

VN-Matrix 300 • Setup Guide

The Extron® VN-Matrix™ 300 series of video encoders/decoders (codecs) and decoders distribute digital SD, HD-SDI, or 3G-SDI video using the Extron PURE3™ codec. Use the correct model for your video format to broadcast video across an IP network. Video signals that are connected to a VNC 300 device configured as an encoder are compressed into a TCP or RTP data stream for transport across a local area or wide area network. At the far end of the network, one or more VNC 300 codecs configured as decoders, VND 300 decoders, or a mix of both models decode the compressed stream back into the original video signal format.

IMPORTANT:
Refer to www.extron.com for the complete user guide and installation instructions before connecting the product to the power source.

NOTE: For full installation, configuration, and operation details, see the *VN-300 Matrix User Guide*, available at www.extron.com.

Connections

NOTES:

- See “Initial Setup — Before You Connect to a Network,” step 2 for the RS-232 protocol for Com port 1 (①).
- The RS-232 protocol for Com port 2 (②) is user configurable and beyond the scope of this guide.

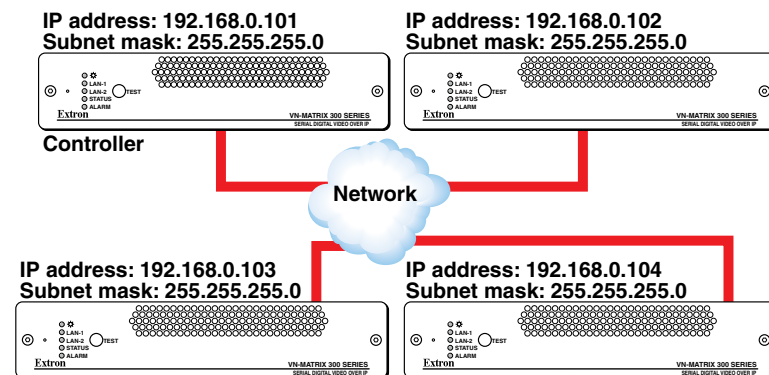


Figure 1. Typical VN-Matrix 300 Application

Connections — Either Configuration

NOTE: Former Electrosonic® products use male connectors for Com ports. You may need an adapter.

- ① **Com 1 port** — Use this male 9-pin port to configure the connected VN-Matrix 300 unit **only**.
- ② **Com 2 port** — Use this male 9-pin port to transmit and receive data across a network.

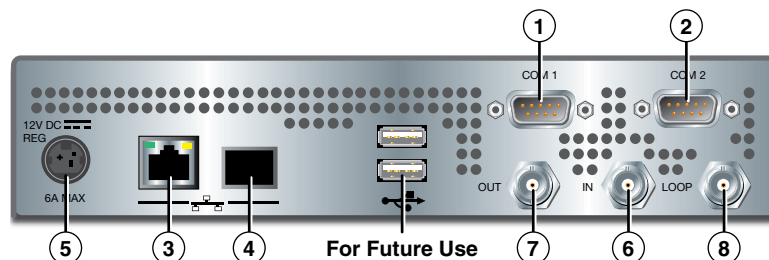


Figure 2. VN-Matrix Connections

NOTE: Do **NOT** connect VN-Matrix units to an existing network until each is correctly configured. Incorrect configuration may cause disruption to other network users. See “Initial Setup — Before You Connect to a Network” to configure the units.

- ③ **Network RJ-45 port (port 1)** — Use either this port or the fiber optic network port (④) to stream video and audio data across a network.
- ④ **Network fiber optic port (port 2)** — Use either this port or the RJ-45 network port (③) to stream video and audio data across a network.

NOTE: Extron does not supply the the plug-in SFP module for the optical Network port.

