WIREPATH
SURVEILLANCE

WPS-100-NVR-4IP

IP NVR

Installation and User's Manual

Review manual thoroughly before installation.
Retain for future reference.

1- Important Safety Instructions

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

1. **Read and follow all instructions and warnings in this manual. Keep for future reference.**
2. **Do not use this apparatus near water.**
3. **Clean only with a dry cloth.**
4. **Do not block any ventilation openings. Install according to manufacturer's instructions.**
5. **Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.**
6. **Do not override the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades - one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.**
7. **Protect the power cord from being walked on or pinched particularly at plug, convenience receptacles, and the point where it exits from the apparatus.**
8. **Only use attachments/accessories specified by the manufacturer.**
9. **Use only with a cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.**
10. **Unplug this apparatus during lightning storms or when unused for long periods of time.**
11. **Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.**
12. **DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, ARE PLACED ON THE EQUIPMENT.**
13. **TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE.**
14. **THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.**

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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2- Manual Overview

We recommend that this document is read in its entirety before proceeding with system design, installation, or operation of the WPS-100-NVR-4IP. When viewing this document electronically, the content identified within references can be quickly located by clicking on the reference. These references have been formatted as a standard hyperlink so that they can be easily identified with exception to the TOC which can also be used to link to sections.

3- Required Items for Installation

The following items are required during the installation of a Wirepath™ IP NVR. It is recommended that these items are prepared in advance to ensure that the installation can be performed smoothly.

- **All NVR to be installed in the system**
- **All Cameras to be installed in the system**
- **All Encoders to be installed in the system (Optional)**
- **Network Connection near the location of the NVR**
- **Administrator rights to the computer that will be used to access the NVR(s)**
- **Router / Switch Details – Contact the network admin to obtain**
    - Admin Rights – Required to setup the network and port forwarding for remote access.
    - Default gateway
    - Net Mask Address
    - DNS Address
    - Static IP to assign to the NVR

- **Installation Manual for all the Wirepath™ Surveillance IP NVR being installed**
- **Quick Start Guide and Installation Manual for Wirepath™ Surveillance IP Cameras**
- **Quick Start Guide and Installation Manual for Wirepath™ Surveillance Encoders**
- **CD-Rom supplied with the NVR**

4- Package Contents

(1) WPS-100-NVR-4IP
(1) USB Mouse
(1) IR Remote
(1) 12V DC 4.16A Power Supply
(2) AAA Batteries
(2) HDD Screws
(1) HDD Bracket
(1) Quick Start Guide
(1) CD-Rom containing documents and setup software

5- Optional Accessories

Wirepath Surveillance offers a wide range of accessories that provide power to the NVR, , and make connections to the head end quick and easy.

5.1- Power Supplies

5.1.1- Remote Power Supplies

Use these remote power supplies to power all the Wirepath™ Surveillance products in the system from a remote location.

- **WPS-PS9-12VDC-10A**
  9 Output Power Supply - 12V DC, 10A - PTC Fuses
- **WPS-PS9-24VAC-12A**
  9 Output Power Supply - 24V AC, 12A - PTC Fuses
- **WPS-PS18-12VDC-18A**
  18 Output Power Supply - 12V DC, 18A - PTC Fuses

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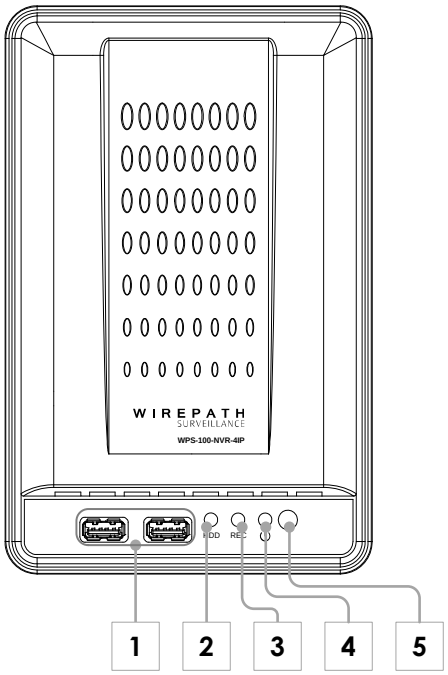
6- NVR Overview

6.1- Features

- **Hexaplex Operation**
  Whether at home, on the job or sitting at the airport, the NVR along with Wirepath IP Cameras enables you to simultaneously perform six system operations all at once:
  - Recording
  - Live Viewing
  - Playback
  - Streaming to Control Systems (direct from Wirepath IP cameras)
  - Backup/Archive
  - Remote Access
- **Motion Detection**
  By defining areas of interest – like a door, driveway or window – you can define when to start recording video. Instead of recording 24/7, the NVR only records when there is motion.
- **Privacy Mask**
  Block out sensitive or privileged areas by placing rectangular blocks or "masks" over up to three installer-defined areas.
- **HDMI and VGA output**
  View content in HD from a local monitor or HD TV Display.
- **Bi Directional Audio**
  Sometimes listening just isn't enough. Audio inputs to the NVR enable you to talk to the person on the other end right through Internet Explorer!
- **Alarm inputs and outputs (via Wirepath IP Cameras / Encoders)**
  Start recording when a motion sensor or alarm is triggered, or activate other devices when motion is detected on a camera.
- **Expandable Storage**
  Supports up to (2) Internal SATA HDDs, (1) 1TB HDD included
- **CMS (Central Management Software)**
  View multiple cameras or encoders, and NVR at once rather than logging in to each camera/encoder's IP address.
- **User Access Levels**
  2 levels of access, Administrators to configure NVR functions, and guests to view content.

