Installation Guide

XX240-00-06

H264-ENCDR 4-Channel Video Encoder

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Product specifications subject to change without notice.

H.264 Encoder Installation & Configuration Guide

General

This manual provides information for installing and setting up the ViconNet® H264-ENCDR 4-Channel Video Encoder.

The H264-ENCDR Network Encoder is a 4-channel digital video server that converts analog camera inputs into streamed IP video data. This embedded device is specifically designed to integrate into the ViconNet Video Management System (VMS). The tight integration into ViconNet provides advanced features, such as museum search, analytics, dynamic load balancing and automatic detection in the ViconNet VMS. It offers full support of NTSC/EIA and PAL/CCIR video cameras.

The H264-ENCDR is easily configured using Vicon's exclusive VNsetup utility, which quickly finds the unit on the network and enables quick assignment of an IP address. In addition, the encoder supports full PTZ control, alarm reporting, picture quality configuration, external sensors, macros, and alarm configuration.

There are several mounting options for the H264-ENCDR including desk, shelf or rack mounting. The unit may be mounted on a desktop using the rubber feet provided. Using the optional mounting kits, it can be rack or wall mounted.

Hardware Installation

This unit should only be installed by a qualified technician using common hand tools and approved materials in accordance with the National Electrical Code ANSI/NFPA 70, state and local wiring codes. These units meet requirements for an FCC Class A computing device and CE.

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.

Accessory Kit

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

Table 1: Accessory Kit

Part	Description
CD and Manuals	Provides documentation and software (including current drivers)
Rubber Bumpers	Protection for desk-top installations
2-position connector	For wiring power
6-position connectors	For wiring RS-422/RS-485 and audio
5-position connectors	For wiring alarm inputs and relay control outputs

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 *Shipping Instructions* at the end of this manual.

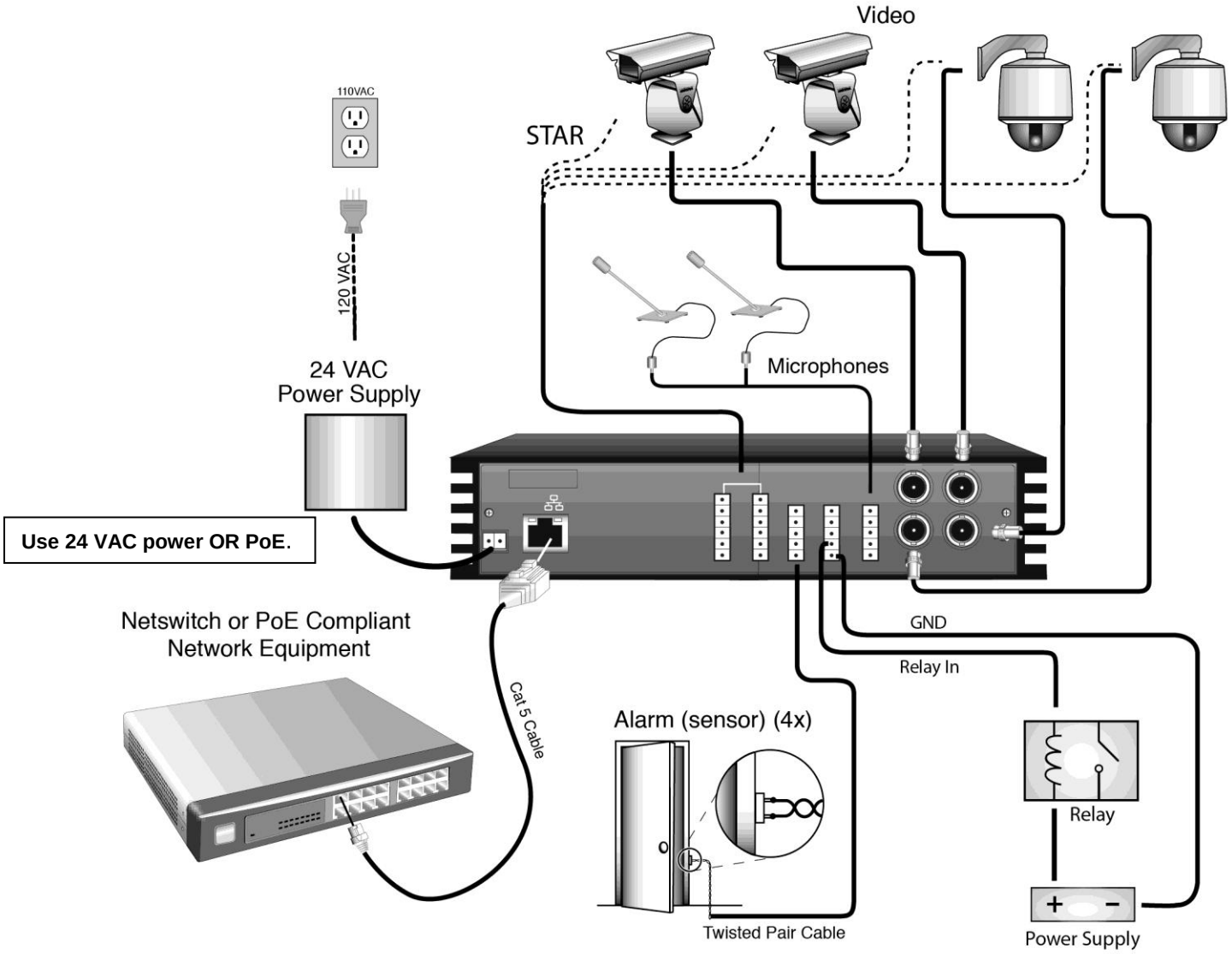
Unpacking the Encoder

Carefully open the carton. Remove the accessory kit and the encoder 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.

Required Items for Installation

To properly install the encoder there must be simple hand tools available such as a screwdriver, wrenches, pliers and wire cutters/strippers. To setup the encoder for operation there must be a PC computer running the VNSetup software.

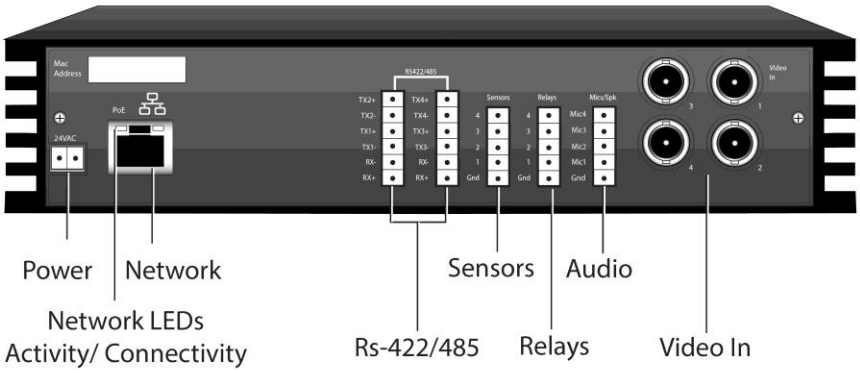
Quick Installation



Unit Components

This section describes the H264-ENCDR rear and front panels.

