VN-755IPV3 High-Performance 4-Channel IP Color Camera/Server

- **State-of-the-art IP Camera/Digital Video Server transmits high quality video across the network for remote viewing and recording**
- **Powered by ViconNet Version 3 software**
- **Transmission of up to 4 digital video channels, 3 external analog inputs in addition to the camera itself**
- **Maximum video transmission rate of 30 fps (25 fps PAL) at 720 x 488 pixels (864 x 586 PAL)***
- **Uses optimized proprietary compression based on MPEG4 that optimizes data and maximizes picture quality**
- **Simultaneous transmission and remote configuration of multiple channel video across the LAN and WAN to connected Kollector Elite recorders and ViconNet workstations**
- **Up to 10 simultaneous viewing/recording streams per camera**
- **Museum Search (Smart Search) feature scans hours of video in minutes**
- **MD5 algorithm video authentication ensures data integrity**
- **Password protection for configuration**
- **DSP camera features electronic iris, fine back focus, DC-drive autoiris and linelocking functions**
- **Sensitivity of 0.05 footcandles (0.5 lux)**
- **Features video motion detection**

The VN-755IPV3 IP 4-Channel Camera/Server is a powerful IP video source for a complete digital video management system based on ViconNet software platform. It is fully compatible with all ViconNet systems and is remotely managed and controlled from ViconNet workstations and Kollector Elite recorders. The IP camera/server provides 4 video channels, 3 external analog video inputs in addition to the camera itself. As a single-channel IP camera, the VN-755IPV3 delivers up to 30 fps of high-quality video across the network.* The camera provides a total nominal bandwidth of 1.7 Mbps at Q5 (360 x 244 pixels).

Equipped with a 100 Mbps LAN interface board, the camera/server allows direct plug-in to a network switch. Images received from the IP camera and the other external cameras connected to its external inputs can be displayed, recorded or archived like any other ViconNet video component using the ViconNet management platform.

The VN-755IPV3 has 4 levels of video resolution, Frame, Field, CIF and HCIF, with 2 levels of compression, Normal (optimized) MPEG4 and Full (JPEG). These comprise 8 selectable quality levels.

The VN-755IPV3 utilizes an MD5 video authentication algorithm which is based on a 128-bit message used to identify data integrity. Viewing authenticated video can be configured from the software. In addition, the IP camera/server supports alarm reporting, macros, audio and alarm configuration through the ViconNet software interface.

The VN-755IPV3 combines excellent picture quality with advanced features. Digital Signal Processing (DSP) control offers crisp lines and detail reproduction. The CCD device has over 380,000 pixels (440,000 PAL), providing a sharp color image with accurate color rendition.

A minimum scene illumination of 0.05 footcandles (0.5 lux) provides usable video output at f/1.2, 25 IRE, incandescent lighting. Horizontal resolution is 480 TV lines.

The VN-755IPV3 accepts DC-drive (CS-G) lenses. A 4-pin connector is provided. All controls and connectors are conveniently located either on the rear panel or side. Synchronization is line locking; multiple cameras can be synchronized using the line-lock function.

The VN-755IPV3 accepts CS-mount or C-mount lenses. A fully isolated power input provides stable images when the VN-755IPV3 is used on a common power supply with other cameras.

The VN755-IPV3 meets UL 2044 standards and complies with radiation requirements for an FCC Class A device.

Vicon strongly recommends the use of uninterruptible power supply systems (UPS) to prevent voltage fluctuations that can affect operation, cause video loss and damage to the equipment..

**30 fps with no analog cameras connected; max of 15 fps with additional external cameras connected.*

ASSOCIATED EQUIPMENT AND ACCESSORIES

Model VN-755IP-KIT, Product Code 8775: Alarm/Audio Accessory Kit; provides for alarm and audio capability.

ViconNet VN1000V3 Master Workstation Software, Product Code 8797-: Software CD for a PC for use with Kollector Elite and Pro series recorders and ViconNet IP video cameras and servers; registration required for use. Product Specification V113.

ViconNet VN-NVR Network Video Recorder: PC preloaded with VN1000V3 Software for use with Kollector Elite and Pro series recorders and ViconNet IP video cameras and servers; registration required for use. Product Specification V113.