6.2- NVR Connections and Controls

6.2.1- Front Panel



1. **USB Ports**
   Connection for USB Drives for storage of recordings, and photos.

2. **HDD LED**
   Flickers BLUE indicating HDD activity.

3. **REC LED**
   Illuminates BLUE when NVR is Recording.

4. **Power LED**
   Illuminates BLUE when NVR is powered On.

5. **IR Receiver**
   Receives signals from IR Remote.

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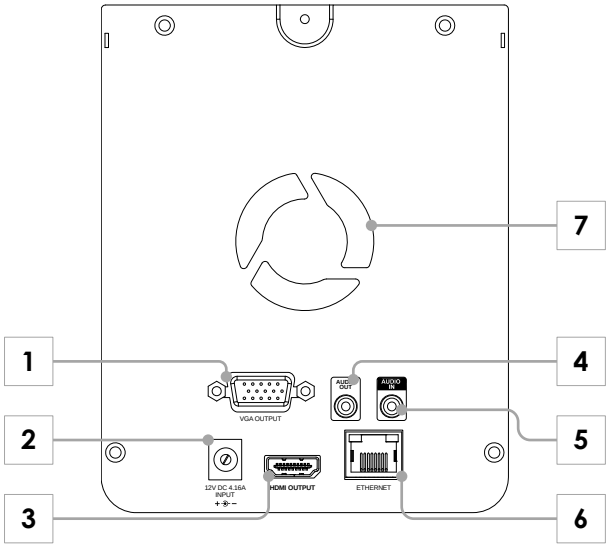
6.2.2- Rear Panel



1. **Main Monitor Out (VGA)**
   Connect to a VGA display for viewing of NVR content.

2. **DC Power Connection**
   Connect to the included 12V DC 4.16A Power Supply.

3. **Main Monitor Out (HDMI)**
   Connect to an HDMI display or Flat Panel TV for viewing of NVR content.

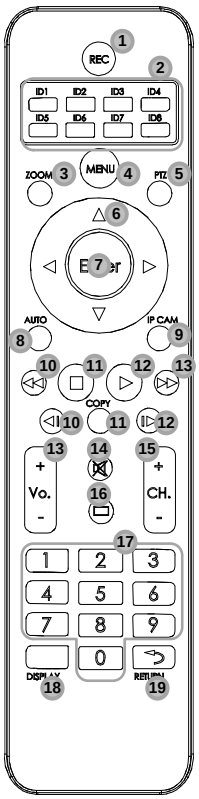
4. **Audio Out (1/8" 3.5mm Mono)**
   Connect to amplifier or powered speaker.

5. **Audio In (1/8" 3.5mm Mono)**
   Connect to a microphone.

6. **Ethernet Port (10/1000Mbps)**
   Connect to a 1Gbps router or switch.

7. **Cooling Fan**
   Cools unit during operation. Do Not Block.

6.3- IR Remote



1. **Record**
   Starts and stops recording of the currently displayed image.

2. **ID 1 to 8**
   Sets the IR Remote to control an NVR set to that ID.

3. **Zoom**
   Digital Zoom of currently displayed Camera.

4. **Menu**
   Displays OSD Menu, or Exits the current menu.

5. **PTZ**
   Opens the PTZ menu to control a connected PTZ Camera.

   Note: The menu will not appear if the selected camera is not a PTZ Camera.

6. **Navigation Buttons**
   Navigates the NVR right side menu, PTZ controls, and OSD menus.

7. **Enter**
   Starts the action for the currently selected menu or control item.

8. **Auto**
   Cycles through Cameras assigned to channels of the NVR when on Single View, and cycles through Split Screens when in Split Screen View.

9. **IP Cam**
   Opens the Quick Setup menu to assign IP cameras and Encoders to an NVR Channel.

10. **Rewind**
    Rewinds the currently playing recorded content.

11. **Stop**
    Stops the currently playing recorded content.

12. **Play**
    Opens a menu to Search by time or Event, backup recorded content, or view the system log. Press Menu to exit.

13. **Fast Forward**
    Fast Forwards the currently playing recorded content.

14. **Skip Back**
    Skips backwards in currently playing recorded content.

15. **Copy**
    Opens the “Backup” window and allows copying video between selectable Start/End times to an attached USB flash drive or hard drive.

16. **Skip Forward**
    Skips forwards in currently playing recorded content.

17. **Number Buttons**
    Direct selection of channels, display single view of the selected channel number.

18. **Display**
    Turns image overlay On or Off.

19. **Return**
    Cycles through previously selected channels of the NVR.

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6.4- Browser Interface

Note: The NVR requires configuration before accessing for the first time.
See sections 9-IP Installer Software and 10-Initial Configuration before accessing the NVR through the local interface.

