



INSTEK DIGITAL



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

MatriVideo Software Evaluation Quick Start Guide

This quick start guide provides instructions for configuring the NVR and viewing video from the MatriVideo Command Center Dual (CCDual) application.

Instek Digital separates the client and NVR into two distinct entities. The NVR (server) runs on embedded Linux while the client(CCdual) computer runs on the Windows Operating System. This separation allows placement of the server in a secure, tamper-proof location, further enhancing security protocols.

MatriVideo Command Center Dual is a state-of-the-art program which makes management of large scale surveillance systems easy and intuitive. This demo package contains the CCDual software for managing the client side of the system as well as a Linux partition to manage the server side of the system. Every element necessary is present for creating a basic, yet comprehensive enterprise scale system.

USB Drive Contents

- A Windows partition containing the installation file for CCDual on the client side.
- A Linux partition necessary for running embedded Linux on the NVR.

System Requirements

Server Hardware(for NVR):

- CPU: Intel series
- Video Card: VESA driver compatible
- Network Card:
 - 100 Mb: Realtek 8139cp c+
 - 1 Gb:
 - Intel pro/1000
 - Intel pro/1000 PCI-express
 - Relatek giga
 - Broadcom Tigon3 based
 - Broadcom NetXtreamII based
 - Atheros L1E gigabit
 - Marvell Gigabite
- North-bridge chipsets: Intel series
- SATA:
 - Intel series

- Marvell 88SX series

Client Hardware(for CCDual):

- CPU: Intel Core 2 Duo 2.4GHz or above
- Memory: DDR2 533MHz 1GBx2 (dual channel mode)
- Video Card: Independent 3D VGA card with 2 VGA connectors, NVIDIA 9800GT or above
- Operating System: Windows XP Professional/ Vista
- Misc.: DirectX 9.0c, Speakers, Microphone (Optional)
- Supported Resolutions: 1280x1024, 1024x768, 1920x1200, 1920x1080, 1680x1050, 1600x1200, 1440x900, 1400x1050, 1280x800, 1280x1024, 1024x768

Demo Limitations

- The NVR can only manage two IP camera channels.
- CCDual can only connect to two NVRs.
- The trial period for this software demo is 21 days of total run time.

Overview

***Warning: The first hard drive on the NVR's contents will be erased upon executing this software demo.**

The NVR and CCDual client computers' hardware settings must both be configured in order to run the software properly. Use the USB drive to install CCDual on the client computer. After the client computer is prepared, the NVR must be booted from the USB drive. The USB drive must remain plugged in at all times while running the NVR software.

The following is a brief overview of the steps involved in configuring the NVR and client computer. The next section will provide more detailed step-by-step instructions.

Configure and Set up CCDual

1. Install CCDual on Client Computer
2. Configure VGA Card on Client Computer

Configure and Set up the NVR

3. Configure NVR BIOS to Boot from USB Drive
4. Boot NVR from USB drive
5. Configure NVR

Procedures to View Video

6. Subscribe NVR

7. Synchronize NVR Time with Client Computer
8. Set Up Cameras
9. View Live Video
10. Set Up Dual Monitor Layout

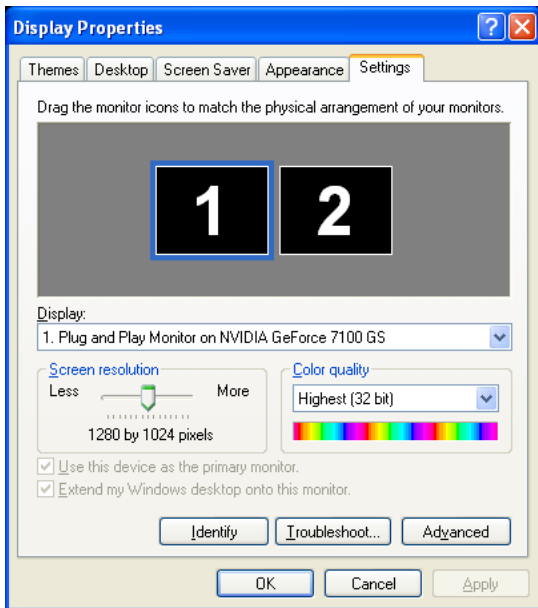
Step1: Install CCDual on Client Computer

- a. Insert USB drive into client computer.
- b. Double-click CCDual-5.5.5.x-ENU.exe.
- c. Follow the Install Shield Wizard instructions to complete the installation.

