DVTel EA-201-0 Encoder User Manual

Installation and user instructions included.

Contents

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1.1. Safety

Observe due diligence and proper security and safety standards when installing and operating the unit.

To help ensure safety and to help reduce risk of injury or damage, observe the following:

- Ensure the unit is installed and operating in an indoor environment. The encoder is for indoor use only.
- Place or install the unit on a secure flat surface or mount it using optional hardware.
- Ensure the operating environment is not contaminated by dust, particles, chemicals, or water and use proper maintenance to ensure the unit is clean and dry.
- Maintain an ambient room temperature sufficient to ensure the operating temperature is 32ºF to 131ºF (0ºC to 55ºC), with no more than 95% non-condensing humidity.
- Use the properly rated power supply unit or PoE and protect against static electricity, ground faults and power surges.
- Assure proper ventilation and access to the unit. If the unit is installed in an enclosed cabinet assure proper temperature and environmental control and ventilation are provided. Never block the ventilation of the unit.
- Never connect devices to the relay output of the encoder that would pose as a safety risk or liability if operated automatically by the unit, from changes in reset, or from remote commands.
- Observe local codes and laws and ensure installation is in accordance with fire, security and safety standards.

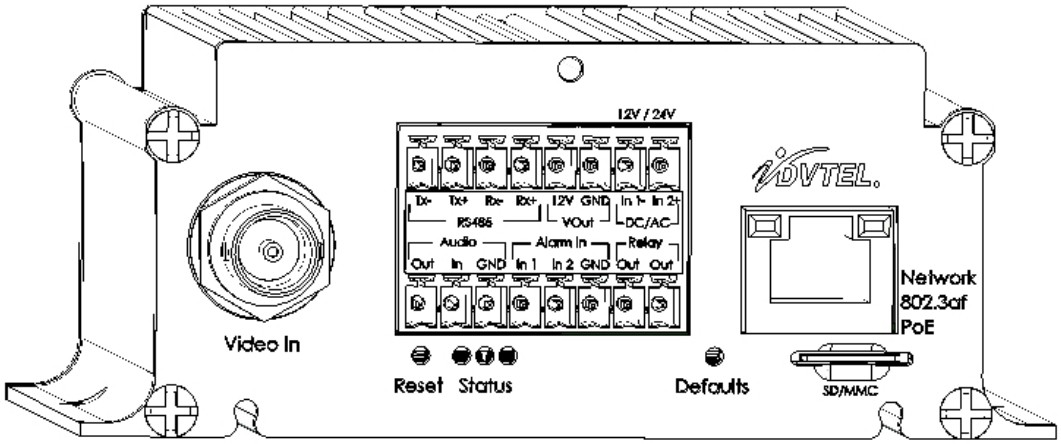
1.2. Related Documentation

The following documentations contain related information:

- EA-201-0 Encoder Quick Install Guide
- UnifiedConfigurator User Guide
- DVTel Latitude User Guide

2. Overview of the EA-201-0 Encoder

The DVTel EA-201-0 Encoder provides the latest H.264 and MPEG-4 (ISO) for up to 60FPS or 2x30 Frames Per Second (FPS) on two streams. Its video compression technology provides real-time SD quality images at the lowest bandwidth and storage costs.



The following is a highlighted list of features for the EA-201-0 encoder:

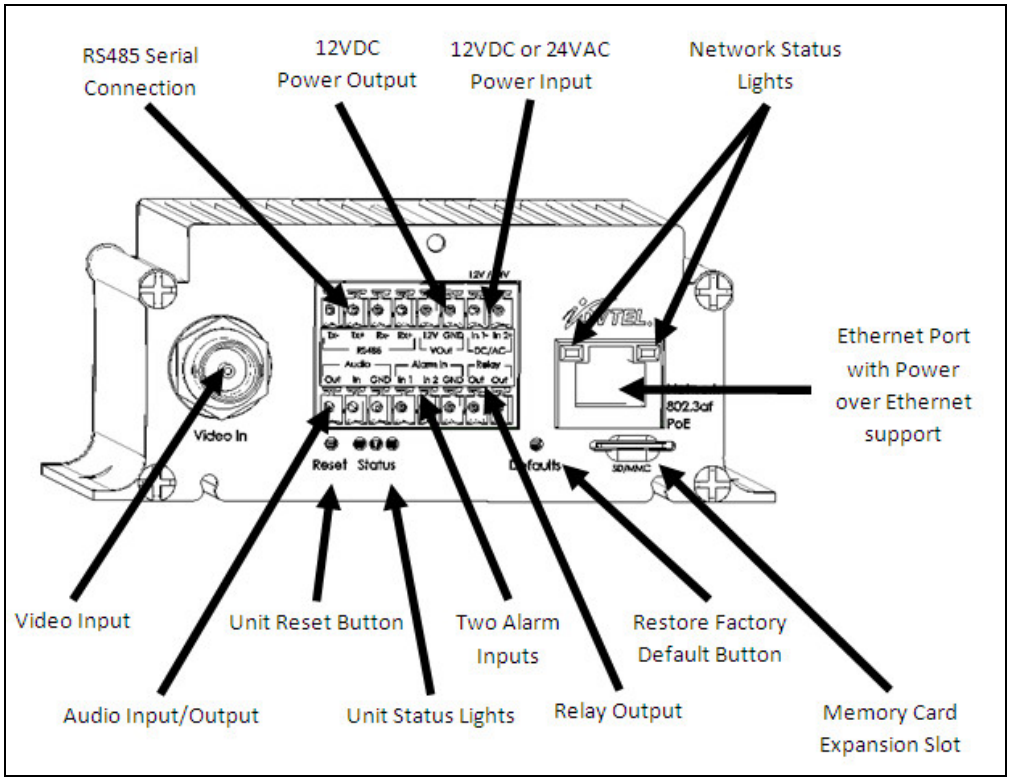
- Dual-stream H.264/MPEG-4 Video
- Multi-video Resolutions up to D1
- Up to 2x30 NTSC (2x25 PAL) FPS
- MicroSD Slot Available
- Bi-directional Audio
- 2 Alarm Inputs / 1 Relay Output
- Unicast or Multicast
- 12VDC/24VAC or PoE

Related Links

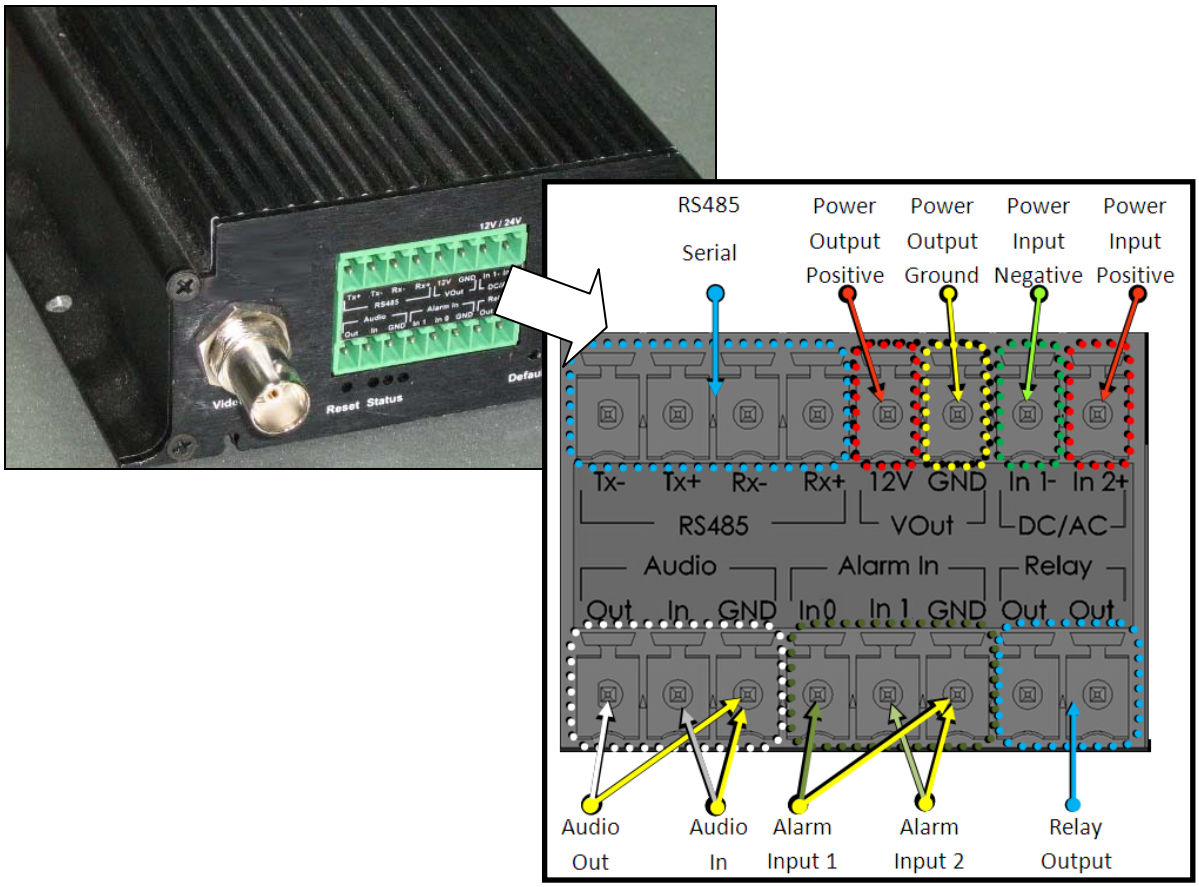
- EA-201-0 Encoder Hardware Overview
- Product Dimension and Weight
- Frame Rate and Performance
- Understanding the LED Status Indicators
- Package Contents
- Optional Accessories

2.1.1. EA-201-0 Encoder Hardware Overview

The following diagram shows the EA-201-0 encoder connections and features:



The following diagram shows a close-up view of the terminal block connection for the EA-201-0 encoder unit.



The following table describes the features and labels on the EA-201-0 encoder:

Connector Name	Label.	Definition	Remarks
Defaults (button)	-	Restore to factory default	
Reset (button)		Reboots the unit	
Video In (BNC)	-	Analog Video Output - Requires Configuration	

Connector Name	Label.	Definition	Remarks
Alarm In (terminal block)	In 1	Alarm Input 1	Interface for connecting an external (alarm input) device. One of two alarm inputs supported. Terminal for the first of a wire pair. Second wire shares the Alarm In GND
	In 0	Alarm Input 2	Interface for connecting an external (alarm input) device. The second of two alarm inputs supported. Terminal for the first of a wire pair. Second wire shares the Alarm In GND
	GND	Ground	The ground terminal for both the In 1 and In 2 Alarm Inputs.
Relay (terminal block)	Out	Relay Output (left wire)	Interface for connecting a single external (Relay Output) device/circuit. This is the terminal for connecting the first wire of the wire pair.
	Out	Relay Output (right wire)	Interface for connecting the same external (Relay Output) device/circuit. Terminal for the second wire of a wire pair.
Audio (terminal block)	Out	Line out	The first wire of the audio out. The second ground wire is shared with the Audio GND.
	In	Line In	The first wire of the audio in. The second ground wire is shared with the Audio GND.
	GND	Audio ground for both line-in and line-out (Audio In and Audio Out)	The connection shared for the second wire (Ground/negative) from either Audio In or Audio Out.
Network 802.3af PoE (J45 port)		Network Lan/Wan connection for 10/100 Ethernet as well as Power over Ethernet support (PoE) to 802.3af standards.	
VOut (terminal block)	12V	12 volt direct current power output. For connecting the first wire of a wire pair. Maximum 3 Watt - 250 mA	

Connector Name	Label.	Definition	Remarks
	GND	12 volt direct current power output. For connecting the second wire of a wire pair.	
DC/AC (terminal block)	In1	Power input connection for either 12 volt direct current or 24 volt alternating current. For connecting the first wire of a wire pair. If you are using a network that has PoE 802.3af, this power connection is not needed.	
	In2	Power input connection for either 12 volt direct current or 24 volt alternating current. For connecting the second wire of a wire pair. If you are using a network that has PoE 802.3af, this power connection is not needed.	
Status		Row of three indicator lights. 1. Identify: A light that can be set in the Configurator to blink continuously and is used to help operators identify the physical units by sight. Used for finding a unit among other units where it is installed. 2. Encoder activity: A light that indicates the unit is operating. 3. [not in use]	

2.1.2. Product Dimension and Weight

The EA-201-0 encoder has the following dimensions:

- **Physical Dimensions:**
  (L x W x H) 4.1” x 3.35” x 1.63” (104 x 85.5 x 41.5mm)
- **Unit Weight:**
  9.2 oz (0.26Kg)

2.1.3. Frame Rate and Performance

The EA-201-0 encoder has dual video streams that can be configured to H.264 or MPEG-4 (ISO). It supports up to 60FPS or 2x30 Frames Per Second (FPS) on two streams.

30/25FPS (NTSC/PAL) at D1 resolution starting at less than 1.5 megabits per stream.

