XX112-02-00

Kollector™ Elite

Network Digital Video Recorder

VICONNET Powered by

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Installation & Operation Manual

VICON

Vicon Part No. 8009-8112-02-00 Section 1 Rev 904

VICON

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We stand behind the quality and dependability of every product with an industry leading Beneficial Use warranty.

If you are not satisfied with a Vicon product or service, I would like to know. Your complete satisfaction is the mission of every Vicon employee.

Sincerely,

Kenneth M. Darby
President

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About This Manual

This Kollector Elite Installation and Operation Manual is comprised of the following chapters:

- **Chapter 1, Introduction**, introduces the Kollector Elite Video Network Digital Video Recorder.
- **Chapter 2, Quick Installation**, is for experienced installers, and provides an illustration of how the Kollector Elite should be connected to its various peripherals.
- **Chapter 3, Installation**, is for novice or first-time installers, and provides step-by-step instruction on how to install the Kollector Elite.
- **Chapter 4, Operation**, describes how to power on, boot and power off the Kollector Elite.
- **Chapter 5, Troubleshooting**, provides information on what to do in the unlikely event of a Kollector Elite malfunction.
- **Chapter 6, Maintenance**, provides information on maintaining the Kollector Elite.
- **Chapter 7, Shipping Instructions**, describes the procedure to be followed when sending a Kollector Elite back to Vicon.
- **Chapter 8, Coaxial Cable Recommendations**, provides technical information for the recommended coaxial cable types.
- **Chapter 9, Twisted-Pair Cable Recommendations**, provides technical information for the recommended twisted-pair cable types.
- **Chapter 10, Technical Information**, provides the electrical, mechanical and environmental specifications for the Kollector Elite.

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Chapter 1
Introduction

The information in this manual covers the installation and operation of the Kollector Elite Digital Video Recorder. This system should only be installed by a qualified technician using common hand tools and approved materials in accordance with national, state and local wiring codes.

The Kollector Elite is an intelligent and rugged Digital Video Recorder. It is a state-of-the-art, Windows-based computer in an attractive industrial steel case. The Kollector Elite is sold in prepackaged configurations with choices of video (frame per second) rates and hard drive sizes, and uses an Intel Pentium CPU platform. All versions run the same Vicon ViconNet software application. For software information, refer to the Kollector Elite Software manual, XX112-3X (where X is a revision number between 0 and 9). Kollector Elite can be networked with all models of Kollector Pro, VN-306T Transmitters and ViconNet workstations to create a complete system.

Kollector Elite complies with UL standard 2044, CSA safety standard C22.2, No. 1 and meets requirements for an FCC Class A computing device.

Vicon requires the use of line conditioners, voltage regulators and uninterruptible power supply (UPS) systems in the electrical power service.

NOTE: *Read all instructions before beginning the installation.*

How to Use This Manual

This manual was designed to provide the best overall instructions for the installation and operation of the Kollector Elite Digital Video Recorder. The graphics and terminology used in this manual have been carefully selected to enable a clear and distinct understanding of the Kollector Elite and its configuration. This manual has been formatted to present distinct methods of installation for experienced (strong computer background) and novice installers.

For Experienced Installers

Refer to *Chapter 2, Quick Installation*, on page 3. Figure 2-1 presents the most common installation for all ports and connectors of the Kollector Elite. For more detailed descriptions, refer to *Chapter 3, Installation* and *Chapter 4, Operation*.

For Novice Installers

Complete the remainder of this chapter and then proceed to *Chapter 3, Installation*. When complete, proceed to *Chapter 4, Operation* to power-on and boot the system. For software information, refer to the Kollector Elite Software Manual, XX112-3X (where X is a revision number between 0 and 9).

Accessory Kit

The provided accessory kit contains necessary items needed to install and wire the recorder during installation as follows:

Table 1-1: Accessory Kit

Part	Description	Quantity
Front Door Key	Opens the front panel door.	2
Installation and Operation Manual	Provides instructions on installation, configuration and operation.	1
Software Manual		1
RJ45 Cable Assemblies	Connects external devices (sensor input) and communication signals (RS-422 PTZ control).	16
Termination Boxes		16
Video Adapter Cable (certain models)	Used to adapt the video card ports for various monitors.	1
Optical Mouse	Used for GUI operation of the ViconNet software.	1
Looping Cable	Provides additional video looping outputs from each camera for use with other video components.	2
Power Cord	Used for power connection of Kollector Elite	1

Unpacking and Inspection

All Vicon equipment is tested and inspected before leaving the factory. It is the carrier's responsibility to provide suitable delivery.

Inspect the cartons upon delivery and, if damage is present, make detailed notes on the carrier's bill. Then, obtain the carrier agent's signature and file a damage claim as soon as possible.

Open the cartons and inspect the equipment for damage. Save the cartons and packing material. If damage is present, contact the carrier and file a damage claim immediately. If the equipment must be returned for repair, follow the instructions in *Chapter 7, Shipping Instructions*.