Kollector Elite Digital Video Recorder, Product Code varies by model: 16-channel networked digital video recorder for use with Kollector Pro Series recorders, ViconNet IP video cameras and servers and ViconNet VN-NVR systems. Product Specification V112.

NETSWITCH-16, Product Code 8495-00: 16-port network switch, includes 10/100Mbps ports, desktop/wall mount, 120 VAC. Product Specification 161.

NETSWITCH-24, Product Code 8495-10: 24-port network switch, includes 10/100/1000Mbps ports, rack mount, 120 VAC. Product Specification 162.

Uninterruptible Power Supplies: 725 VA unit with DB9 (RS-232) and USB ports; 120 VAC input/output. Product Specification V147.

Model	Product Code	Description
S24WPS-1	7028-10	Single-channel, indoor/outdoor, 2 amps, 120 VAC input, 24 VAC output
S24PS-230	7027-01	Single-channel, indoor, 2.5 amps, 120/230 VAC input, 24 VAC output
V248-300PS	6422-10	Eight-channel, indoor, 120 VAC input, 24/28C output, 12.5/10 A (total)
V2416-8PS	7669	Sixteen-channel, indoor, 120 VAC input, 24 VAC output, 0.5 A/channel (8 A total)
V2448-175PS	6410-20	Four-channel, indoor, 120 VAC input, 24/28 VAC output (jumper selectable), 7/6.25 amps (total)

Caution: *Note that on multi-channel units, the amperage stated is the total for all channels. To assure sufficient current to individual cameras, connect only the number of cameras that use less than the maximum supply current.*

Power Supplies

Network Considerations

The VN-755IPV3 4-Channel IP Camera can be connected to any ViconNet network. Kollector Elite Recorders and ViconNet Workstations can be used for live viewing and recording of network-streamed video. A network can be as simple as a single VN-755IPV3 4-Channel Camera connected to a ViconNet Workstation or can be complex with the addition of several networks interconnected via WAN.

When adding a VN-755IPV3 4-Channel IP Camera to the ViconNet network, the following items must be considered:

- The number of cameras on a switch with respect to switch capabilities and system bandwidth mapping.
- Bandwidth limitations on ports connected to workstations (using 100 or 1000 Mbps).
- Workstation capabilities such as processing speed and disk write speed.
- Storage size and location types including local Workstation recording, attached SCSI RAID and integrated NAS/SAN devices.

Refer to the network diagrams on the next page for sample configurations.

Basic video bandwidth performance can be seen below. This chart shows a VN-755IPV3 single video channel at 30 FPS with varied quality settings and video motion environments. 30 FPS is the maximum video frame speed from the VN-755IPV3. Lower frame speeds can be attained down to 1 FPS. Bandwidth calculations can be scaled down from the chart data. For example:

A VN-755IPV3 set at 10 FPS would be expected to have a bandwidth of 0.5 Mbps at Q5 and in a High video motion environment.

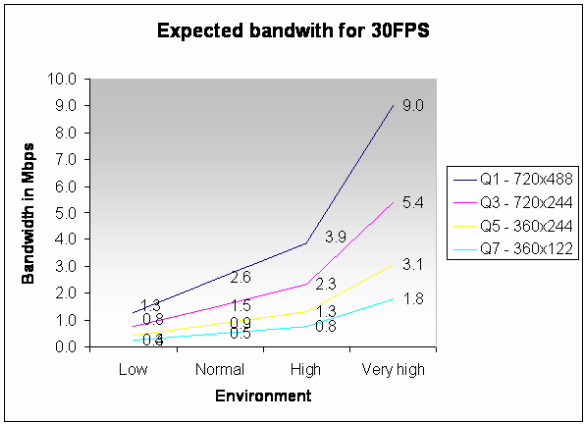


Table 1: Hard Drive Consumption Rate

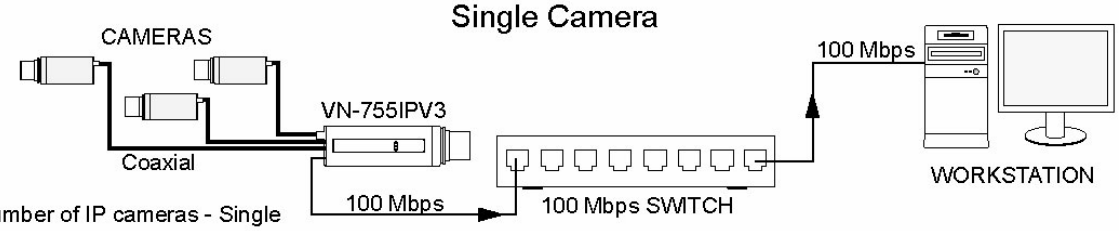
VN-755IPV3	Remote Hard Drive Storage (GB)								
	60	200	300	500	600	900	1000	2000	3000
Days Recording	22	73	110	183	220	330	366	732	1098