Rear Panel Connections



- **PTZ Port:** Two 6-position terminal blocks used to connect simplex RS-422/485 communications. Use star configuration.
- **Network Port:** A standard RJ-45 connector used to connect to a 100/1000Base-T LAN/WAN. A green LED indicates network connectivity and a yellow LED indicates data activity. Unit power can be supplied if connected to PoE (Power over Ethernet) compliant network equipment.
- **Power Port:** A 2-position terminal block used to connect power (24 VAC) (if not using PoE – see Network Port).
- **Video (Camera) Input:** 4 standard BNC-F connectors used for analog camera video input.
- **Sensor (Alarm) Port:** A 5-position terminal block used to connect up to 4 N.O./N.C. sensors.
- **Relay Port (Output):** A 5-position terminal block used to connect up to 4 external relay controls (open collector logic); the external relay (customer supplied) then controls the optional equipment. Requires a separate power supply (customer supplied).
- **Audio:** A 5-position terminal block used for 4 microphones connection.

Front Panel Indicators

The front panel includes a blue LED (Status), that indicates power and that the unit is running properly, and 4 bicolor LEDs (numbered 1, 2, 3, 4), to indicate video state. Upon power up, the unit will go through a series of diagnostic tests and the LEDs will blink. During normal operation, the video LEDs will illuminate solid green to indicate connection, blinking green to indicate transmitting video and red for no video. The blue LED blinks when the unit is functional

Mounting

There are several types of mounting recommended for the encoder as shown below.

Desktop

The H264-ENCDR can rest on a clean and dry flat surface, like a desk or tabletop. Four (4) rubber bumpers are provided for stable mounting. There must be an area of no less than 3 in. (76 mm) left around the exterior to provide suitable airflow for cooling. Do not place items on the cover.

Rack

The H264-ENCDR can be mounted in a standard 19-inch (483 mm) wide vertical rack shelf using the H264-ENCDR-RK2 (double) rack mount kit or the H264-ENCDR-RK8 to mount 8 units vertically (5U). The shelf is not provided. The encoder can be rested on the shelf or fastened using the provided mounting plate.

Wall Mounting

The H264-ENCDR can be wall mounted using the H264-ENCDR-WM wall mount kit.

Installing the H264-ENCDR

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

- **Step 1: Connecting the Cabling**
- **Step 3: Connecting the Power Supply**

Important Notes

Do not apply power or plug-in the unit 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 room or area designated for the ***ViconNet*** hardware installation is well ventilated and that the surface on which the H264-ENCDR is to be placed is level, clean and dry.

The ViconNet H264-ENCDR encoder offers full support of NTSC/EIA and PAL/CCIR video cameras. It features an auto detection function that recognizes if a camera is NTSC or PAL video format upon power up. Since the autodetect feature works upon power up, it is important to connect the cameras to the BNC connectors before the encoder is powered up. *If a new camera is connected to the encoder after power up, it will be seen in the format of the last camera connected before power up. Repower the encoder for the autodetect feature to work correctly to identify the camera format.*

Step 1: Connecting the Cabling

This procedure describes the required cabling that must be installed in order to use the encoder. The mating connectors required are supplied in the accessory kit.

To connect the cabling:

Perform the following connections (refer to Rear Panel Figure):

1. 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 (switch, wall jack, etc.). Verify that a PC or ViconNet workstation is available for software configuration.
2. Locate the camera video input cable(s) near the encoder. Insert the BNC-M plug into the encoder's BNC-F video (camera) input port(s); 4 BNCs are available.

To connect a camera dome/PTZ camera control to the H264-ENCDR:

A star configuration provides multiple communication paths. By fanning out communications, system reliability increases; a failure on one leg of a star has no affect on the other units. Refer to the Figure below for an illustration of a sample configuration.

1. Using a twisted-pair cable, prepare a 2-conductor shielded twisted-pair type cable by stripping the ends back for use.
2. Connect the PTZ wires to the RS-485/422 Terminal Block (TX+ and TX-); refer to Figure below. Ensure that you connect the wires to the correct polarity.
3. Install the other end of this cable into the camera dome or receiver it will communicate with.

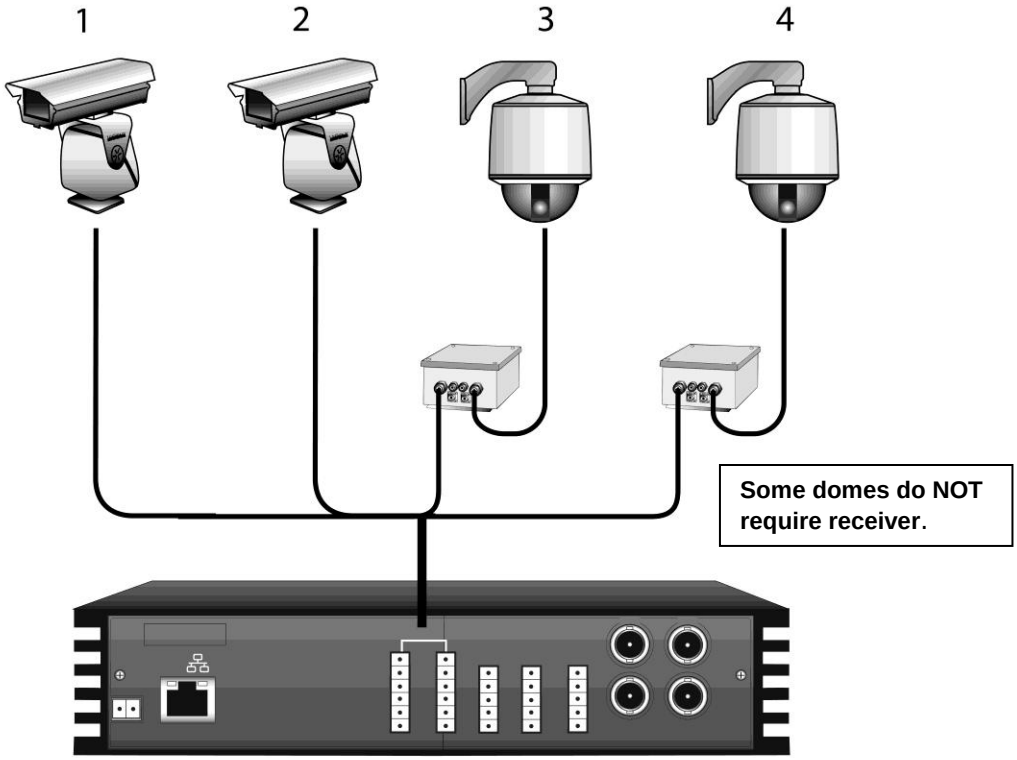


Figure: PTZ Camera Control

Star Configuration

To connect an alarm (sensor) to the H264-ENCDR:

1. Locate the alarm cable(s) near the encoder. These wires (pairs) will be connected to the Sensors and GND (Ground) terminal block connections (refer to Figure below). There are four alarms available.
2. Connect one alarm wire to the Sensor connection on the terminal block.
3. Connect the other alarm wire to the GND connection.
4. Connect the other end of this cable to the appropriate alarm output (N.O. or N.C. dry contact) and common.

Note:

Upon power-up, the state of the alarm inputs is sampled and stored as the default, non-alarmed state. Therefore, ensure that all the alarm sensors are in a non-alarmed state prior to power-up.

Note:

Users may select N.O. and N.C. according to the sensor type being installed.

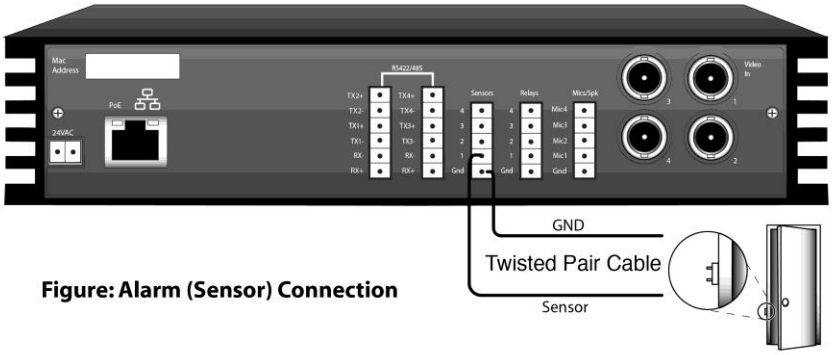


Figure: Alarm (Sensor) Connection

To connect a relay to the H264-ENCDR:

1. Locate the relay cable(s) near the encoder. These cable wires (pairs) will be connected to the Relays and GND (Ground) terminal block. There are four (4) relay output controls available.
2. Connect positive (+) terminal of customer-supplied relay coil to the positive (+) terminal of separate external power supply (customer-supplied).
3. Connect negative (-) terminal of the relay coil to the relay control terminal block (1-4 on the encoder).
4. Connect the negative (-) terminal of the external power supply to the GND connection on the terminal block.

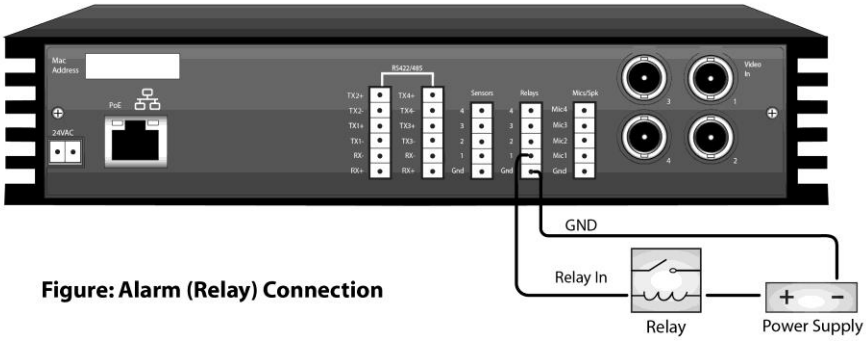


Figure: Alarm (Relay) Connection

To connect Audio to the H264-ENCDR:

1. Locate the audio cable(s) near the encoder. These wires (pairs) will be connected to the Mic and GND (Ground) terminal block connections (refer to Alarm Figure as an example).
2. Connect one relay wire to the GND connection.
3. Connect the other end of this cable to the appropriate microphone output.

Note:

The Audio Input should be a line level 0 dbm output, 32 KHz bandwidth, 600 ohm impedance and 2 V RMS (1 V p-p) output dynamic type.

Step 2: Connecting the Power Supply

To ensure that the H264-ENCDR is protected during a power surge or failure and that no data is lost, it should be connected to an uninterruptible power source (UPS) before use. The power supply must be supplied by the customer.

To connect the UPS:

1. Place the H264-ENCDR near the 24 VAC power supply. Connect the 24 VAC power supply 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.

Note:

Refer to your UPS device's User Manual for details on proper connection.

Note:

Power can also be applied to the unit using Power-over-Ethernet (PoE) using PoE compliant network equipment.

Operation

Powering On the Unit

To power on the encoder:

With the unit set up as shown in *Installation*, connect the 24 VAC power supply to the H264-ENCDR or connect PoE via network cable (RJ-45). The Status Indicator will illuminate blue (blinking) to indicate the encoder is ON and running properly.

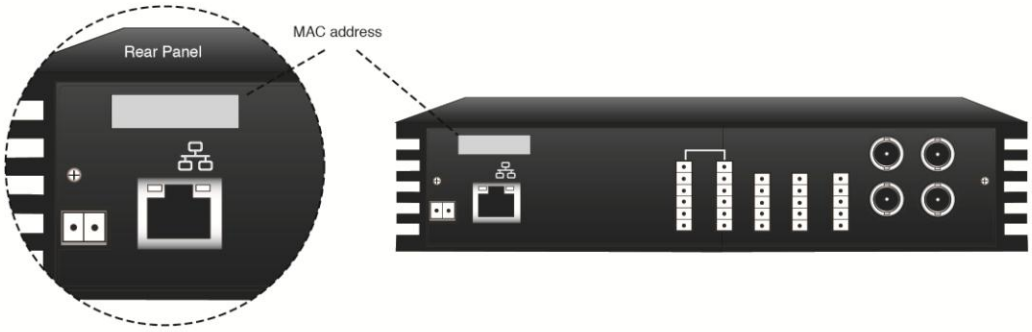
Powering Off the Unit

To power off the system:

With the encoder operational, disconnect the 24 VAC power supply or, if using PoE, disconnect the network cable (RJ-45). The power indicator will cease to illuminate, indicating a power OFF condition.