Note: CCDual requires two monitors. Follow the next step to properly configure the monitors.

Step 2: Configure VGA Card on Client Computer

- a. Connect both monitors to the video card on the client computer.
- b. Right-click on the Windows desktop and select properties.
- c. Click the **Settings** tab to view the Settings menu.



- d. Mark the checkbox labeled **Extend my Windows desktop onto this monitor**.
- e. Click **OK** to save changes and close the Settings menu.
- f. Navigate to the video card control panel and turn on the Dual Mode setting.

Note: This step will vary depending on which type of video card is installed on the client computer.

- g. Restart the computer to complete VGA card configuration.

Step 3: Configure NVR BIOS to boot from USB Drive

Note: This step will vary depending on which type of BIOS the computer uses.

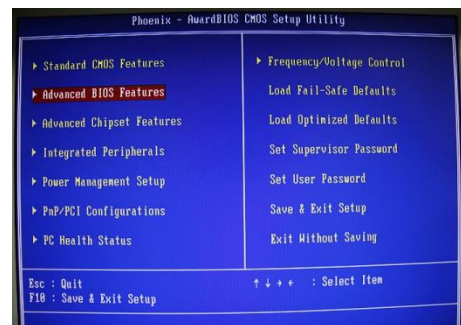
For Phoenix –Award BIOS Setup utility

- a. Insert USB drive into NVR.

- b. When the boot screen displays press **Delete** to enter BIOS setup menu.
- c. Use the arrow keys to scroll to **Advanced BIOS Features** and press **Enter**.



- d. Use the arrow keys to highlight **USB HDD0: FLASH Driver SM_USB20** and move it to the first position using the **+** key.

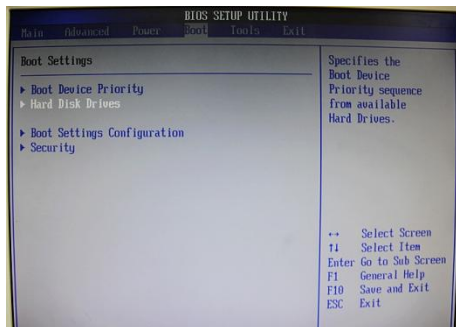


- e. Press **F10**. At the prompt, press **Y** to save changes and exit the BIOS setup menu.

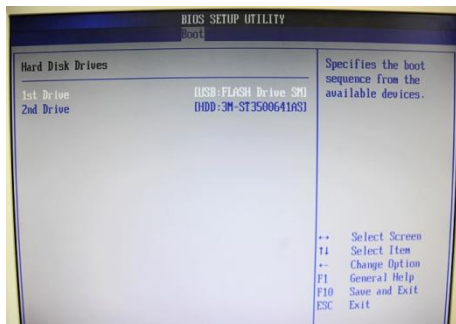


For AMI BIOS Setup utility

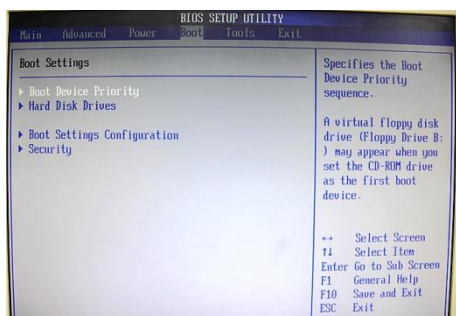
- Insert USB drive into NVR.
- When the boot screen displays press **Delete** to enter the BIOS setup menu.
- Use the arrow keys to scroll to the Boot menu.



- Select **Hard Disk Drives** and Press **Enter**.
- Use the + key to move **USB: Flash Drive SM** to the first drive position.