6.4.1- Accessing the NVR

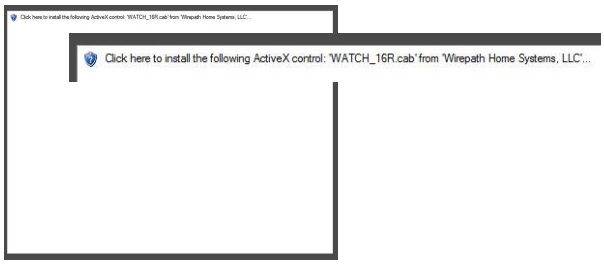
Note: IE 8.0 or higher is required to access the NVR; other browsers are not supported at this time.

A. **Open the web browser, and enter the IP Address that was assigned to the NVR. The address should include the port number assigned to the NVR. Note that access varies between local network and remote access through a DDNS.**
Local Network Example: http://192.168.1.56:8056
Remote Access (DDNS) Example: http://JonesIPNVR.wirepathdns.com:8056

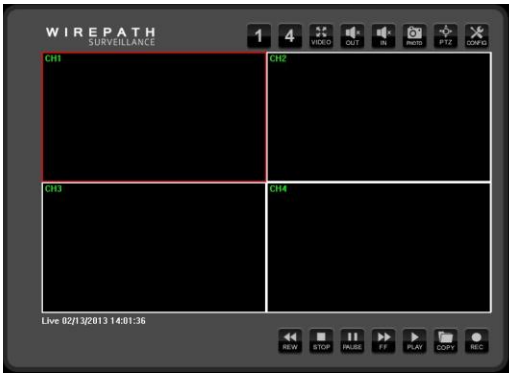
B. **A window will open asking for a username and password.**

Default Username and Password:
Username: admin
Password: admin
Recommendation: *After initial setup of the NVR, we recommend that the password be changed to avoid unwanted access.*

C. **Install the ActiveX control if prompted to do so. If the ActiveX installation window does not appear, the IP address may not be correct. Verify the IP address by using the IP Installer.**



D. **After installing the ActiveX the NVR should be visible in the web browser.**

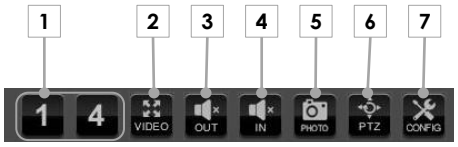


6.4.2- Recommendations for Best Performance

As the number of open browser windows or tabs increases, the risk of slowed response time to the NVR increases. We recommend that open browser windows or tabs be limited to no more than 4 to avoid interruption in communications or reduced response time with the NVR.

6.4.3- Live View Controls

6.4.3.1- Top of Screen



1. **Split Screen Display Selection**
   Select 1 to display or advance to next single image
   Select 4 to display a 4 image Split Screen.

2. **Video**
   Expands the NVR image to Full Screen, Press ESC or Double click on Full Screen image to return to Live View screen.

3. **Audio Out**
   Mutes or Un-Mutes Audio from a local Camera microphone to the NVR location.

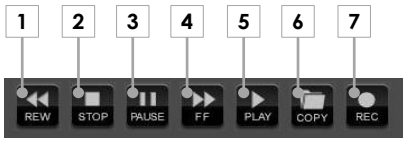
4. **Audio In**
   Mutes or Un-Mutes Audio from. NVR location when a microphone is connected to the NVR.

5. **Photo**
   Takes a snapshot of the current image that can be saved to the PC.

6. **PTZ**
   Opens panel to control the functions of a PTZ NVR.
   See section *6.4.4-PTZ Camera Controls (Browser)*

7. **Config**
   Opens the NVR's configuration menu.

6.4.3.2- Bottom of Screen



1. **Rewind (REW)**
   Rewinds the currently playing recording.

2. **Stop**
   Stops the currently playing recording.

3. **Pause**
   Pauses the currently playing recording.

4. **Fast Forward (FF)**
   Fast Forwards the currently playing recording.

5. **Play**
   In Live View, opens Search window to search for and select recordings to play back.

   During playback, Begins playback of the currently playing recording when in Rewind, Fast Forward or Pause.

6. **Copy**
   Saves a copy of recorded NVR content from specified Start and End time, to the local PC.

7. **Record**
   Records the currently playing image to the location selected in the proceeding window.
   Press Record again to stop the recording.
   Press Stop in the Recording dialog to stop the recording.

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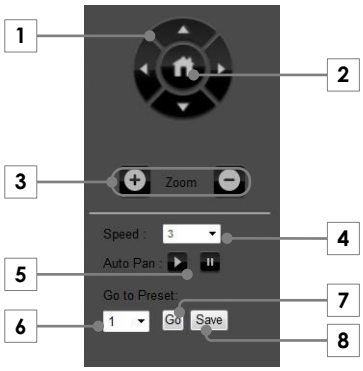
6.4.4- PTZ Camera Controls (Browser)



1. **Navigation Buttons**
   Up, Down, Left and Right.

2. **Home**
   Returns camera to the preset Home position.

3. **Zoom**
   + to Zoom In, - to Zoom Out.

4. **Speed**
   Sets the speed for navigation buttons.

5. **Auto Pan**
   Press Play to start, and Pause to stop.