The EA-201-0 encoder provides the following dual streaming formats:

- H.264 + H.264
- MPEG-4 + H.264

MPEG-4 + MPEG-4 Additionally the following resolution settings for MJPEG & H.264 format can be selected:

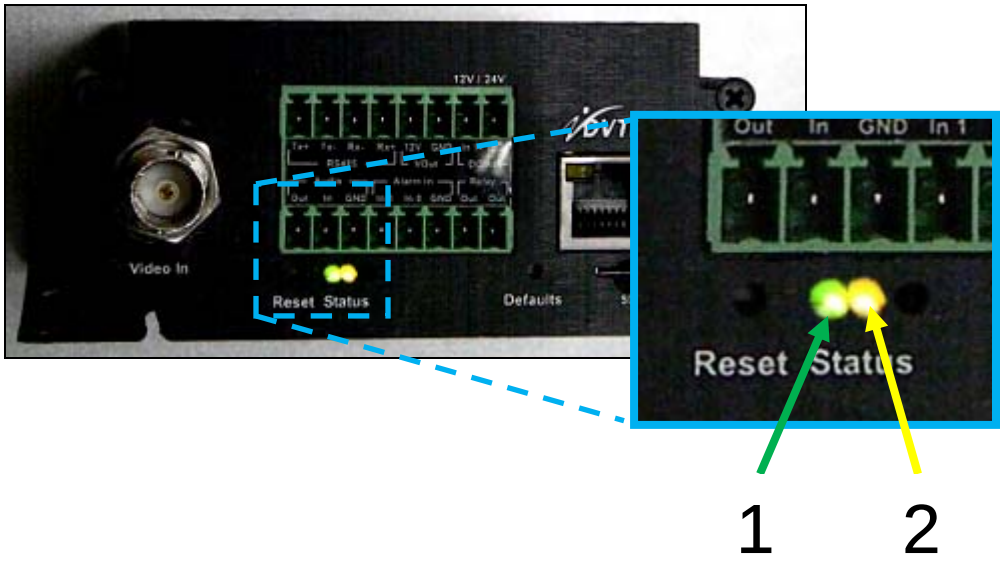
- Highest 1.3Mpixel:
  - PAL: 1280 × 960 (12fps)
  - NTSC: 1280 × 960 (15fps)
- HD 720p:
  - PAL: 1280 × 720 (25fps)
  - NTSC: 1280 × 720 (30fps)
- D1:
  - PAL: 720 x 576 (25fps) - SD 576i
  - NTSC: 720 x 480 (30fps) - SD 480i
- VGA:
  - PAL: 640 × 480 (25fps)
  - NTSC: 640 × 480 (30fps)
- CIF:
  - PAL: 352 × 288 (25fps)
  - NTSC: 352 × 240 (30fps)
- QVGA:
  - PAL: 320 x 240 (25fps)
  - NTSC: 320 x 2400 (30fps)
- QCIF:
  - PAL: 176 × 144 (25fps)
  - NTSC: 176 × 120 (30fps)

2.1.4. Understanding the LED Status Indicators

The LED stats indicators on the EA-201-0 encoder has three Status light areas:

1. Identify
   A light that can be set in the Configurator to blink continuously and is used to help operators identify the physical units by sight. Used for finding a unit among other units where it is installed.
2. Encoder activity
   A light that indicates the unit is operating.
3. [not in use]

The following image shows the status lights:



In addition to the status indicators, there are LED lights for the Ethernet 10/100 connector that operates when the unit is connected to the LAN:

- Green Link Light indicates good network connection.
- Orange Activity Light flashes for network activity indication.

2.1.5. Package Contents

Each EA-201-0 encoder package includes the following:

Count	Description
1	EA-201-0 encoder unit
1	EA-201-0 encoder product CD, which includes documentation and configuration software-tools. (DVTEL EA-201-0 Encoder User & Install Guide)
1	Printed EA-201-0 Encoder Quick Install Guide
2	Terminal block connectors

2.1.6. Optional Accessories

The following power supply is an optional accessory that you can order when purchasing the EA-201-0 encoder:

- **DVT-PWR-DC18W** 19W Power Supply for a single unit

3. Installing the EA-201-0 Encoder

3.1. Workflows

The following workflows are recommended:

- Pre-Install Workflow
- Installation Workflow
- Post Hardware Install

3.1.1. Pre-Install Workflow

Pre-install for EA-201-0 encoder

1. Install the video camera or video source.
2. Determine EA-201-0 encoder placement. Install boxes and associate equipment if needed.
3. Establish or Install LAN/WAN network access to the EA-201-0 encoder location (network wiring, ports, wireless, WAP (Wireless Access Point), etc.).
4. Install wiring between dry contacts (Relay Outputs, Alarm Input) and the EA-201-0 encoder (at the planned placement location).

WARNING!
Never connect devices to the Relay Outputs that when operated automatically by the unit or users of the system, pose a safety or security risk.

5. Install wiring between PTZ controller leads and the serial connection of the EA-201-0 encoder.
6. If you intend to use the EA-201-0 and all of its features with DVTel Latitude NVSM system, assure the version is Latitude Version: 6.1 or greater.

3.1.2. Installation Workflow

1. Establish Network IP
   Check if the EA-201-0 encoder unit's default IP can be used on the IP network. If not, connect the unit to a computer Ethernet locally (not through the network and change it using the UnifiedConfigurator. If necessary, configure the LAN/WAN to support the EA-201-0 IP.

   Note: If you plan to use an Administrative user name and password on the unit, it is only for Telnet and Web server access; You do not need these to use the Configurator.

2. Place the EA201 encoder unit.
   Select a location to store the EA201 encoder unit and install any necessary cooling, shelter, and ventilation to maintain proper ambient environment.
3. Connect the EA201 encoder unit to a video source.
4. Connect the unit to the network.
5. If not connected to a network supporting PoE, connect the electric to the EA201 encoder unit.
6. Write down the EA201 encoder unit IPs and MAC addresses. Note which cameras and dry contacts (Relay Outputs and Alarm Inputs) are connected with descriptions. Note the camera model as well as which cameras are PTZ and which are stationary.

3.1.3. Post Hardware Install

The following general workflow outlines the tasks that will need to be done after the install of the EA-201-0 encoder unit. For DVTel Latitude users, the post install procedures covered in greater detail in the DVTel Latitude User Manual.

1. Depending on the software application to be used, you will need to access the software, and if he software is not already communicating with the EA-201-0 encoder make the connections and configurations as needed:
   - If using DVTel Latitude, in the AdminCenter, discover and attach the EA-201-0 encoder unit to an Archiver.
   - If using the WebInterface, visit the unit via Internet explorer web browser and enter the Admin account username and password before configuring via the Web interface.
2. Configure the EA-201-0 encoder unit and cameras for daily use.

3.2. Connecting the Video, Network and Power Cables

The connection of the DVTel EA-201-0 encoder unit The EA-201-0 encoder supports PoE for networks

If using Power over Ethernet (PoE), make sure to connect to an 802.3af or 802.3at POE switch or power injector.

To help protect the unit and connected system components from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).

Note: The DVTel EA-201-0 encoder unit is supported for Latitude Version: 6.1 and up.

The following workflow should be followed in sequence:

1. Connecting the Video Source (camera)
2. Connecting to the Network
3. Connecting the Power Supply to the Input Power Terminal Block Connector

3.2.1. Connecting the Video Source (camera)

The EA-201-0 encoder unit accepts video input from either an analog camera or analog video device.

Video connections are not recommended to be greater than 30 meters (98 feet).

The recommended video coaxial BNC cable specifications is 75Ω coaxial cable impedance.

Use the appropriate connectors for indoor and outdoor cabling. Cables should be maintained at scheduled intervals, connections should be secured, and worn or damaged cables should be replaced to assure optimally low impedance.

Note:
Using a cable longer than the manufacturer's specification for optimal video signal may result in degradation of color and video parameters.

CAUTION:
To avoid damage to the system and system interference, a certified electrician must assure that the ground voltage (ground loops and foreign stray voltage) is comparable among all connected system components (ground isolation transformer may be required to solve ground loop problems). This relates to all grounded devices as well as the shield of video cables and equipment racks.

To connect a video source to the EA-201-0 encoder unit

1. Securely connect the video cable to the output of the camera or device.
2. Connect the other cable end to EA-201-0 encoder unit VIDEO IN connection on the face of the unit.

3.2.2. Connecting to the Network

Before connecting the EA-201-0 encoder unit to the network, assure that the LAN/WAN supports the EA-201-0 encoder IP and will allow the unit to communicate with remote workstations.

For some installations, the IP settings must be changed using the Unified Configurator before connecting to the LAN\WAN network.

Use of Category 5 Ethernet cable is recommended for network connection; to have best transmission quality, cable length should not exceed 100 meters.

By default, the EA-201-0 encoder is shipped with a factory set IP and MAC addresses. The MAC address is labeled on the unit, but the static IP needs to be obtained via the Configurator software (can be found on the CD included with the unit). If you have multiple units connected, consider using the Identify feature to cause the unit to blink. This feature is covered in the Turning On the Identify Status Light from the Configurator section.

If your network uses a firewall, you must configure the firewall to support communication among the components of the system.

To Connect an EA-201-0 encoder unit to the Network:

- Connect one end of the Ethernet cable to the network port and the end to the Ethernet 10/100 port labeled Network 802.3af PoE.

Note:
The Network does not have to use PoE. The reason the label indicates this standard is to assure that if you are using PoE, the standard being used must be 802.3af. If you are using PoE you do not need to connect a power supply to the unit terminal block.

Note:
In some cases, you may need use an Ethernet crossover cable when connecting the EA-201-0 encoder directly to the PC.

Troubleshooting Tip:
Verify the Ethernet port status lights (link indicator and activity indicator LEDs) are correctly lit. • Green Link Light indicates good network connection. • Orange Activity Light flashes for network activity indication.

3.2.3. Connecting the Power Supply to the Input Power Terminal Block Connector

Connecting the electrical power to the EA-201-0 encoder unit is recommended as the last connection to be made. Electrical safety should always be observed. If you are using PoE, you do not need to make this connection because your unit should already be receiving electric power.

WARNING!
To avoid permanent damage to the EA-201-0 encoder, **never** connect a power supply (external power) to the Power Out labeled **VOUT** on the EA-201-0 encoder terminal block face of the unit

To Connect the Input Power:

1. If your Network is not using PoE, do the following:
   a) Connect the properly rated power supply wires to the appropriate positive and negative terminal block connector labeled **DC/AC**.

      WARNING! Do NOT connect the power input to the **VOUT**.

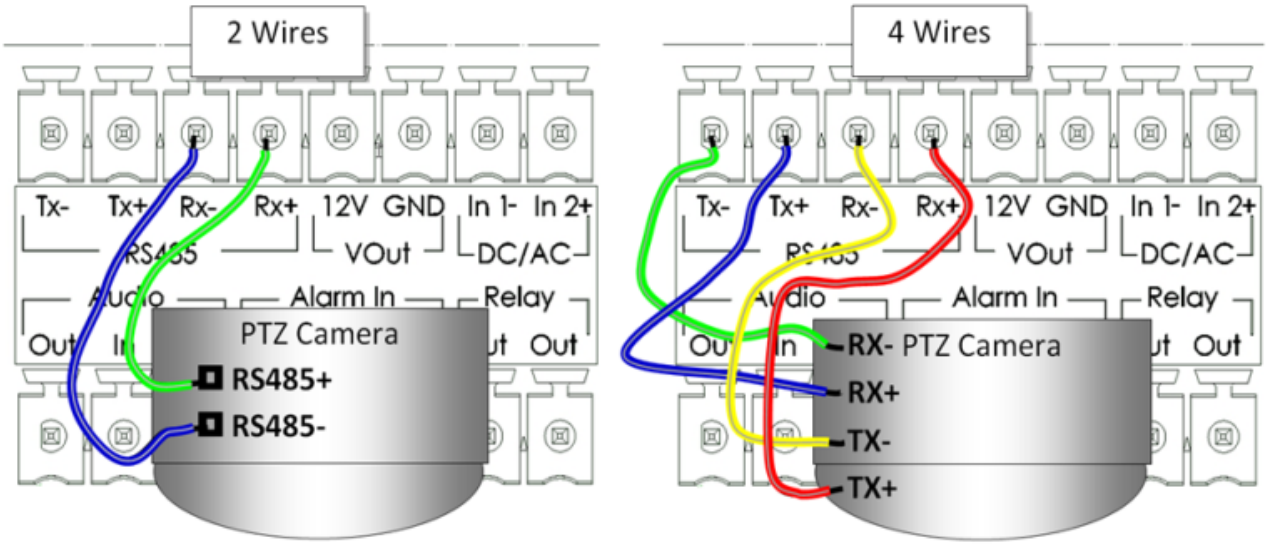
   b) Plug the terminal block connector into the face of the EA-201-0 encoder unit.
2. Verify that one or more LED on the front panel of the EA-201-0 encoder unit is lit.

3.3. Connecting a Serial Device RS-422/485 PTZ Controls

The RS485 serial connection on the terminal block of the EA-201-0 encoder allows you to connect a PTZ controller directly to your PTZ camera. This will allow you to control the PTZ camera being used as the video source to the EA-201-0 encoder.

Through this connection you can use a remote client PTZ controller to move the PTZ camera. For example, using the PTZ control panel in the DVTel Latitude ControlCenter to pan, tilt and zoom the camera.

The following image shows a four wire and two wire connection diagram for attaching the wires to the terminal block connector of the EA-201-0 encoder:



4-Wire Connection Set Up

Signal on Peripheral	Signal on DVTel EA-201-0 encoder
Rx-	Tx-
Rx+	Tx+
Tx-	Rx-
Tx+	Rx+

2-Wire Connection Set Up

Signal on Peripheral	Signal on DVTel EA-201-0 encoder
Data+	RX+
Data-	RX-

To connect the RS-422/485 PTZ Controls

1. Run two or four wires between the PTZ camera and the unit location depending on your connection requirements (two wire or four wire).
2. If not already removed, remove the terminal block plug from the face of the EA-201-0 encoder.
3. Strip the insulation from the tips of the wires so that they can be inserted into the male terminal block connector of the EA-201-0 encoder unit.
4. Connect the wires as following:

   For "**two**" wire connections:

   a) Connect wires to the RX- clamp on the male terminal block connector of the EA-201-0 encoder and connect it to the single negative (minus) controller terminal/connection of the PTZ camera.

   b) Connect wires to the RX+ clamp on the male terminal block connector of the EA-201-0 encoder and connect it to the single positive (plus) controller terminal/connection of the PTZ camera.

For "**four**" wire connections:

a) Connect a wire to the TX- clamp on the male terminal block connector of the EA-201-0 encoder and connect the opposite end to the RX- controller terminal/connection of the PTZ camera.

b) Connect a wire to the TX+ clamp on the male terminal block connector of the EA-201-0 encoder and connect the opposite end to the RX+ controller terminal/connection of the PTZ camera.

c) Connect a wire to the RX- clamp on the male terminal block connector of the EA-201-0 encoder and connect the opposite end to the TX- controller terminal/connection of the PTZ camera.

d) Connect a wire to the RX+ clamp on the male terminal block connector of the EA-201-0 encoder and connect the opposite end to the TX+ controller terminal/connection of the PTZ camera.