Note: This table is based on the following conditions:

- 24 hours normal activity with 50% detected movement over time, Normal compression and Quality Q5 (360 x 244 pixels NTSC, 432 x 293 pixels PAL)

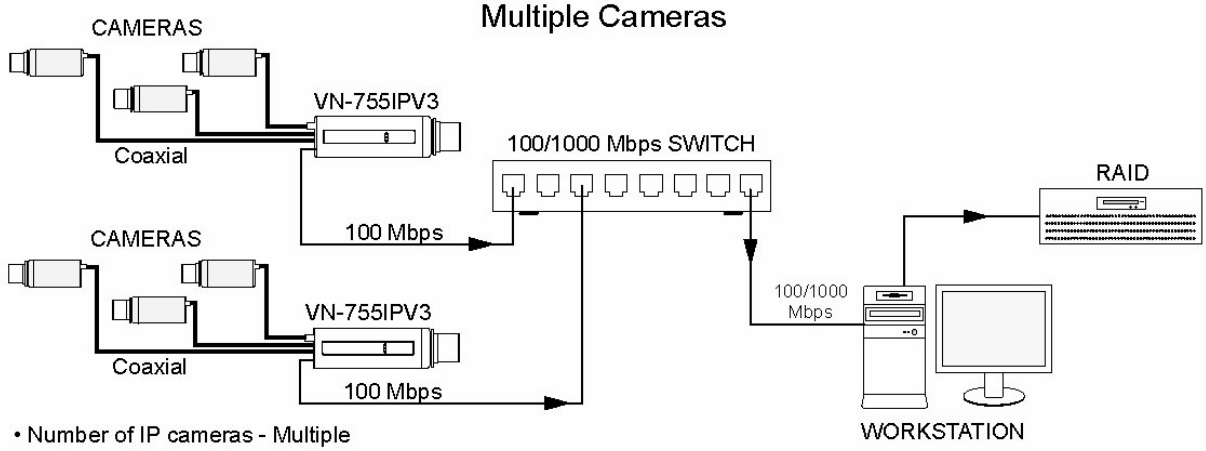
- Recording durations may vary based on actual scene activity.

Single Camera



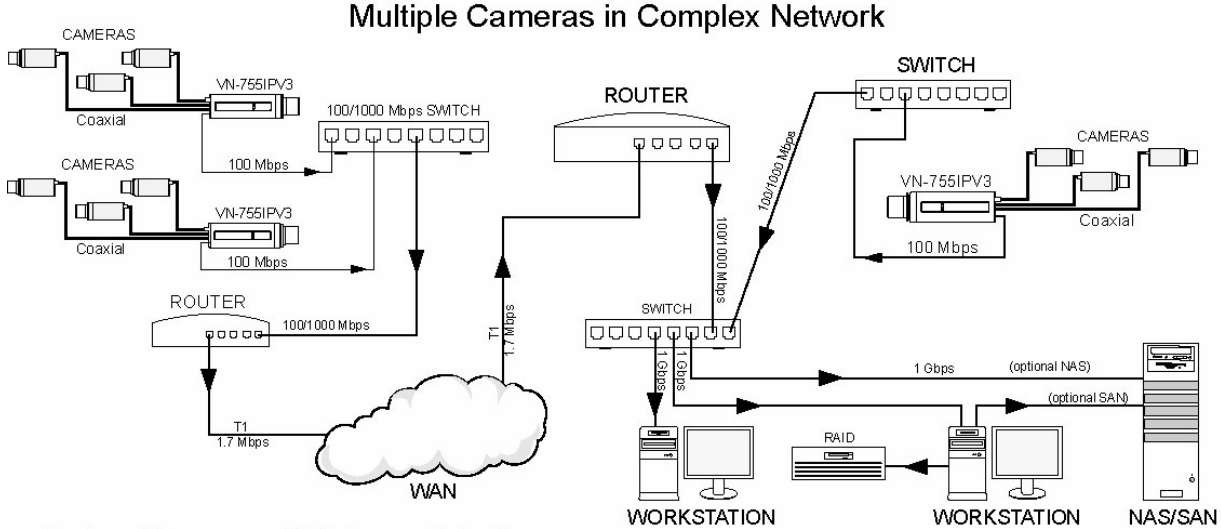
- Number of IP cameras - Single
- Number of video channels - 4
- Network bandwith - 100 Mbps
- Storage method - Local workstation hard drive