- Press **ESC** to return to the Boot menu.
- On the Boot menu select **Boot Device Priority**.



- Use the + key to move **USB: Flash**

Drive SM to the first position.

- Press **F10**. Select **OK** to save changes and exit the BIOS setup menu.



Step 4: Boot NVR from USB Drive

- Insert USB drive and turn on the NVR. Booting may take a few minutes.

Note: The data contained on the USB drive is essential for running embedded Linux. The drive must remain plugged in while running the NVR software.

Step 5: Configure NVR

Note: After booting, the NVR can be configured locally by keyboard or remotely by using PuTTY, a Secure Shell (SSH) terminal emulator.

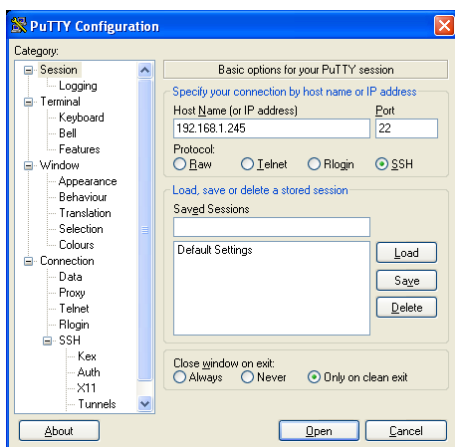
- To configure the NVR directly, connect a keyboard and monitor to it and follow the steps below.

```
* Starting NTP server ntpd
* Starting engine_main: ...
* Starting sudog: ...
* Starting Instek discovery server idserver
* Running local boot scripts (/etc/rc.local)

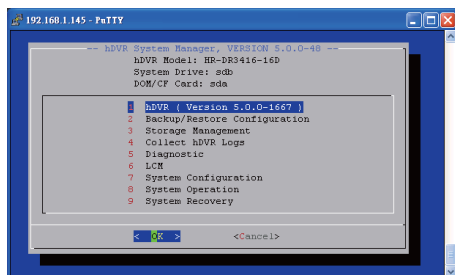
MatriVideo 5.0.0 Instek-00089BB1FF59 tty1
Instek-00089BB1FF59 login: root
Password:
Linux Instek-00089BB1FF59 2.6.27-legacy2 #1 Wed Nov 12 16:15:42
Welcome to InstekDigital MatriVideo
[Dec02 Tue1103:0811]
root@Instek-00089BB1FF59-MatriVideoServer$
```

- To configure the NVR remotely, launch PuTTY on the client computer by

navigating to Start->Programs->Instek Digital->CCDual->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. Once the remote connection has been established follow the steps below to complete the configuration.

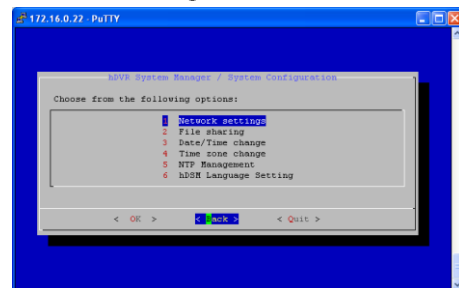


- a. After connecting to the NVR a login prompt will appear on the monitor. The NVR's default username is `root` and the password is `id`.
- b. Under the OS prompt input `hdsm` to run the hDVR System Manager.



- c. Change the time zone by selecting **System Configuration** followed by **Time zone change**. Select the

appropriate continent or ocean and then select the country. Select **Yes** to confirm changes.

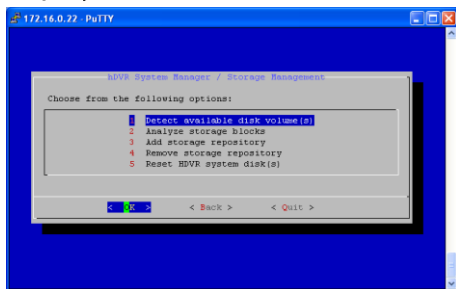


- d. Change the date and time by selecting **System Configuration** followed by **Date/Time Change**. The hDVR must be stopped in order to make changes to the date and time. Select **Proceed** to stop hDVR processes and continue making changes to the time and date. On the next menu, use the Tab and arrow keys to adjust the time. Select **OK** to confirm changes to the date. Another menu will appear on which the Tab and arrow keys can be used to adjust the time. Select **OK** to confirm changes to the current time. Select **proceed** again to confirm that the new time and date settings are accurate and return to the System Configuration menu.



