Kollector Network Server
16-Channel Digital Video Servers

- **Powered by ViconNet software**

- **30, 60 and 120 fps models**

- **Hard drive capacity to 800 GB for long-term local storage**

- **Hybrid proprietary compression based on MPEG4**

- **Maximum resolution of 480 TV lines @ 640 × 480 (576 TVL @ 768 × 576 PAL) pixel capture without loss of video quality**

- **Simultaneous record and transmission of up to 16 local digital video channels**

- **Macros are used for programming recording, alarm and display events**

- **Remote setup from any recorder or workstation**

- **RS-422 PTZ control via optional RS-232 converter**

- **Built-in GUI provides configuration setup without affecting recording or transmission**

Kollector Network Server (KN) is a 16-channel digital video server powered by a software platform called ViconNet. This platform allows each KN server to record and transmit video to other Kollector Elite recorders and ViconNet workstations over the network. These powerful units also have internal hard drives for local storage.

ViconNet software is the application that manages all Kollector Elite and Pro recorders, workstations and servers.

ViconNet utilizes two different video compression methods, selectable based on the application's requirements.

- NORMAL: Optimized MPEG4; a proprietary compression algorithm developed by Vicon that produces outstanding video quality and extended recording durations.
- FULL: JPEG; standard full frame compression for use in situations that cannot use a motion compensation compression.

ViconNet uses an MD5 type video authentication algorithm. MD5 is a standard authentication that is based on a 128-bit message used to verify data integrity.

Kollector Net Server has a recording rate based on system settings, video scene content and selected hard drive size. Refer to Table 4 for actual GB per day and total recording days data.

Kollector Net Server includes a fully integrated GUI for system configuration, limited playback and record on a SVGA monitor and support for NTSC/EIA and PAL/CCIR video cameras. The toolbar provides the functions of scheduling and macros, report generation, setup, and user logout and shutdown. The Site & Device tree allows a user to view and activate locally connected cameras and PTZ cameras. The display controls allow a user to set the image quality.

Kollector Net Server is housed in an industrial-hardened case with all connections made from the back panel. It has a universal power supply that can accept 110 - 240 VAC.

Vicon requires the use of uninterruptible power supply systems (UPS) to prevent voltage fluctuations that can affect operation, cause video loss and cause damage to the equipment. Failure to comply voids the warranty.

ASSOCIATED EQUIPMENT AND ACCESSORIES

ViconNet VN1000 Master Workstation Software, Product Code 8220: Software CD for a PC for use with Kollector Elite and Pro series recorders; registration required for use. Product Specification V113.

ViconNet VN5000 Master Workstation, Product Code 8221: PC preloaded with VN1000 Master Control Software for use with Kollector Elite and Pro series recorders; registration required for use. Product Specification V113.

Model VN-MON Monitor, Product Code 8222: 17-inch VGA monitor for use with Kollector Elite and Pro series recorders and ViconNet VN5000 systems.

Model VN-17FLT Monitor, Product Code 8237: 17-inch flat-screen monitor for use with Kollector Elite and Pro series recorders and ViconNet VN5000 systems. Product Specification V127.

Model NETSWITCH-8 Network Switch, Product Code 7787: 8 port, 10/100 autosensing network switch, stackable.

Model V650-UPS Uninterruptible Power Supply, Product Code 8298: 650 VA/400 W unit with DB-9 port (RS-232) and 120 VAC input/output.

Vicon Product Facts	ⓊL CE FC	Model No: KN	Product Codes: See Table 1	SEC: 1	SPEC: V155	REV: 1104	1

Vicon part number 8009-7155-00-01
Windows is a registered trademark of Microsoft Corporation.

Product specifications subject to change without notice.