Chapter 2
Quick Installation

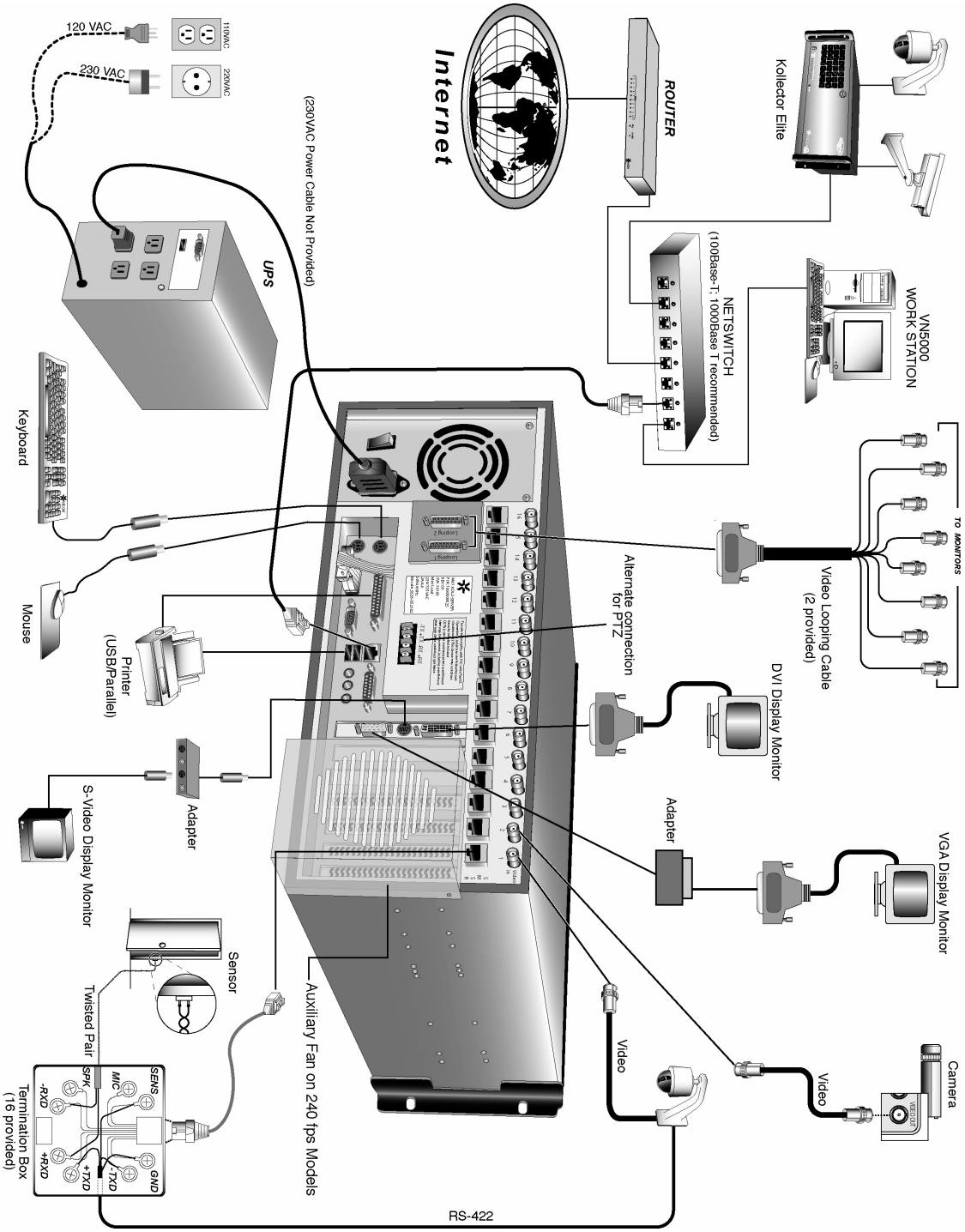

Figure 2-1: Kollector Elite Quick Installation

Chapter 3
Installation

For novice or first-time installers, these steps provide the most thorough and accurate instructions.

About This Chapter

This chapter details the complete installation of the Kollector Elite Digital Video Recorder. The following sections provide information as follows:

- ***Unpacking the Recorder*** defines how to remove the unit and accessories from the box.
- ***Required Items for Installation*** defines items needed for installation.
- ***Unit Components*** defines all connections on the front and rear panels and their use.
- ***Mounting*** defines all methods of securing the recorder for permanent use.
- ***Installing the Kollector Elite*** describes how to install all necessary peripheral devices directly to the recorder, as well as how to install all necessary peripheral devices to the Termination Boxes

Unpacking the Recorder

Carefully open the carton. Remove the Accessory Kit and the recorder from the box and place them on a large, flat working surface. Open the Accessory Kit and verify the contents against the list in Table 1-1, page 2.

Required Items for Installation

To properly install the recorder there must be simple hand tools available such as a screwdriver, wrenches, pliers and wire cutters/strippers. To setup the recorder for operation there must be a keyboard available to operate the GUI.

Unit Components

This section describes the Kollector Elite unit's front and rear panels.

Front Panel Controls and Connections

The following picture shows the Kollector Elite front panel. Each panel component is described in the table below.