Multiple Cameras



- Number of IP cameras - Multiple
- Number of video channels - Multiple
- Network bandwith - 100 Mbps up to 7 VN-755IPV3 cameras @ Q1, 30fps (divided across all its inputs)
  - 1000 Mbps up to 70 VN-755IPV3 cameras @ Q1, 30fps (divided across all its inputs)
- Storage method - Local workstation hard drive or SCSI attached RAID

Multiple Cameras in Complex Network



- Number of IP cameras - Multiple on multiple sites
- Number of video channels - Multiple
- Network bandwith - Each switch to its limit (as shown above), constrained only by the WAN (T1 @ 1.7 Mbps)
- Storage method - Local workstation hard drive, SCSI attached RAID or NAS/SAN storage
- In the basic configuration, workstation recording capability is approximately 25 cameras

ELECTRICAL

Input Power Source: 24 VAC, ±10%.

Input Power Isolation: Internal fully isolated power input.

Current: 500 mA nominal.

Power Consumption: 12 W nominal.

Heat Equivalent: 0.7 btu/min (0.17 kg-cal/min) nominal.
Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of heat generated will be less and will vary from product to product. These figures are provided as an aid in determining the extent of cooling required for an installation.

Maximum Power Cable Distance: Refer to Table 2 (based on nominal power).

Radio-Frequency Emission Standard: FCC Class A.

Safety Standard: UL 2044.

VICONNET (IP)

Communication Platform: ViconNet Digital Video Management System Version 3.

LAN Interface: 100 Mbps, TCP/IP Unicast.

Number of Video Channels: 4, over LAN connection (1 internal and 3 external).

Video Formats Supported: NTSC and PAL, model dependant.

Video Transmission Rate: See Table 3.

Number of Simultaneous Video Streams: Maximum of 10 viewing/ recording streams per camera.

Video Transmission Resolution: 480 horizontal TV lines maximum at 720 x 488 pixel pallet (864 x 586, PAL).

Video Quality: ViconNet software quality 1-8, selectable on an 8-position bar with 2 compression level settings in resolutions 720 x 488 (864 x 586 PAL), 720 x 244 (864 x 293, PAL), 360 x 244 (432 x 293, PAL), 360 x 122 (432 x 146, PAL).

Audio: 1 line-level microphone input; 0 dbm, 32 KHz bandwidth, 600 ohm impedance, 2 V RMS (1 V p-p) output.

Alarm: 4, select N.O./N.C.

Video Bandwidth: 1.7 Mbps (per video stream), nom. See Bandwidth chart.

Hard Drive Consumption Rate: Refer to Table 1.

SOFTWARE OPERATION (ViconNet)

Network Setup: Standard network protocol type using IP addressing scheme and separate PC application software.

Site Authorization: Camera can be setup using remote recorder or workstation GUI. Permissions can be assigned for macro create & edit, alarm setup, Authentication, Reports and System Status. Supports up to 20 Groups and 50 Users.

Macro Create & Edit: System macros can be configured to use the camera's video. In addition, within macros, alarms can be sent and remote macros run.

Alarm Setup: An alarm can be triggered on video motion detection and loss. The alarm can be sent to remote units.

Authentication: The video from the camera can be set to view the Authentication status symbol (A) on the displayed video.

Picture Quality and FPS Priority: Camera video can be setup to prioritize recorded picture quality and video FPS. Priority can be assigned to user/macro recording for highest requested video quality or Master user control.

VIDEO CHARACTERISTICS

Image Device: 1/3-inch interline transfer CCD.

Active Picture Elements: NTSC: 768 (H) x 494 (V).
PAL: 752 (H) x 582 (V).

