

VRX Company Inc.

Application Note: EasternCCTV IP Camera Setup for use with VR100IP Text Inserter Instructions and Examples.

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1. Abbreviations and Phrases

Ethernet	A type of network protocol. Electrical connections commonly on RJ45 with CAT5 or 6 wire.
GUI	Graphical User Interface.
H.264	A video compression standard.
IP or IP Camera	Internet Protocol, or Internet Protocol Camera
NVR	Network Video Recorder, used to record digital video streams from IP Cameras.
PC	Personal Computer
Ping	An Ethernet message used to check if a device exists at a particular IP Address.
RTSP	Real Time Streaming Protocol

Table 1 Abbreviations used in this manual

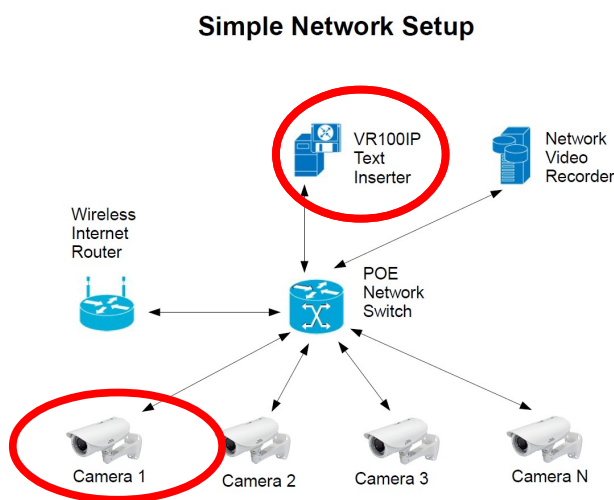
2. Objective

The objective of this document is to enable an installer to configure an IP Camera and the VR100IP Text Inserter so that the Text Inserter can stream video from the IP Camera. These devices are circled in red in the network diagram in Figure 1.

Configuration of the VR100IP and a Network Video Recorder will be covered in another document.

Please refer to Table 2 for a list of tested Compatible Camera(s). If your camera is similar then it may also work, please check the URL needed to access the camera. If it is "rtsp://admin:123456@IPADDRESS:554/" where IPADDRESS, is an IP address, and the User and PW are "admin" and "123456" for example, then most likely it will work with these instructions.

Figure 1: Simple Network Setup



3. Compatible Cameras

Table 2 contains the model numbers of cameras known to be compatible with this Application Note. Other similar cameras may also be compatible as well.


Brand	Model	Photo
Patriot by Eastern CCTV	Actual test: IP-IRD3E02-G-3.6mm-2 Similar to: IP-IRD3E02-G/W-3.6MM - 3Mp HD IP Camera	

Table 2: Tested Compatible Camera(s)

4. Before You Begin

4.1. Setup Equipment

The installer will need a computer on the IP video network with a browser. Use the browser to access the GUI (Graphical User Interface) of the camera the NVR and the VR100IP.

4.2. Start with Camera and NVR Working Together

Before you try to install the VR100IP Text Inserter into a camera system, the IP Camera should already be configured on the network so that either the NVR can receive the IP video stream or a browser on the installer's computer can receive the IP video stream. This may require the installer to setup the networking equipment for their local network, including routers and switches with cabling need to make all of the components communicate properly. Once this is done, the VR100IP Text Inserter should be configured on the network so that the Web GUI interface is available in the installer's browser. Once all of the hardware is connected and configured on the local network, then the customer is ready to start configuration.

5. Configure Camera and VR100IP

Now we will configure both devices so that streaming can proceed from the camera to the VR100IP Text Inserter.

