The MP-955IR I-Onyx® Megapixel IP IR Camera is a powerful IP video source for a complete digital video management system based on ViconNet® version 5 software. The camera is fully compatible with all ViconNet systems and is remotely managed and controlled from ViconNet workstations and Kollector® Elite recorders. The camera delivers high-quality video across the network.

Equipped with a 100 Mbps LAN interface board, the camera allows direct plug-in to a network switch. Images received from the IP camera can be displayed, recorded or archived like any other ViconNet video component using the ViconNet management software.

I-ONYX MP-955IR
MEGA-PIXEL CAMERAS

IP IR Megapixel Camera

- **Up to 1.3 megapixel resolution IP camera (SXGA 1280x1024 pixels)**
- **Compatible with ViconNet Version 5 software**
- **Transmits high quality video across the LAN and WAN for remote viewing and recording on ViconNet NVRs, DVRs and Workstations**
- **Uses MPEG-4/M-JPEG compression that optimizes file size and maximizes picture quality**
- **Power over Ethernet (PoE) eliminates the need for separate power supply**
- **A range of fps available depending on resolution**
- **Supports Multicast**
- **Multi-stream with variable frame rate in the same compression**
- **Remote configuration across the network**
- **Password protection for configuration**
- **Provides IR illumination with 24 IR LEDs, allowing functionality in low-light situations**
- **Camera features electronic iris, BLC, AGC, white balance, flickerless**
- **Integral 3.3-12 mm/F1.6 megapixel lens**
- **IP 66 weatherproof bullet shape housing**

Megapixel cameras provide higher resolution, which results in images with more detail and clarity. They also offer the ability to cover a larger area while maintaining the detail in the image. This provides the capability to digitally zoom further into the live or the recorded video without losing focus and pixelating.

The cameras support either Multicast or Unicast and allows networks that support multicast to take advantage of this feature. Multistream support allows viewing and recording video at different frame rates (fps) at the same compression (MPEG-4 or M-JPEG).

The MP-955IR is a 1/3-inch format camera with a progressive scan CMOS image device. It has 1280 x 1024 effective pixels. It has a maximum resolution of SXGA (1280 x 1024) with an image frame rate of 8 fps (lower resolutions provide higher fps). The camera offers a selectable compression type of MPEG-4 or M-JPEG.

With IR OFF, the camera has a sensitivity 0.0046 fc (0.05 lux) in B/W mode and 0.046 fc (0.5 lux) in color mode, at F1.8, 30 IRE, max AGC. The camera automatically switches from color mode to black-and-white mode under 0.37 fc (4 lux). With the IR ON, sensitivity is 0 fc (0 lux). Additionally, the MP-955IR provides 24 IR LEDs to illuminate up to 66 ft (20 m) at 30 IRE.

The MP-955IR camera includes a 3.3-12 mm/f16 megapixel varifocal lens. All connectors are conveniently located on the rear panel. Synchronization is internal. Camera may be powered by either PoE or a 12 VDC power input.

The camera is housed in a weatherproof IP66 rated bullet shaped housing with sunshield for outdoor use. A wall mount is available, model MP-955IR-WM.

The MP-955IR camera complies with radiation requirements for an FCC Class A device and CE.

ASSOCIATED EQUIPMENT AND ACCESSORIES

MP-955IR-WM Wall Mount: Product Code 9607-22: Mount designed specifically for wall mounting the MP-955-IR.

ViconNet VN-WS-SW Software: Full capability master workstation software package, except the recording function, for a PC for use with Kollector recorders; registration required for use. Product Specification V113-09.

ViconNet VN-NVR-SW Software/VN-NVR Master Workstation: ViconNet master workstation software package (primarily for recording function)**/**PC preloaded with Master Control Software for use with Kollector recorders; registration required for use. Product Specification V113-20.

Kollector Family of Digital Video Recorders, Product Code varies by model: 16-channel networked digital video recorders. Includes the Kollector Elite, Kollector Pro and Kollector Lite series. Product Specification V112, V128 and V185 respectively.

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.

NETSWITCH-24POE Network Switch, Product Code 8495-20: 16-port, 10/100/1000 autosensing network switch with a choice of 24 VAC or PoE power source, stackable. Product Specification V162-20.

Uninterruptible Power Supplies: 725 and 1000 VA units with DB9 (RS-232) and USB ports; 120 VAC input/output. Product Specification V147.

| **Vicon Product Facts** FC CE | Model No: MP-955IR | Product Code 9607-20 | SEC: 3 | SPEC: V194-11 | REV: 1009 | 1 |

Vicon part number 8009-7194-11-01
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Product specifications subject to change without notice.