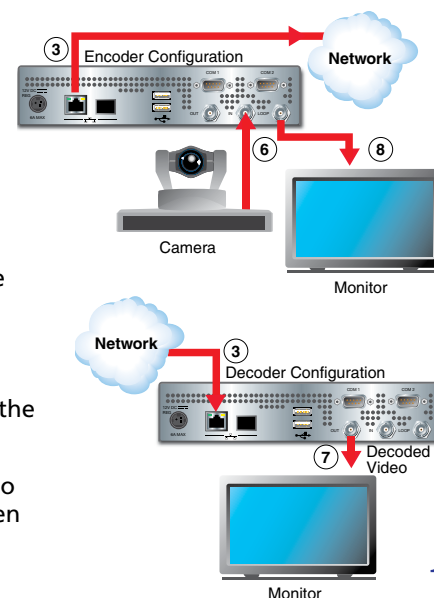
- ⑤ **Power Connector** — Connect the included 12 V power supply between this connector and a 100 VAC/240 VAC, 50-60 Hz source.

Video Connections — Encoder Configuration

- ⑥ **In BNC connector** — Connect a digital video input for encoding and streaming to one or more decoders.
- ⑦ **Out BNC connector (optional)** — This connector provides a loop through of the original source with or without an optional text overlay.
- ⑧ **Loop BNC connector (optional)** — This connector provides a buffered loop through of the original source.

Video Connections — Decoder Configuration

- ⑥ **In BNC connector (optional)** — If desired, connect a digital genlock signal to synchronize the decoder to a genlock signal.
- ⑦ **Out BNC connector** — Connect a digital video display to receive the streamed digital video output. When no video streams are being decoded, this output can provide either a frozen image of the last received frame or a splash screen that masks the output.
- ⑧ **Loop BNC connector** — Not used.



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Initial Setup — Before You Connect to a Network

NOTE: You need to manually assign a known IP address for the controller into each VN-Matrix 300 unit. Extron recommends that you use a static IP address scheme rather than DHCP.

Before connecting each VN-Matrix 300 unit to the network (connectors ③ and ④), change the network settings of the units.

- **For an open network**, contact the system administrator for a range of IP addresses.
- **For a network dedicated exclusively to the VN-Matrix 300 (preferred)**, Extron recommends that you use addresses in the range of 192.168.0.1 through 192.168.0.254, with a subnet mask (netmask) of 255.255.255.0.

One VN-Matrix unit must be designated as a controller. All normal system configuration and control is via the network interface for which the controller functions as a network server. The controller can be any unit in the system, whether configured as an encoder or decoder.

In figure 1 on page 1, the VN-Matrix 300 unit at 192.168.0.101 is designated as the controller. Each VN-Matrix 300 device in the system should be set to recognize the IP address of the device controller.

Change the network settings for all units as follows:

1. Connect a PC to the Com 1 port (①) on the unit to be set.
2. To initiate communication between the computer and the VN-Matrix 300 unit, run HyperTerminal from the PC. Set the communications settings as follows:
Baud rate: 115200 **Data bits:** 8 **Parity:** None
Stop bits: 1 **Flow control:** None
3. Connect the power supply to the VN-Matrix 300 unit (⑤). When the boot up is completed, a message similar to as shown below appears:
eth1: IBM EMAC: link up, Unknown speed/duplex.
eth1: IBM EMAC: MAC 00:e0:aa:11:00:38.
4. Press <Enter>. The connected unit responds with the prompt login:.
5. Type the default login **config** and press <Enter>. The connected unit responds with the prompt password:.
6. Type the default password **config** and press <Enter>. The connected unit downloads the configuration menu.

The screenshot shows a configuration menu with two columns of settings. The left column is for 'Network Port 1' (RJ-45 Network Port ③) and the right column is for 'Network Port 2' (Optical Network Port ④). Both columns have a list of 18 items, with the last item being 'Exit'. The settings for Network Port 1 are: 0. Speed/Duplex: auto_10_100_1000, 1. Boot method: static [dhcp], 2. address: 192.168.0.104, 3. netmask: 255.255.255.0, 4. gateway:, 5. broadcast:, 6. mtu: 1500, 7. controller ip: 192.168.0.101, 8. controller port: 80, 9. Exit. The settings for Network Port 2 are: 10. Speed/Duplex: fibre_fixed_1000F, 11. Boot method: static [dhcp], 12. address: 192.168.1.2, 13. netmask: 255.255.255.0, 14. gateway:, 15. broadcast: 192.168.1.255, 16. mtu: 1500, 17. ip forwarding: 0, 18. webserver port: 80. At the bottom, it says 'Please select an option:'.