5.1. Configure Camera

5.1.1. Log into the Camera Configuration GUI.

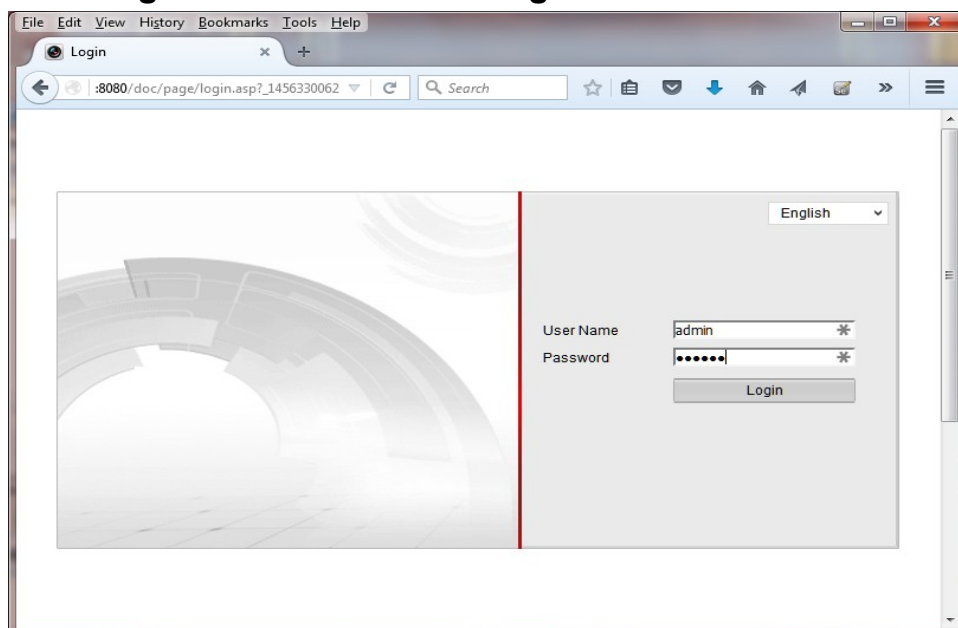


Figure 2: IP Camera Login

Using your login and password, or the default login and password for the camera, log in using the Internet Browser as shown in Figure 2. For this camera the URL was `http://IPADDRESS:8080` We have found the default user and password for these cameras to be “admin” and “123456”. It is recommended to to change them from the default once configured.