Network and Storage Considerations

The MP-955IR IP Camera can be connected to any ViconNet version 5 network. ViconNet NVRs, DVRs and Workstations can be used for live viewing and recording of network-streamed video. A network can be as simple as a single camera connected to a ViconNet Workstation or can be complex with the addition of several networks interconnected via WAN. Refer to the network diagrams on the next page for sample configurations.

When adding an MP-955IR 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 SAN devices.

The MP-955IR offers a variety of configurations that impact on the video quality (resolution/fps) vs bandwidth usage. There is a choice of Video Bit Rate Mode (Constant Bit Rate and Variable Bit Rate) and Frame Rate Mode (Constant and Variable). If the Video Bit Rate is set to variable, the Video Quality can only be set to Low, Middle or High; if it is set to constant, the video maximum bit rate is unlimited. It is suggested that the Constant Bit Rate be selected, since it provides more exact control over the network; the parameters shown below have been tested and proven to provide the best quality of video.

Table 1: Constant Bit Rate Guidelines (MPEG-4 Mode)

		Video Settings			Expected Recording Duration		
Recording Requirement	Resolution	Frame Rate*		Video Maximum Bit Rate (K)	1 day	7 days	30 days
		NTSC	PAL				
	1.3 Megapixel (1280x1024, CMOS)	8 (constant mode)		2000	21.6 G	151.2 G	648.0 G
		4 (constant mode)		1200	13.0 G	90.7 G	388.8 G
		2 (constant mode)		500	5.4 G	37.8 G	162.0 G
		1 (constant mode)		256	2.8 G	19.4 G	82.9 G
	D1 (720x480@NTSC, 720x576@PAL)	30	25	1500	16.2 G	113.4 G	486.0 G
		15	12	750	8.1 G	56.8 G	243.1 G
		10	8	500	5.4 G	37.8 G	162.0 G
	CIF (352x240@NTSC, 352x288@PAL)	30	25	750	8.1 G	56.8 G	243.1 G
		15	12	384	4.1 G	29.1 G	124.4 G
		10	8	256	2.8 G	19.4 G	82.9 G
		5	5	128	1.4 G	9.7 G	41.5 G

*Maximum frame rate is 8 fps at 1.3 megapixel resolution.

Table 2: Constant Bit Rate Guidelines (M-JPEG Mode

Video Settings			Time Frame at Quality Level (50 is Recommended)								
Resolution	Frame Rate		1 day			7 days			30 days		
	NTSC	PAL	~25	~50	~75	~25	~50	~75	~25	~50	~75
1.3 Megapixel (1280x1024, CMOS)	8 (constant mode)	8 (constant mode)	77GB	135GB	195GB	539GB	945GB	1.4TB	2.3TB	4.05TB	5.85TB
	4 (constant mode)	4 (constant mode)	38GB	68GB	93GB	266GB	476GB	651GB	1.15TB	2.1T	2.8TB
	2 (constant mode)	2 (constant mode)	19GB	34GB	47GB	133GB	238GB	329GB	570GB	1.1TB	1.4TB
	1 (constant mode)	1 (constant mode)	10GB	17GB	24GB	70GB	119GB	168GB	300GB	510GB	720GB
D1 (720x480@NTSC, 720x576@PAL)	30	25	88GB	152GB	190GB	616GB	1.1TB	1.4TB	2.65TB	4.6TB	5.7TB
	15	12	44GB	76GB	95GB	308GB	532GB	651GB	1.35TB	2.3TB	2.85TB
	10	8	29GB	51GB	64GB	203GB	357GB	448GB	870GB	1.55TB	1.95TB
	5	4	15GB	26GB	32GB	105GB	182GB	224G	450GB	780GB	960GB

Table 3: Variable Bit Rate Parameters

Video Quality	Min-Max Bit Rate
High	~1Mbps ~4.6Mbps
Middle	~500kbps ~2.6Mbps
Low	~300 kbps ~1.8Mbps

		Model No: MP-955IR	Product Code 9607-20	SEC: 3	SPEC: V194-10	REV: 1009
Vicon Product Facts	FC CE					