6. **Preset Select**
   Drop down list of preset number.

7. **Go**
   Starts selected preset.

8. **Save**
   Saves the current location, and zoom to the selected preset number.

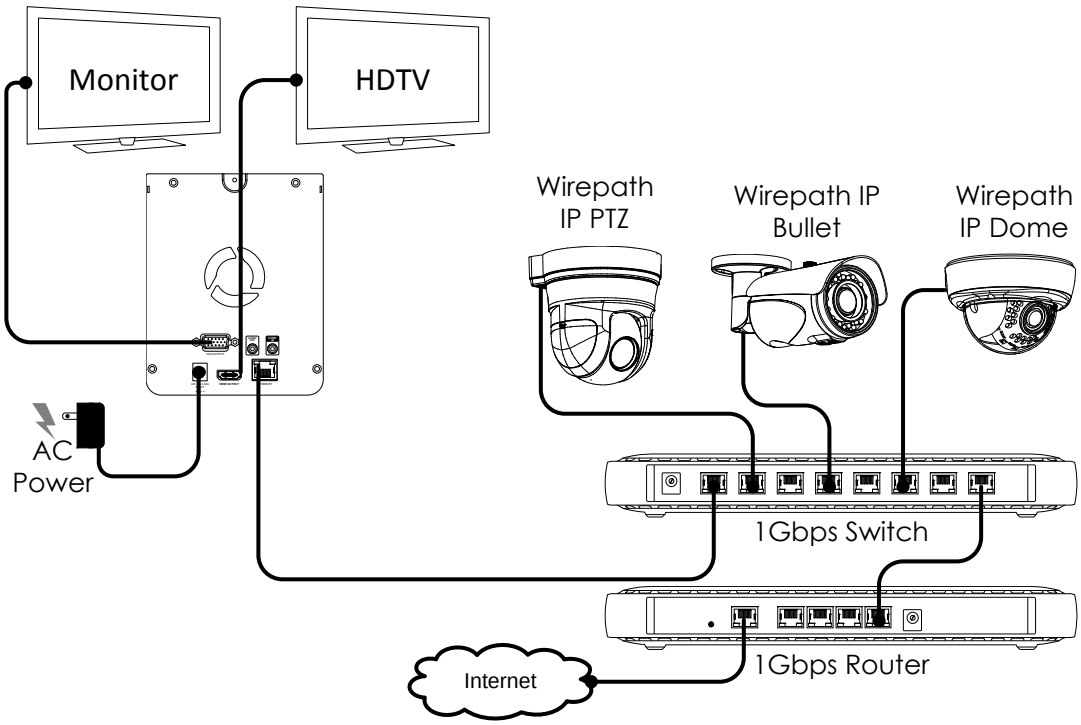
7- System Diagram Considerations

7.1- Recommended Equipment

7.1.1- Networking Devices

Streaming content from IP NVR requires bandwidth greater than most devices. We recommended the use of 1Gbps routers and switches in order to maintain a high quality streaming image. Additionally, to reduce traffic on the overall network, we recommend that all IP Surveillance devices be connected to a dedicated 1Gbps switch or dedicated VLAN.

7.2- Basic System Diagram



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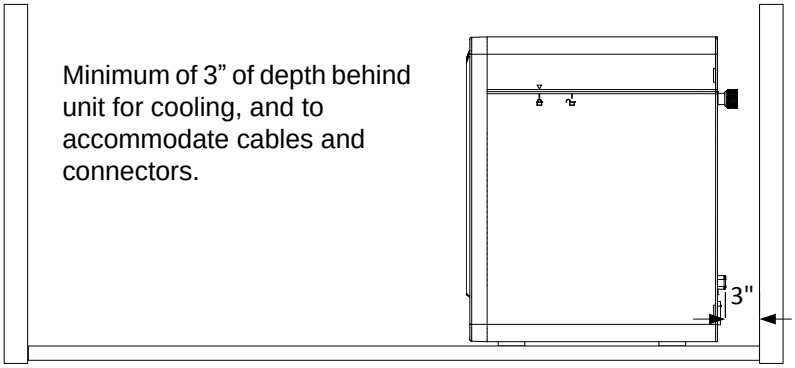
8- NVR Installation

8.1- Placing the NVR

The WPS-100 Series NVR contains a fan for cooling the HDD and other internal components. A minimum of 3” of free space is required on the sides and rear of the unit to maintain proper air flow.



9- IP Installer Software

The IP Installer software provides a quick view of Wirepath™ IP Surveillance devices connected to local network. This software is required for initial setup of any Wirepath™ IP Surveillance device.

***Recommendation:** Before starting any configuration or service of Wirepath™ IP devices, we recommend that the latest version of the IP Installer is downloaded from **www.SnapAV.com** to ensure that all functionality is available.*

VPN Important Note: The IP Installer is not able to locate IP Devices if VPN connections are active. Close all VPN connections before running the IP Installer.