5.1.2. Check the Network Settings

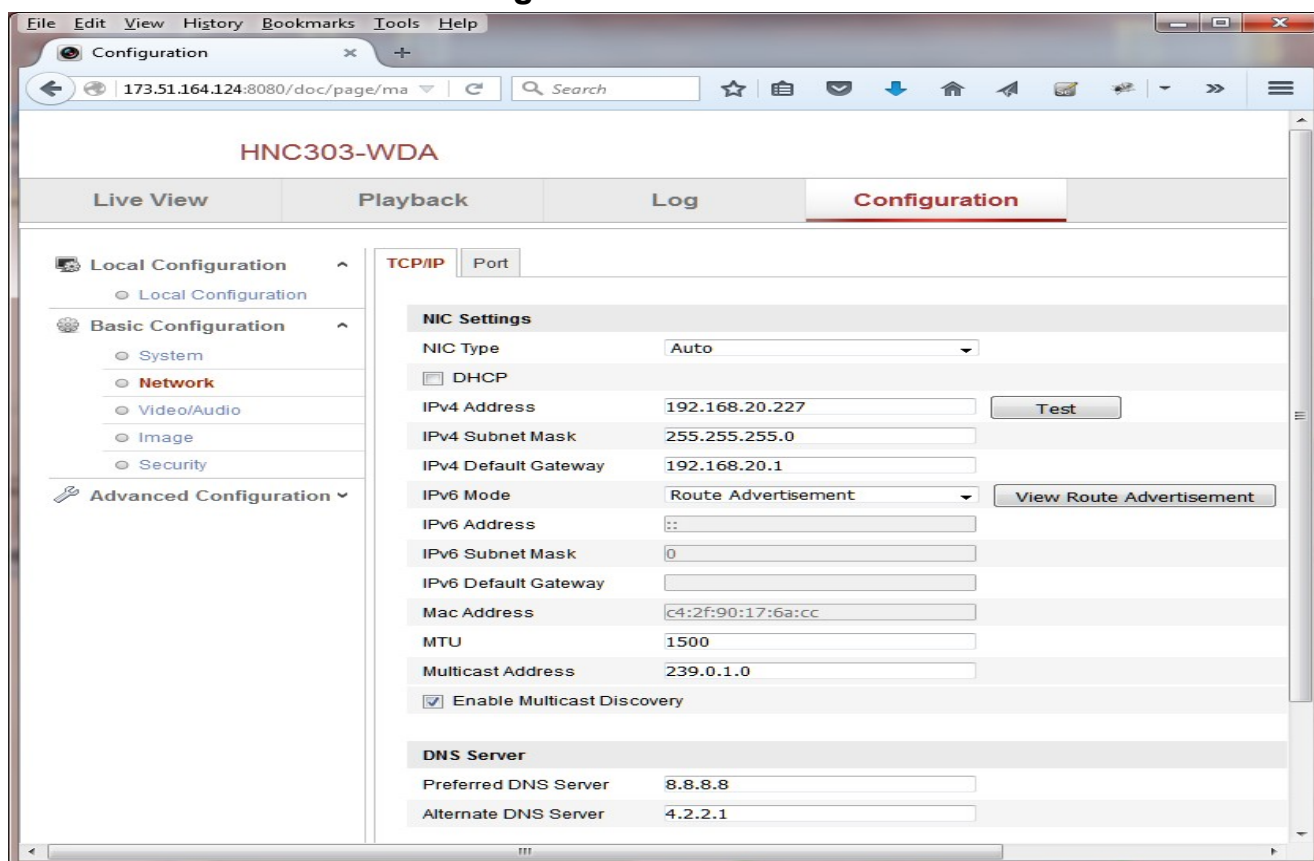
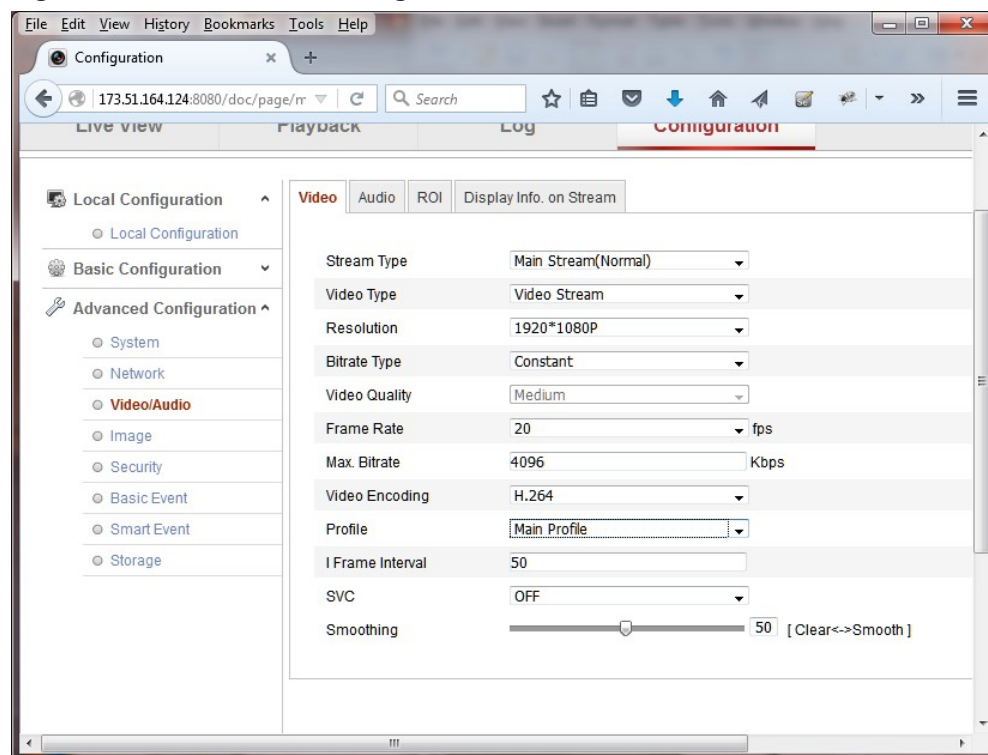