3.4. Powering an External Device

The Single Channel Encoder outputs regulated 12 volts which may be used to power external devices, such as video cameras.

The regulated voltage is provided via the PWR OUT port. Care should be given in assuring that connections are properly rated

Power Out Parameters

Parameter	Description
Regulated voltage	12VDC
Maximum power	3 Watt
Amperage	250 mA

WARNING!

To avoid permanent damage to the EA-201-0 encoder, **never** connect a power supply (external power) to the Power Out **VOUT**.

WARNING!

To avoid permanent damage to the EA-201-0 encoder or connected device, assure that the connected meets the the Power Out **VOUT** power specifications.

3.5. Initial Configuration of the EA-201-0 (Unified Configurator)

You can use the configurator to change the primary settings of the EA-201-0 encoder.

If you have not installed the configurator, see the following:

- Prerequisites and System Requirements
- Installing the Configurator from Disk

In this section:

3.5.1. Prerequisites and System Requirements

Upon receiving a Single Channel Encoder, its basic parameters, such as the IP address, need to be configured. To configure the device, you need the Device Configurator. This application is provided in the DVTEl Latitude AdminCenter's Unified Configurator and also along with the EA-201-0 encoder.

The following hardware and software requirements must be fulfilled to configure a EA-201-0 encoder:

• Windows XP or greater

• An Ethernet network card

3.5.2. Installing the Configurator from Disk

The Configurator is a small application that can be used to find and configure basic settings of encoder and camera units on the network.

Once the EA-201-0 encoder unit is discovered by the configurator, it is displayed in the discover table along with key information.

The Device Configurator is an executable file that is compressed along with the VsipApi.dll file,

Install the Configurator from Disk

1. Copy the Device Configuartor zip file to the local computer.
2. Extract all the files to the hard disk of your computer.
3. Double click the Configurator.exe file and if a confirmation to run security prompt appears, confirm to run the file.

3.5.3. Accessing the EA-201-0 in the Configurator

The Unified Configurator can be used to launch the Configurator. The Configurator is a small application that can be used to find and configure basic settings of encoder and camera units on the network.

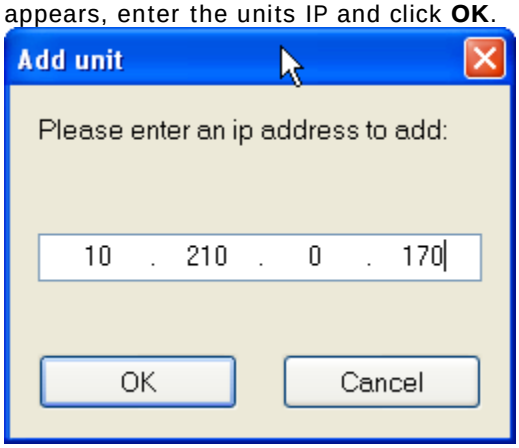
Once the EA-201-0 encoder unit is discovered by the configurator, it is displayed in the discover table along with key information.

To access the EA-201-0 encoder in the Configurator:

1. Do one of the following to open the Device Configuration Tool:
   - From the DVTel Latitude AdminCenter, in the sidebar menu, click **Applications▶Device Configuration Tool** and in the Unified Configurator dialog that appears, click **Pro Line A**.
   - From the EA-201-0 encoder installation CD, double-clicking on `Configurator.exe`

   The Configurator dialog appears. Allow the Configurator to complete its search of the VPN for Pro Line A units. When finished the status will appear to the right of the toolbar indicating how many units were discovered.

2. If the EA-201-0 encoder unit doesn't appear, click **Add** and in the dialog box that appears, enter the units IP and click **OK**.

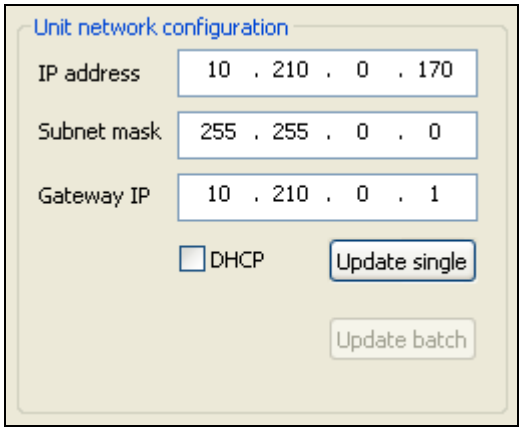


3. In the discovery table, select the EA-201-0 encoder row.
The setting values from the unit appear in the fields of the Configurator screen, the toolbar enables the available options for making configurations and the right-click menu is available for executing commands on the unit.

Changing the EA-201-0 encoder IP Address and Network Connection Settings (Configurator)

You can change the Network connection settings and IP address of the EA-201-0 encoder unit using the Configurator.

Unit Network configuration Area



Unit Network Configuration Settings

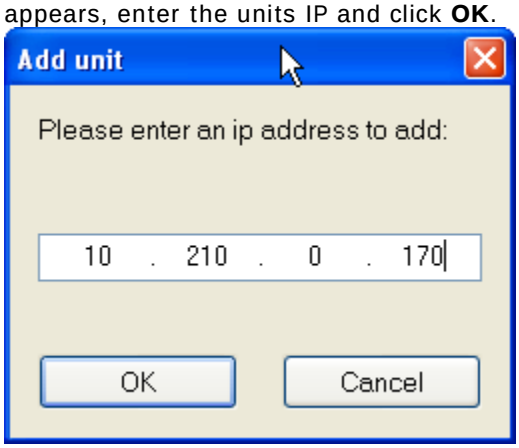
Label	Description
IP address	The Internet Protocol number for unique logical addressing of the unit. This is the four part IP number (octets) for communication on the network.
Subnet mask	This is a filter used to limit the range of communication accepted by the unit on the network. Dot-decimal notation.
Gateway IP	This is the IP address of the gateway on the LAN/VLAN.
DHCP	This is a setting that allows enabling the unit to automatically obtain a fresh IP address from a network DHCP mechanism. If the network doesn't have a DHCP mechanism, this setting will not change the IP address when the Update single button is clicked.
Update single	A command button that applies and saves the settings made in the unit network configuration to the last selected unit in the discovery table of the Configurator.
Update batch	A command button for applying settings to multiple selected units.

To change the EA-201-0 encoder IP address and network connection settings

1. Do one of the following to open the Device Configuration Tool:
   - From the DVTel Latitude AdminCenter, in the sidebar menu, click **Applications▶Device Configuration Tool** and in the Unified Configurator dialog that appears, click **Pro Line A**.
   - From the EA-201-0 encoder installation CD, double-clicking on `Configurator.exe`

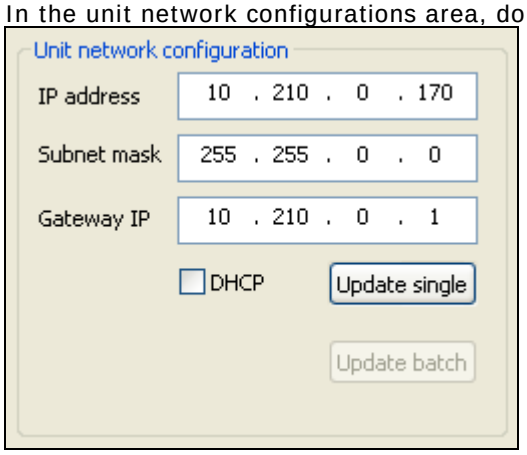
   The Configurator dialog appears. Allow the Configurator to complete its search of the VPN for Pro Line A units. When finished the status will appear to the right of the toolbar indicating how many units were discovered.

2. If the EA-201-0 encoder unit doesn't appear, click **Add** and in the dialog box that appears, enter the units IP and click **OK**.



3. In the discovery table, select the EA-201-0 encoder row.
The setting values from the unit appear in the fields of the Configurator screen.

4. In the unit network configurations area, do the following:



   a) To change the IP address, in the IP Address field enter the new IP numbers.

   b) To change the subnet mask, in the Subnet mask field enter the subnet mask.

   c) To change the gateway address. in the Gateway IP field, enter the new IP number for the Gateway.

   d) If you want the network DHCP mechanism to assign an IP to one or more units, select **DHCP**.

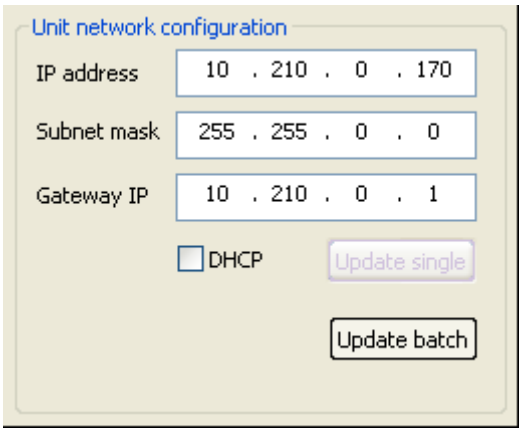
5. When finished click **Update single**.

3.5.4. Update Batch Address and Network Connection Settings

The Configurator allows the configuration of multiple unit settings in one action.

Because multiple units cannot have the identical values for IP, the Update Batch feature increments each IP number. **For example:** The behavior of the batch updating mechanism based on an entry as follows:

Unit Network Configuration-Batch update



Would be as follows for each unit multi-selected in the discovery table:

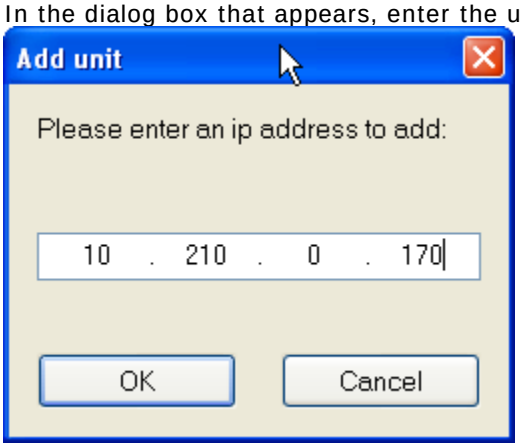
Example Batch Update Matrix

Unit place in the selection sequence	New IP	Subnet mask	Gateway
1	10.210.0.170	255.255.0.0	10.210.0.1
2	10.210.0.171	255.255.0.0	10.210.0.1
3	10.210.0.172	255.255.0.0	10.210.0.1
4	10.210.0.173	255.255.0.0	10.210.0.1
5	10.210.0.174	255.255.0.0	10.210.0.1
6	10.210.0.175	255.255.0.0	10.210.0.1
7	10.210.0.176	255.255.0.0	10.210.0.1
8	10.210.0.177	255.255.0.0	10.210.0.1
9	10.210.0.178	255.255.0.0	10.210.0.1
10+	10.210.0.[*170+(n-1)*]	255.255.0.0	10.210.0.1

To change the EA-201-0 encoder IP address and network connection settings

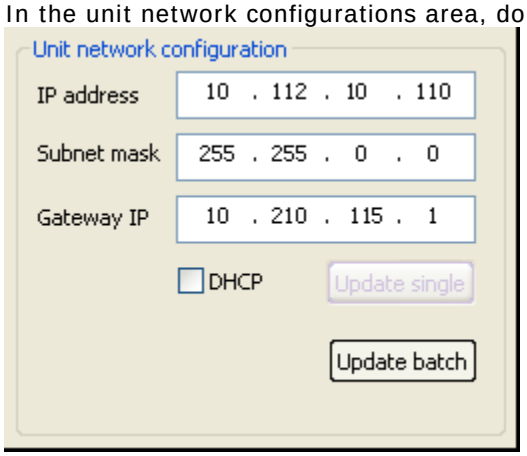
1. Do one of the following to open the Configurator:
   - From the DVTel Latitude AdminCenter, in the sidebar menu, click **Applications▶Device Configuration Tool** and in the Unified Configurator dialog that appears, click **Pro Line A**.
   - From the EA-201-0 encoder installation CD, double-clicking on `Configurator.exe`

   The Configurator dialog appears. Allow the Configurator to complete its search of the VPN for Pro Line A units. When finished the status will appear to the right of the toolbar indicating how many units were discovered.
2. If an EA-201-0 encoder unit doesn't appear, do the following:
   a) In the Configurator dialog, click **Add.**
   b) In the dialog box that appears, enter the units IP and click **OK**.



   c) Repeat steps a) & b) for each EA-201-0 encoder unit on the network that doesn't appear in the discovery table.
3. In the discover table, press **CRTL** and hold it while clicking each of the encoders you want to include in the batch.

4. In the unit network configurations area, do the following:



   a) To change the IP address, in the IP Address field, enter the new starting IP number (all IPs applied will be incremented up from this IP).

   b) To change the subnet mask, in the Subnet mask field enter the subnet mask.

   c) To change the gateway address. in the Gateway IP field, enter the new IP number for the Gateway.

   d) When finished click **Update batch**.

3.5.5. Rebooting the EA-201-0 Encoder Using the Configurator

The EA-201-0 encoder can be rebooted (reset) from remote using the Configurator. It should be noted that the EA-201-0 encoder can be reset and restored in a variety of ways. For more information, see Performing a Reset/Reboot or Restoring Defaults on page 30.

To Reboot the EA-201-0 encoder using the Configurator

1. Access the Configurator and select the unit. For more information on accessing the Configurator, see the Accessing the EA-201-0 in the Configurator section on page 18.

2. On the Configurator toolbar, click  .
   The unit reboots.

3.5.6. Restoring Full Firmware Default Settings Using the Configurator (Factory default)

If you want to restore the EA-201-0 encoder unit configurations to a clean unaltered firmware default (the last working firmware), the Configurator offers a remote software capability to issue a restore command that will revert all the settings to the default values including the IP, subnet mask, gateway IP and more.

This restore does not restore User account passwords.