Model	Product Code	Description
KN30-40	8466-00	Kollector Network Server, 16-channel networked digital video server, 30 fps, 40 GB HD, 4 sensor channels, NTSC/EIA and PAL/CCIR
KN30-250	8467-00	Kollector Network Server, 16-channel networked digital video server, 30 fps, 250 GB HD, 4 sensor channels, NTSC/EIA and PAL/CCIR
KN30-600	8468-00	Kollector Network Server, 16-channel networked digital video server, 30 fps, 600 GB HD, 4 sensor channels, NTSC/EIA and PAL/CCIR
KN60-40	8469-00	Kollector Network Server, 16-channel networked digital video server, 60 fps, 40 GB HD, 4 sensor channels, NTSC/EIA and PAL/CCIR
KN60-400	8470-00	Kollector Network Server, 16-channel networked digital video server, 60 fps, 400 GB HD, 4 sensor channels, NTSC/EIA and PAL/CCIR
KN60-800	8471-00	Kollector Network Server, 16-channel networked digital video server, 60 fps, 800 GB HD, 4 sensor channels, NTSC/EIA and PAL/CCIR
KN120-40	8472-00	Kollector Network Server, 16-channel networked digital video server, 120 fps, 40 GB HD, 4 sensor channels, NTSC/EIA and PAL/CCIR
KN120-400	8473-00	Kollector Network Server, 16-channel networked digital video server, 120 fps, 400 GB HD, 4 sensor channels, NTSC/EIA and PAL/CCIR
KN120-800	8474-00	Kollector Network Server, 16-channel networked digital video server, 120 fps, 800 GB HD, 4 sensor channels, NTSC/EIA and PAL/CCIR

Table 1: Models, Product Codes and Descriptions

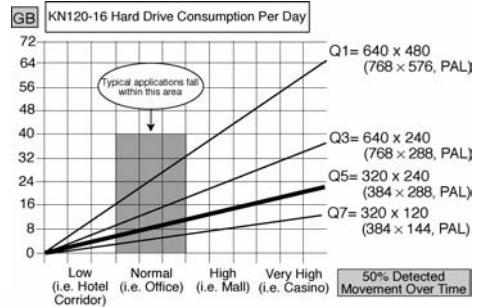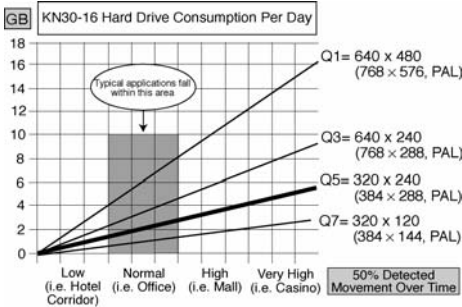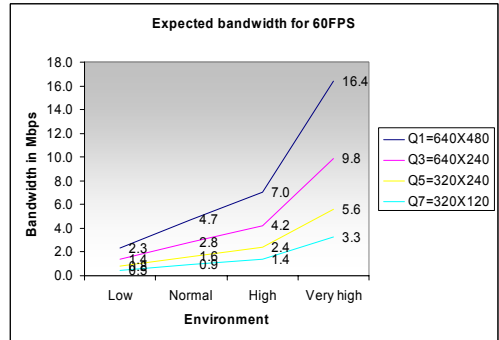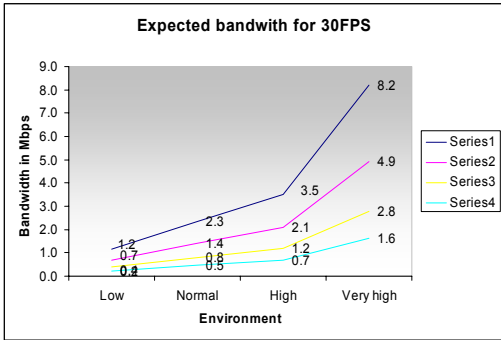| MODELS	SPECIFICATIONS		
	Internal Hard Drive (GB)	Frame Rate (max fps)	Video Channels
KN30-40	40*	30	16
KN30-250	250*	30	16
KN30-600	600*	30	16
KN60-40	40*	60	16
KN60-400	400*	60	16
KN60-800	800*	60	16
KN120-40	40*	120	16
KN120-400	400*	120	16
KN120-800	800*	120	16

*20 GB of space is used for the application.