- e. The first HDD will automatically be in use by the NVR. Subsequent HDDs

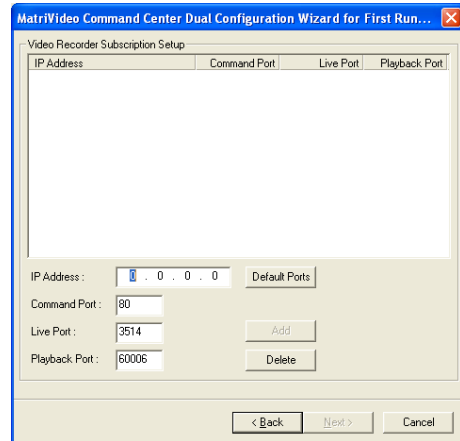
will need to be added via the hDSM. On the System Configuration menu select **Storage Management** followed by **Add Storage Repository**. NVR processes must be stopped in order to proceed. Select the available storage repositories to add to the NVR. This can be done individually or by using **All** 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**.



- f. After making configuration changes NVR services must be started manually. On the hDSM main menu select **hDVR** followed by **Start** to initialize NVR services.

Step 6: Subscribe the NVR

- a. Run CCDual. During the first run you will be asked to subscribe (or add) the NVR to the video recorder subscription list.



- b. Type in the NVR IP address (192.168.1.245 by default), Command Port, Live Port and Playback Port of the NVR.

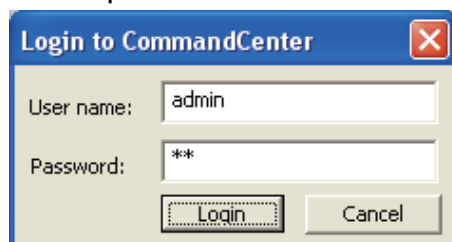
*Note: Do not change these port numbers if connecting the NVR in a LAN environment. Click **Add** to continue. You can add additional NVRs in a similar fashion. When all the NVRs have been added, click **Next** to continue.*

Command Port: 80

Live Port: 3514

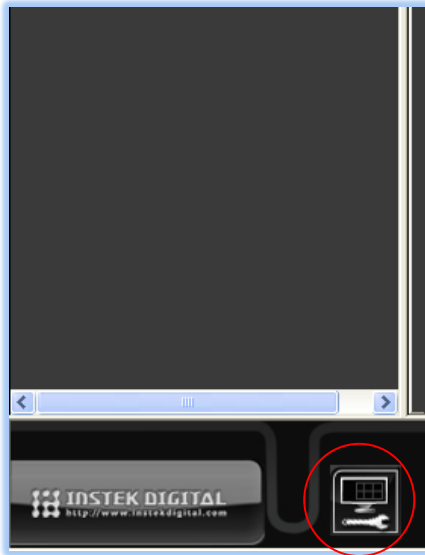
Playback Port: 60006

- c. Finish the configuration wizard and log into the Command Center. The default username is `admin` and the default password is `id`.



Step 7: Synchronize NVR Time with Client Computer

- Click on the **MatriVideo Command Center Dual Setup** tab on the bottom left corner of the screen.



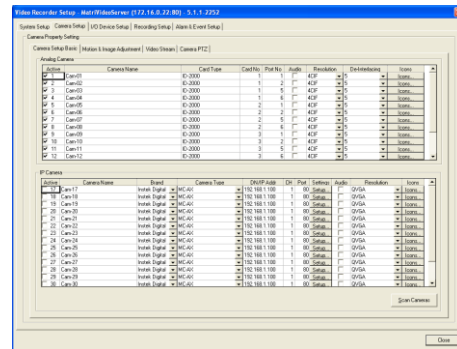
- Type in the IP address of the NVR or an available timeserver. This will keep the time in sync between the NVR and your laptop/desktop running CCDual and the NTP server.