Single Camera

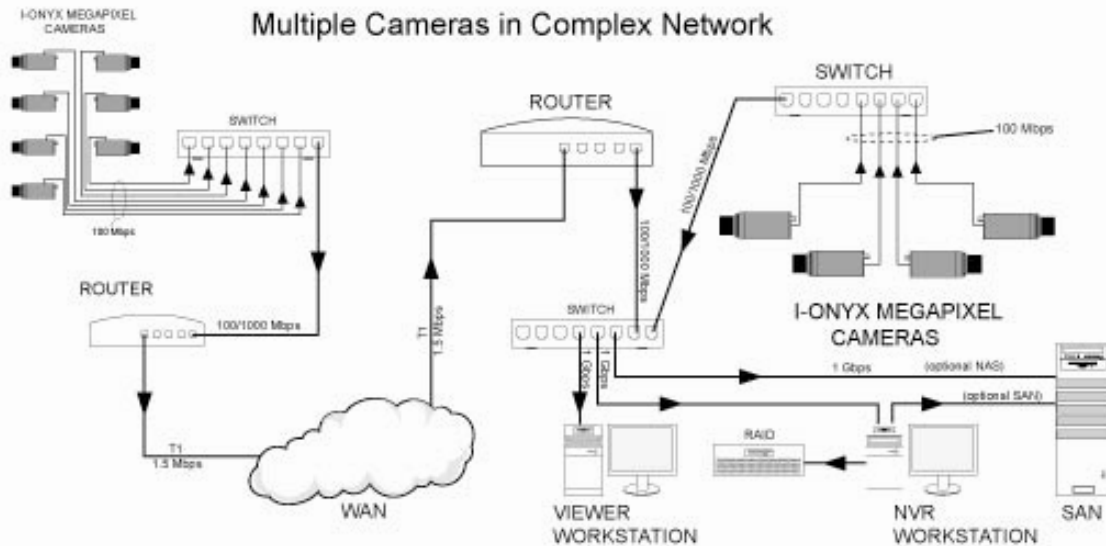I-ONYX MEGAPIXEL CAMERA — 100 Mbps — 100 Mbps SWITCH — 100 Mbps — NVR WORKSTATION
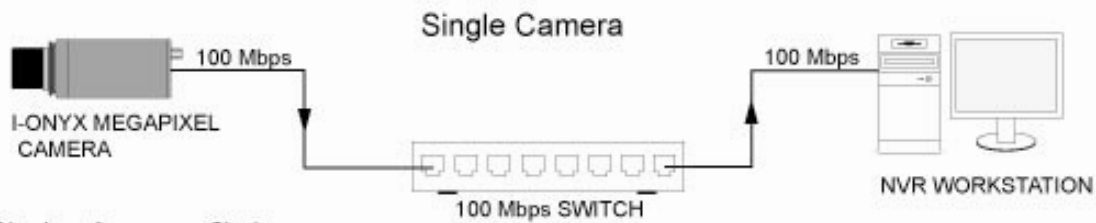
• Number of cameras - Single
• Network bandwith - 100 Mbps
• Storage method - Local workstation hard drive

Multiple Cameras

I-ONYX MEGAPIXEL CAMERAS — 100/1000 Mbps SWITCH — 100 Mbps — 100/1000 Mbps — RAID — NVR WORKSTATION
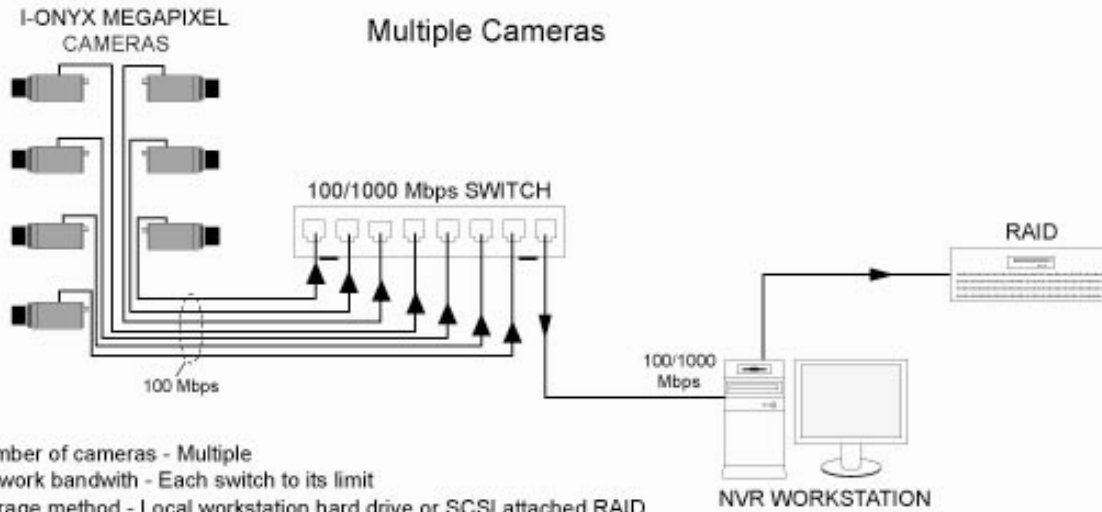
• Number of cameras - Multiple
• Network bandwith - Each switch to its limit
• Storage method - Local workstation hard drive or SCSI attached RAID

Multiple Cameras in Complex Network

I-ONYX MEGAPIXEL CAMERAS — SWITCH — ROUTER — SWITCH — 100 Mbps — ROUTER — 100/1000 Mbps — 100 Mbps — I-ONYX MEGAPIXEL CAMERAS — SWITCH — T1 1.5 Mbps — WAN — VIEWER WORKSTATION — RAID — 1 Gbps (optional NAS) — NVR WORKSTATION — (optional SAN) — SAN

• Number of cameras - Multiple on multiple sites
• Network bandwith - Each switch to its limit (as shown above), constrained only by the WAN (T1 @ 1.5 Mbps)
• Storage method - Local workstation hard drive, SCSI attached RAID or SAN storage

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V194-10 | REV: `1009 | 3 |

ELECTRICAL

Input Power Source: 12 VDC or PoE (IEEE 802.3af Class 3).