RJ-45 Network Port (③)	Optical Network Port (④)
0. Speed/Duplex: auto_10_100_1000	10. Speed/Duplex: fibre_fixed_1000F
1. Boot method: static [dhcp]	11. Boot method: static [dhcp]
2. address: 192.168.0.104	12. address: 192.168.1.2
3. netmask: 255.255.255.0	13. netmask: 255.255.255.0
4. gateway:	14. gateway:
5. broadcast:	15. broadcast: 192.168.1.255
6. mtu: 1500	16. mtu: 1500
7. controller ip: 192.168.0.101	17. ip forwarding: 0
8. controller port: 80	18. webserver port: 80
9. Exit	

Please select an option:

NOTE: Many menu selections are not available if DHCP is selected. Select 1 or 11 to toggle DHCP on and off.

7. Change the settings as needed as follows:

NOTES:

- Do not include leading zeros when typing IP addresses. For example, type 192.168.0.104; **do not** type 192.168.000.104.
- Settings that you may need to change are:

- Address (selection 2 or 12)
- Netmask (selection 3 or 13)
- Controller IP (selection 7)

- a. Type the option number and <Enter>.
 - b. Type the new setting and <Enter>.
 - c. Once all the changes have been made, type 9 and <Enter> to save the settings and exit the menu.
8. Repeat steps 1 through 7 for each VN-Matrix 300 unit in the system.

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Initial Setup — After You Connect to a Network

After the low-level configuration described on page 2, system configuration and operation is via the network interface of the unit designated as the controller. Built-in HTML pages, which can be viewed by any web browser, such as Mozilla® Firefox®, version 1.3 or newer (preferred), or Microsoft® Internet Explorer®, version 6.0 or newer, provide access to various system parameters.

NOTE: Whichever browser you use, it must be configured to accept cookies and be JavaScript-enabled.

Startup and Login

1. After you have made all network connections, cycle power on each VN-Matrix 300 unit to ensure that the other network components, such as hubs and switches recognize the power up of the units and begin exchanging data with them.
2. Connect a computer to the same network as the VN-Matrix 300 device that is configured as the controller.

NOTE: The computer must be on the same subnet as the VN-Matrix 300 units

3. In the web browser, enter the IP address of the VN-Matrix 300 unit that is configured as the controller into the address bar of the web browser (③ in the figure at right).
4. Press <Enter>. The login screen appears.
5. Enter the Username and Password (⑤ in the figure at right).

③

Username

⑤ Password:

⑥

NOTES: • The VN-Matrix 300 devices have two user accounts (usernames):


- **admin** — allows full read/write access to all setup parameters,
- **public** — allows read-only access to setup parameters.
- As shipped from the factory, the password for both accounts is the same as the user name (the password is "admin" for the admin user account and "public" for the public account).
- The username and password are case sensitive.
- For the initial setup, use the **admin** username.

6. Click the **Login** button (⑥, above) or press <Enter>. The VN-Matrix 300 web page opens to the Device List tab, shown below. This page lists all VN-Matrix devices that are connected to the system controller.

Configure the Units as Encoders or Decoders

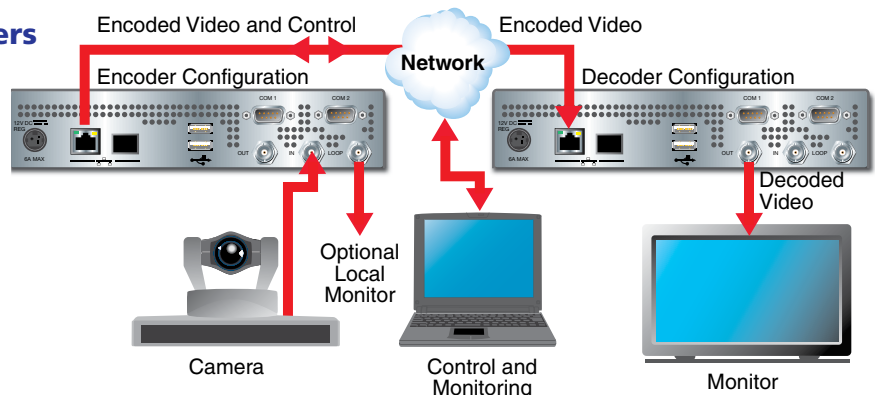
A typical VN-Matrix 300 network includes an encoder (source), a decoder (display), and a controlling PC.