Sensitivity: 0.05 fc (0.5 lux).
Conditions: lens at f/1.2 and 25 IRE video output.

Horizontal Resolution: 480 lines.

Electronic Iris: NTSC: 1/60-1/100,000.
PAL: 1/50-1/100,000.

Scanning System: NTSC standard: 2:1 interlace, 525 lines, 30 frames/sec.
PAL standard: 2:1 interlace, 625 lines, 25 frames/sec.

Backlight Compensation: ON/OFF select.

Internal Cameras	Number of External Cameras	FPS (Total)
1	0	30
1	1-3	15

Table 3: Video Transmission Rate

Signal-to-Noise Ratio:	Better than 48 dB.
White Balance:	Automatic.
Video Signal Output:	1.0 V p-p VBS @ 75 ohms composite video.
Synchronization In:	Line-locking with vertical phase.
Gain Control:	Automatic (AGC), ON/OFF select.
Output for Autoiris:	DC-drive coil (CS-G) autoiris lenses.

CONTROLS AND CONNECTORS

External Controls:	Power Indicator: Red LED. Network Indicator: Green LED. Status Indicator: Amber LED. ALC Level: potentiometer. Mode Select DIP Switch: BLC ON/OFF. ALC/ELC (AI/EE). AGC ON/OFF. FLICKERLESS ON/OFF* AGC HI-GAIN (Turbo) ON/OFF. V-Phase Adjustment push buttons.
Connectors:	Power: 2-pin terminal (rear). Autoiris lenses (DC drive): 4-pin molded connector (side). Analog Video in (3): BNC (rear). Analog Video out: BNC (rear). Alarm in: RJ-45 (rear) through Telco box (VN-755IP-KIT). Network: RJ-45 CAT 5 (rear). Audio: RJ-45 (rear) through Telco box (VN-755IP-KIT). See rear Panel diagram.

Wire Size (AWG) Annealed Copper Wire	Maximum Distance ft (m)
20	240 (73)
18	375 (114)
16	600 (183)
14	960 (293)
12	1500 (4574)

Table 2: Maximum Power Cable Distances

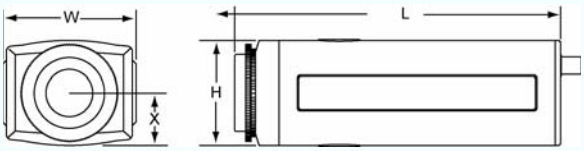
*****Used in Japan only*

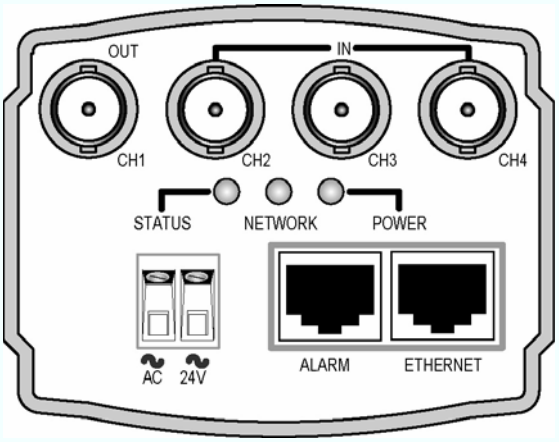
MECHANICAL

Dimensions:	See Figure Height (H): 2.4 in. (60 mm). Width (W): 2.9 in. (74 mm). Length (L): 7.1 in. (181 mm).
Distance from Base to Optical Center of Lens (X):	1.25 in. (32 mm).
Weight:	1.5 lb (0.68 kg).
Flange Back Adjustment:	CS mount: 12.5 mm. C mount: 17.5 mm.
Lens Mount:	C or CS mount.
Camera Mounting:	1/4-20 threaded hole in camera bottom and camera top.
Shipping Dimensions:	Height: 3.7 in. (95 mm). Width: 6.5 in. (165 mm). Length: 9.1 in. (230 mm).
Shipping Weight:	1.85 lb (0.84 kg).
Shipping Volume:	0.13 ft^3 (0.004 m^3).

ENVIRONMENTAL

Operating Temperature Range:	32 to 122° F (0 to +50° C).
Humidity:	Up to 90% relative, noncondensing.





Rear Panel