Table 2: Kollector Net Server Overview

Compression Type	Resolution and Compression Rate							
	1 (Frame) 640 x 480 (768 x 576 PAL)	2 (Frame) 640 x 480 (768 x 576 PAL)	3 (Field) 640 x 240 (768 x 288 PAL)	4 (Field) 640 x 240 (768 x 288 PAL)	5 (CIF) 320 x 240 (384 x 288 PAL)	6 (CIF) 320 x 240 (384 x 288 PAL)	7 (HCIF) 320 x 120 (384 x 144 PAL)	8 (HCIF) 320 x 120 (384 x 144 PAL)
	High	Low	High	Low	High	Low	High	Low
FULL (JPEG)	Largest Picture Best Quality Full Refresh	Largest Picture Excellent Quality Full Refresh	Large Picture Very Good Quality Full Refresh	Large Picture Good Quality Full Refresh	Medium Picture Average Quality Full Refresh	Medium Picture Fair Quality Full Refresh	Small Picture Low Quality Full Refresh	Small Picture Very Low Quality Full Refresh
NORMAL (MPEG4)	Largest Picture Best Quality Periodic Refresh	Largest Picture Excellent Quality Periodic Refresh	Large Picture Very Good Quality Periodic Refresh	Large Picture Good Quality Periodic Refresh	Medium Picture Average Quality Periodic Refresh	Medium Picture Fair Quality Periodic Refresh	Small Picture Low Quality Periodic Refresh	Small Picture Very Low Quality Periodic Refresh

Table 3: Kollector Net Server Video Quality

Expected bandwith for 30FPS

Expected bandwith for 60FPS

KN30-16 Hard Drive Consumption Per Day

KN120-16 Hard Drive Consumption Per Day

KN60-16 Hard Drive Consumption Per Day
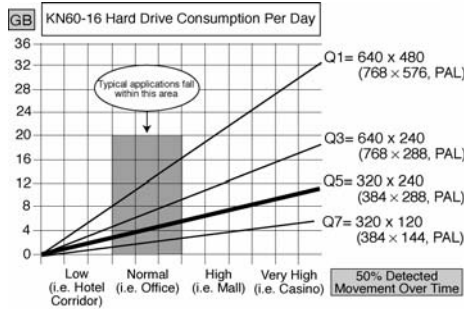
	Models								
	KN30-40	KN30-250	KN30-600	KN60-40	KN60-400	KN60-800	KN120-40	KN120-400	KN120-800
Hard Drive Size	40*	250*	600*	40*	400*	800*	40*	400*	800*
Days Recording	16	116	286	9	90*	193*	4.5	45	96

Note: This table is based on the following conditions:
- *24 hours normal activity with 50% detected movement over time, Normal compression and Quality Q5 (320 x 240 pixels NTSC, 384 x 288 pixels PAL)*
- *Recording durations may vary based on actual scene activity.*
- *Recording data does not include audio data (0.7 GB/12 hour day/microphone).*
- ** 20 GB of space is used for the application.*

Table 4: Kollector Net Server Typical Recording Durations

ELECTRICAL

Input Voltage: 120 – 230 VAC +/- 10%, 50/60 Hz nominal.
Note: Vicon requires the use of uninterruptible power supply systems (UPS) to prevent voltage fluctuations that can affect operation and cause damage to the equipment. Failure to comply voids the warranty.

Current: 2.3 A.

Power Consumption: 300 W nominal.

Heat Equivalent: 17.0 btu/min (4.3 kg-cal/min).
Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of the 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.

System: CPU: Intel® Celeron® 2.0 GHz minimum.
RAM: 512 MB.
HDD: 40 – 800 GB. (Based on model. See Table 2.)
LAN Card: 3Com 100 Mbps TPO.