It should be noted that the EA-201-0 encoder can be reset and restored in a variety of ways. For more information, see Performing a Reset/Reboot or Restoring Defaults on page 30.

CAUTION:
This restore can change the IP. Because the IP address will be restored, a restore of factory defaults can cause network communication that uses the previous IP and gateway to fail. If you restore the defaults, you will likely need to update settings which can include firewalls, monitoring software, archiving and recording software etc., that are associated to the unit. If you want to restore defaults except network communication settings, use the Partial Restore Factory Defaults option instead. For more information see the Partially Restor section on page 25.

To restore (all) Factory defaults to Last Firmware using the Configurator

1. Access the Configurator and select the unit. For more information on accessing the Configurator, see the Accessing the EA-201-0 in the Configurator section on page 18.
2. On the Configurator toolbar, click  .
   The unit reboots and the factory defaults including the IP and communication settings are restored.

3.5.7. Partially Restoring to the Last Firmware (Configurator-Restore Factory Default)

If you want to restore the EA-201-0 encoder unit configurations to the last firmware defaults but leave the IP and communication settings unchanged, the Configurator offers a remote software capability to issue a restore command that will revert all settings to the default values except for the IP, subnet mask, and gateway IP values.

This restore does not restore User account passwords.

It should be noted that the EA-201-0 encoder can be reset and restored in a variety of ways. For more information, see Performing a Reset/Reboot or Restoring Defaults on page 30

Warning:
When a restore procedure is executed, the EA-201-0 units Relay Output (pin out) will be restored to the Normally Open default original state. Assure connected device behavior is anticipated before applying a restore and that any safety overrides are in place when needed.

To partially restore factory default settings using the Configurator

1. Access the Configurator and select the unit. For more information on accessing the Configurator, see the Accessing the EA-201-0 in the Configurator section on page 18.
2. On the Configurator toolbar, click  .
   The partial restore of factory default setting is done and the unit reboots.

3.5.8. Opening a Telnet Session for Access to Encoder Features and Settings

The Telnet interface on the EA-201-0 encoder allows full access to configuring the most advanced features of the encoder unit. Because the EA-201-0 encoder offers some of the most advanced features in the industry, the use of Telnet should be used sparingly for configurations not handled by user friendly software applications.

Caution:
Changing settings in Telnet may have adverse effects on third party applications the unit is interfaced with. The unit does not automatically report Telnet setting changes to these applications.

Note:
For users of DVTel Latitude:, it should be noted that making configurations to shared settings outside of the Latitude software using Telnet, can cause discrepancies in the setting values, which Latitude will treat as errors and seek to correct or restore settings whenever possible. Therefore, if you are using Latitude, all supported unit configurations should be made via the Latitude user interface. Other non-shared settings can be changed as needed. However, these advanced settings should not be arbitrarily changed, and should only be changed by users who understand the setting net effects.

Once you open a Telnet session a widow with numbered menus appears. For more information, refer to the EA-201-0 Encoder Telnet User Manual.

To open a Telnet Session (using the Configurator)

1. Access the Configurator and select the unit. For more information on accessing the Configurator, see the Accessing the EA-201-0 in the Configurator section on page 18.
2. On the Configurator toolbar, click  .
   A Telnet window opens and displays Telnet menus.
3. If prompted, in the Telnet session, enter the Admin user name, press **Enter** and admin password and press **Enter**.
   (If User accounts is disabled you will not be prompted.)

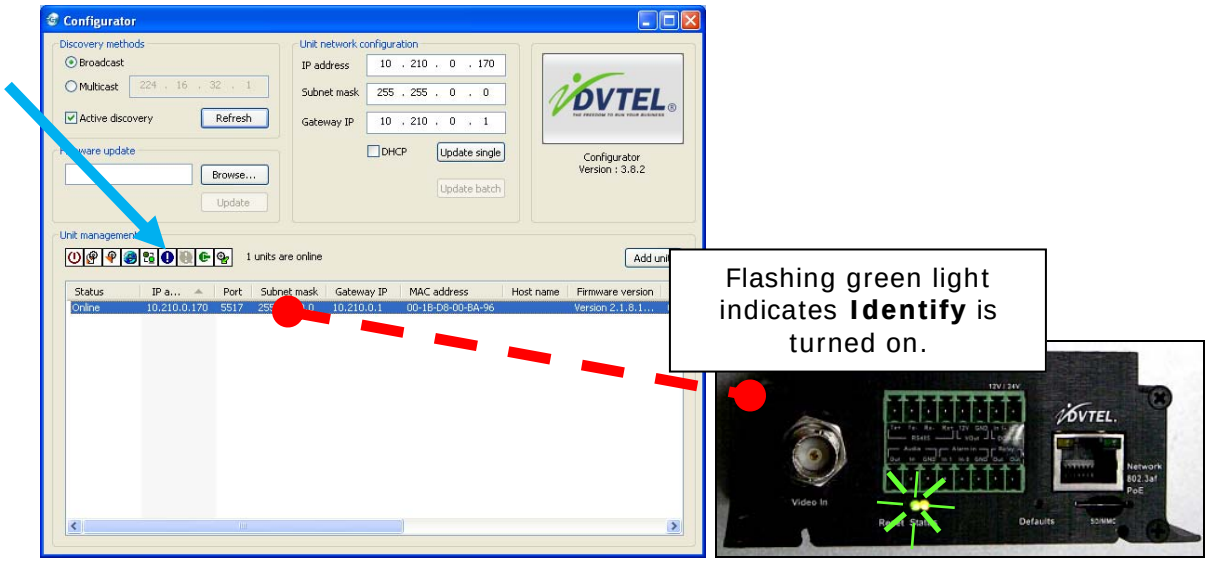
3.5.9. Turning On the Identify Status Light from the Configurator

The Identify feature is a feature that is useful for visually identifying the physical unit by commanding that unit to continuously flash with a blinking status light on the face of the EA-201-0 encoder unit.

This allows remote Configurator users to eliminate confusion among multiple hardware units.

When you need a way to identify a software listed unit to the actual hardware, a visual match-up is possible using this feature.

When you turn on the Identity light, the unit Identity light blinks as if to say “here I am” so you can find the unit where it sits.



The blinking light will remain on until it is turned off using the Unidentified command. For more information on Unidentify (turning off the Identify status light) see the section Turning Off the Indentify Status Light from the Configurator (Unidentify) on page 28.

To turn on the Indentify Status light (Identify)

Note:
The Identify Status light on the face of the EA-201-0 encoder unit must be off in order to turn it on.

1. Access the Configurator and select the unit. For more information on accessing the Configurator, see the Accessing the EA-201-0 in the Configurator section on page 18.
2. On the Configurator toolbar, click  .
   The first green led light on the unit face blinks continously.

3.5.10. Turning Off the Indentify Status Light from the Configurator (Unidentify)

This command can be applied to any unit that has the Identify feature turned on. Unidentify turns off a blinking Indentify “Status” light on the face of the physical unit. For more information on the Identify command, see the section Turning On the Identify Status Light from the Configurator on page 27.

To turn off the Indentify Status light (Unidentify)

1. Access the Configurator and select the unit. For more information on accessing the Configurator, see the Accessing the EA-201-0 in the Configurator section on page 18.
2. On the Configurator toolbar, click  .
   The blinking Identify Staus light turns off (first green led light on the EA-201-0 encoder unit face).

3.5.11. Modifying Serial Port Settings from the Configurator

The serial port settings can be changed to match your requirements. The serial port settings include the following:

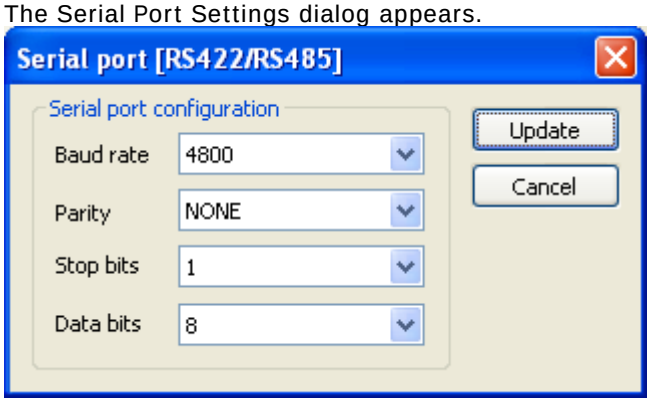
Setting	Description
Baud rate	A setting for the transmission speed in bauds.
Parity	A setting for transmission error checking.
Stop bits	Bits sent at the end of each character transmission in order for the receiving end to identify the finish (stop) of a character.
Data bits	The number of data bits in each character of the transmission.

The configuration settings of the Serial port need to match the requirements of the connected receiving end. Usually this is used for PTZ camera controllers. If connecting a PTZ camera, check the camera documentation for the correct settings needed for serial communication.

To modify serial port settings from the Configurator

1. Access the Configurator and select the unit. For more information on accessing the Configurator, see the Accessing the EA-201-0 in the Configurator section on page 18.

2. On the Configurator toolbar, click  .
The Serial Port Settings dialog appears.



3. Do the following:
    a) From the **Baud rate** menu, select the baud rate to use.
    b) From the **Parity** menu, select the parity rate to use.
    c) From the **Stop bits** menu, select the stop bit setting to use.
    d) From the **Data bits** menu, select the data bit setting to use.
4. When finished, click **Update**.

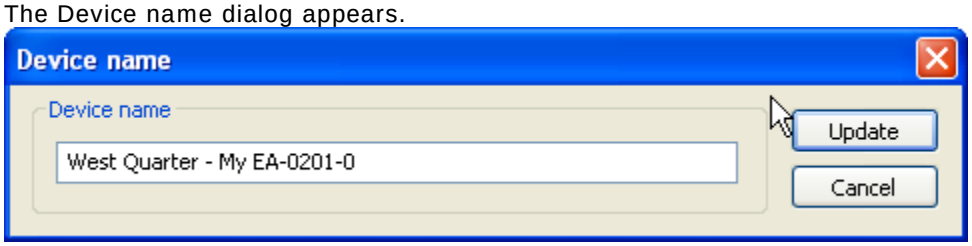
3.5.12. Changing the Encoder Descriptive Name (Device Name) from the Configurator

The descriptive name of the unit often appears in software user interfaces, for example a site map, and is a great way to uniquely identify the unit for the user.

You can change the name of the EA-201-0 encoder to provide a useful customized description.

To change the encoder device name from the Configurator

1. Access the Configurator and select the unit. For more information on accessing the Configurator, see the Accessing the EA-201-0 in the Configurator section on page 18.
2. On the Configurator toolbar, click  .
The Device name dialog appears.



3. In the **Device name** menu, enter a descriptive name and click **Update**.

3.6. Performing a Reset/Reboot or Restoring Defaults

There are multiple methods for Resetting or Restoring the EA-201-0 encoder. Because there are differences between a reboot (or reset) and a restore, it is important to know the differences. It is also worthy or noting that after some configurations, the EA-201-0 encoder will automatically reboot upon saving the configurations.

Because some of the restore functionality takes the unit back to defaults, it is worthy to take the time to understand the major differences so that configurations are not lost.

The following are available:

- **RESET:** A software initiated reset from the Configurator
  For more information, see Rebooting the EA-201-0 Encoder Using the Configurator on page 24.
- **RESET:** A software initiated reset from the Latitude AdminCenter
  For more information, refer to the Latitude AdminCenter documentation.
- **RESET:** A hardware initiated reset from the EA-201-0 encoder hardware. For more information, see Resetting the EA-201-0 encoder via the Hardware on page 32.
- **REBOOT:** A hardware initiated reboot by powering down and powering up the EA-201-0 encoder hardware. i.e turning off or disconnecting the power (PoE internet) and reconnecting.
- **PARTIAL -LAST FIRMWARE RESTORE:**
  - Via the configurator, issuing a command to restore.
    For more info, see the Partially Restoring to the Last Firmware (Configurator-Restore Factory Default) section on page 25.
  - Issuing a Partial load default configuration command via Telnet.
    A Full Factory Firmware Default restore to the EA-201-0 encoder hardware (Reverts user account passwords to defaults) For more information, see the Partially Restoring to the Last Firmware (Telnet- Partial load default configuration) section on page 33.
- **FULL- LAST FIRMWARE RESTORE:**
  - A Full Factory Default restore from the Configurator
    For more information, see the Restoring Full Firmware Default Settings Using the Configurator (Factory default) section on page 25
  - A Full Factory Firmware Default restore to the EA-201-0 encoder hardware (Reverts user account passwords to defaults) For more information, see the Restoring Full Factory Firmware Default (Ver 1) via the EA-201-0 Hardware section on page 36
  - Issuing the Load default configuration command via Telnet. A Full Factory Default restore to the last firmware default version. For more information, see the Restoring Full Firmware Default Settings Using the Telnet (Load default configuration) section on page 3333 31.
- **FULL-BASE FIRMWARE RESTORE:** A Full Factory Default restore of the EA-201-0 encoder hardware. Reverts to the last firmware default version. For more information, see the Restoring Full Factory Firmware Default (Ver 0) via the EA-201-0 Hardware section on page 36.

Warning:
When factory restore procedures are executed, the EA-201-0 units Relay Output (pin out) will be restored to the Normally Open default original state. Always assure connected device behavior is anticipated before applying a restore and that any safety overrides are in place when needed.

3.6.1. Resetting the EA-201-0 encoder via the Hardware

You can reset the EA-201-0 encoder by pressing the Reset button on the face of the unit or by turning the power off and back on.

This type of reset doesn't change the unit settings but will clear the temporary memory stored in the unit and disconnect it temporarily from the network and communication session. While resetting, the unit will go "offline" unit it restarts and established online status again.

Warning:
When a restore procedure is executed, the EA-201-0 units Relay Output (pin out) will be restored to the Normally Open default original state. Assure connected device behavior is anticipated before applying a restore and that any safety overrides are in place when needed.

To reset the EA-201-0 encoder via the hardware:

- Using a thin straight object, insert it into the hole on the face of the EA-201-0 encoder marked "Reset" and press and hold the button for a second and release.

  OR

- Switch off or disconnect the power to the unit and switch it on again.