Current: 12 VDC: 500 mA.
PoE: 130 mA.

Power Consumption: 12 VDC: 6 W with IR ON.
PoE: 6.24 W with IR ON.

Heat Equivalent: 12 VDC: 0.34 btu/min (0.086 kg-cal/min);
PoE: 0.35 btu/min (0.089 kg-cal/min).
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.

Radio-Frequency Emission Standard: FCC Class A; CE.

VICONNET (IP)

Communication System: ViconNet Digital Video Management System Version 5.

LAN Interface: 10/100 Mbps, TCP/IP Unicast/Multicast.

Number of Video Channels: 1, over LAN connection.

Picture Resolution and Frame Rate: SXGA: 1280 x 1024 up to 8 fps;
HD720: 1280 x 720 up to 10 fps;
VGA: 640 x 480 up to 30 fps.

Audio Input/Output: Future feature.

Alarm: Future feature.

Video Bandwidth: Refer to Tables 1 and 2.

Hard Drive Consumption Rate: Refer to Tables 1 and 2.

SOFTWARE OPERATION (ViconNet)

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

Site Administration: Camera can be setup from NVRs, DVRs and Workstations.

Macro Create & Edit: System macros can be configured to use the camera's video.

VIDEO CHARACTERISTICS

Image Device: 1/3-inch micron progressive scan CMOS.

Effective Pixels: 1280 x 1024

Sensitivity: IR LED OFF:
Color: 0.046 fc (0.5 lux);
B/W: 0.0046 fc (0.05 lux).
Conditions: lens at f/1.8 and 30 IRE video output, max AGC. Color mode automatically switches to B/W under 0.37 fc (4 lux)
IR LED ON, B/W: 0 fc/lux.

Resolution: 1.3 megapixel SXGA (1280 x 1024).

IR Sensitivity: 700 nm to 1100 nm.

IR LEDs: 24 IR LEDs (850 nm).

IR Working Distance: 66 ft (20 m).

Electronic Iris: 1/10-1/2000, 50/60 Hz.

Day/Night Function: Mechanical IR cut filter.

Flickerless: 1/120 sec (60 Hz; 1/100, 50 Hz)

Backlight Compensation: Yes.

Signal-to-Noise Ratio: Better than 45 dB.

White Balance: 6 configurable modes: Auto, indoor 1, indoor 2, outdoor 1, outdoor 2, hold current, manual.

Video Signal Output: 1.0 V p-p VBS @ 75 ohms composite video.

Synchronization In: Internal.

Gain Control: Automatic (AGC), user defined.

Compression: MPEG-4 or M-JPEG, selectable.

Lens: Focal Length: 3.3-12 mm/F1.6.
Angle of View: 89.8° - 23.9° (horizontal).

CONTROLS AND CONNECTORS

External Controls: Power Indicator: Red LED.
Reset button: Sets factory defaults.

Connectors: Power: 12 VDC: 3-pin terminal;
PoE: RJ-45.
Ethernet: RJ-45 CAT 5.
Audio/Alarm: screw terminal connector (for future use).
See figure below.

CAMERA SOFTWARE

Network: Ethernet: 10/100Base-T.
Protocol: TCP, UDP, IP, HTTP, DHCP, PPPoE, RTP, RTSP, FTP, SMTP, DNS, DDNS, NTP, ICMP,OGMP, ARP, 3GPP.
Web Browser: Microsoft Internet Explorer 6.0 or above.

Software Security: Password protection configured by administrator.

Connections

MECHANICAL

Dimensions: See Figure.
Height (H): 2.98 in. (75.6 mm).
Width (W): 3.03 in. (77 mm).
Length (L): 8.66 in. (220 mm).

Weight: 1.5 lb (0.69 kg).

Camera Mounting: Mounts onto most Vicon mounts. Wall mount available.

Shipping Dimensions: Height: 3.75 in. (95 mm).
Width: 12.0 in. (305 mm).
Length: 10.0 in. (254 mm).

Shipping Weight: 3.3 lb (1.57 kg).

Shipping Volume: 0.26 ft^3 (0.007 m^3).

ENVIRONMENTAL

Operating Temperature Range: -4 to 122° F (-20 to +50° C).

Humidity: 20 to 80% relative, non-condensing.