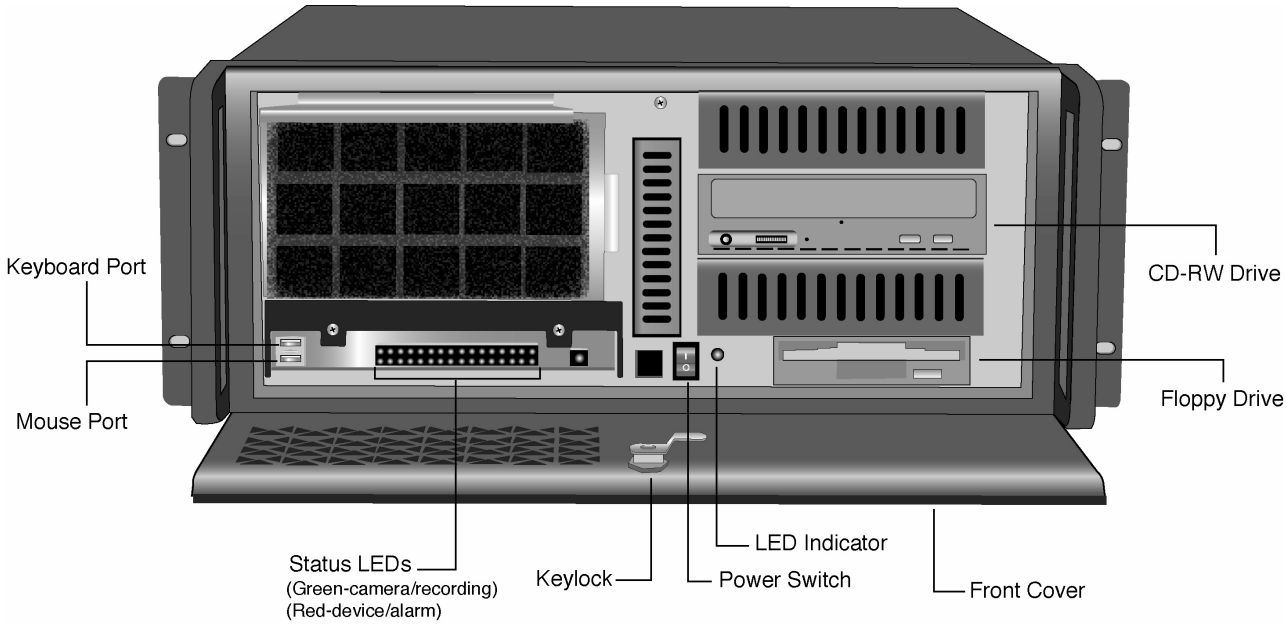

Figure 3-1: Front Panel Layout

The Kollector Elite's front panel contains the following components:

- **Keyboard Port:** A USB-type connector used to connect a standard PC keyboard (not included).
- **Mouse Port:** A USB-type connector used to connect an optical mouse.
- **Status LEDs:** Used to indicate what the Kollector Elite is doing, for example, scanning for attached cameras or recording.
- **Keylock:** Used with the provided key to lock the front door.
- **Power Switch:** Used to power on the recorder (for more details, refer to *Powering On the Recorder*, page 13).
- **LED Indicator:** Used to display the power status (ON means recorder on and OFF means recorder off).
- **Front Cover:** Used to protect the Kollector Elite's front panel from unauthorized use.
- **Floppy Drive:** Used as a removable data drive.
- **CD-RW Drive:** Used as a high-capacity removable data drive.

Rear Panel Controls and Connections

The following picture shows the Kollector Elite rear panel. Each panel component is described below.

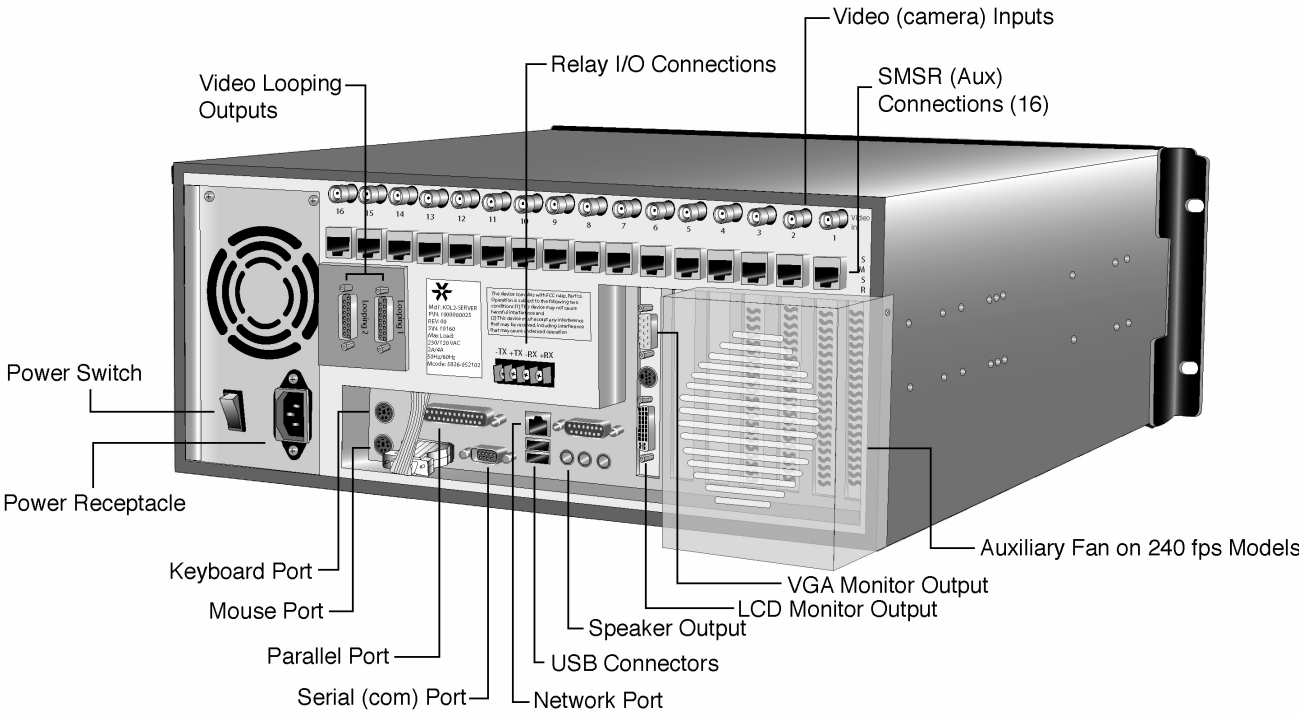

Figure 3-2: Rear Panel Layout

The Kollector Elite's rear panel contains the following components:

- **Video Looping Outputs:** DB-15 connectors used with provided cables to loop the video inputs out.
- **Relay I/O Connections:** Not currently used.
- **Video (Camera) Inputs:** Standard BNC-F connectors used for analog camera video input.
- **SMSR (Aux) Connections:** Standard RJ-45 connectors used for sensor and communication input for each video channel. SMSR connectors are used for sensors, microphones, speakers and PTZ cameras.
- **Power Switch:** Used to power on and off the power supply of the recorder.
- **Power Receptacle:** Used to connect the provided Power Cable.
- **Keyboard Port:** A mini-DIN type connector used to connect a standard PC keyboard (not included).
- **Mouse Port:** A mini-DIN type connector used to connect the provided optical mouse.
- **Network Port:** A standard RJ-45 connector used to connect to a LAN/WAN.
- **USB Connectors:** Used for optional devices.

- **Parallel Port:** Used for general printing.
- **Serial (COM) Port:** Used to connect system serial devices.
- **Speaker Output:** Mini phono-type connector used for sound card audio output.
- **LCD Monitor Output:** Used for digital video output to a monitor. A DVI-to-VGA adapter is provided for use with VGA monitors.
- **Auxiliary Fan:** Used to cool the unit during operation (available on 240 FPS models only).

NOTE: *Connector locations may vary according to KE type.*

Mounting

There are two types of mounting recommended for the recorder, either desktop or rack. For more details, refer to the Kollector Pre-installation Manual, XX112-7X.

Desktop

The desk or table must provide a surface of suitable strength for the Kollector Elite's weight of 45 lb (20.5 kg). In addition, there must be area left around the cabinet to provide suitable airflow for cooling. Do not place heavy items on the cover.

Rack

The recorder was designed to be mounted in a standard 19-inch (483mm) wide vertical rack. Use the provided rack mount ears to connect the recorder to the rack using hardware provided with the rack.

It is recommended that at least ¼ standard rack height of space be left in between multiple recorders mounted in the same rack for cooling purposes.

⚠***WARNING****: Failure to leave space for cooling between recorders may result in malfunctioning and possible failure of the recorder.*

Installing the Kollector Elite

After the recorder is mounted permanently, follow the steps in this section to install the Kollector Elite unit hardware.

IMPORTANT NOTES:

The connection of external hardware may require simple hand tools. Do not apply power or plug-in the recorder to any outlet until instructed to do so.

Disable the AC power to prevent installer injury and damage to the unit.

Before beginning the hardware installation, ensure that the following environmental conditions have been met:

- *The surface on which the* **ViconNet** *hardware is to be placed must be level.*
- *The room or area designated for the* **ViconNet** *hardware installation must be well ventilated.*

Step 1: Connecting the Hardware

This procedure describes the various hardware connections that must be performed in order to operate the system.

To connect the ViconNet hardware:

1. Perform the following connections (refer to Figure 3-1 on page 5 and Figure 3-2 on page 6):
   - Locate the keyboard on a flat surface near the recorder. Connect the keyboard by inserting its connector into the correct port.
   - Locate the mouse on a flat surface near the recorder. Connect the mouse by inserting its connector into the correct port.
   - Position the monitor in a permanent fixed location near the recorder. Connect the monitor by inserting its VGA connector into the VGA Monitor Output port.
   - Insert one side of a standard LAN cable to the Network Port's RJ-45 connector. Insert the other RJ-45 connector into the LAN side of the network.
   - Gather and locate all camera video input cables near the rear of the recorder. Insert each BNC-M into its respective Video (Camera) Input port (1 – 16).
   - Mount the provided Termination Boxes in a fixed permanent location near the recorder. Insert one end of the provided RJ-45 Cable Assembly into the Termination Box, and insert the other end into the desired SMSR (Aux) Connections port (1 – 16) on the recorder.

     NOTE: *For additional information regarding the devices connected to the SMSR connectors, refer to* Step 2: Connecting External Hardware to Termination Boxes*, page 9.*

- Insert the female end of the provided 120VAC Power Cable into the recorder's Power Receptacle. Do not connect the remaining end to a power receptacle until instructed. If using 230VAC power, it will be necessary to obtain a suitable power cord for use. This cable is a standard computer 230 VAC power cord.
- Turn ON the Power Switch.

2. Connect the monitor to the power source.

Step 2: Connecting External Hardware to Termination Boxes

The connection of external hardware to the Termination Boxes requires simple hand tools. Do not apply power or plug-in the recorder to any outlet until instructed to do so.

⚠ ***WARNING:*** *Disable the AC power to prevent installer injury and damage to the unit.*

With the Termination Boxes mounted permanently, connect external devices as follows:

Communications (PTZ Control)

To connect a PTZ camera control to the Kollector Elite:

1. Using a twisted-pair cable as defined in *Chapter 9, Twisted-Pair Cable Recommendations*, prepare a 4-conductor plus shield type cable by stripping the ends back for use.
2. Connect the PTZ wires to the Termination Box connectors (either TX+ and TX- or RX+ and RX-, depending on the type of the camera (refer to Figure 3-3 on page 10). Ensure that you connect the wires to the correct polarity.
3. Install the other end of this cable into the device it will communicate with, for example, a V1400X-IDL, Camera Dome or other type of receiver.
4. Connect the RJ45 cable to the appropriate channel in the rear panel.

Sensor Input

When using SMSR connectors to connect devices to the Kollector Elite, refer to the guidelines described below, according to the specific device type.