IMPORTANT NOTE !

Each server has a unique MAC (media access control) address. This information is essential in the camera configuration process described in the ViconNet Configuration Section later in this manual. Before starting installation make a record of this address and the location where the camera is installed. The MAC address label is located on the bottom panel, as shown in the illustration below. There will also be a sticker with the CD that will include the MAC address and password for that specific camera (the password can be a combination of numbers and letters up to 8 characters long).



Make all entries to the log below and retain for future reference

MAC Address	Password	Location
Example: 00-06-68-19-00-79	4765D274	first floor- lobby doors

Configuring the Encoder

The H264-ENCDR is shipped with one CD that contains the ViconNet software needed to setup your IP system, including the application setup, the firmware and setup software (VNSetup). Be sure the ViconNet Workstation meets the minimum requirements, is running the ViconNet application (minimum version 6.5) (VNSetup, minimum version 368) and has the proper PTZ camera driver. The VNSetup is found on the included CD under software, H264-ENCDR Setup. Refer to appropriate ViconNet documentation.

Network Considerations

The H264-ENCDR can be connected to any ViconNet network. Kollector Recorders and ViconNet Workstations/ NVRs can be used for live viewing and recording of network-streamed video (workstations do not record). A network can be as simple as a single H264-ENCDR connected to a ViconNet Workstation or can be complex with the addition of several networks interconnected via WAN.

When adding a H264-ENCDR to the ViconNet network, the following items must be considered:

- The number of H264-ENCDRs 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, disk write speed and display card strength.
- Storage size and location types including local Workstation recording, attached SCSI RAID and integrated NAS/SAN devices.

The default parameters on the IP encoder are:

Factory Defaults	**Network Defaults**
IP address: [1.1.1.2]	IP address: [1.1.1.1]
Nucleus IP address: [1.1.1.1]	Nucleus IP address: [1.1.1.2]
Net Mask address: [255.255.255.0]	Net Mask address: [255.255.255.0]
Gateway address: [1.1.1.1]	Gateway address: [1.1.1.2]

On first startup, the H264-ENCDR will attempt to establish connection to the Nucleus with the default address (1.1.1.1). Connecting it to an active Nucleus is done through the VNSetup utility.

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Groups and Users Restrictions

ViconNet allows creating Multiple Groups and Users in order to limit the rights to different levels. For more information on how to create Users and Groups, refer to the latest revision of ViconNet manual XX113.

Configuring the Network Settings

Note:

Before starting, make sure that VNSetup is installed on the configuring PC\Workstation. Installation is done using the CD included.

There are two ways to change the IP encoder network settings:

- Activating the H264-ENCDR for the first time: via VNSetup application.
- Connecting the H264-ENCDR to an active Nucleus: via ViconNet application (using same Nucleus the H264-ENCDR is configured for is necessary).

Note:

In order to install firmware, the PC and H264-ENCDR must be on the same IP network subnet.

Using the VNSetup Utility

VNSetup consists of several TABs. Each TAB provides different functionalities.

Note

Once the H264-ENCDR Setup is installed, a shortcut is placed on the desktop for future use.

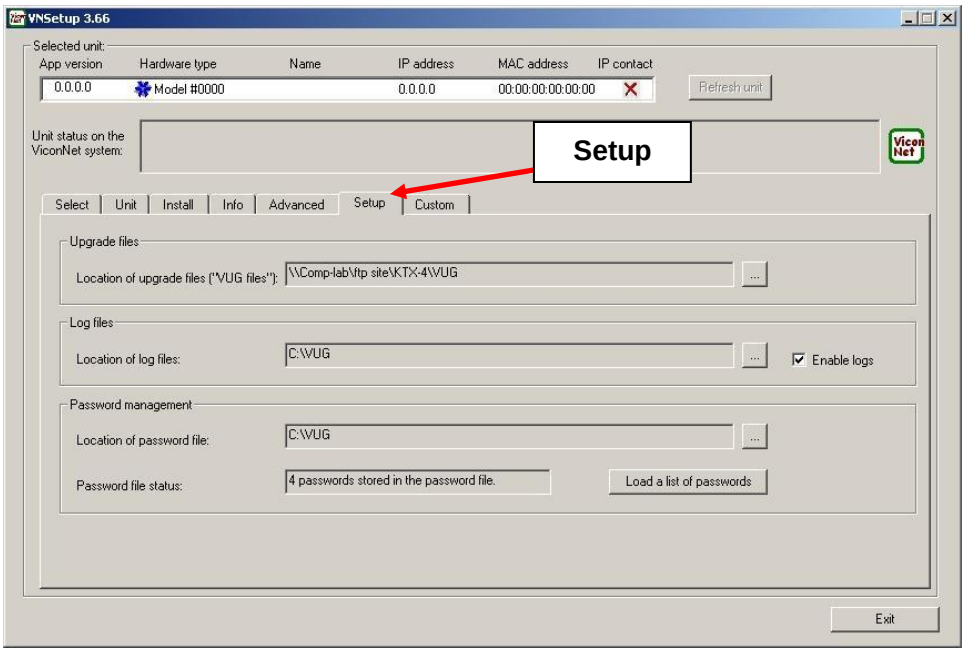
1. Make sure the MAC address and password of the H264-ENCDR is available. Use MAC Address log provided.
2. Verify that the H264-ENCDR is physically connected to the configuring workstation via the network.

Setup TAB

Note

Since the Setup configuration affects the entire installation process, it MUST be configured prior to attempting upgrades or logging.

In the File Setup TAB, 3 fields are defined. The *Upgrade files* field indicates the installation upgrade directory. The *Log files* field allows the user the ability to put a copy of log files in a predefined directory. *Password management* selects a directory to save all password files. (By default, the setup files will be installed to C:\VUG.) In *Password file status*, the number of passwords stored is displayed. *Load a list of passwords* is intended for very large sites only. Contact Technical Support to use this feature.



Select TAB

The Select TAB allows the user to select the relevant IP Unit in order to change its settings or to upgrade its version.

1. From the *Unit selection* list, select the relevant IP product. In case of multiple sites, it is advised to use the filter under the *Unit Type* field. Click on any column tab to sort names by that definition in ascending or descending order.
2. Once the desired unit has been selected, notice the icon, indicating a password protected unit. In order to change the selected unit's settings on the local PC that is running the VNSetup, a unique password must be entered. The screen will display how many units there are and how many of those are password protected (locked). A remote unit, as in systems using network routers and VLANS (virtual LANs), will not display in the Unit selection list, as those block network broadcast traffic. If you want to select a remote unit, manually enter the IP address in the *IP address of remote unit* field and click *Find remote unit*. The remote unit is added to the list (if needed use a PC on the same VLAN or network to discover the device).
3. Password authentication

   There are two authentication options. You can either authenticate a specific unit, by entering its password, or use a Nucleus authentication, allowing you access to all units in the network that are connected to that Nucleus.