3.6.2. Partial - Last Firmware Restore

This type of restore can be used to help repair problems that may have been caused by a failed upgrade or errors in the firmware, It restores key areas of the firmware to the last working firmware version but allows you to maintain key settings that were configured.

There are there ways to issue this command:

- Partially Restoring to the Last Firmware (Configurator-Restore Factory Default) page 25.
- Partially Restoring to the Last Firmware (Telnet-Restore Factory Default) on page 32.

3.6.2.1. Partially Restoring to the Last Firmware (Configurator - Partial factory defaults)

This information is covered in the topic: Partially Restoring to the Last Firmware (Configurator-Restore Factory Default) on page 25.

3.6.2.2. Partially Restoring to the Last Firmware (Telnet- Partial load default configuration)

If you want to restore the EA-201-0 encoder unit configurations to the last firmware defaults but leave the IP and communication settings unchanged, Telnet offers a remote software capability to issue a restore command that will revert all the default settings except the IP, subnet mask, and gateway IP.

This restore does not restore User account passwords.

It should be noted that the EA-201-0 encoder can be reset and restored in a variety of ways. For more information, see Performing a Reset/Reboot or Restoring Defaults on page 30

You can issue a Partial load default configuration command to the EA-201 encoder via Telnet.

Warning:
When a restore procedure is executed, the EA-201-0 units Relay Output (pin out) will be restored to the Normally Open default original state. Assure connected device behavior is anticipated before applying a restore and that any safety overrides are in place when needed.

To partially restore factory default settings using the Partial load default configuration Telnet command:

1. Open a Telnet session. For more information, see Opening a Telnet Session for Access to Encoder Features and Settings.
2. Go to the Telnet **Main Menu**, press **"A"** and **Enter**.

3.6.3. Full-Last Firmware Restore (Factory Defaults)

The Full Factory Default restore provides a clean configuration that takes the unit back to the working firmware (firmware upgrade) maintained as a backup.

There are three options for issuing this type of restore:

- Restoring Factory Default via the Configurator (Partial restore factory defaults) on page 25
- Restoring Full Factory Firmware Default (Ver 1) via the EA-201-0 Hardware on page 36
- Restoring Full Firmware Default Settings Using the Telnet (Load default configuration) on page 33.

3.6.3.1. Restoring Factory Default via the Configurator (Partial restore factory defaults)

Via Telnet, you can view the current firmware version and a restore the firmware to the last working version without erasing key configuration. For more information, see the section Partially Restore on page 25

Issuing a Partial load default configuration command via Telnet. A Full Factory Firmware Default restore Ver 2 on the EA-201-0 encoder hardware (Reverts user account passwords to defaults)

Warning:
When a restore procedure is executed, the EA-201-0 units Relay Output (pin out) will be restored to the Normally Open default original state. Assure connected device behavior is anticipated before applying a restore and that any safety overrides are in place when needed.

3.6.3.2. Restoring Full Factory Firmware Default (Ver 1) via the EA-201-0 Hardware

You can restore the EA-201-0 encoder to the Default settings that were on the unit when the firmware was last upgraded.

The settings will include all communication settings and restore of the firmware to the last working version that was installed on the unit. While restoring, the unit will go “offline” unit it restarts. If the unit IP was changed, the unit will come back online and communicate to the network on the default IP with the default subnet mask and gateway settings.

All user-defined values will be lost. Following this restore, you will likely need to reconfigure the EA-201-0 encoder (for instance, its IP address and VSIP port) for proper operation within its network. This can be done using the Configurator to configure the Network communication settings in the same manner as a new install.

It should also be noted that the firmware may also need to be upgraded to a more current version.

Warning:
When a restore procedure is executed, the EA-201-0 units Relay Output (pin out) will be restored to the Normally Open default original state. Assure connected device behavior is anticipated before applying a restore and that any safety overrides are in place when needed.

To restore Full Factory Firmware Defaults via the EA-201-0 hardware

- Using a thin straight object, insert it into the hole on the face of the EA-201-0 encoder marked “Defaults” and press and hold the button for ten seconds and release.

3.6.3.3. Restoring Full Firmware Default Settings Using the Telnet (Load default configuration)

If you want to restore the EA-201-0 encoder unit configurations to a clean unaltered firmware default (the last working firmware), Telnet offers a remote software capability to issue a restore command that will revert all the default settings including the IP, subnet mask, gateway IP and more.

This restore does not restore User account passwords.

It should be noted that the EA-201-0 encoder can be reset and restored in a variety of ways. For more information, see Performing a Reset/Reboot or Restoring Defaults on page 30.

CAUTION:
This restore can change the IP. Because the IP address will be restored, a restore of factory defaults can cause network communication that uses the previous IP and gateway to fail. If you restore the defaults, you will likely need to update settings which can include firewalls, monitoring software, archiving and recording software etc., that are associated to the unit. If you want to restore defaults except network communication settings, use the Partial Restore Factory Defaults option instead. For more information see the Partially Restoring to the Last Firmware (Telnet- Partial load default configuration) section on page 33.

Warning:
When a restore procedure is executed, the EA-201-0 units Relay Output (pin out) will be restored to the Normally Open default original state. Assure connected device behavior is anticipated before applying a restore and that any safety overrides are in place when needed.

To partially restore factory default settings using the Load default configuration Telnet command:

1. Open a Telnet session. For more information, see Opening a Telnet Session for Access to Encoder Features and Settings.
2. Go to the Telnet **Main Menu**, press **"L"** and **Enter**.

3.6.4. Restoring Full Factory Firmware Default (Ver 0) via the EA-201-0 Hardware

You can restore the EA-201-0 encoder to the default settings that were on the unit when the unit was built at the factory.

The settings will restore all communication settings and restore of the firmware to the version that was installed when the unit was built. While restoring, the unit will go “offline” unit it restarts. If the unit IP was changed, the unit will come back online and communicate to the network on the default IP with the default subnet mask and gateway settings.

All user-defined and post factory configured values will be lost. Following such this restore, you will likely need to reconfigure the EA-201-0 encoder (for instance, its IP address and VSIP port) for proper operation within its network. This can be done using the Configurator to configure the Network communication settings in the same manner as a new install.

It should also be noted that the firmware may also need to be upgraded to a more current version.

Warning:
When a restore procedure is executed, the EA-201-0 units Relay Output (pin out) will be restored to the Normally Open default original state. Assure connected device behavior is anticipated before applying a restore and that any safety overrides are in place when needed.

To restore Full factory Firmware and defaults via the EA-201-0 hardware

1. Using a thin straight object, insert it into the hole on the face of the EA-201-0 encoder marked “Defaults” and press and hold the button without releasing it.
2. While holding the “Defaults” button down, using another thin straight object, insert it into the hole on the face of the EA-201 encoder marked “Reset” and press, hold and then release the button.
3. While continuing to hold the “Defaults” button down wait for the unit to shut down and fully restart and then release the Defaults button.

3.6.5. Updating\Downgrading the Firmware

You can update (or downgrade) the firmware on the EA-201-0 encoder unit when new versions of firmware are available. Firmware updates often provide benefits such as bug fixes, features, compatibility enhancements, and more. When using the EA-201-0 encoder with third party software or with DVTel Latitude, it is important to take note of which versions of firmware are compatible with versions of the Latitude software.

You can use the Configurator to view the firmware version and if available to update the firmware using a firmware update file from DVTel.

Take the following facts regarding firmware update using the IP network into consideration:

- Ensure that the IP link is stable before starting the procedure; therefore it is not recommended to perform it over the Internet.
- Ensure that the power supply is stable before starting the procedure and do not disconnect it during the procedure.

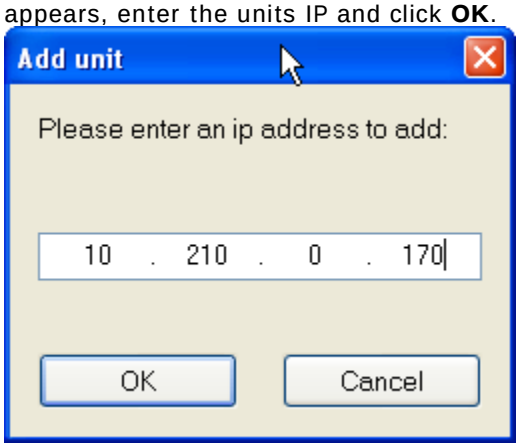
The only method to update the firmware is through an IP network connection. If this update procedure fails, repeat procedure.

Downgrading the firmware is the same procedure as upgrading, you only need to apply the bin file for the version you want to downgrade too.

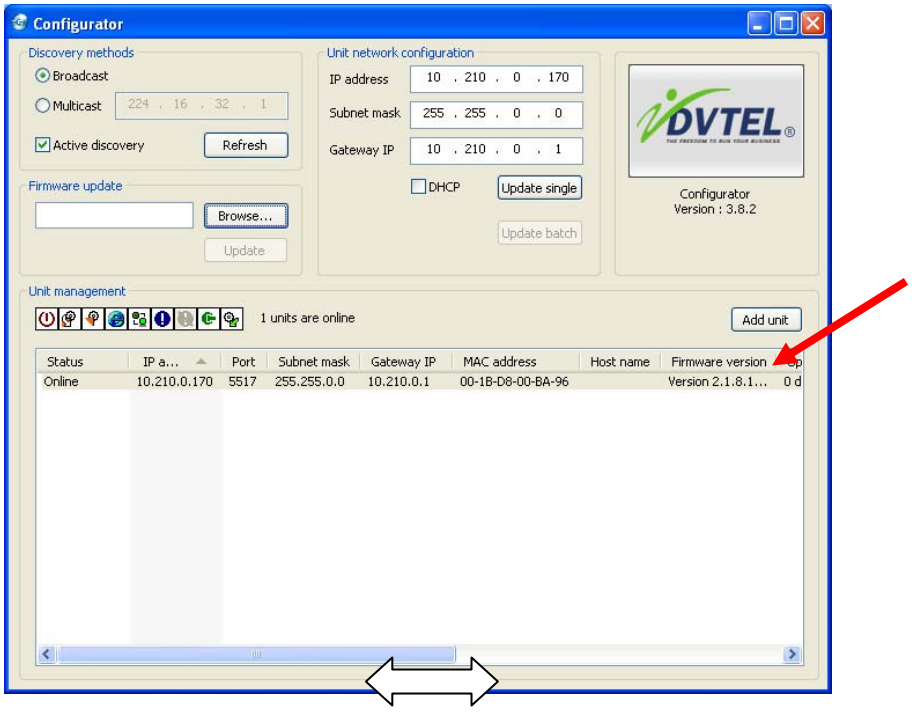
To view the EA-201-0 encoder firmware version

1. Do one of the following to open the Device Configuration Tool:
   - From the DVTel Latitude AdminCenter, in the sidebar menu, click **Applications▶Device Configuration Tool** and in the Unified Configurator dialog that appears, click **Pro Line A**.
   - From the EA-201-0 encoder installation CD, double-clicking on `Configurator.exe`

   The Configurator dialog appears. Allow the Configurator to complete its search of the VPN for Pro Line A units. When finished the status will appear to the right of the toolbar indicating how many units were discovered.
2. If the EA-201-0 encoder unit doesn't appear, click **Add** and in the dialog box that appears, enter the units IP and click **OK**.



3. If necessary, in the discover table, scroll down and scroll right to view the firmware version shown in the EA-201-0 encoder row.



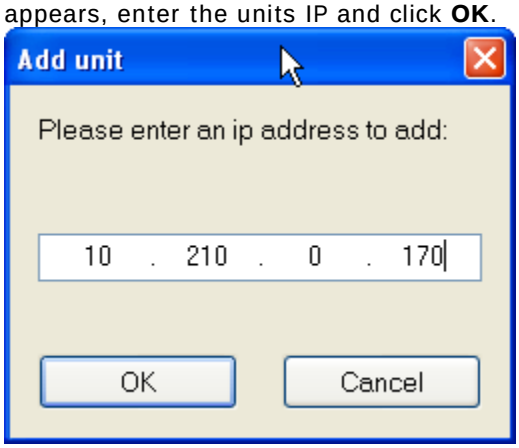
To update the EA-201-0 encoder firmware

1. Do one of the following to open the Unified Device Configuration Tool:

   - From the DVTel Latitude AdminCenter, in the sidebar menu, click **Applications▶Device Configuration Tool** and in the Unified Configurator dialog that appears, click **Pro Line A**.
   - From the EA-201-0 encoder installation CD, double-clicking on `Configurator.exe`

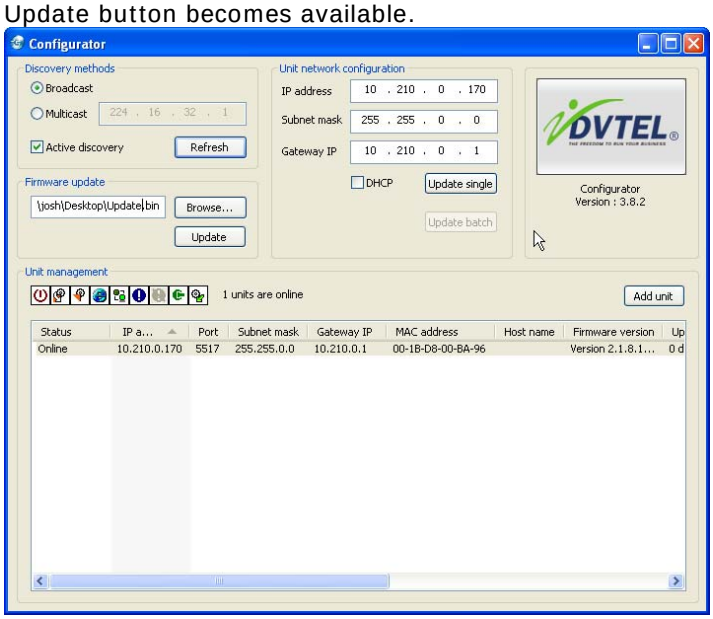
   The Configurator dialog appears. Allow the Configurator to complete its search of the VPN for Pro Line A units. When finished the status will appear to the right of the toolbar indicating how many units were discovered.

