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A complete system to provide high resolution, long-term digital video storage and an IP based CCTV solution on a scalable and reliable platform

NVR-3U Quick Start Guide

(HR-NR38xx-3U)

**THANK YOU FOR PURCHASING A QUALITY PRODUCT FROM INSTEK DIGITAL.
THIS QUICK START GUIDE WILL PROVIDE YOU WITH THE INSTRUCTIONS
NEEDED TO CONFIGURE YOUR DVR (SERVER) AND VIEW THE VIDEO FROM
THE COMMAND CENTER LITE APPLICATION (CLIENT SOFTWARE).**

**INSTEK DIGITAL SEPERATES THE CLIENT SOFTWARE FROM THE SERVER
INTO TWO DISTINCT ENTITIES. THIS SETUP ALLOWS YOU (THE CUSTOMER)
TO PLACE YOUR SERVER IN A SECURE, TAMPER-PROOF LOCATION, FURTHER
ENHANCING YOUR SECURITY PROTOCOLS.**

MatriVideo™ Network Video Recorder (NVR) is a complete network-based video recording solution supporting IP video compression formats such as H.264, MPEG-4 and MJPEG. The MatriVideo™ NVR can render and display video feeds from any camera source via Ethernet.

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FRONT PANEL OF THE 3U NVR



REAR PANEL OF THE 3U NVR



NETWORK CONNECTION OVERVIEW



1. Power Socket (Single or Dual)
2. Power Switch
3. COM1 for External I/O Module (RS-232)
4. Ethernet Ports (RJ45) x2
5. Main Power Switch (Dual Power model only)
6. COM2 Port for PTZ Control (RS-485)
7. COM3 Port for PTZ Control (RS-232)

STEP 1: CONNECT YOUR NVR

- a. Carefully remove the four screws from the front handles to open the front panel.



- b. Use your thumb to press the key hole of the hard disk drive (HDD) tray and push it up to unlock it. Remove the HDD trays from the front panel carefully. Secure the HDD inside the tray with four screws each. Insert the HDDs (with the trays) back into their slots from HD0 to HD7.



- c. Secure the DVR front panel by tightening the four screws.
- d. Connect the NVR to your existing network infrastructure.

STEP 2: POWER ON THE NVR

- a. Connect the power cord.
- b. Turn on the power for the NVR from the rear panel. The booting process will take a few minutes to complete.
- c. Once boot up is complete, you will see the following information on the front LCD panel: System Version, IP Address, Network Connectivity Information, and the System Date & Time.



STEP3: INSTALL COMMD CENTER LITE

- a. Insert the Command Center Lite CD into the CD-ROM drive of your laptop or desktop PC and run the Command Center Lite application setup.

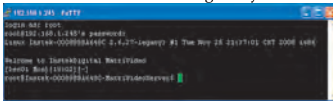
STEP 4: CONNECT THE NVR

- Configure the NVR with PuTTY (see step **b**) or by connecting a keyboard and a monitor directly to the NVR (see step **c**).
- PuTTY is a Secure Shell (SSH) client used to securely connect to the NVR remotely. To launch PuTTY navigate to **Start** → **Programs** → **Instek Digital** → **Command Center Lite** → **PuTTY**. In the text box labeled **Host Name or IP Address**, enter the IP address of the NVR found on the front panel LCD (the default IP address is 192.168.1.245). Click **Open** to initiate the remote connection to the NVR.

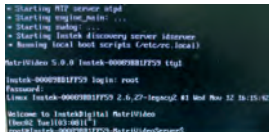


- The NVR uses an embedded Linux Operating System. Once the NVR has a keyboard and monitor connected, you will see a login prompt on the monitor. The NVR's default username is **root** and the password is **id**

Connection using Putty

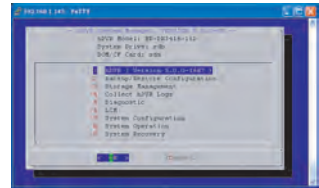


Local console screen of the NVR



- After successfully logging in, you can change the default password for the root account by typing **passwd root**. A command prompt will ask you to set a new password. Ensure you do not forget this password.

- Type **hdsm** and press **[Enter]** on your keyboard to run the NVR System Manager application.



- Change the Time Zone

System Configuration → **Time Zone Change** → **Select Continent or Ocean** → **Select Country/Region**. Select **Yes** to confirm.

- Change the Date/Time

System Configuration → **Date/Time Change** → Select **Proceed** to stop the NVR process → Use **[TAB]**, Up Arrow and Down Arrow to change the Year, Month and Date. Use **[TAB]**, Up Arrow and Down Arrow to change the Hour, Minutes and Seconds → Select **Proceed** to accept the changes.

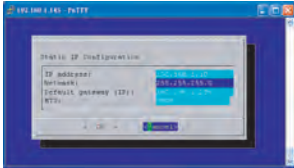
- Change the IP Address

To ensure there is sufficient bandwidth between the IP cameras and NVR, MatriVideo NVR uses multiple network interfaces. It is recommended to connect eth1 of the NVR to the same network segment as the IP cameras and connect eth0 of the NVR to the same segment as the Command Center or nCCTV. Here is an example outlining the eth0 configuration:

System Configuration → **Network Settings**

→ **IP Configuration** → Select **eth0** → **Enable eth0** → **Static IP Configuration** → Enter the IP address, Netmask, Gateway and select **OK** to proceed. The eth0's IP address has been changed to "192.168.1.10" in this document. Please wait a few moments for the changes to take effect.