   3.1. Unit authentication - On the *Unit password* field, enter the unit password and press the *Add password* button. Once approved, notice that the icon has disappeared and the user may proceed to next phase. The password will be saved on this PC.

Note

The unit password is supplied on the sticker with the MAC address in the accessory kit package.

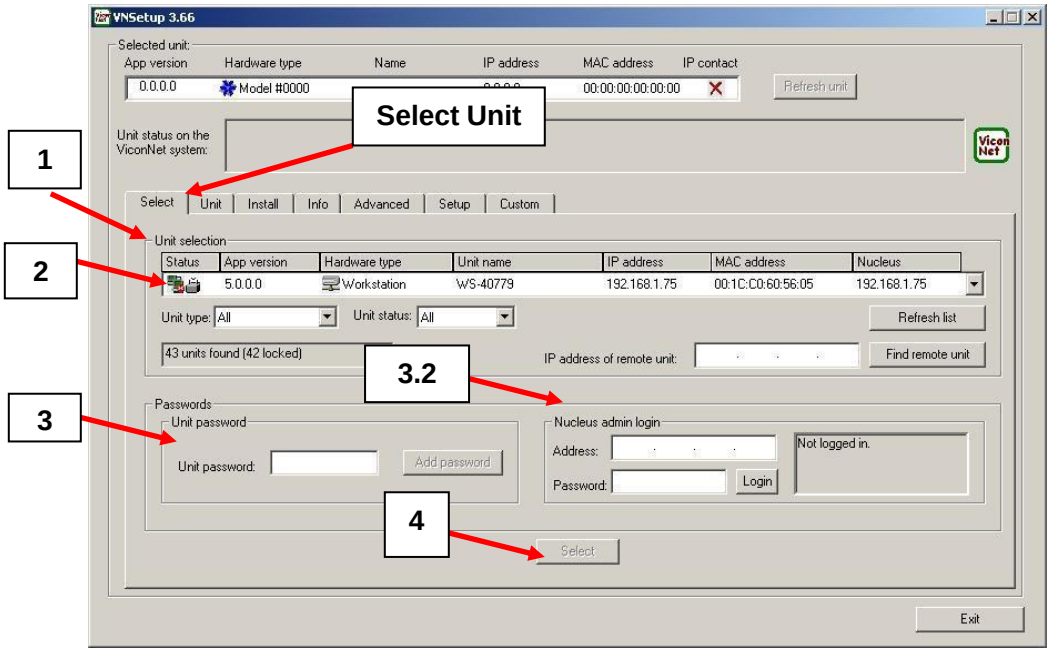
   3.2. Nucleus authentication - On the *Nucleus admin login* field, enter a valid Nucleus IP address and admin password and press the *Login* button. Once approved, notice that the icon has disappeared from **all** the units currently connected to the selected Nucleus and the user may proceed to next phase.

4. Press the *Select Unit* button on the lower section of the screen.

Note

You MUST click the Select button to select the unit to the list for further editing; verify that it is added to the list.

5. The selected unit appears on the *Selected Unit* section on the top of the screen and settings can be changed.



Unit TAB

The Unit TAB allows the user to change the following settings: Unit name, Nucleus IP address, IP address, Subnet mask, Gateway, DNS, DHCP, Time zone, Daylight saving time, Local time, Local date, and Debug level (if requested by technical support), on a scale of 0-4, where 4 is highest debug level.

Note

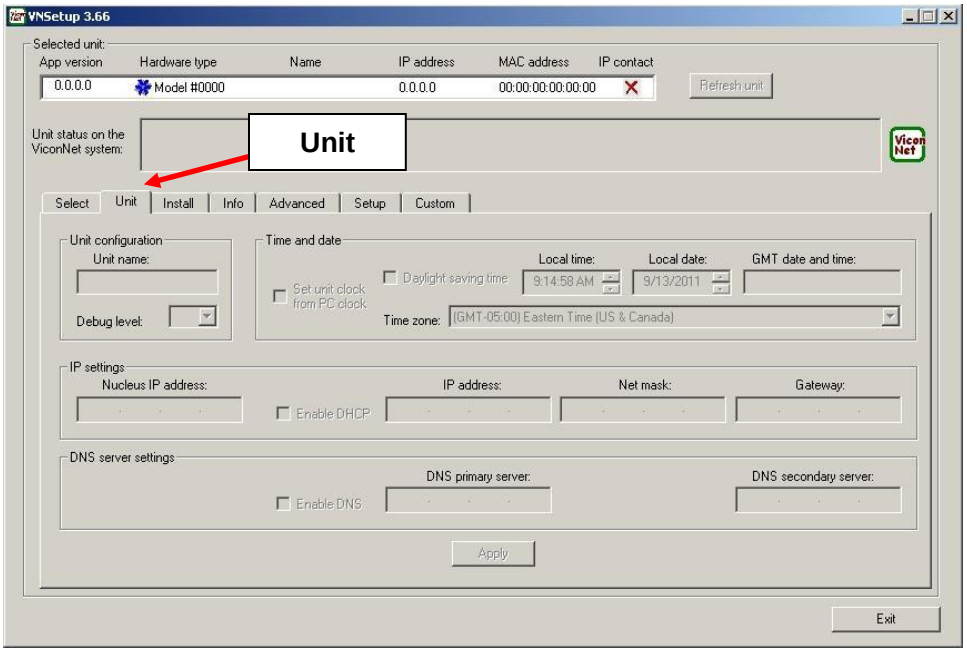
The *Apply* button must be pressed for changes to take effect.

Note

Verify all IP addressing parameters with your IT administrator.