2. If the EA-201-0 encoder unit doesn't appear, click **Add** and in the dialog box that appears, enter the units IP and click **OK**.



3. Obtain the firmware upgrade "bin" file from DVTel and copy it to your local computer or an accessible location on your network.

4. In the Firmware upgrade area, click browse and select the "bin" file and then click **Open**.
The file validation progress indicator appears and once the file is validated, the Update button becomes available.



Note:

If the Update button is not available after selecting a valid "bin" file, verify that you have selected an EA-201-0 encoder unit in the discovery table and that the bin file is a valid EA-201-0 encoder firmware upgrade file.

5. Select the EA-201-0 encoder unit in the discover table. Verify the unit you want to upgrade is selected in the discover table and in the Firmware upgrade area, click **Update**.

3.7. The EA-201-0 Browser-Based Web Interface

The EA-201-0 encoder includes a embedded browser-base web interface that allows you to access the unit using HTTP protocol and an Internet Explorer browser with ActiveX.

The following diagram shows the EA-201-0 Browser-Based Web Interface and its features:

The EA-201-0 Browser-Based Web Interface includes the following features:

Label	Description / Setting	Details
Navigation Tree	Contains the screen display options for selecting and viewing in the Display Area.	
	Home	Displays the units streaming video.
	Network	Displays and allows configuration of network communication settings.

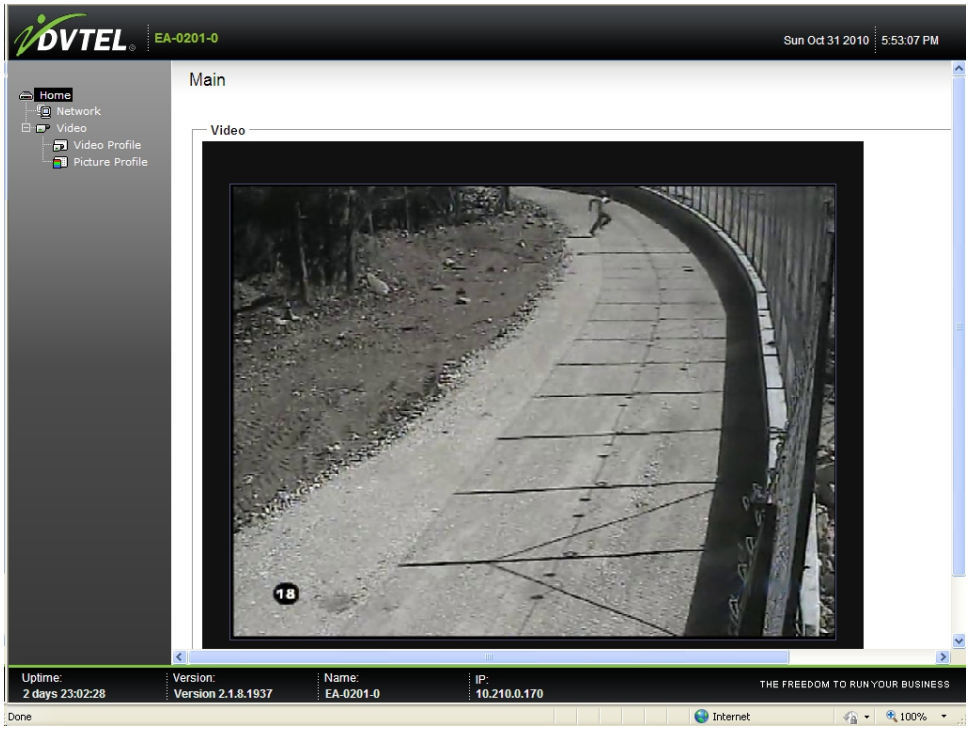
Label	Description / Setting	Details
	Video	Settings related to the video output of the unit: Includes: Video Profile – Allows configuration of video resolution, quality, format and streaming properties. Image Profile – Allows configuration of the video image properties for adjusting the appearance of the image.
Display Area	The area of the user-interface that displays the selection in the Navigation Tree for viewing and making configurations.	
Unit Name	Displays the descriptive name of the EA-201-0 encoder.	
Properties Banner	Displays information and properties of the EA-201-0 encoder.	Uptime: Shows how long the unit has been online without a restart. Version: Shows the last firmware version installed on the unit. Name: Shows the descriptive name of the unit. IP: Shows the network IP address of the unit.
Page Timestamp	Shows the date and time the Web Interface was last loaded into the browser (refreshed).	

In this section:

3.7.1. Web Interface Home Page

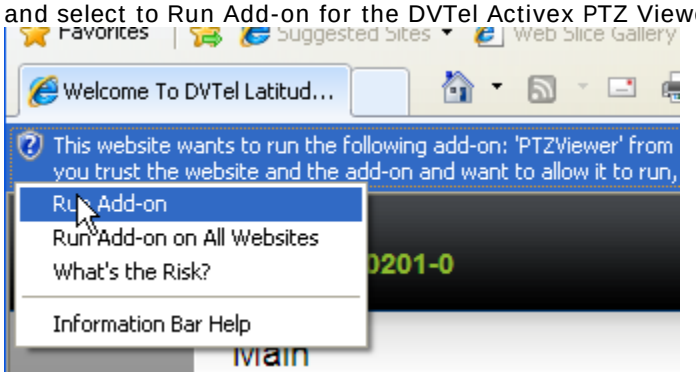
The Home page provides a window for video displaying of the streaming output video from the EA-201-0 encoder.

Streaming Video Display of the Web Interface Home page



To access the Web Interface (Home page)

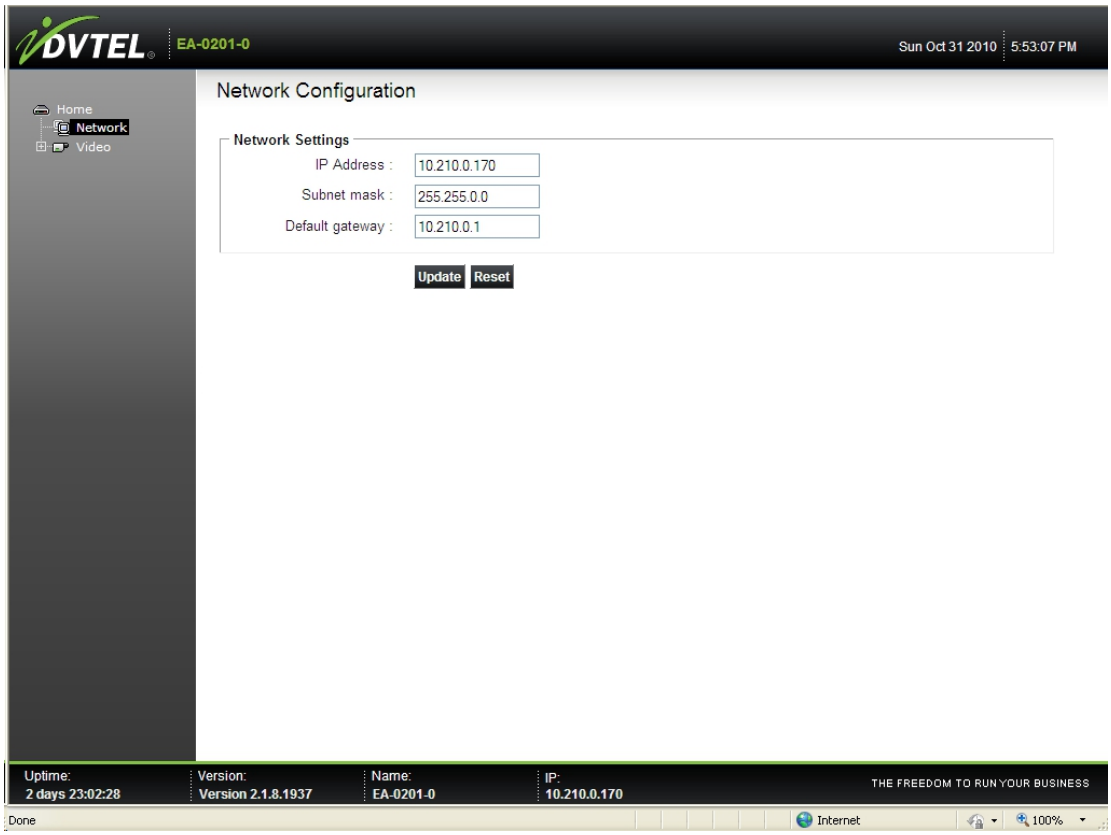
1. Open Internet Explorer and in the Address bar, enter the EA-201-0 encoder IP as a URL as follows: http:///[EA-201-0 encoder ip]. For example if your IP is 127.10.110.01 enter http://127.10.110.01.
2. In the login prompt, enter the username and click **OK**.
3. If a security prompt appears for the installation of the ActiveX, right click the notice and select to Run Add-on for the DVTel Activex PTZ Viewer.



3.7.2. Web Interface Network Page - Network Configuration

You can configure the EA-201-0 encoder network IP and communication settings via a browser to access the Web Interface.

The Network Configuration Webpage



Related Link

- Changing the EA-201-0 encoder IP Address and Network Connection Settings via a Web Browser

3.7.2.1. Changing the EA-201-0 encoder IP Address and Network Connection Settings via a Web Browser

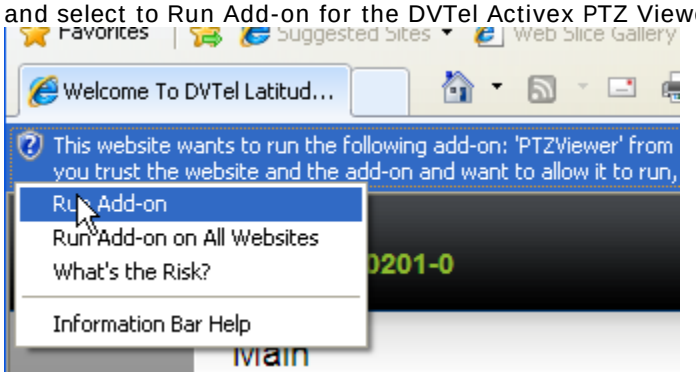
You can change the network communication settings and IP address of a EA-201-0 encoder via the Web Interface Network Configurati on page.

The following settings and features appear on the Network page of the Web Interface:

Setting / Feature	Description
IP Address	Allows the editing of the IP address of the EA-201-0 encoder.
Subnet mask	The subnet mask that the unit allows communication with.
Gatway IP	The IP address of the gateway.
Update	Applies and saves the changes in the Network settings to the EA-201-0 encoder.
Reset	Refreshes the values loaded in the fields of the Network page. This refers only to this webpage and is not to be confused with a unit Reset.

To change the EA-201-0 encoder IP address and network connection settings via a Web browser

1. Open Internet Explorer and in the Address bar, enter the EA-201-0 encoder IP as a URL as follows: http:///[EA-201-0 encoder ip]. For example if your IP is 127.10.110.01 enter http://127.10.110.01.
2. If a security prompt appears for the installation of the ActiveX, right click the notice and select to Run Add-on for the DVTel Activex PTZ Viewer.



3. In the Navigation Tree, select **Network**.

4. In the Network Configurations page, do the following:
    a) To change the IP address, in the IP Address field, enter the new IP numbers.
    b) To change the subnet mask, in the Subnet mask field enter the subnet mask.
    c) To change the gateway address. in the Gateway IP field, enter the new IP number for the Gateway.
5. When finished click **Update**.

3.7.3. Web Interface Video Profile

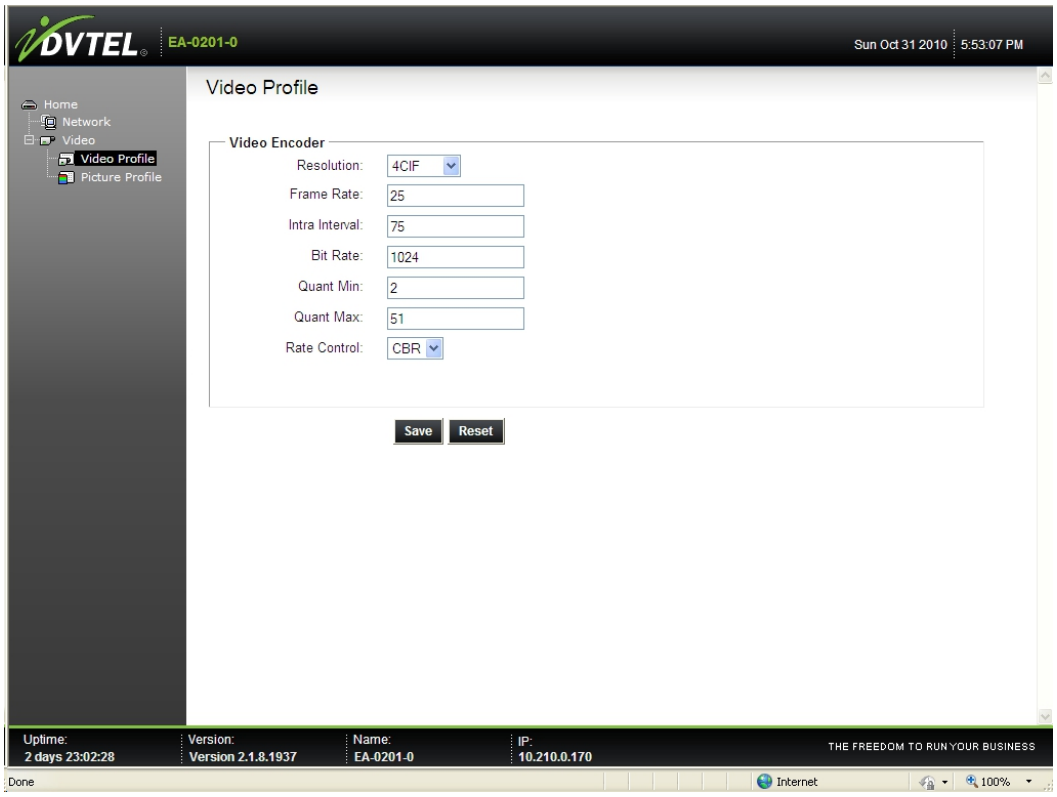
You can change the video settings for the EA-201-0 encoder in a web browser via the Web Interface.