NOTE: *Speaker (**SPK**) will be operational in future versions.*

To connect a sensor to the Kollector Elite:

1. Using a twisted pair cable as defined in *Chapter 9, Twisted-Pair Cable Recommendations*, prepare a 2-conductor type cable by stripping the ends back for use.

2. Connect the sensor wires to the SENS and GND connectors (refer to Figure 3-3 below).
3. Install the other end of this cable into the appropriate sensor output (NO or NC dry contact).
4. Connect the RJ45 cable to the appropriate channel in the rear panel (refer to Figure 3-2 on page 6).

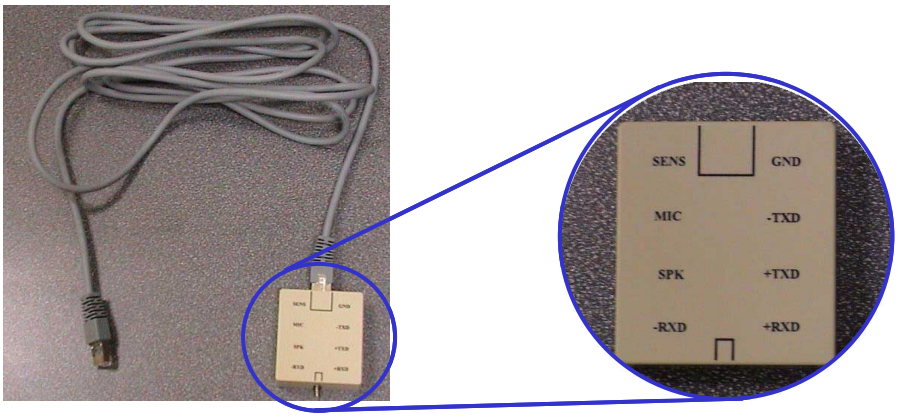

Figure 3-3: Termination Box

5. When using a detector that operates with a resistor, the resistor should be connected as follows:
   - **Normally Open Detector**: The resistor should be connected to the sensor (**SENS**) and the ground (**GND**) connectors.
   - **Normally Closed Detector**: The resistor should be connected between the detector's wire and the ground (GND) connector.

   NOTE: *16 1KΩ resistors are included.*

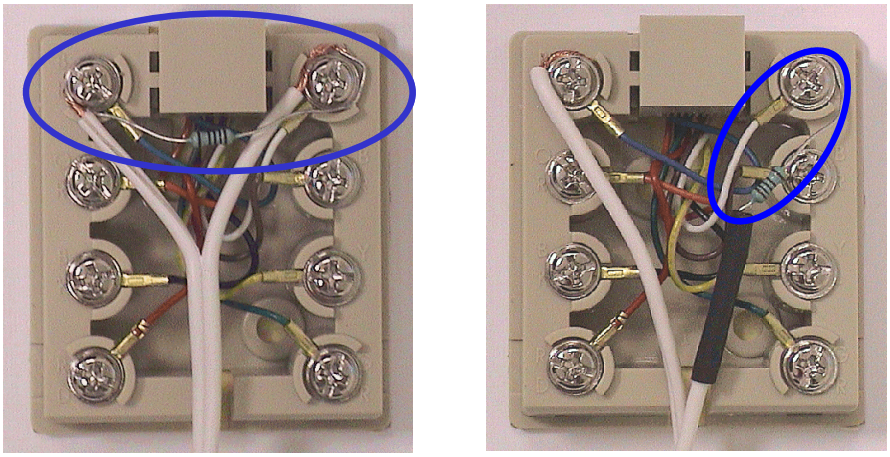

Figure 3-4: Resistor Connection Types

Step 3: Connecting Looping Cables

Looping cables are required only when you wish to retrieve video (output) from the Kollector Elite. The purpose of the cables is to transmit video signals to a second transmitter. Each cable transmits 8 video signals - Looping 1 transmits signals from cameras 1 to 8 and Looping 2 from cameras 9 to 16.

To connect the cables:

1. Using the two provided Video Looping Cable Assemblies, insert the large D-type connector end into one of the two Video Looping Output ports.
2. Connect each of the remaining BNC-F connectors to the Video (Camera) Input ports, as defined in the following table. In order to connect the video, male-to-male BNC cables are required (not included).

Cable Color	Looping 1 Cameras	Looping 2 Cameras
Red	1	9
Green	2	10
Blue	3	11
Gray	4	12
Black	5	13
Yellow	6	14
White	7	15
Brown	8	16

NOTE: *Each BNC cable is labeled for the relevant channel. For example V6680 VIDEO 2/10 (green wire) transmits video from camera 2, if the D type is connected to Looping No. 1, or camera 10 if connected to Looping No. 2. Each channel (wire) is designated a unique color.*

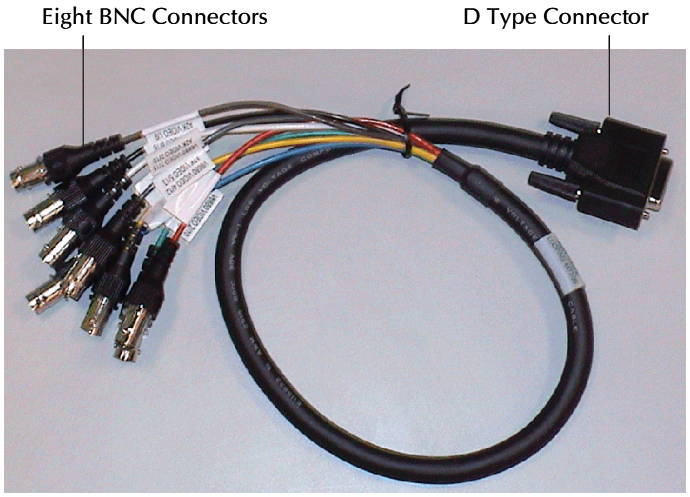

Figure 3-5: Looping Cable

Step 4: Connecting the Power Supply

To ensure that the Kollector Elite is protected during a power failure and that no important data is lost, it must be connected to an uninterruptible power source (UPS) before use.