Connector Types/ Quantities: Analog Video Inputs: 16 BNC-F (using provided cable adapter).
Power: 1 standard 3-conductor female socket. 1 power toggle switch.
VGA Video Output: 1 standard VGA port.
Sensor Input Port: 4 NO/NC in screw terminal block, software selectable.
PTZ Control Port: 1 DB-9 RS-232 serial port used with provided RS-422 adapter.
Network Port: Ethernet 100Base-T RJ-45 jack.
Keyboard Port: 5-pin DIN jack (PS2).
Mouse Port: 5-pin DIN jack (PS2).

Video Level Input: 1.0 V peak-to-peak (140 IRE) nominal.
Luminance: 100 IRE +/- 15%.
Sync: 40 IRE +/- 15%.
Colorburst: 40 IRE +/- 15%.

Video Input Impedance: All BNC connectors: 75 ohms.

Video Formats Supported: NTSC, PAL, EIA and CCIR.

Video Recording Rate: 16 simultaneous channels @ 30, 60 or 120 frames per second, maximum. 30 fps per channel, maximum.

Video Recording Resolution: 480 horizontal TV lines maximum at 640 x 240 pixel palette; 768 x 288, PAL.

Video Quality: Selectable using a 4-position bar, from the Main Screen. There are 4 levels of resolution (Frame, Field, CIF, HCIF) with 2 levels of compression (Normal, Full) comprising 8 quality levels total, accessible from the Setup menu selections. Normal is Optimized-MPEG4 and Full is JPEG compression, see Table 3.

Video Bandwidth: Model dependant, see Bandwidth charts.

Hard Drive Consumption: Model dependant, see Table 4.

Camera to Recorder Analog Input Video Transmission Distance (coaxial cable distance): 1000 ft (305 m) nominal.

Sensor Input Type: Each alarm input is automatically configured as a normally opened (NO) or normally closed (NC) trigger.

VGA Monitor Output: SVGA, True-Color Mode with a minimum resolution of 1024 x 768.

VGA Video Display Modes: Multi-screen Display Mode for both live and Video Playback of 1, 4, 6, 9, 16 cameras.

Panel Indicators: 1 red LED used for HDD status indication.
1 green LED used for power indication.

Panel Key Lock: Key lock provided on front panel to secure all controls.

SOFTWARE OPERATION

Main Window Screen: A multi-channel display area containing up to 16 connected cameras, a current details area, a Site and Device Tree, a System Status Area, a Control Dialog Display Area, an Other Controls Area, a Playback Controls Area, a Function Controls Area, a Display Mode Controls Area, a Video Display Area and a Toolbar. Each area contains the necessary controls to operate and setup the system.

Site and Device Tree: A physical list of all locally connected cameras and PTZ cameras. The devices are represented by graphical symbols. Components in the Site and Device Tree are selectable and configurable.

Navigator Window: A set of function buttons used to access the video on-screen. The buttons include Frame buttons, Rewind buttons, and Fast Forward buttons.

Control Dialog Display Area: A space to work in conjunction with the Other Controls Area. When one of the Other Controls is selected, the corresponding button palette appears in this area.

Toolbar: An area providing access to all major functionality of the system. The Schedule/Macro, Reports, Setup, Logout and Shutdown buttons are accessible in this area. The Schedule/Macro button allows the running of preconfigured combinations of camera, sensor and PTZ programmed routines. The Reports button allows the viewing and printing of system status reports. The Setup button allows configuration of the system functions. The Logout button allows leaving the system without closing the software. The Shutdown button allows full system shutdown.

Display Mode Control Area: A palette of buttons used to select and modify the number of video channels displayed and monitored or recorded simultaneously.

Function Control Area: A palette of controls used to enable or disable the video recording as well as any currently running macros in the system.

Video Display Controls Area: A palette of buttons used to set the picture quality and resolution of the recorded and networked video. A 4-position bar allows the quality setting.

Other Controls Area: A palette of buttons that activate when a valid device is selected from the Site and Device Tree. When active, the selection of these buttons causes the Control Dialog Display Area to display additional control information. The Other Controls are Playback, PTZ, Controls, Print Export and Picture.

System Configuration: A Main Settings Menu used for setup of the network and sites, macros, devices, authorization, Alarms, Auto Login, Schedules, Auto Record, Storage Database Utilities, Authentication, Protocol Controls, Manual Record, Registration and Picture Quality.