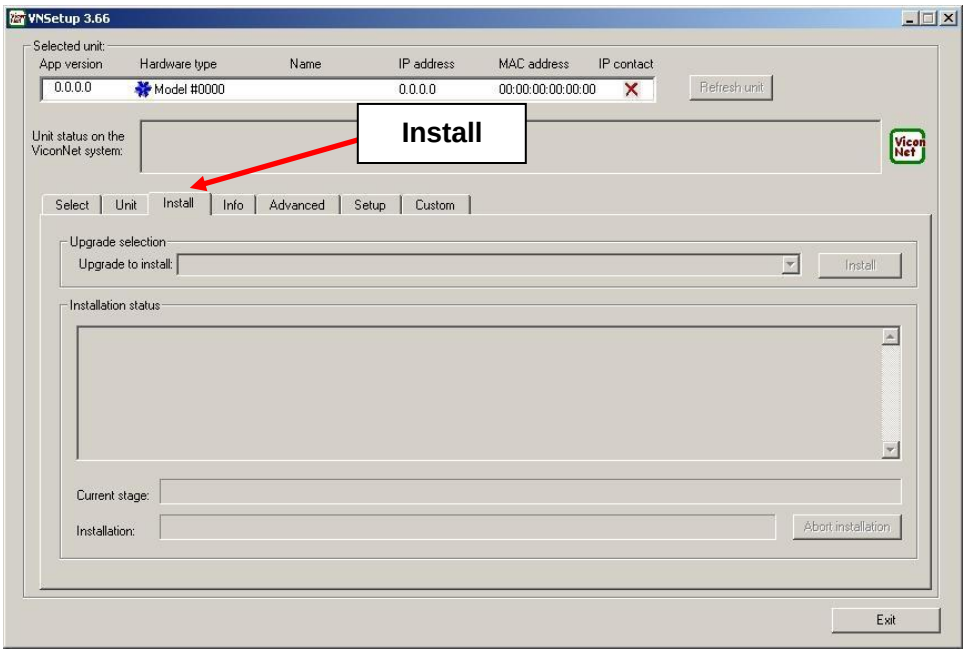
Note

In order for the DHCP option to work properly, verify that the DHCP server **does not expire** the IP address licensed to the encoder. (Encoder should always receive the same IP address from the DHCP server.)



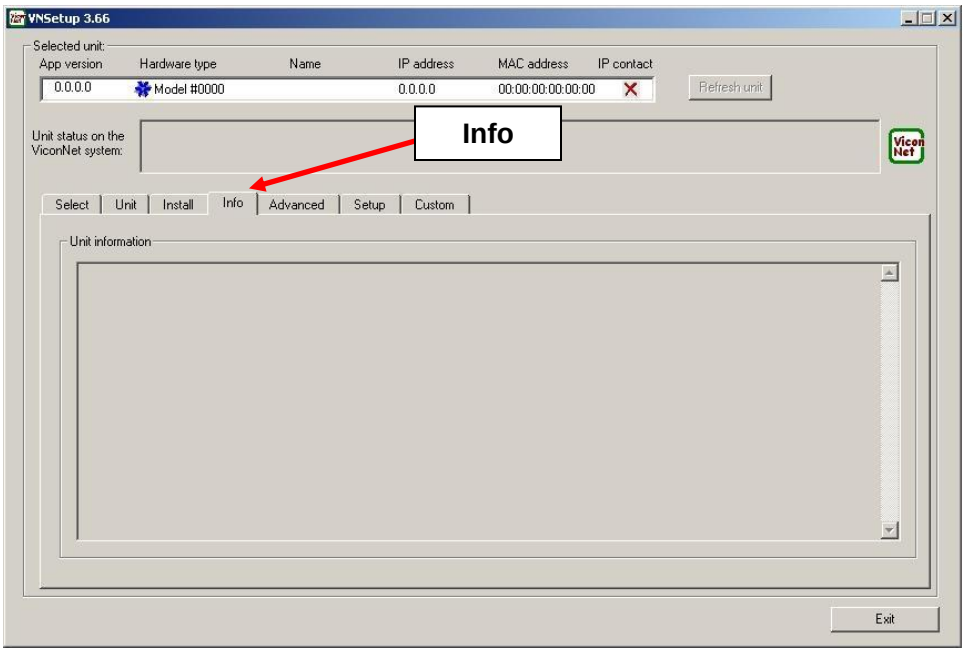
Install TAB

The Install TAB allows the user to install/upgrade newer versions. Choose the correct version and click Install to send to the selected unit.



Info TAB

The Info TAB displays the selected IP product general information.



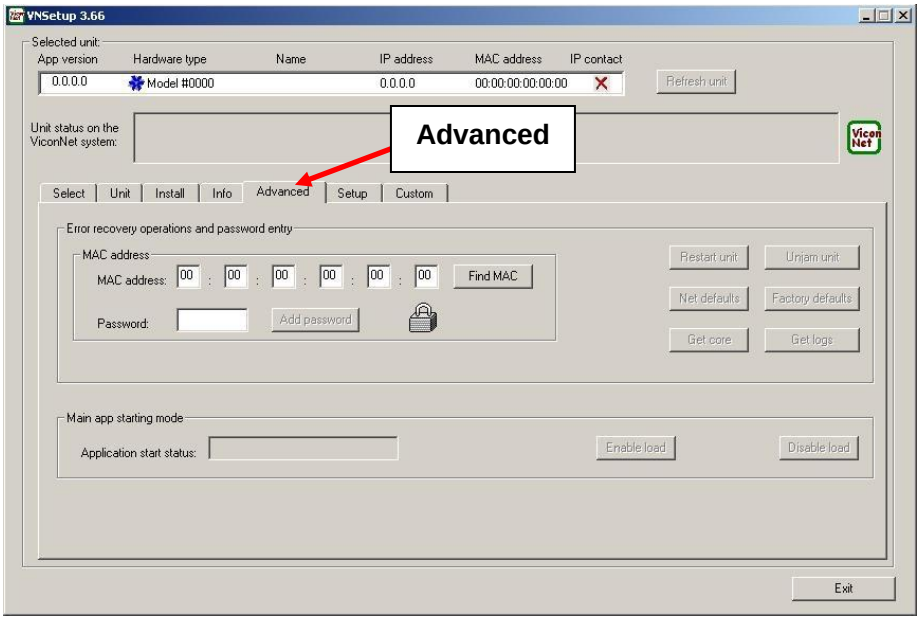
Advanced TAB

The Advanced TAB functionalities allow the user to handle unexpected events on a specific remote unit when they occur.

When a problem occurs, the user can choose to *Unjam Unit* to restart the unit's firmware, *Restart Unit* to restart the hardware, *Net Defaults* to return the initial network settings and *Factory Defaults* to return to the initial configuration. *Get core* and *Get logs* are used mostly for debugging purposes and are not relevant for the encoder.

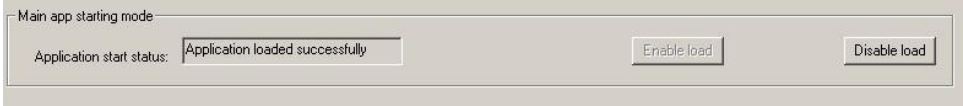
The *Main application starting mode, Application start status* may be "*Unknown"*, "*Application loaded successfully"* or "*Loading of application is disabled"*. The *Disable Load* button allows the pausing of the application load in case of software issues while still permitting communication via VNSetup; the *Enable Load* button resumes the application load.