To connect the UPS:

1. Connect the Kollector Elite's power cord to the UPS power receptacle.
2. Connect the UPS power cord to the wall outlet.
3. Power on the UPS and ensure that it is working properly.
4. Power on the Kollector Elite.

> ***NOTE:*** *Refer to your UPS device's User Manual for a more detailed explanation of how to connect it properly.*

Chapter 4
Operation

About This Chapter

This chapter details power on, booting and power off of the Kollector Elite Digital Video Recorder. For full programming and operation information, refer to the Kollector Elite Software manual, XX112-3X (where X is a revision number between 0 and 9). The following sections provide information as follows:

- ***Powering-on the Recorder*** guides the user through proper power on and boot procedures.
- ***Powering-off the Recorder*** guides the user through proper shut down procedures.

Powering On the Recorder

To power on the system:

1. With the recorder set up as shown in *Chapter 3, Installation*, verify that the rear panel toggle switch is in the ON position (“I” pressed in).
2. Open the front panel cabinet and press the front panel toggle Power Switch towards the "I" position. The button will switch back to the "O", which is its default position, even when the system is running.

IMPORTANT: *Do not press any keyboard buttons at this time.*

When the recorder completes booting and the Main Screen is displayed. For more details, refer to the Kollector Elite Software Manual, XX112-3X.

Powering Off the Recorder

To power off the system:

- With the recorder booted and operational, press the **Shutdown** button in the *Site Setup* window. Follow the screen prompts and the system will return to the ViconNet desktop. Use the **Start** button to completely shutdown the system.

  OR (this not recommended, due to the possibility of data loss)

  Momentarily press the power switch. The system switches off, component by component.

Chapter 5
Troubleshooting

If the Kollector Elite does not power-up correctly, check the following:

- Verify that the outlet or UPS supplying power is actually active. Plug in a lamp or other device to the outlet to verify the 120 or 230 VAC. If voltage is present, proceed to the next item.
- Verify that the rear panel Power Switch is in the ON position (“I” pressed in). If the recorder fails to boot, proceed to the next item.
- Press the front panel Power Switch so it is in the ON position (“I” pressed in). If the recorder fails to boot, call Vicon Technical Support.
- If the recorder boots, but does not display the Main Screen, reboot the unit by toggling the front panel power switch OFF and ON. If the recorder still fails to boot, call Vicon Technical Support.

Chapter 6
Maintenance

Periodic checking and maintenance of certain parts of your Kollector Elite will minimize future system problems. The following table lists the items that need to be checked and when.

Maintenance Required	Monthly	Annually
Replacing the filter		
Cleaning the filter		
Backing up		
Checking the front and rear fans		

To replace the filter:

1. Turn the Kollector Elite off, and then open the front door.
2. Open the filter housing on the left-hand side.
3. Carefully remove the old filter, and then replace it with a new 105mm x 175mm filter.
4. Close the filter housing.
5. Turn the Kollector Elite back on, and then close the front door.

To clean the filter:

1. Turn the Kollector Elite off, and then open the front door.
2. Open the filter housing on the left-hand side.
3. Carefully remove the old filter, and then wash it under running water with a mild soap.
4. When the filter is completely dry, return it to its place in the Kollector Elite.
5. Close the filter housing.
6. Turn the Kollector Elite back on, and then close the front door.

To back up the Kollector Elite:

- Refer to *Chapter 3, Configuring the ViconNet System* in the *Kollector Elite Software Manual* (XX112-3X)

NOTE: *The backup procedure should be performed whenever a change is made to the system settings.*

To check the front and rear fans:

1. Turn the Kollector Elite off, and then open the front door.
2. Open the filter housing on the left-hand side.
3. Carefully remove the filter, look at the front fan and ensure it is operating properly.
4. Look at the fan in the rear of the Kollector Elite and ensure it is operational.
5. When you have finished, replace the filter, turn the Kollector Elite back on, and then close the front door.

> ⚠ ***CAUTION:*** *Do not open the recorder's top cover for any reason. Failure to follow this instruction can result in serious injury to the user and void the manufacturer's warranty.*

Chapter 7
Shipping Instructions

Use the following procedure when returning a unit to the factory:

1. Call or write Vicon for a Return Authorization (R.A.) at one of the locations listed below. Record the name of the Vicon employee who issued the R.A.

   Vicon Industries Inc.
   89 Arkay Drive
   Hauppauge, NY 11788
   Phone: 631-952-CCTV (2288); Toll-Free: 1-800-645-9116; Fax: 516-951-CCTV (2288)

   For service or returns from countries in Europe, contact:
   Vicon Europe Ltd.
   Brunel Way
   Fareham, PO15 5TX
   United Kingdom
   Phone: +44 (0) 1489/566300; Fax: +44 (0) 1489/566322

2. Attach a sheet of paper to the unit with the following information:

   - Name and address of the company returning the unit
   - Name of the Vicon employee who issued the R.A.
     - R. A. number
     - Brief description of the installation
     - Complete description of the problem and circumstances under which it occurs
     - Unit's original date of purchase, if still under warranty