Network and Sites Configuration: The network portion of this feature allows setup of a system Nucleus and Backup Nucleus. The Nucleus acts as the coordinator of all running system applications. The Backup Nucleus acts as the hot-standby Nucleus if the primary Nucleus goes offline. The Network Settings menu provides a comprehensive worksheet for each networked device.

Macro Configuration: Macros can be defined for recorded or displayed cameras, command duration, recording location, local viewing, device ID, picture quality, refresh mode, recording rate (fps), related devices (sensors/relays) and alarm activation.

Device Configuration: Devices can be configured for system recognition and operation. Valid devices are cameras (with PTZ) and sensors. All devices are assigned a unique ID number and title descriptor. Devices can also be setup for specific protocols and supported with existing manufacturer's drivers where applicable.

Authorization Rights Setup: Administrator and Guest group rights can be configured by specific site. Administrator rights provide authority to perform all system functions. Guest rights provide custom authority to perform any selected system functions.

Alarm Configuration: Alarms are programmed to annunciate under the conditions specified in the macro. Alarms can be triggered by physical sensors, detected video loss, detected video motion or messages sent over the network.

Storage Database Utilities: This utility allows setup and usage of locally detected hard disks.

Authentication: Video authentication is MD-5 based. It is established by site and affects both the source and destination of video. A check box is used to enable video authentication on the video generated by the local system.

Macro Function: System can be setup to perform routines of record and playback and alarm in a dedicated screen setup menu.

Log Reporting: Continuously running activity log.

Schedule Function: System can be set to record and display a video "tour" of multiple channels.

MECHANICAL

Application: Indoor.

Mounting: Standard 19 in. (483 mm) rack mount and stackable, 2U height.

Dimensions: Height (H): 3.5 in. (89 mm).
Width (W): 19.0 in. (483 mm).
Depth (D): 17.0 in. (431 mm).
Note: Dimensions exclude rack mount flanges, hardware and connectors. See Figure.

Weight: 26.0 lb (11.8 kg), approximately.

Construction: Steel case and hardware.

Color: Black.

Shipping Dimensions: Length: 23.5 in. (597 mm).
Width: 21 in. (533 mm).
Height: 9 in. (229 mm).

Shipping Weight: 36 lb (16.3 kg), approximately.

Shipping Volume: 4.75 ft^3 (0.13 m^3).

ENVIRONMENTAL

Unit Operating Temperature Range: 32 to 104° F (0 to 40° C).

Unit Operating Humidity Range: 0 to 95% relative, non-condensing.

Ideal Room Temperature Range: 66 to 75° F (19 to 25° C).

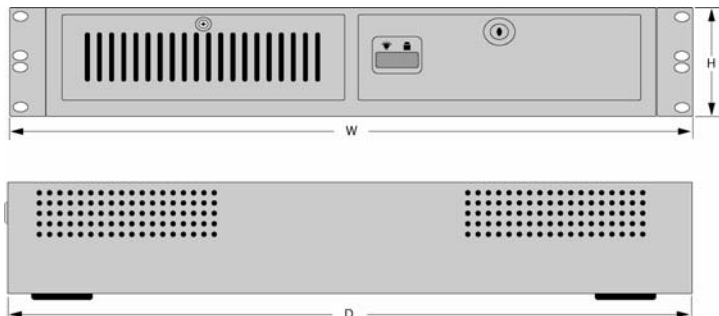**Ideal Room Humidity Range:** 80% relative, non-condensing.

Maximum Room Temperature Range: 50 - 86˚F (10 - 30˚C).

Storage Temperature Range: -4 to 158° F (-20 to 70° C).

Storage Humidity Range: 0 to 95% relative, non-condensing.

VICON INDUSTRIES

89 Arkay Drive
Hauppauge, NY 11788
www.vicon-cctv.com

TEL: 631-952-2288
FAX: 631-951-2288
TOLL FREE: 800-645-9116

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