The default value for proper dome operation MUST be "Application loaded successfully" and the Enable button grayed out.



Note:

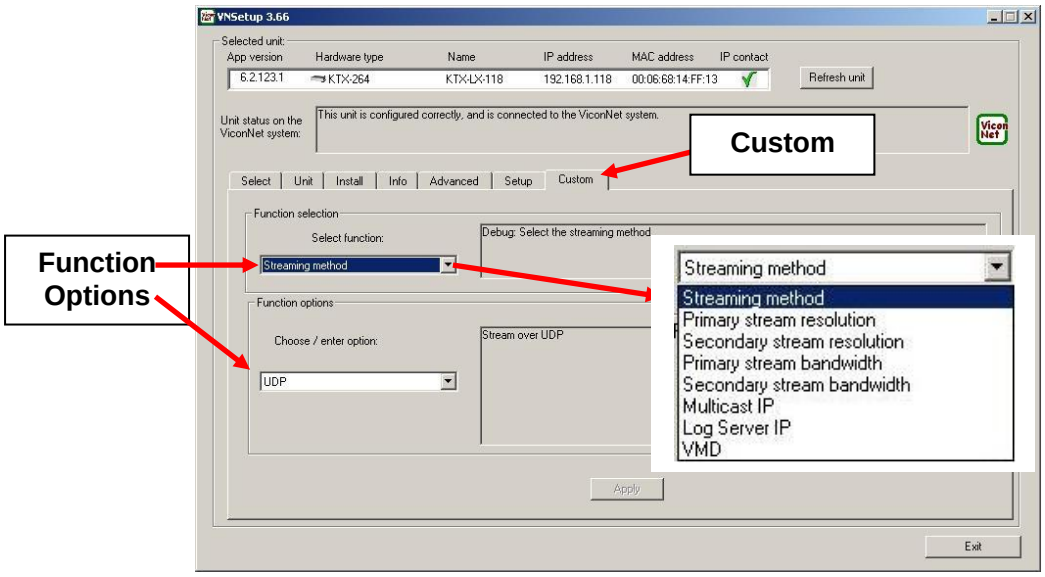
If *Factory defaults* is selected, make sure that *Application start status* states *Application loaded successfully*. The screen would look as below.



If that is not the case, Enable load will not be grayed out; press the *Enable load* button. Click OK when the box displays.

Custom TAB

The Custom TAB allows setup of the video streams.



Streaming Function selection - Select the streaming method.

Primary Stream Bandwidth – Select the network bandwidth for each camera's primary video stream from 100 Kbps – 8 Mbps

Secondary Stream Bandwidth – Select the network bandwidth for each camera's secondary video stream from 100 Kbps – 8 Mbps

NTP – Select Disable or Enable. This should be disabled when using ViconNet

Multicast IP (future feature) – Select the IP address to be used for multicast streaming. This selection is only relevant if choosing a multicast streaming method for this unit. Note: when using Multicast, each unit needs to have its own multicast IP. 232.0.0.0 is default.

Log Server IP – For use ONLY for technical diagnostics if instructed by Vicon Technical Support. Enter the IP address of the computer on which diagnostics logs are to be saved. 0.0.0.0 is default

Streaming Function options – Select the network streaming function used. Choose from TCP, UDP, multicast/ASM or multicast/SSM.

TCP – TCP stream (unicast)

UDP - UDP stream (unicast); default

Multicast/ASM – Any-Source-Multicast stream; compatible with most multicast enabled network (traditional method).

Multicast/SSM – Source-Specific-Multicast stream; compatible with SSM enabled network (an advanced method that requires network specific capabilities).

The table below provides the ports used by the H264-ENCDR when streaming video from the different channels. All streams arrive from the same IP address; the port use is done automatically by ViconNet and the encoder. This information is important for fire-walled environments where video must be allowed through.

Ports for Streaming Video

Channel No.	Main Stream Port	Secondary Stream Port
1	554	8554
2	8555	8556
3	8557	8558
4	8559	8560

ViconNet Configuration

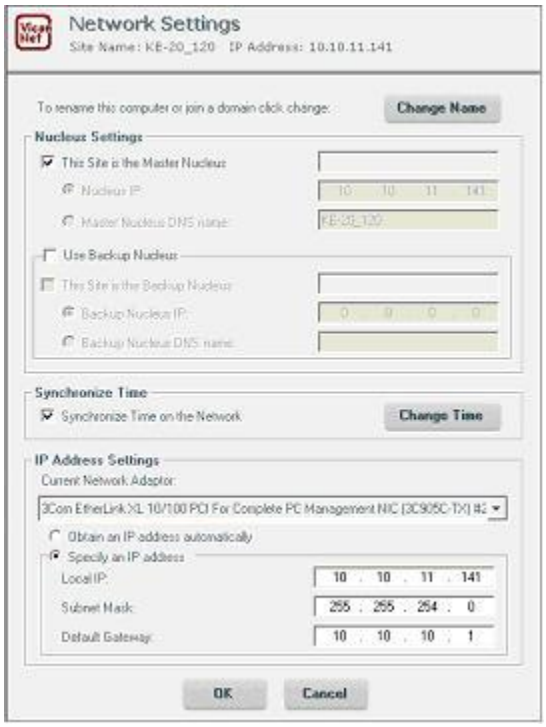
After the H264-ENCDR has been setup with the proper IP address, configuration features from a remote workstation, server or recorder are available as follows.

- A network settings screen is used to modify the H264-ENCDR's IP parameters. This allows great flexibility in network setup.

Note

This setup can be performed from any VN-WS/VN-NVR Workstation connected to the H264-ENCDR and to the Nucleus or from a Kollector.

1. Verify that the H264-ENCDR is connected to the network, that it is active and that it is configured to use the same Nucleus.
2. From the Workstation desktop, run the ViconNet application.
3. After logging in, open the site setup selection window.
4. Select the H264-ENCDR setup.
5. Open the *Network Setup and Site Name* setup window. *Network Settings* window will display. See Figure below.
6. Change the required parameters and click OK. (See your IT administrator for specific network parameters.) Application of the H264-ENCDR will restart.



Network Settings Window

- An Authorization screen is used to establish authority levels, by user group. Functions such as PTZ and video view, record and playback can be set for authority level.
- A priority screen is used to establish video quality and FPS levels.