The Mode column on the Device List tab shows how each VN-Matrix 300 unit is configured using the following icons:

 = Encoder  = Decoder
 = Recorder  = Undefined









NOTES: • The VNM Recorder is not documented in this guide. Inclusion in this list is for reference only.

- The VND 300 is a decoder only and its configuration cannot be changed.
- The device list may show more devices than are in your system. This is because the controller maintains a list of devices that have been used in the past and are not currently available. In this case, the IP address entry for that device is blank.



Configure the devices as encoders or decoders as follows.

1. On the Device List tab, click anywhere on the row (except the Delete column) for the device to be configured (① in the image below). This selects that device and displays the device page (shown on page 4).

Device List						Save All	Help	Logout
VN-Matrix Controller						System Alarm Status: Clear		
Device	Mode	Status	Name	IP Address	Version	Del		
3G-SDI	?		790001	192.168.0.102	ver4.5g	 ①		
3G-SDI	?		790003	192.168.0.104	ver4.5g			
3G-SDI	?		790006	192.168.0.101	ver4.5g			
3G-SDI	?		790008	192.168.0.103	ver4.5g			

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2. In the Device Setup box, click the Data Interface drop-down box and select either **Cat6** (network port 1, item ③ on page 1) or **SFP/Fibre** (network port 2, item ④ on page 1) as the cable to output or receive the video signal (② on the figure at right).

3. In the Device Setup box, click the **create source** button to configure the device as an encoder (③ in the figure at right). Proceed to step 6.
— or —

In the Device Setup box, click the **create display** button to configure the device as a decoder (④ in the figure at right). A display icon (display0) appears in the Configuration box. Proceed to step 4.

Device Setup

Device Type	none	create source	③ create display
Mode	enable		
Identify	<input type="checkbox"/>		
Data Interface	Cat6		②
Multicast TTL			

NOTE: If a device is already configured, the device type is identified and the only button available is **change device type**. Click the button to display the **create source** and **create display** buttons, and then perform step 3.

If the device reports **"Device is streaming data"**:

- a. Change the data interface cable setting (step 2).
- b. Change the device type (step 3).
- c. Change the data interface cable setting back to the desired port (step 2).

Device Setup

Device Type	source	change device type
Mode	enable	
Identify	<input checked="" type="checkbox"/>	
Data Interface	SFP/Fibre	
Multicast TTL	2	

4. For a decoder, click the display icon (display0) that is in the configuration box after you have created a display in step 3 (④ in the figure at right). The source configuration screen appears (below).

Bandwidth Source Audio Fec

video	Please select a source		
audio	Please select a source		
colfec	Import Source		
rowfec	790003.videoPort0_rtp		
	790003.videoPort0_tcp		
	790006.videoPort0_rtp		
	790006.videoPort0_tcp		

⑤

Configuration

display0 ④ ancPort0 101 colfec 010 rowfec 010

NOTE: The display icon is available only after you create a display in step 3.

5. Click the Video Source drop-down box and then select the video source (⑤ in the figure above).

NOTE: Choose **rtp** for unicast RTP streaming or **tcp** for unicast TCP streaming. See the *VN-300 Matrix User Guide* for more information about these data transport methods.

6. Click the **Save All** button to save the configuration changes.

Indications

- **Power (⚡) LED** — The Power LED lights green when receiving power. The LED flashes green when an over temperature, overload, or underload condition occurs — cycle the power on and off to reset the unit.
- **LAN 1 and LAN 2 LEDs** — The LAN LEDs light or flash when the associated Ethernet connection is active.
- **Status LED** — The Status LED lights when video is present but encoder is not streaming it (unit is disabled or in standby mode). The LED flashes when the unit is streaming or receiving video.
- **Alarm LED** — The Alarm LED lights when a critical alarm has occurred.

- ⚡ Power
- LAN-1
- LAN-2
- STATUS
- ALARM

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