3. Pack the unit carefully. Use the original shipping carton or its equivalent for maximum protection.

4. Mark the R.A. number on the outside of the carton on the shipping label.

Chapter 8
Coaxial Cable Recommendations

> ⚠ ***CAUTION:*** *Careful selection of proper cable is essential to obtain the best performance from this equipment. Vicon assumes no responsibility for poor performance when cables other than those recommended, or equivalent, are installed. In all cases, coaxial cable impedance should be 75 ohms.*

Materials

Use only a pure copper center conductor. Do not use a copper-plated steel or aluminum center conductor, as they will result in poor quality video. Solid-core bare copper conductor is the best type, where flexing and bending will be minimal. If severe bending and flexing is required for installation, use a stranded center conductor. Never exceed the manufacturer's minimum bend radius specification. Use cellular (foam) polyethylene dielectric except where heavy moisture exists. For moisture conditions, use solid polyethylene dielectric cable with a heavy exterior insulation. The shield must be copper braid providing 95% or better coverage.

Cable Types

The cable types listed below are the most common 75-ohm types used. They vary in size (diameter), dielectric type and net DC resistance. The larger cable results in a lower DC resistance and better video quality, with increased difficulty in handling and installation. Let the required picture quality and cable distance provide a guide in choosing the best cable type. For cables other than the approved Vicon types below, contact the manufacturers listed below. Note that "BC" refers to bare copper and "TC" refers to tinned copper.

Table 8-1: Recommended Coaxial Cable Types

Cable Type	Belden Type No.	Alpha Type No.	West Penn Type No.	Type Center Conductor	Type Shield and % Coverage	DC Resistance ohms/1000 ft (km)
RG-11/U	8213	9847	811,4811	14 Solid BC	BC braid (95%)	2.6 (8.5)
RG-6/U	9248	9804C	806,4806	18 Solid BC	Foil + 61% TC braid (100%)	7.5 (24.6)
RG-59/U	8281*	----	815	20 Solid BC	2 TC braids (96%)	9.9 (32.5)
RG-59/U	9259	9803	816	22 Stranded BC	BC braid (95%)	15.0 (49)
RG-59/U	9659	----	----	22 Stranded BC	BC braid (95%)	15.0 (49)

*Requires special BNC-M connector due to 0.305 nominal O.D.

Belden Inc.	http://www.belden.com/	(800) 235-3361
Alpha Wire Company	http://www.alphawire.com/	(800)-52 ALPHA (522-5742)
West Penn Wire	http://www.westpenn-cdt.com/	(800)-245-4964

Table 8-2: Picture Quality vs. Cable Length

Picture Quality	Maximum Cable Run** ft (m)		
	RG-59/U	RG-6/U	RG-11/U
Usable picture	1100 (350)	1500 (450)	2400 (750)
Clean picture	820 (250)	1000 (300)	1600 (500)
Best picture	400 (120)	530 (160)	820 (250)

** For longer cable runs, use a Vicon Video Amplifier to obtain a suitable picture.

Chapter 9
Twisted-Pair Cable Recommendations

> ⚠ ***CAUTION:*** *Careful selection of the proper cable is essential to obtain the best performance from this equipment. Vicon assumes no responsibility for poor performance when cables other than those recommended are installed.*

Materials

Use a pure copper stranded conductor with or without a tin plating to obtain a low DC resistance. Do not use cable with either a steel or an aluminum stranded conductor because these do not transfer signals effectively for long distances. The preferred insulation and cable jacket is Polyvinyl chloride (PVC). It has better electrical characteristics than polyethylene and resists flames, sunlight and most solvents, but is more vulnerable to moisture.

Cable Types

The most commonly used cable types are dual individually shielded, twisted pair in a single jacket. This configuration is the most convenient for RS-422/ RS485 applications. Single twisted pair is also a suitable cable.

Choose a Belden cable type by referring to the characteristics and maximum distances listed below. The maximum distance for the most reliable digital control refers to the distance between the CPU/Keypad and the Camera Dome Assembly. The characteristics of the cables in Table 6 should be used as a guideline when cables other than Belden are used. Materials and construction must follow the guidelines above.

Table 9-1: Recommended Individually Shielded, Twisted-Pair Cable Types

Cable Type	Wire Size (AWG)	Insulation Material	Jacket Material	Max. Distance ft. (m)	Number of Twisted Pairs
Belden 9406	22	PVC	PVC	5000 (1500)	2
Belden 9402	20	PVC	PVC	5000 (1500)	2
Belden 8723	22	Polypropylene	PVC	8000 (2400)	2
Belden 8162	24	Datalene[1]	PVC	15000 (4600)	2
Belden 9729	24	Datalene[1]	PVC	15000 (4600)	2
Belden 9182	22	Datalene[1]	PVC	25000 (7600)	1

[1] Datalene is a Registered Trademark of Belden.

Chapter 10
Technical Information

Table 10-1: Technical Information

Electrical Characteristics	
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 with this violates the unit warranty.
Current	3 A
Power Consumption	450 W nominal

UPS Requirements	• Capacity: 1000 VA/600 W
	• Maximum operation time:
	  • 16 cameras recording/displaying with a 15" Sony CRT monitor): 18 minutes
	  • 16 cameras recording/displaying with a 17" Mag CRT monitor): 5 minutes
	• Input:
	  • Voltage: 100 - 240 VAC
	  • Voltage Range: ±30% (with a 4-step AVR)
	  • Frequency: 47 – 63 Hz (auto detection)