1. Install the IP Installer

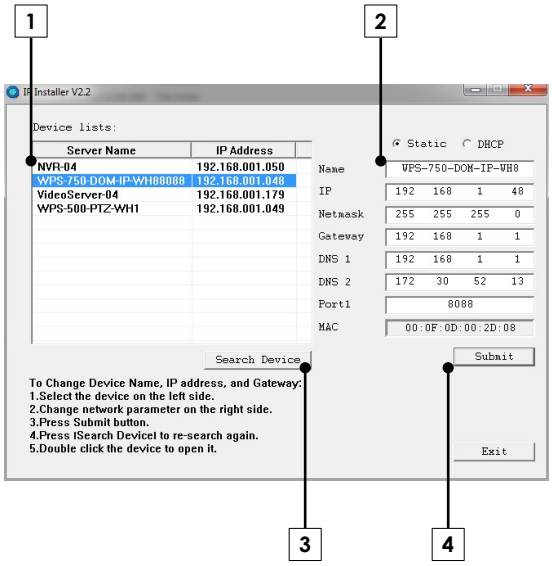
A. Copy the WPS IP Installer from the CD-ROM or download it from www.SnapAV.com to a PC.

Note: The WPS IP Installer is a native executable application and does not require installation on the PC. We recommend that it be manually copied to a known location on your work/install computer/laptop for easy access.

2. Open the WPS IP Installer.

Once open, the installer will scan the network for Wirepath™ IP NVRs, Cameras, and Encoders that are connected to the network. If no devices appear, select **Search Devices** button to initiate a scan of the network.

9.1- IP Installer Operation



1. Connected Device List

Displays a list of all connected Wirepath™ IP surveillance device names, and IP address.

2. Device Name and Network Settings

Used to configure the devices network settings. MAC address cannot be changed.
See section *10-Initial Configuration*

3. Search Devices

When selected, the IP Installer will scan the network for connected devices that are powered on.

4. Submit

Select to submit changes made to the network and name settings for the selected device.

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10- Initial Configuration

While the NVR has a local interface that can viewed on a monitor or HDTV, we recommend that initial configuration be performed through the browser interface.

Recommendation: *While the NVR can be configured remotely from outside the local network, operation can be slow. We strongly recommend that the bulk of configuration be performed via the local network to avoid slow response times.*

1- Assign a Static IP address

By default the NVR will receive an IP address via DHCP; however, it is recommended that the NVR is assigned a static IP address, and given a 4 digit port. Using a static IP address ensures that the address will not change due to changes to the router.

Note: The static IP used should be outside the DHCP range of the router to avoid conflicts with other devices on the network.

A. **Open the IP Installer, and select the NVR from the list of devices. The NVR name will highlight Blue in the list.**

B. **Select Static at the top of the right side column. This will allow for manual entry of the network configuration settings.**

C. **Enter the IP address issued by the network admin.**

D. **Enter the Net Mask assigned by the network admin.**

E. **Enter the default Gateway assigned by the network admin.**

F. **Enter the DNS 1 address assigned by the network admin.**

G. **Enter the DNS 2 address assigned by the network admin. If only 1 DNS address is used, this must be "0.0.0.0".**
Note: *Any data displayed in these fields should be replaced with information obtained from the network admin to ensure they are set properly.*

H. **Assign a name to the NVR that will identify it easily when using the IP Installer or configuring the NVR, and for recordings, or captured images.**
Example: JonesNVR1

2- Enter a Port to uniquely identify and remotely access the NVR.

Recommended Port Numbering
Each NVR must have a unique port number for Remote Access from outside the local network. To make port numbering consistent, and easy to remember we recommend that the ports be 4 digits, and contain the IP address of the NVR starting with 8.

Example:

IP Address	**Port**
192.168.1.050	8050
192.168.1.100	8100

3- Verify Access through the Main NVR Interface

Once the IP Address has been set, the NVR can be accessed through the web browser. Note that on initial access to each NVR, ActiveX controls will need to be installed on each PC that is used to access the NVR.
See section *6.4.1-Accessing the NVR* for details on how to access the NVR via a web browser.

4- Update to the Latest Firmware

While the NVR is shipped with the latest firmware available at the time, newer firmware may be available with improvements.

Recommendation: *We recommend that you check for the latest firmware version on* ***www.SnapAV.com*** *and update if needed before proceeding. See step 1-Upgrade the Firmware in section 12.3-System Update for details.*

5- Configure the Date and Time

To ensure that recordings and photos are accurately time stamped, the Date and Time of the NVR need to be set to the correct time for the location of the NVR.

See section *12.1.2-Time Settings* for details on the features used in this step.

A. **Select Config Button in the upper right hand corner of the Main NVR Interface.**

B. **Select System Information in the left side menu and configure Time Settings as needed.**
Tip: *Using an NTP server, and setting the time zone, and enabling DST is the best method for maintaining accurate time. We recommend that pool.ntp.org is used as it pulls time from a range of time servers that provide backup to each other in the event of server outage.*

6- Change the Administrator Password

Now that the NVR is visible on the network, we recommend that the administrator password is changed from the default to prevent unwanted access.

See section *12.2-User Management* for details on the features used in this step.

A. **Select Config Button in the upper right hand corner of the Main NVR Interface.**

B. **Select User Management in the left side menu.**

C. **Select Edit next to the admin username in the user list at the bottom of the screen to open the User Setup window.**

D. **Edit the Username (if desired) and New Password, and confirm the new password.**

E. **After selecting OK, the user login window will open. Enter the new password to continue.**

7- Configure User Accounts to Access the NVR

There are 2 levels of users, Administrator which is the default admin account, and Guest accounts.