ViconNet (IP/LAN) Version Operation

The following functions are supported by the ViconNet system through a workstation, recorder or server.

1. System macros can be configured to view and record the H264-ENCDR's video. In addition, within macros, alarms can be sent and remote macros triggered.
2. An alarm can be triggered upon video motion detection and video loss. This alarm can be sent remotely to other networked units.
3. PTZ control can be performed from any networked workstation, recorder or server. Authorization for PTZ can be assigned to specific operator levels.

Refer to the ViconNet workstation manual XX113-3X for complete information on operation. A copy of the manual can be found on the CD included.

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: 631-952-2288; Toll-Free: 1-800-645-9116; Fax: 631-951-2288

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.

Technical Information

Specifications	
Input Voltage	24 VAC ±20%, 50/60 Hz nominal. Power over Ethernet IEEE 802.3af. **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	470 mA max @ 24 VAC; PoE: 205 mA max @ 48 VDC
Power Consumption	11.3 W
Heat Equivalent	39.55 btu/hr
Certifications	CE; FCC Class A; UL

Video Specifications	
Video Channels	4
Video Formats Supported	NTSC/EIA and PAL/CCIR
Video Compression	H.264
Video Streaming	TCP, UDP, unicast and multicast. Refer to the table under VN Setup, Custom TAB.
Resolutions	NTSC: HCIF, CIF, 2 CIF, 4 CIF (352x120 - 720x480); PAL: HCIF, CIF, 2 CIF, 4 CIF (352x144 - 720x576).
Frame Rate	30/25 fps (NTSC/PAL) per camera at full resolution*
Alarms	4 dry contact, N.O./N.C. inputs. 4 relay control (open collector logic) outputs for customer-supplied external relay (5 - 24 VDC, 500 mA per output); requires separate power supply (customer supplied).
Audio	4 line-level microphone/speaker inputs

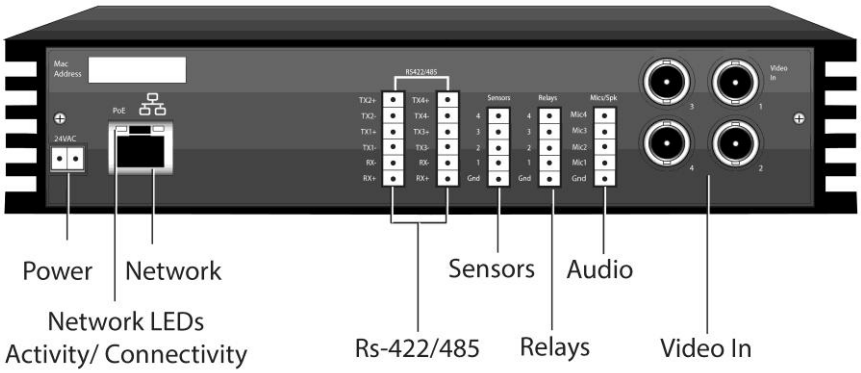
PTZ Control	2 RS-422/485 simplex protocol using Phoenix connections

Mechanical Characteristics

Application	Indoor
Mounting	Desk, wall or rack mounting with optional mounting accessories
Dimensions	Height (H): 1.73 in. (44 mm) Width (W): 8.5 in. (216 mm); Depth (D): 6.75 in. (153 mm), including connectors
Weight	2.25 lb (1.0 kg)
Construction	Aluminum case/aluminum extrusion

Environmental Characteristics

Operating Temperature Range	32 to 104° F (0 to 40° C)
Operating Humidity Range	0 to 90% relative, non-condensing



Vicon Standard Equipment Warranty

Vicon Industries Inc. (the "Company") warrants your equipment to be free from defects in material and workmanship under Normal Use from the date of original retail purchase for a period of three years, with the following exceptions:

1. Uninterruptible Power Supplies: Two years from date of original retail purchase.
2. VDR-700 Recorder Series: One year from date of original retail purchase.
3. V5616MUX: One year from date of original retail purchase.
4. Arecont Cameras: One year from date of original retail purchase.
5. FMC series fiber-optic media converters and associated accessories: Lifetime warranty.
6. For PTZ cameras, "Normal Use" excludes prolonged use of lens and pan-and-tilt motors, gear heads, and gears due to continuous use of "autopan" or "tour" modes of operation. Such continuous operation is outside the scope of this warranty.
7. Any product sold as "special" or not listed in Vicon's commercial price list: One year from date of original retail purchase.

Date of retail purchase is the date original end-user takes possession of the equipment, or, at the sole discretion of the Company, the date the equipment first becomes operational by the original end-user.

The sole remedy under this Warranty is that defective equipment be repaired or (at the Company's option) replaced, at Company repair centers, provided the equipment has been authorized for return by the Company, and the return shipment is prepaid in accordance with policy.

The Company will not be obligated to repair or replace equipment showing abuse or damage, or to parts which in the judgment of the Company are not defective, or any equipment which may have been tampered with, altered, misused, or been subject to unauthorized repair.

Software supplied either separately or in hardware is furnished on an "As Is" basis. Vicon does not warrant that such software shall be error (bug) free. Software support via telephone, if provided at no cost, may be discontinued at any time without notice at Vicon's sole discretion. Vicon reserves the right to make changes to its software in any of its products at any time and without notice.

This Warranty is in lieu of all other conditions and warranties express or implied as to the Goods, including any warranty of merchantability or fitness and the remedy specified in this Warranty is in lieu of all other remedies available to the Purchaser.

No one is authorized to assume any liability on behalf of the Company, or impose any obligations on it in connection with the sale of any Goods, other than that which is specified above. In no event will the Company be liable for indirect, special, incidental, consequential, or other damages, whether arising from interrupted equipment operation, loss of data, replacement of equipment or software, costs or repairs undertaken by the Purchaser, or other causes.

This warranty applies to all sales made by the Company or its dealers and shall be governed by the laws of New York State without regard to its conflict of laws principles. This Warranty shall be enforceable against the Company only in the courts located in the State of New York.

The form of this Warranty is effective July 1, 2014.

THE TERMS OF THIS WARRANTY APPLY ONLY TO SALES MADE WHILE THIS WARRANTY IS IN EFFECT. THIS WARRANTY SHALL BE OF NO EFFECT IF AT THE TIME OF SALE A DIFFERENT WARRANTY IS POSTED ON THE COMPANY'S WEBSITE, *WWW.VICON-SECURITY.COM*. IN THAT EVENT, THE TERMS OF THE POSTED WARRANTY SHALL APPLY EXCLUSIVELY.

Vicon Industries Inc.

For office locations, visit the website:

www.vicon-security.com

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