Notice: Keep the value of MTU at its default (1500) unless you have other devices such as a SAN connected to the same network.



Note: eth1 should be set to a different network segment that corresponds with the network segment of the IP Camera (Ex: 192.168.2.x) to ensure sufficient bandwidth for IP streaming.

- i. Add Storage to the NVR: The first HDD will automatically be in use by the NVR. Subsequent HDDs will need to be added via the hDSM.

Navigate to **Storage Management** -> **Add Storage Repository** and select the available storage repositories to add to the NVR. This can be done individually or by using **All** to select all available storage repositories. Select **OK**. Proceed to the menu option **Detect Available Disk Volume** to check the status of the HDDs. The status of the HDDs should display **In Use**.

- j. To restart the NVR process, go back to the hDSM main menu and navigate to **hDVR** -> **Start**. This will take a few seconds to complete.

STEP 5: SUBSCRIBE THE NVR

- a. Run the Command Center Lite or Command Center application. During the first run, you will be asked to subscribe (or add) the NVR to the video recorder subscription list.

- b. Type in the **IP address**, **Command Port**, **Live Port** and **Playback Port** of the NVR.

Command Port: 80

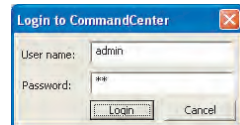
Live Port: 3514

Playback Port: 60006

Note: Do not change these port numbers if connecting the NVR in a LAN environment.



- c. Click **Add** to add the NVR to the list. You can add additional NVRs in a similar fashion. Click **Next** to continue.
- d. After finishing the configuration wizard, log into the Command Center. The default username is **admin** and the password is **id**



STEP 6: TIME SYNC WITH THE NVR

- a. Click on the MatriVideo Command Center Setup icon on the bottom left corner of the screen.



- b. Type in the IP address of an available time server. This will keep the time in sync

between the time server and your PC running the Command Center application.



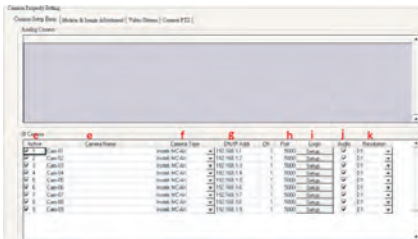
STEP 7: SETTING UP THE CAMERAS

- a. Right-click on the NVR (labeled by its IP address) in the camera tree panel and click **Video Recorder Setup**. When asked to login the default username is **admin** and the password is **id**

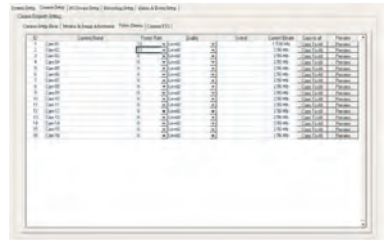


- b. Click the **Camera Setup** tab.
- c. Click the **Camera Setup Basic** tab. Click the **Active** box next to the camera name(s) to enable each individual camera(s).

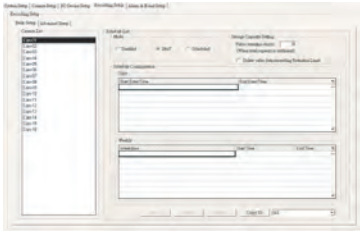
Note: Before continuing, you must configure the IP address of each camera to ensure it is in the same network segment as the NVR. Refer to your camera’s user manual for more information on how to do this.



- d. If you are using Instek MC-series cameras, please refer to the “Instek MC-AX Quick Start Guide”.
- e. In the **IP Camera** table, type a descriptive **Camera Name**.
- f. Select the **Camera Type**.
- g. Type the **IP Address** of the IP cameras. Domain names are supported if available on the surveillance network.
- h. The **Port** number is dependent on the IP camera. **Ch** refers to the channel number of the video server. See the IP camera or video server manual for additional information.
- i. The **Login** option is used to access the camera configuration settings. Refer to the camera user manual for additional information.
- j. Click **Audio**, if supported. Refer to the camera’s user manual for additional information.
- k. Select the **Resolution** for the camera from the drop-down list box.
- l. Click the **Video Stream** tab to set up the **Frame Rate** and **Quality** (Bitrate) for each individual camera.



- m. To setup 24x7 recording, click the **Recording Setup** tab and then click **Basic Setup**. Select a camera from the camera panel and change the recording mode to **24x7**. Alternatively, select **24x7** and then at the bottom of the screen click **Copy to All** to apply the setting to all cameras in the group.



- n. Restart the NVR and Command Center application for the camera settings to take effect. To restart the NVR, click the **System Setup** tab then click **Restart Video Recorder Service**. To exit the Command Center, click the **Exit** icon.



STEP 8: VIEW THE VIDEO

- a. Click on the + icon next to the IP address of the NVR to expand the camera tree.



- b. Drag and drop the video source (cameras) from the camera tree to the blank patterns (1x1, 2x2, 3x3, 4x4, 3x2, 4x3, 5x3) to view your video.



CONTACT INFORMATION

We graciously thank you for investing your faith in Instek Digital and being a valuable part of our corporation. Instek Digital's prime goal is to deliver leading technology in addition to exceptional customer service and technical support.

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