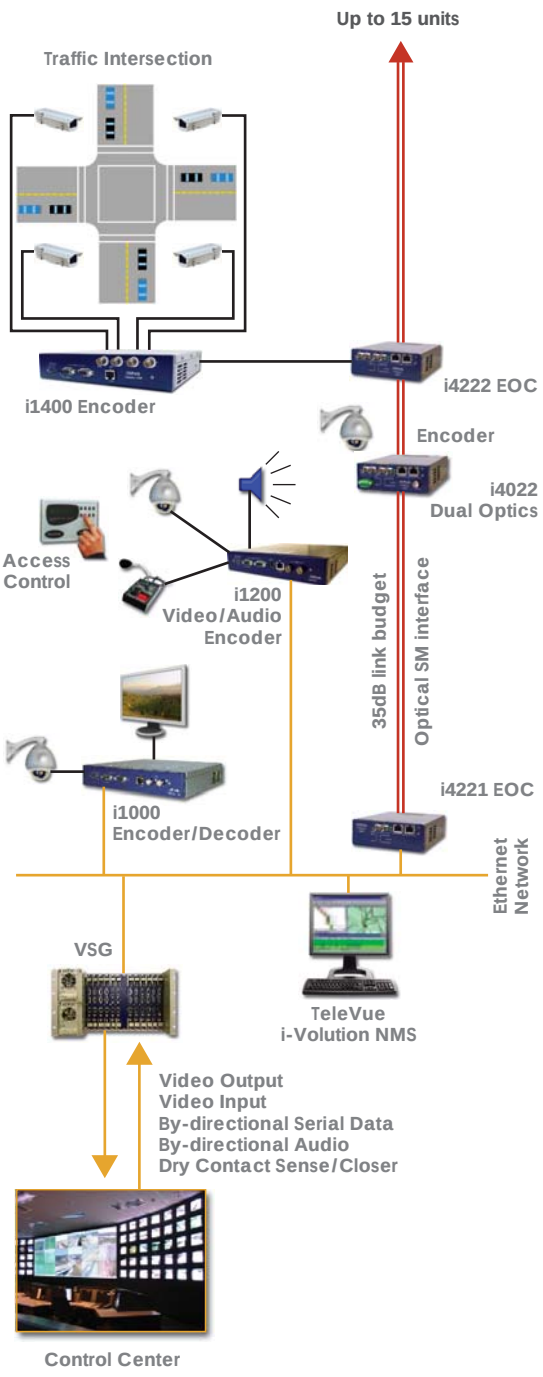

Video

Analog Video	NTSC (30 fps), PAL (25 fps)
Channels/Connector	(2) BNC, 75 ohms
IP connectivity	Unicast and Multicast (UDP)
Digital Encoding	MPEG-1 (ISO/IEC 11172-2) and MPEG-2 (ISO/IEC 13818-1 Transport Stream or ISO/IEC 13818-2 Elementary Steam) MP@ML
Data Rate	128 kbps to 8 Mbps aggregate in Transport Stream and up to 12 Mbps aggregate in Elementary Stream
Digital Decoding	Decoder automatically detects incoming MPEG-1/2 TS or ES Stream
Data Rate	128 kbps to 12 Mbps aggregate in both Transport and Elementary Stream

Resolution	NTSC	PAL
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)
Channels/Connectors	(2) DB9-F
Interface	EIA-232/422/485 - 2/4 Wire, Half/Full Duplex, Software Programable
Data Rate	300bps to 115.2 kbps

LAN

Format	IEEE 802.3 Ethernet
Channels/Connector	(1) / RJ45
Interface	10/100 Base-T Ethernet, Half/Full Duplex, Auto-Sensing
Data Rate	10/100 Mbps
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

Alarms

Via NMS/SNMP:
- Video Loss Detection
- Video Motion Detection
- Unit Configuration Change and 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

VSG Chassis

	VSG	VSG-L
Chassis Card Slots	12	3
Hot insertion	Yes	Yes
Power	90 to 264 VAC	85 to 264 VAC
Frequency	47 to 63 Hz	47 to 63 Hz
Consumption	350 W	60 W
Height	12.3" (31 cm)	3.5" (8.9 cm)
Width	19" (48 cm)	19" (48 cm)
Depth	13" (33 cm)	16" (40.6 cm)

Environmental

Temperature	-10°C to +50°C with relative humidity of 5% to 95%, Non-Condensing
Environmental Protection	PCB Conformal Coating

Regulatory Approvals

Safety	EN 60950, AS/NZS 3548, UI1950 (VSG) / EN 60950, UI1419 (VSG-L)
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 ports		Audio ports		Ethernet ports	Data ports	Dry contact		VSG Slots required
	Encoding	Decoding	Encoding	Decoding			Sense	Closer	
VSG 1000-E Video Encoder	2				1	2			1
VSG 1000-D Video Decoder		2			1	2			1
Other VSG modules variants - Refer to individual datasheets									
VSG 1200-E MultiMedia Encoder	2 - 1		1	1	1	2			1
VSG 1200-D Multimedia Decoder		1 - 2	1	1	1	2			1
VSG 1200-I/O Panel							4	4	1

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