Heat Equivalent	25.6 BTU/min (6.4 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® Pentium IV 2.66 MHz, minimum RAM: 512 MB HDD: 200 - 900 GB LAN Card: 3Com 10/100 Mbps TPO
Connector Types/Quantities	Analog Video Inputs: 16 BNC-F Analog Video Loopouts: 16 in 1 DB-15 connector Power: 1 standard 3-conductor female socket VGA Video Output: 1 standard VGA port Sensor Input Port: 16 NO/NC RJ-45 connectors, software selectable PTZ Control Port: 16 individual RJ-45 connections or one 4-pin terminal block using RS-422 protocol Network Port: Ethernet 100Base-T RJ-45 jack Keyboard Port: Mini-DIN jack (PS2) Mouse Port: Mini-DIN jack (PS2)
Video Level Input	All BNC connectors: 1.0 V peak-to-peak
Video Input Impedance	All BNC connectors: 75 ohms
Video Formats Supported	NTSC, PAL, EIA and CCIR

Mechanical Characteristics	
Application	Indoor
Mounting	Desktop or standard 19 in. (483 mm) rack mount and stackable, 4U height
Dimensions	Height (H): 7.0 in. (178 mm) Width (W): 19.0 in. (483 mm) Depth (D): 22.0 in. (558.8 mm) for 120 fps models 24.25 in (615.95 mm) for 240 fps models with extra fan **Note:** Refer to Figure 10-1.
Weight	Approximately 45.0 lb (20.5 kg)
Construction	Steel case and hardware
Color	Black
Shipping Dimensions	Length: 25 in. (635 mm) Width: 24 in. (610 mm) Height: 12 in. (305 mm)
Shipping Weight	Approximately 53 lb (24 kg)
Shipping Volume	4.2 ft^3 (0.12 m^3)
Environmental Characteristics	
Operating Temperature	Range: 32 to 104° F (0 to 40° C)
Operating Humidity Range	0 to 95% relative, non-condensing
Storage Temperature Range	-4 to 158° F (-20 to 70° C)
Storage Humidity Range	0 to 95% relative, non-condensing

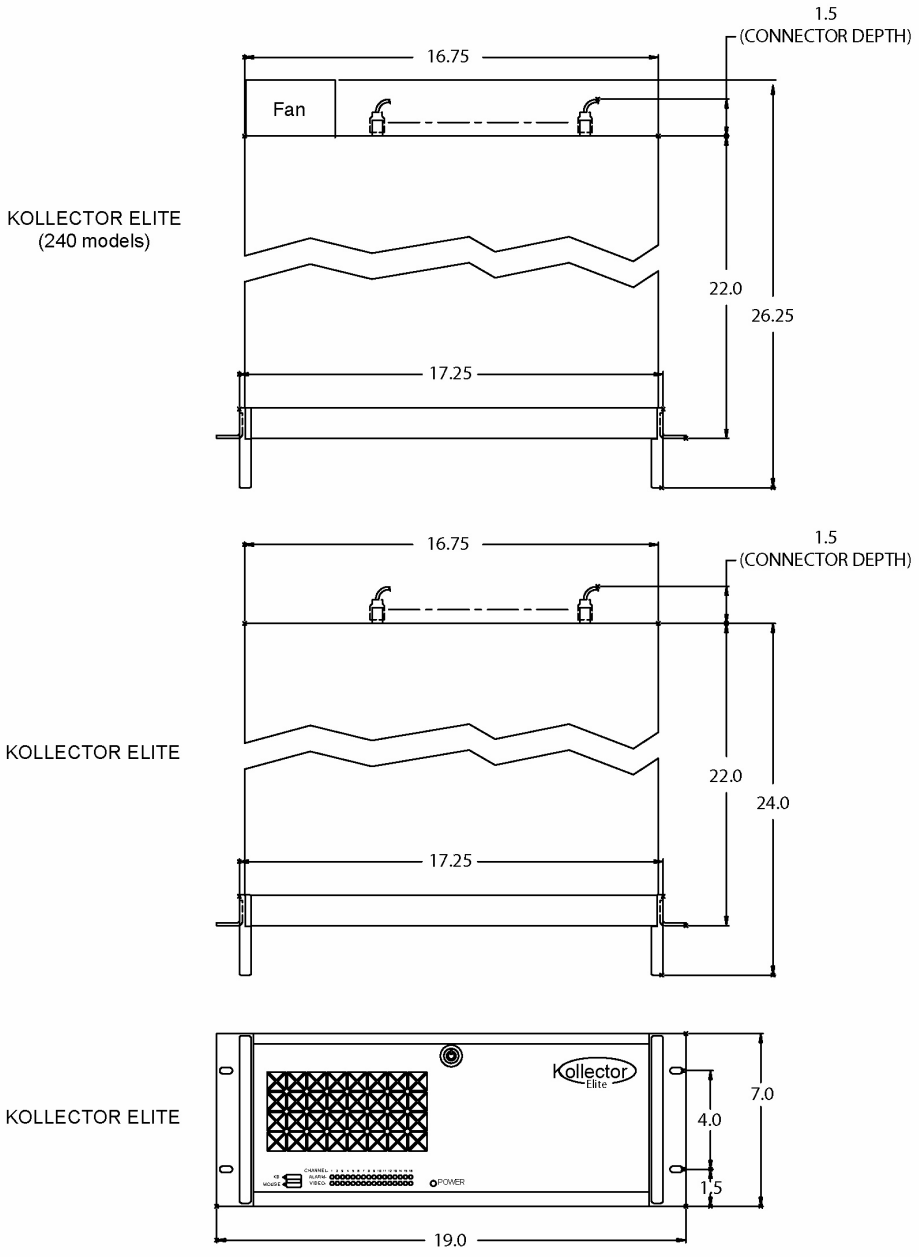

Figure 10-1: Kollector Elite Dimensions

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