Figure 3: IP Camera Network Setup

Configure or check the IP Address of the Camera. Record this value later to use as input for the VR100IP configuration. As shown in Figure 3 the IP address of this camera, for example, is 192.168.20.227.

5.1.3. Configure the Video Settings

Figure 4: IP Camera Video Settings



Set Video settings as desired. Here are some suggestions, but are guide lines only.

Setting Name	Value	Notes
Code-Stream Type	Main Stream	Recommend to leave as General
Video Type	Video Stream	Turn off Audio to save bandwidth
Resolution	720P (1280*720) or higher.	Up to 1080P supported by VR100IP
Bit Rate Type	CBR	Either CBR or VBR are supported
Video Quality	Medium	Leave at default.
Frame rate(FPS)	20 or higher	Up to 30 FPS supported by VR100IP. Lower bit rates might be required on congested networks.
BitRate or Max Bitrate	4096	Recommended that Bit Rate matches VR100IP
Video Encoding	H.264	Same in VR100IP
Provile	Main Profile	For Main image stream.
I Frame Interval	50	Recommend to leave as default
SVC	OFF	Don't Care
Watermark Character	DigitalCCTV	Don't Care

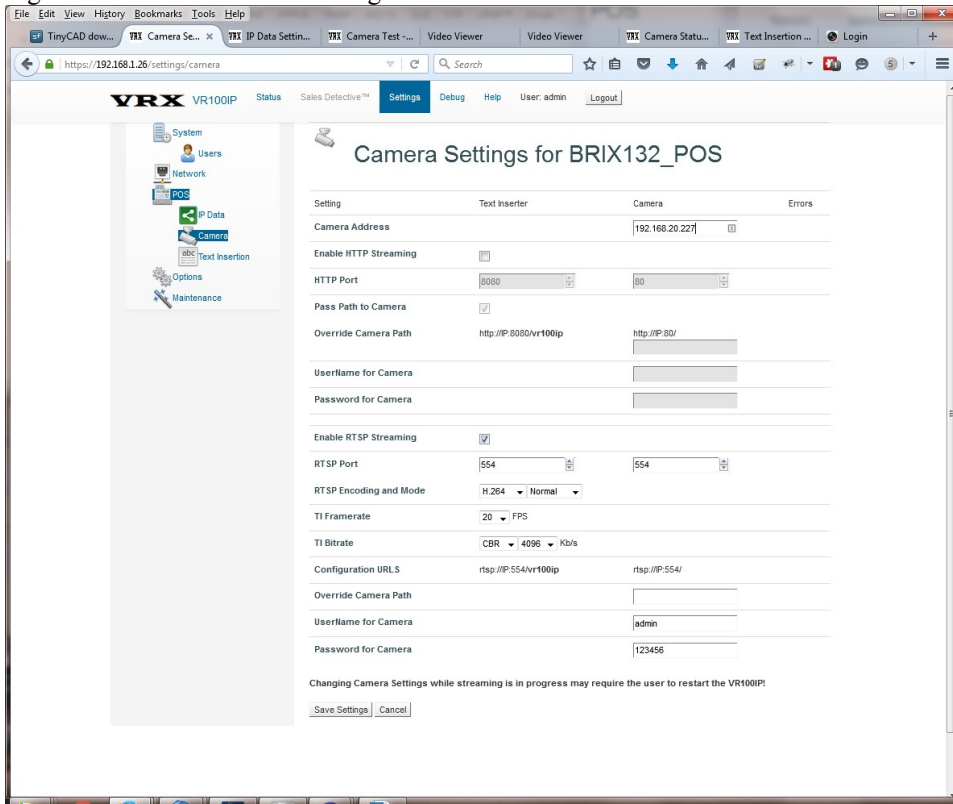
Table 3: Example Video Settings

Save the changes.