The admin account is the only account that can be set as an administrator, cannot be changed to a user account, and cannot be deleted.

An unlimited number of Guest accounts can be added that can view and control the function of the NVR. User accounts can be selectively granted permissions to access or modify many of the NVR settings.

Access to the NVR varies based on the level:

Administrator	Has access to all functions of the NVR including configuration. This account cannot be deleted.
Guest	Has access to view the NVR. Depending on permissions, may or may not be allowed access to configuration and settings. Guests without such permissions who attempt to access to the NVR configuration will be prompted for the Admin username and password.

See section *12.2-User Management* for details on the features used in this step.

A. **Select Config Button in the upper right hand corner of the Main NVR Interface.**

B. **Select User Management in the left side menu.**

C. **Select the Add User button.**

D. **Enter a Username and Password for a new user.**

E. **Re-Enter the password in the Confirm field,**

F. **Select the desired features the new user will be allowed to access.**

G. **Select OK to confirm the addition.**

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8- Assign Cameras to Channels of the NVR

While the cameras are IP and appear on a local network, there may be cameras on the network that will not be viewed by the NVR (for example, a stand-alone camera intended to be monitored, but not recorded) . Assigning cameras to the NVR is required in order to view, control and record them from the NVR GUI.

A. Open NVR Camera Settings

A.1- Select Config Button in the upper right hand corner of the Main NVR Interface.
A.2- Select NVR Settings in the left side menu.
A.3- Select the Camera Tab, and set Camera to 1

B. Assign Camera Address Manually

B.1- Select **Set** next to Camera Setup.
B.2- Select the Mode to use for the camera address, Normal-Standard IP (Wirepath IP Camera or Encoder), or RTSP (non Wirepath RTSP IP cameras).

While Wirepath IP Cameras/Encoders are RTSP capable, Normal-Standard mode should be used when connecting to a Wirepath NVR as many capabilities are lost in RTSP mode (like Motion sensing for example). RTSP should only be used when integrating existing third party devices that are otherwise not compatible with the NVR.

B.3- Enter the IP address, Port, User, and Password for the camera.
B.4- Select Connect to confirm the settings and assign the camera to the channel.

C. Assign Camera Address via Quick Search

C.1- Select the Quick Search button to view a list of connected Wirepath™ IP Cameras and Encoders. Non Wirepath™ cameras connected to the network will not appear in the list.
C.2- Select the IP address of the camera in the list to assign to channel 1.
C.3- Select Connect to assign the camera to the channel.

D. Repeat Steps A to C for all NVR channels and the cameras that will be assigned.

11- Additional Configuration

Recommendation: *While the NVR can be configured remotely from outside the local network, operation can be slow. We strongly recommend that the bulk of configuration be performed via the local network to avoid slow response times.*

1- Upgrade the Firmware

See section *12.3-System Update* for details on the features used in this step.

A. **Download the latest firmware from www.SnapAV.com.**
Note: If no firmware appears on the products support tab, there have been no updates to the firmware since the initial release.

B. **Select Config Button in the upper right hand corner of the Main NVR Interface.**

C. **Select System Update in the left side menu.**

D. **If the firmware version listed is below the version on the site, then firmware should be updated.**

E. **Select Browse, navigate to the folder containing the firmware, select the latest firmware file, and select Open.**

F. **Select Upgrade to start the update process.**
WARNING: Firmware upgrade must be performed from a wired connection on the local network. While it is possible to recover from an update that fails due to a lost connection, the NVR will be inoperable until a successful upgrade is performed from a reliable connection.

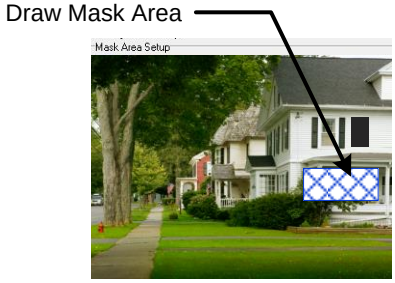
2- Configure a Privacy Mask

Privacy mask allows for areas of an image to be blocked out to avoid unwanted capturing of sensitive areas. For Example: A NVR used to monitor the front lawn of a house would have the windows on the neighboring homes masked to avoid peeping on the neighbors.

See section *12.3.1.6-Privacy Mask Setup* for details on the features used in this step.

A. **Open NVR Camera Settings**
A.1- Select Config Button in the upper right hand corner of the Main NVR Interface.
A.2- Select NVR Settings in the left side menu.
A.3- Select the Camera Tab, and select the camera to configure.

B. **Selecting a Privacy Mask Area**
B.1- Select **Set** next to Privacy Mask Setup.
B.2- Select the Area 1 checkbox.
B.3- Select the Mask Area Setup button for Area 1.
B.4- Select On under Mask Design Mode to allow for setting an area to mask.
B.5- In the bottom image, place the mouse at the upper left hand corner of the area to mask, hold down the left mouse button and drag the box over the area to mask and release the mouse button. The area to be masked will be indicated by a colored Split Screen.
B.6- Select Update to save the area. The selected area will now display a black privacy mask under the colored Split Screen, and this area will be blacked out in all viewed and recorded video.
B.7- Repeat Steps B.2 to B.6 for Area 2 & 3 if more areas are needed.