These settings include the following:

Setting	Options	Description
Resolution	QCIF, CIF, 2CIFH, 2CIFV, 4CIF and D1	Provides a setting that determine the output picture number of pixels (columns * lines) for the pictures of the video sequence.
Frame Rate		The number of output p-frames per second in the streaming video. Dictates the maximum number of frames per seconds (fps) that will be encoded and transferred by the transmitter. This parameter can be set from 1 to 30 fps.
Intra Interval		The frequency at which a complete video frame (called I-frame) is sent by the encoder. In a video there are I frames and P frames sandwiched in the sequence of images that make up the moving picture video. In general the P frames are partial “delta- like” frames of only the parts of an image that changed since the previous frame. The more P frames the smaller size of the streaming video however quality can suffer as the changes loose image data over time. In an essence the I frame brings the quality back to the stream that the P frames may have lost. For example if “I” represents full picture frame data and “P” represents partial picture frames, the following: PPPPPIPPPPPIPPPPPIPP… is one I frame every 5 P frames or 5+1=6. Possible values are in the 0–100 range. A value of 0 indicates that no I-frame will be sent automatically by the device; a value of X means that a complete image refresh will occur every X frames

Setting	Options	Description
Bit Rate		The maximum number of bits per second generated by the device. Valid bit rates range from 32 to 6000 kbps.
Quant Min		A parameter that sets a lower range that restricts the values allowed in varying the lousy compression tolerance the encoder will apply. This works towards achieving optimal bitrates vs quality. Based on the quantizer number applied, a tolerance level is used to trim transmitted data. A higher quantizer value means less video quality but a lowering of the bit rate, and vice versa. The value range is from 2 to 31 for MPEG-4 and 2 to 51 for H.264.
Quant Max		A parameter that sets a upper range that restricts the values allowed in varying the lousy compression tolerance the encoder will apply. This works towards achieving optimal bitrates vs quality. Based on the quantizer number applied, a tolerance level is used to trim transmitted data. A higher quantizer value means less video quality but a lowering of the bit rate, and vice versa. The value range is from 2 to 31 for MPEG-4 and 2 to 51 for H.264.
Rate Control		The mode controlling the bit rate variation. The available modes are: CBR, Constraint VBR, and Unrestricted VBR(labeled CFR).
	CBR	Defines the streaming video will use a Constant Bit Rate and will not vary. The Constant Bit Rate mode is the most effective to maintain the optimal (target) bit rate. Video quality may suffer and the frame rate may decrease. This mode should be used when transmitting video over networks that have very limited bandwidths, and with an intra interval value of 0.
	VBR	Defines the streaming video will use a variable bit rate while maintaining a (target) constant frame rate. This mode should be used when video quality and frame rate take precedence over bit rate.
	Unrestricted VBR (Labeled CFR)	Defines the streaming video will use a Variable Bit Rate constrained by a maximum bitrate but allowing bitrate to fluctuate within the range. In this mode, data is not sent evenly. (The rate control is disabled and the current bit rate is a function of VBRQ and therefore the bit rate can changes dramatically based on the video content.)

The Video Profile Web Interface webpage

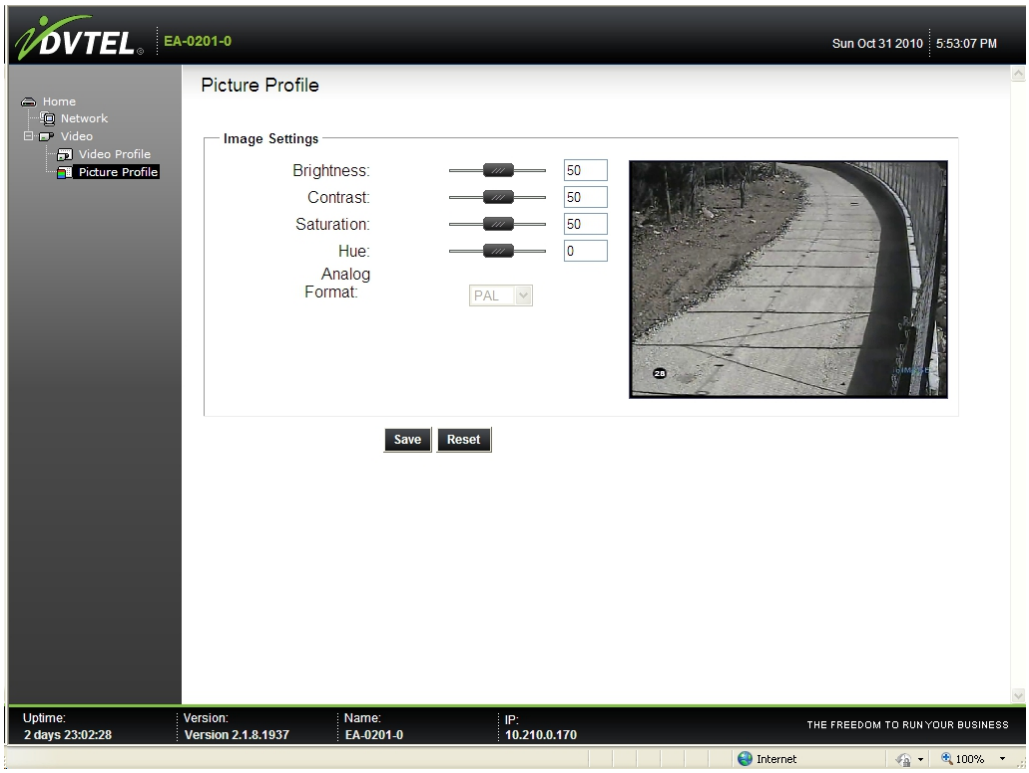


To set the video parameters

1. In the Web Interface, in the Navigation pane, select **Video ▶ Video Profile**.
   The Video Profile page appears in the Display Area.
2. In the Display Area of the Video Profile, do the following:
   a) To change the resolution, from the **Resolution** menu, select a resolution.
   b) To change the frame rate, in the **Frame Rate** field, enter the number of frames per second to use as a target frame rate.
   c) To change the I-frame interval, in the **Intra Interval** enter the number of I-frames between P-frames to use as a target for the streaming video.
   d) To change the Bit Rate, enter the number in kbps in the **Bit Rate** field.
   e) To change the quantizer range, enter the minimum range number in the **Quant Min** and the maximum range number in the **Quant Max** field.
   Note: The range must be no less than 2 and no greater than 31.
   f) To change the Rate Control over the bit rate, from the **Rate Control** menu, select a rate control option.
3. When finished, click **Save**.

3.7.4. Web Interface (Video) Picture Profile

You can adjust the output streaming video image appearance as needed. Adjustments include brightness, contrast, saturation and hue.



To adjust the output video image brightness, saturation, contrast and hue via a Web browser

1. In the Web Interface, in the Navigation pane, select **Video ▶ Picture Profile**.
   The Video Profile page appears in the Display Area.
2. In the Display Area of the Video Profile, do the following:
   a) To change the image brightness, click and drag the **Brightness** slider or enter the brightness value in the **Brightness** field.
   b) To change the image contrast, click and drag the **Contrast** slider or enter the contrast value in the **Contrast** field.
   c) To change the image color saturation, click and drag the **Saturation** slider or enter the saturation value in the **Saturation** field.
   d) To change the image color hue, click and drag the **Hue** slider or enter the hue value in the **Hue** field.
3. When finished, click **Save**

3.7.5. System Requirements for the Browser-based Viewer

To set up & view the EAM201 encoder via web browser, please ensure your PC meets the following minimum system requirements:

Items	System Requirement
Personal Computer	1. IntelA○REA PentiumA○REA M, 2.16 GHz or IntelA○REA CoreTM2 Duo, 2.0 GHz
Operating System	Windows VISTA, Windows XP, or Windows 7
Web Browser	Microsoft Internet Explorer 7.0 or later
Network Card	10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation
Viewer	Enabled ActiveX control plug-in for Microsoft IE and assure browser, firewall, and windows defender settings allow the EAM201 ActiveX to run.

3.8. Managing Web Interface Access (Telnet User Names and Passwords)

The Access Management settings of the EA-201-0 encoder allow you to enable and disable the all access to the web interface (web server http access) as well as the use of a user account.

By default, the EA-201-0 encoder has the webserver enabled with Admin user account access to Telnet

3.8.1.1. Enabling/Disabling All Web Interface Access via Telnet

Using Telnet you can enable or disable all access to the Web interface and all HTTP access will be disabled. If you disable this setting, configuration of the device up via the web server will not be available.

By default, access to the Web Interface is enabled but requires users to login.

To enable/disable the Web Interface (HTTP Access) on the EA-201-0 encoder

1. On the Telnet main page, type **2** and press **ENTER** to select **Access Management**.
2. Type **1** and press **ENTER** to select **Security**.
3. Type **1** and press **ENTER** to select **HTTP Access**.
4. From the HTTP Access options, select one of the following:
   - Type **"1"** and **Enter** to Enabled.
   - Type **"2"** and **Enter** to Disabled.
5. When finished, press **"P"** and **Enter**.
6. Repeat the previous step until you return to the Main Menu.
7. Press **"S"** and **Enter** to save changes and press **"Q"** and **Enter** to quit and exit the Telnet window.

3.8.1.2. Managing the Web Interface/Telnet User Accounts

By default the Access management user name and password are enabled on the EA-201-0 encoder and will be required for accessing Telnet or the Web Interface (http web server).

Note that at this time the three additional users to the Web interface access are not fully supported at this time.

The default User accounts menu and settings in Telnet

Related Links

Changing a Web Interface Admin User Name or Password

Disabling all Web Interface and Telnet User Accounts

3.8.1.2.1. Changing a Web Interface Admin User Name or Password

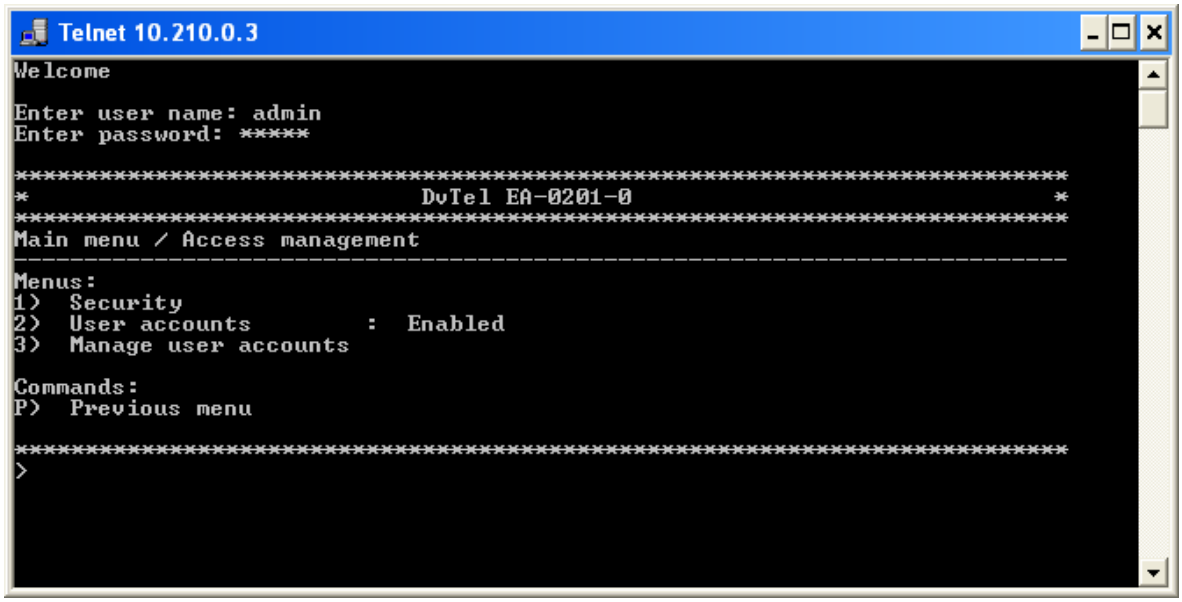
You can change the username and password for the Web Interface and Telnet administrator users via Telnet.

If user accounts are enabled, before accessing the unit via Telnet, you will need to login as an Administrator using the Admin user name and password.

If the password is lost or forgotten, there is no retrieve password procedure. In such instances the EA-201-0 encoder will need to be restored to factory default manually (via the hardware “Default” restore button). For information on restoring factory settings, see Restoring Full Factory Firmware Default (Ver 0) via the EA-201-0 Hardware on page 36.

Note that enabling or disabling the user account password has no effect on the discovery process of encoder on the network and communication with DVTel Latitude (ControlCenter AdminCenter, Archiver, Etc.) will not be affected.

Telnet window showing the authentication and Main Menu screen



The *Access management* menu Manage user accounts is not available when the User accounts setting is set to Disabled.

To Change the Admin User Account Username and Password

1. From the **Main Menu** type "**2**" and press **ENTER**.
2. From the **Access Management**, choose **"3"** and press **Enter**.
3. Do one or more of the following:

   To change the Administrator User Name:

   a) Type **"1"**and press **Enter**.

   b) Type the new Administrator User Name and press **Enter**.

   To change the Administrator User Password:

   a) Type **"2"**and press **Enter**.

   b) Type the new Administrator Password and press **Enter**.
4. When finished, press **"P"** and **Enter**.
5. Repeat the previous step until you return to the Main Menu.
6. Press **"S"** and **Enter** to save changes and press **"Q"** and **Enter** to quit and exit the Telnet window.

3.8.1.2.2. Disabling all Web Interface and Telnet User Accounts

You can disable the need to login to the Web interface. It is important to note that at this time it also means you disable the requirement of an Admin login for Telnet usage also.