5.2. Configure VR100IP

Now we will configure the VR100IP settings. Log into the VR100IP webpage and select the Settings tab (see Figure 5 below).

Figure 5: VR100IP Camera Settings



Column	Setting	IP Camera Setting	Notes
Camera	Camera Address	Network TCP/IP IP Address	
Text Inserter	Enable RTSP Streaming		Enabled
Camera	RTSP Port	Network Connection RTSP Port	
Text Inserter	RTSP Encoding	Camera Video Encode Mode	
Text Inserter	RTSP Mode		Select Normal
Text Inserter	TI Framerate	Camera Video Frame rate(FPS)	

Column	Setting	IP Camera Setting	Notes
Text Inserter	TI Bitrate	Camera Video Bit Rate Type	CBR or VBR
Text Inserter	TI Bitrate	Camera Video Bit Rate	
Camera	Override Camera Path		Leave empty.
Camera	UserName for Camera	System Account	Use Appropriate User Name
Camera	Password for Camera	System Account	User Appropriate Password

Table 4: Text Inserter Settings Mapped to Camera Settings

Use the information in Table 4 to configure the VR100IP. Configure the appropriate Username and Password to access the camera.

5.2.1. Configure IP Address to match IP Camera IP Address

As shown in Figure 5 the IP address is set to the same value as the IP Camera TCP/IP settings (in this example, the IP address is 192.168.20.227).

5.2.2. Configure RTSP settings to match IP Camera Video Settings

As shown in Figure 5 the RTSP settings should be configured based on the IP Camera Connection Settings and the IP Camera Video Settings. Enable the RTSP Streaming and set the Camera port to match the port configured in the Connection Settings. For RTST, port 554 is the default value.

Next, configure the RTSP Streaming settings based on the IP Camera Video Settings such as the example settings in Table 3.

6. Test Connections

Now we will test the camera and VR100IP connection settings.

After configuring the VR100IP with the camera settings, test the connection status by viewing the Camera Status page in the VR100IP webpage (select Status tab, then select the Camera icon on left). The page should be similar to Figure 6 below.

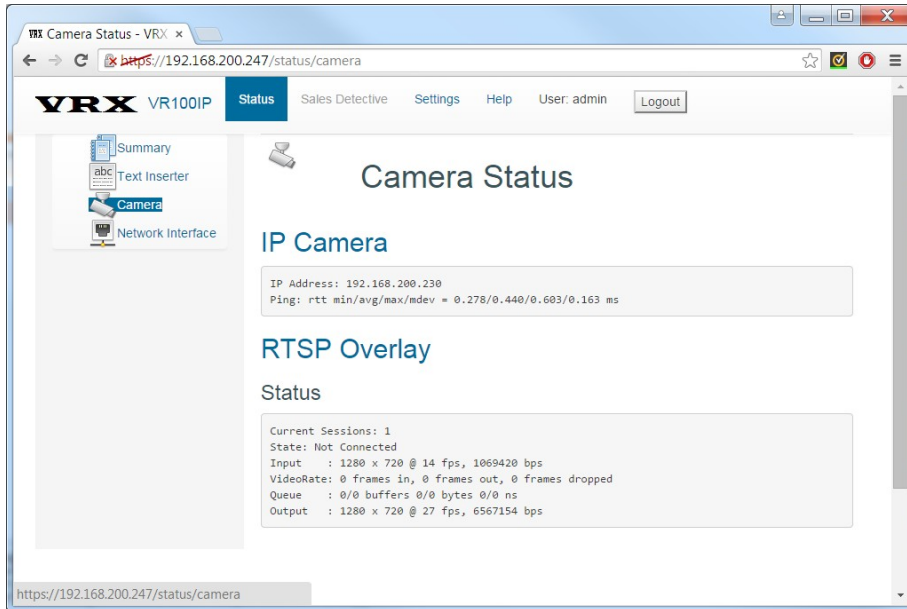


Figure 6: VR100IP Camera Status Page

6.1.IP Camera Ping Test

If the settings in section 5 were configured correctly, the “IP Camera” section should display the camera IP address and a series of “Ping rtt” or Ping Round Trip Time values.