NOTE: *If the video source on the selected Camera channel does not support Privacy Mask, the Privacy Mask screen will display "Unsupported" and will not contain any Privacy Mask controls.*

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3- Configure Motion Detection Areas

Motion Detection allows for specific areas of the image to be used for triggering the recording of video, an alarm, or sending a notification. When an area is defined, motion in that area will trigger the predefined action; this is useful to avoid unwanted events from being triggered due to motion in areas of no concern.

Note: *Motion for the entire viewable area is set by default; we recommend that smaller areas be defined unless this is desired result.*

See section *12.3.1.5-Motion Setup* for details on the features used in this step.

A. **Open NVR Camera Settings**
- A.1- Select Config Button in the upper right hand corner of the Main NVR Interface.
- A.2- Select NVR Settings in the left side menu.
- A.3- Select the Camera Tab, and select the camera to configure.

4- Selecting a Motion Detecting Area
- A.1- Select **Set** next to Motion Setup.
- A.2- Select the Area 1 checkbox.
- A.3- Select the Mask Area Setup button for Area 1.
- A.4- In the bottom image, place the mouse at the upper left hand corner of the area to detect motion, hold down the left mouse button and drag the box over the area to detect motion, and release the mouse button.

- A.5- Select Update to save the area.
- A.6- Select the Sensitivity level. (Range 1 Low to 10 High).
- A.7- Repeat Steps B.2 to B.6 for Area 2 & 3 if more areas are needed.

5- Setup a Schedule

See section *12.3.2-Record Tab* for details on the features used in this step.

A. **Open NVR Camera Settings**
- A.1- Select Config Button in the upper right hand corner of the Main NVR Interface.
- A.2- Select NVR Settings in the left side menu.
- A.3- Select the Record Tab.
- A.4- Set the time for a Pre-Alarm to start the recording.
- A.5- Set the time for Post-Alarm to stop recording.
- A.6- Set Record Mode to Schedule to show schedule setup options.

B. Setup a Schedule to Save Recording to the HDD

See section *12.3.2.1 (A) Schedule Setup* for details on the features used in this step.

- B.1- Select **Set** next to Schedule Setup.
- B.2- Select the method to use for the recording, Full Record, Alarm Rec, or No Rec.
- B.3- Click on the box(es) to enable one-hour blocks of time for the desired Day of week and Time of day.
- B.4- Select Exit to return to the Record settings screen.

C. Setup a Schedule to Send Email Notification

See section *12.3.2.1 (B) Mail Schedule Setup* for details on the features used in this step.

- C.1- Select **Set** next to Mail Schedule Setup.
- C.2- Select the method to use for sending Email notifications, No Mail, Alarm Mail, Motion Mail, or Both.
- C.3- Click on the box(es) to enable one-hour blocks of time for the desired Day of week and Time of day.
- C.4- Select Exit to return to the Record settings screen.

D. Setup a Schedule to Save Recording to an FTP Location

See section *12.3.2.1 (C) FTP Schedule Setup* for details on the features used in this step.

- D.1- Select **Set** next to Schedule Setup.
- D.2- Select the method to use for sending to FTP, No FTP, Alarm FTP, Motion FTP, or Both.
- D.3- Click on the box(es) to enable one-hour blocks of time for the desired Day of week and Time of day.
- D.4- Select Exit to return to the Record settings screen.

6- Configure NVR for Remote Access

Access to the NVR from outside the local network requires configuration of individual ports for each NVR, a Dynamic DNS name from a DDNS service provider be assigned, and the router setup for port forwarding. Follow the steps within this section to configure the NVR(s) for Remote Access.

Recommendation: *Our free Wirepathdns service is fast to set up right through the NVR interface – no PC required – and it provides maximum uptime thanks to redundant USA-based servers located across the country.*

A. **Enter a port for the NVR**
Note: *Port configuration is part of initial setup and is included here to verify that a unique port has been configured.*

See section *12.1.1-IP Assignment* for details on the features used in this step.

A.1- Select IP Setting under the Network section of the left side Menu.
A.2- Next to Web Page Port, enter a port number to identify the NVR.
Note: This port number should not be assigned to other devices on the network.

B. **Select a DDNS Service**
See section *12.1.1-DDNS Settings* for details on the features used in this step.

B.1- Select DDNS under the Network section of the left side Menu.
B.2- Under DDNS Setting, Select Enabled.
B.3- Select the DDNS Provider in the dropdown list.
B.4- Enter a Hostname to use for Remote Access to the .
Example: JonesHouse
B.5- Click Apply at the bottom to save the settings.
Note: *If installing multiple NVR, this step only needs to be completed once. After that, each Wirepath™ Surveillance NVR can be accessed using the same Hostname and each NVR's uniquely assigned port number.*
Example: joneshouse.Wirepathdns.com:8201 accesses one NVR, joneshouse.Wirepathdns.com:8202 accesses another, etc.