Step 8: Set up Cameras

- 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.
- Click the **Camera Setup** tab.

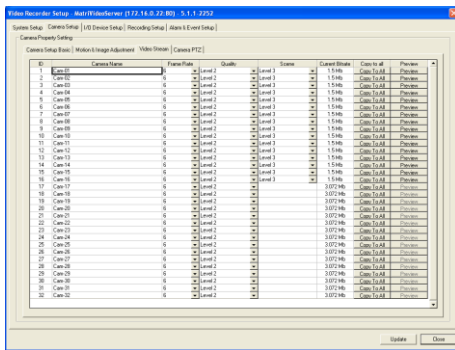
- Click **Camera Setup Basic** tab. Click the **Active** box next to the camera name(s) to enable the camera. IP cameras can be set up on the bottom part of the window. You can also change the camera name by clicking on the camera name row for each camera, such as "Cam-01", "Cam-02".

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.



- In the **IP Camera** table, type a descriptive **Camera Name**.
- Select the **Camera Type**.
- Type the **IP Address** of the IP cameras. DNS is supported if available on the surveillance network.
- 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.

- h. The **Login** option is used to access the camera configuration settings. Refer to the camera user manual for additional information.
- i. Click **Audio**, if supported. Refer to the camera's user manual for additional information.
- j. Select the **Resolution** for the camera from the drop-down list box.
- k. Click the **Video Stream** tab to set up the **Frame Rate** and **Quality** (Bitrate) for each individual camera.

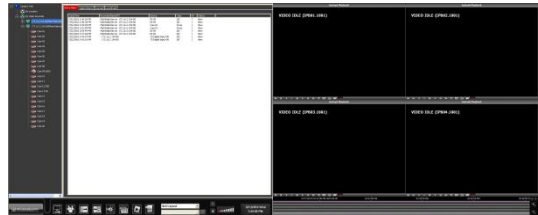


- l. To setup 24x7 recording click the **Recording Setup** tab and then click **Basic Setup**. Select a camera from the camera panel and change the recording mode to **24x7**. Alternatively, select **24x7** followed by **Copy to All** to apply the setting to all cameras in the group.

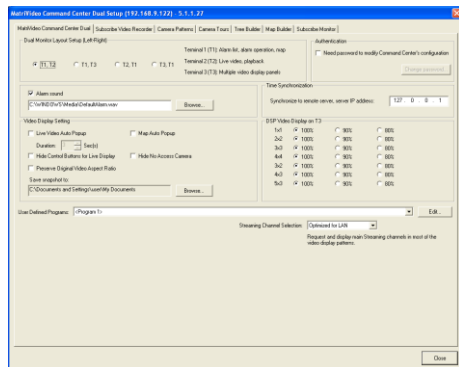
Step 9: View Live Video

Note: The default terminal to be displayed on the second monitor must be chosen the first time CCDual is run.

- a. Open MatriVideo Command Center Dual.



- b. To begin viewing live video, double-click an NVR on the camera tree to expand it and display a list of available cameras. Use the mouse to drag a camera icon from the camera tree on terminal one to a display panel on either terminal two or terminal three.



Step 10: Set Up Dual Monitor Layout

Note: Terminal one must be displayed on one of the monitors at all times. The user may choose whether to display terminal two or terminal three on the other monitor.

- a. Click the **MatriVideo Command Center Dual Setup** button.



- b. On the MatriVideo Command Center Dual Setup menu use the radio buttons to choose the default monitor layout.
- Terminal one displays the camera tree and the controls for CCDual. The user may toggle between terminal two and three by clicking the **Switch to** button at the bottom of terminal one.
 - Terminal two displays live video and video playback from up to four camera sources. It provides a complete toolset for intensive video

analysis. While viewing terminal two the user may switch to terminal three by changing the layout setting in the dropdown box on terminal one.

- Terminal three allows the user to view live video simultaneously from up to 16 different camera sources.

CONTACT INFORMATION

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

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