If the “Ping” values are empty, then the VR100IP cannot communicate with the camera. Recheck the IP address of the camera and the VR100IP Camera Settings and check the Camera Status page again. If there are still no Ping values, check all network connections between the camera and VR100IP (network cabling, switches, router, etc.).

If you still cannot get a camera connection to the VR100IP test the network connectivity independently with , for example, a Windows computer. Open a command window and Ping the camera and VR100IP to confirm they are on the same network.

```

C:\Windows\system32\cmd.exe
C:\Users>ping 192.168.1.108
Pinging 192.168.1.108 with 32 bytes of data:
Reply from 192.168.1.108: bytes=32 time<1ms TTL=64
Reply from 192.168.1.108: bytes=32 time<1ms TTL=64
Reply from 192.168.1.108: bytes=32 time<1ms TTL=64
Reply from 192.168.1.108: bytes=32 time<1ms TTL=64
Ping statistics for 192.168.1.108:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Users>ping 192.168.1.26
Pinging 192.168.1.26 with 32 bytes of data:
Reply from 192.168.1.26: bytes=32 time<1ms TTL=64
Reply from 192.168.1.26: bytes=32 time<1ms TTL=64
Reply from 192.168.1.26: bytes=32 time<1ms TTL=64
Reply from 192.168.1.26: bytes=32 time<1ms TTL=64
Ping statistics for 192.168.1.26:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Users>

```

Figure 7: Example on a command window of Ping an example camera at 192.168.1.108 and VR100IP at 192.168.1.26 (Note this is a different camera from those above.)

6.2.RTSP Overlay Test

Refer back to the RTSP Overlay status in Figure 6 above. If the VR100IP is already connected to a NVR, then the “State” field should show “Connected” status, or “Playing ” status , otherwise it will show “Not Connected”.

6.2.1.Using VLC to test RTSP Overlay

To test the video from the VR100IP, you can use a PC or laptop connected to the same network as the camera and VR100IP. Download and install the program VLC (this is a free download from www.videolan.org/vlc/index.html). This program can be used to check the RTSP connection.

Launch VLC and select Media - Open Network Stream. In the text field labeled “Please enter a network URL:”, input the following RTSP address:

rtsp://<username>:<password>@<IP>:<port>/vr100ip

<username> = The username of the VR100IP User

<password> = The password of the VR100IP User

<IP> = The IP address of the VR100IP

<port> = The RTSP port configured for both camera and VR100IP (default is 554)

Example: for the VR100IP address in Figure 6, the URL to enter in VLC would be:

rtsp://admin:123456@192.168.200.247:554/vr100ip

[note: in this example, the <username> and <password> are “123456”]

Press Play and wait a few seconds for video playback to begin. If connected properly, you will see video from the VR100IP (ie, the camera’s video with text overlay).

If there is no video playback, recheck the RTSP settings in both the camera and VR100IP.

If video playback in VLC is working, return to the VR100IP Webpage and refresh the Camera Status page. In the State field, the value should now be “Playing”.

7.Still having questions?

If you are having compatibility trouble with the POS system, your NVR or your Text Inserter, please look for updated information on our web site at www.vrxinc.com

Contact the VRX Company Inc at support@vrxinc.com or
by calling 1-866-543-8398 9-5 Eastern Time.

Snail Mail at: VRX Company Inc. PO Box 4663, Maryville, TN 37802-4663