To enable/disable Web Interface and Telnet User Account Login

1. From the **Main Menu** type "**2"** and press **ENTER**.
2. From the **Access Management** menu type "**2"** and press **ENTER**.
3. From the **User Accounts** menu, choose one of the following:
   - Type **1** and press **ENTER** to select **Enabled**.
   - Type **2** and press **ENTER** to select **Disabled**.
4. When finished, press **"P"** and **Enter**.
5. Repeat the previous step until you return to the Main Menu.
6. Press **"S"** and **Enter** to save changes and press **"Q"** and **Enter** to quit and exit the Telnet window.

3.9. Appendix A: Technical Specifications

Network	
Interface	Ethernet 10/100BaseT
Connector	RJ-45
Protocols	Transport: RTP (unicast/multicast), TCP
Others: DNS, NTP, HTTP Server, IGMP V1/V2, FTP Client, Telnet Client and DHCP Client	
Video	
Input	Single Composite Video (both NTSC and PAL)
Connection	1 BNC Female
Compression	H.264/MPEG4 ISO Standard, Dual Stream
Resolution	Up To D1 / 1/2 D1
Frame Rate	NTSC – 60FPS or 2 x 30 FPS in all Resolutions and Compression Modes
PAL - 50FPS or 2 x 25 FPS in all Resolutions and Compression Modes	
Bandwidth	Configurable between 30 Kbps and 6 Mbps
Alarm	DC Auto
Input	2 Dry Contacts
Output	1 Relay Contact, 60V AC/DC at 500 mA max
Audio	
Bi-Directional Audio	Input: -46 to -3 dBV into 30 KOhm
Output: -46 to -3 dBV into 16 Ohms minimum	
Bandwidth 8khz	

Audio Connections	Via Terminal Block
Serial Port	
Standards	RS-232, RS-422/485 2/4 Wires (maximum of 115.2 Kbps)
Connector	Terminal block
Operating Mode	Transparent serial port supports any asynchronous serial protocol
Management	
Configuration	Remote: Via Web Access, Telnet, or Supported Video Management Software
Firmware Upgrade	Flash memory for upgrade of video codec and application firmware over the network
Regulatory	
USA	FCC UL C/UL
Europe	CE, RoHS
Warranty	
2-year limited warranty, covering parts	

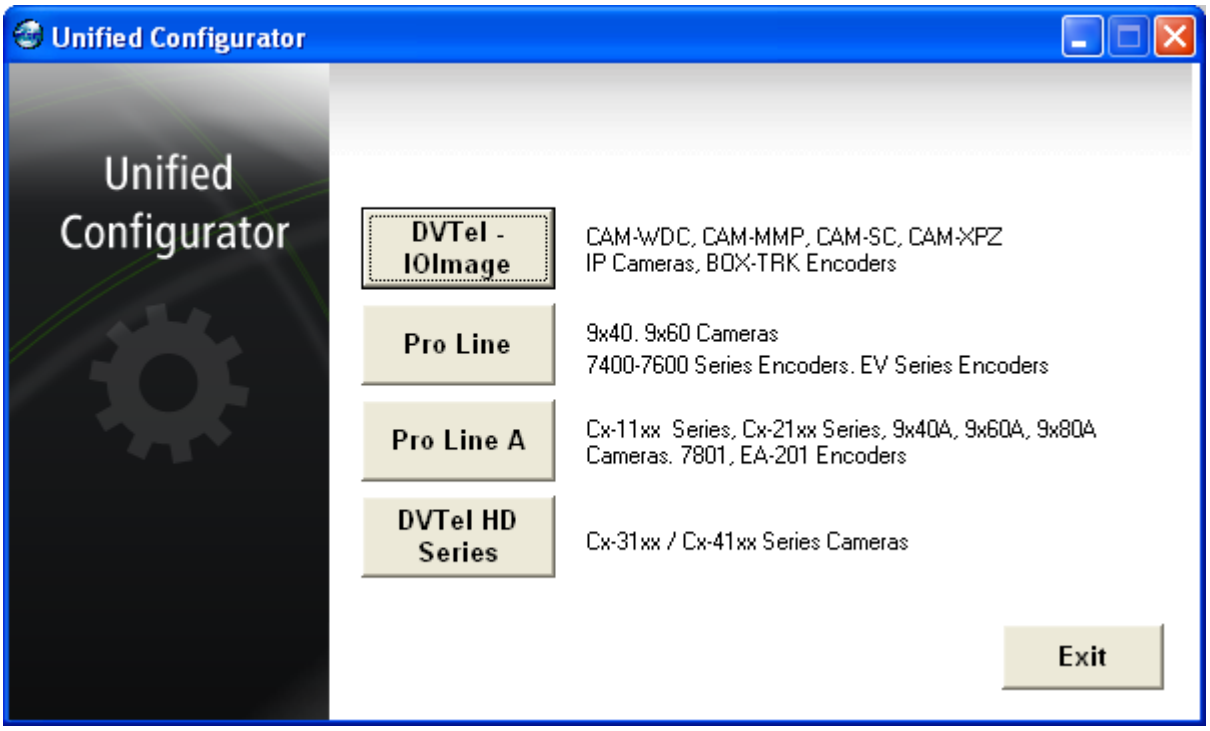
Physical
Enclosure Aluminum case with flange mount
(wall mount)
Finish Black (anodized)
Physical
Dimensions (L x W x H) 4.1” x 3.35” x 1.63” (104 x 85.5 x 41.5mm)
Unit Weight 9.2 oz (0.26Kg)
Unit Shipping Weight 1.2 Lbs. (0.54Kg)

Electrical
Input Voltage 12VDC / 24VAC ±10% or 802.3af PoE
Power Consumption 4.3 Watts
Power Connector Terminal Block (12VDC / 24VAC)
RJ45 - 802.3af PoE
Power Output 12VDC, 4.3W via Terminal block
Environment
Operating Temperature 32°F to 122°F (0°C-50°C)
Storage Temperature -4° F to 158° F (-20° C to 70° C)
Humidity 95% non-condensing at 122° F (50°C)

3.10. Unified Configurator vs. Configurator

It should be noted that the Unified Configurator that is accessible from the Latitude application menu and the unifiedconfigurator.exe file is an application that simply provides a dialog for users to view and select different configuration options and to choose the Configurator that suits the type of units being configured. Based on the user's selection a Configurator tool that is appropriate will open in a separate window. For the EA-201-0 encoder that option is the **Pro Line A** Configurator.

The Unified Configurator Screen – Device Configuration Tool



The commands, configurations and settings are made in the Configurator which is opened via the Unified Configurator screen.

3.11. Troubleshooting

This section provides useful information and remedies for common situations where problems may be encountered.

Problem	Try
No Lights	• Check the power is turned on at the source, includes checking GFI, Breakers, UPS, etc. • Check the power supply connections to the EA201 encoder, between the power source and the unit. If using PoE, check the power injector on the network and the network connection and network wires to the unit • Reset the EA201 encoder unit. • Check the power supply is working. • Unplug the EA201 encoder and have it serviced.
No Ethernet 10/100 Lights (connected to the Ethernet with other lights working)	• Check that the network is working. • Check that the Ethernet cable is properly attached. • Check the Ethernet cables for damage and replace as needed.
How to find out what IP is being used	• Check the label on the unit. • Use the UnifiedConfigurator on the same LAN (virtual Lan) run a discovery on the network. • If you believe the unit has been discovered and cannot determine which physical unit matches which discovered IP, use the “Identify” feature to make the identify status light to blink on the units until and go through the units in the discovery table of the UnifiedConfigurator until you see the unit in question with a blinking Identify light. • Connect the unit directly to a PC and use the UnifiedConfigurator to discover the unit.
IP isn’t found in a EA201 encoder-Setup scan of the network LAN/WAN	• Check that the EA201 encoder is on. • Check the Ethernet cables are connected. • Reset the EA201 encoder using the IP. • Check that the LAN/WAN supports the IP. • If the IP is supported by the Network, check the subnet mask and gateway settings via the UnifiedConfigurator tool. If they are incorrect, make the necessary corrections. • Ping the IP to check if there is a response. • Reset the unit to factory defaults by pressing the Defaults button. Once visible to the UnifiedConfigurator, you can change the unit to the desired IP.

Problem	Try
The IP responds to a ping on the network from the workstation but is not showing on a EA201 encoder-Setup scan of the network LAN/WAN	• Disconnect the EA201 encoder unit Ethernet 10/100 port or turn the EA201 encoder unit power off and then ping the IP again. If the IP responds there is another device using the IP. Consult with the Network Administrator to resolve the conflict.
The EA201 encoder IP is already in use by another computer (collision)	• Unified Configurator tool and connecting the EA-201-0 encoder to a local PC Ethernet port, change the EA201 encoder IP.
IP shows on the LAN/WAN but communication between the EA201 encoder and the client is blocked	• Ping the unit from the monitor workstation. • If the Ping responds with a “Reply” (not a “Timeout”), disconnect the EA201 encoder unit from the network or turn off the EA201 encoder unit power and then ping it again, if there is a “Reply” response there exists a collision in the network and the IP is being used by another EA201 encoder or device. Contact the Network Administrator, of change the EA201 encoder unit IP. • Check the subnet mask allows communication from the workstation’s IP. If not, modify the subnet mask to allow the workstation. • Check with the Network Administrator if the workstation supports communication of this type between it and the EA201 encoder unit. • If operating on a WAN, check that the EA201 encoder unit configuration has the correct gateway address.
The EA201 encoder unit has different IP than what is marked on the box.	• If this is the initial setup and the EA201 encoder unit is using an IP other than the IP marked on the unit, chances are that you network uses DHCP that has dynamically assigned a network compatible IP when the EA201 encoder unit was initially installed. This should not be a problem. Note that you should contact the Network Administrator and see if there is a DHCP feature for assigning the same IP to a specific EA201 encoder unit MAC address. This will assure the IP does not change in the future. • If there is no DHCP feature on the network, then the EA201 encoder unit may have been configured to a different IP or the label on the unit is incorrect. • You can change the IP if necessary; see the Unified configurator section.

Problem	Try
Bad video quality	• Check the cables are connected securely. This includes junction boxes and amplifier that may be used. • Check the camera settings are correct, on the camera and in the EA201 encoder settings. • Check the camera lens is clean and unobstructed
Streaming video image is hanging (stopped)	• Check the network is operating correctly • Check the EA201 encoder configurations are optimal for the available CPU and network traffic.
The PTZ camera control doesn't work	• Check the PTZ control leads are securely connected to the terminal block connector. • Check the PTZ control leads are connected to the correct pins of the RS485 TERMINAL block and to the camera PTZ control termination. • Inspect the wires are not damaged.
No audio out	• Check the amplifier and speakers are turned on and receiving power. • Check the volume on the speakers. • Check any mute features are not turned on. • Check the speaker connection. • Check the Audio IN and Audio Out connections are wired correctly and connected to the shared ground terminal block connection. • Check there is Audio Signal being received from the Audio IN.

Problem	Try
Alarm Inputs are not working	• Check that the EA201 encoder is communicating through the network. • Check the EA201 encoder-Setup Configuration to assure the Alarm Input is enabled. • Check the Alarm inputs wires are connected securely. • Check that the alarm wires are paired in the terminal block according to requirements. • Check that the block connector is plugged in firmly to the Alarm Inputs and not the Relay Output. • Check that the Alarm Input is being sent by the connected device.
Relay Output is not working	• Check that the Relay Output is properly configured in the software settings. • Check the Relay Output wires are connected securely. • Check that the Relay Output is paired in the terminal block according to requirements and that one wire is connected to the common. • Check that the NO or NC states of the unit match the system configuration. • If the power recently went out, it should be noted that the unit default state will be NO when the unit comes back online. • Check that the block connector is plugged in firmly to the Relay Output and not the Alarm Inputs.

3.12. Procedures List

The following procedures can be found in this manual:

3.13. Contacting DVTel

DVTel, Inc., multiple award-winning market leader in the development and delivery of intelligent security solutions over IP networks. We provide unified solutions leverage existing network infrastructure while providing unmatched levels of flexibility, scalability, cost-effectiveness—all backed by superior customer support.

To contact us:

Location	Location
CORPORATE HEADQUARTERS **DVTel, Inc.** 65 Challenger Road Ridgefield Park, NJ 07660 201.368.9700 Fax: 201.368.2615 Order Fax: 201.712.0343 info@dvtel.com	**ASIA PACIFIC REGION** **DVTel** 111 North Bridge Road, #27-01/02 Peninsula Plaza, Singapore 079098 +65 6389 1815 Fax: +65 6491 5660 info@dvtel.com
ANZ AND THE PACIFIC ISLANDS **DVTel** 37 Victoria Street Henley Beach SA 5022 T +61 8 8235 9211 F +61 8 8235 9255 M +61 419 850 166 info@dvtel.com	**EMEA** **DVTel UK LTD.** 7 Lancaster Court Coronation Road High Wycombe, HP12 3TD +44 (0) 1494 430240 Fax: +44 (0) 1494 446928 info@dvtel.com
INDIA AND SAARC **DVTel** Gesco Coprporate Centre The Great Eastern Centre 70, Nehru Place, New Delhi - 110019 +91 11 26209202 Fax: +91 11 26209302 info@dvtel.com	**CALA** **DVTel Mexico S.A.P.I. de C.V** Ave. Paseo de la Reforma No. 505 Piso 31 Col. Cuauhtémoc México, Distrito Federal C.P. 06500 T +52 443 279 3746 Fax: +52 55 8503 4299 info@dvtel.com
China **DVTel China** Room 607. Block 3 Zhubang 2000 Office Tower No.98 Balizhuang Xili Chaoyang District Beijing, China 100025 Tel: 86-10-8586-8836 Mobile: +86-13501266857 info@dvtel.com	**DVTel 中国.** 北京市朝阳区八里庄西里98号住邦2000商务中心3号楼607室 100025 座机: +86-10-85868836 手机: +86-13501266857 传真: +86-10-85868815 邮件: info@dvtel.com

To request the latest versions of firmware and software or to download other product-related documents, visit http://www.dvtel.com/support. If you have obtained a login go to our support gateway.

For assistance, email us at support@dvtel.com or phone 1-888 DVTEL 77.