C. **Configure Router for Port Forwarding.**
In order to access the NVR(s) from outside the network, the assigned port must be forwarded within the network's router. User interfaces and methods for port forwarding varies from router to router, refer to the manual for the router being used for information on how to forward ports. If the router supports UPnP Port Forwarding, the NVR can be configured to use this feature from the NVR interface.
See section *12.1.2-UPnP Port Forwarding.*

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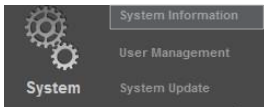
12- Browser Configuration Menu

The local and browser configuration menus contain the same settings for the NVR. Changes to settings are synced in real time and are available in both menus as they are made.

12.1- System Information

This menu displays important information about the NVR's network settings, and allows for setting items such as language, Date, and Time.



12.1.1- Server Information

Displays information about the NVR's MAC Address, allows for entering a name to easily identify the NVR, and selecting a language for the GUI.

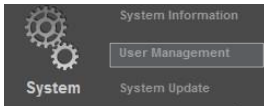
Server Name	Name for the NVR (limited to 31 characters) that will appear in the IP Installer, and GUIs.
Language	Select the language to use for the Main NVR Interface.
MAC Address	Displays the MAC Address of the NVR. This cannot be adjusted, and will appear grayed out.

12.1.2- Time Settings

Proper time settings are important for producing accurate time stamps for events, recorded video, and captured snapshots.

Server Time	Displays the Current Time and Date for the NVR
Date Format	Select the desired format to display the Date.
Time Zone	Time Zone can only be adjusted when NTP, or Manual are selected.
Enable Daylight Savings	Enabled by default. Daylight Saving Time Start and Stop parameters can be configured.
NTP	Enabled by default. Keeps NVR time synchronized with a Network Time Server. ***Recommendation: We recommend that the default (pool.ntp.org) be used as it pulls from multiple redundant servers.***
Synchronize With PCs Time	Sets the NVR date and time to that of the local PC, and then shifts to the NVR's internal clock. After applying, Time Setting is indicated as Internal Clock.
Manual	Allows for manual entry of the date and time, then shifts to the NVR's internal clock.
Internal Clock	Shifts the NVR to using the Internal Clock only. Automatically selected after using Synchronize with PC's time or Manual time settings.

12.2- User Management



There are 2 levels of users: Administrator which is the default Admin account, and Guest accounts. The Admin account is the only account that can be set as an administrator. An unlimited number of guest accounts can be added.

12.2.1- Authority Settings

HDD Format Password Check	When Enabled (default), prevents a user of the NVR local GUI from formatting the NVR HDD unless they can provide appropriate login credentials (admin, or user with HDD Setup permission). When disabled, any user with access to the NVR local GUI can reformat the NVR HDD.
Anonymous User Login	When Yes is selected the NVR can be accessed without the use of login credentials. These users have the ability to: • View Video • Use Zoom, Mute, Video (Full), Record, and Picture • Change the GUI size ***Recommendation:*** *To avoid unwanted access to the NVR we recommend that this feature be set to NO.*
Password Protection	When Enabled, users of the NVR local GUI can select and view cameras, but must enter login credentials to operate PTZ, use Search features or access DVR configuration and settings. Disabled by default (assumes any user with access to the NVR local GUI is authorized admin privileges).

12.2.1.1- User List

Add User:	Usernames can only contain Letters and Numbers. Spaces and special characters such as underscores will not be accepted. By default, new users have NO access permissions to any NVR features or settings. All new Users must be specifically granted access to the desired features and settings by selecting the presented checkboxes. The Menu Setup checkbox must be selected to enable checkboxes to grant access to any “Setup” feature (Camera Setup, Record Setup, etc.) ***Note: There is only one Administrator account, and it cannot be deleted. However, additional Users can be selectively granted some, or all admin-level privileges.***
Modify/Remove	Select Edit to modify a User account. Select Remove to delete a User account. ***Note:*** *The Administrator account cannot be removed.*

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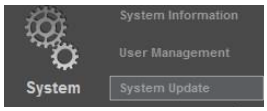
12.3- System Update

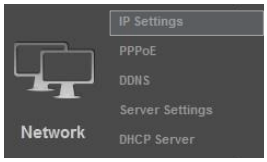
Important Note:
Updating Firmware MUST be performed over a wired IP connection to the device. While it is possible to recover from an upgrade that fails due to a lost or intermittent connection, the NVR will be inoperable until it is recovered via a reliable connection.



Recommendation: *Before performing a Firmware update, we recommend that the NVR configuration be saved to a file in the event that any settings are changed by the upgrade.*

Firmware Version	Current firmware version of the NVR.
New Firmware	Select Browse to open a new firmware file stored on the PC. After selecting the file, select the Upgrade button to begin the firmware update process. Software Updates can be downloaded from www.SnapAV.com.
Load Default Settings	Select the Apply button to reset the NVRs to factory defaults. ***Recommendation:*** *This will erase all NVR settings with the exception of network configuration and the admin account. However, as a precaution we recommend that the settings are saved prior to performing a factory default.*
Load Setup From	Allows for a setting file previously saved from the browser to be uploaded to the NVR. ***Note: This will overwrite any existing settings once Apply is selected.***
Backup Settings	Saves the current settings to a backup file. Select the Download button and select the desired file path and name.

12.1- IP Settings



12.1.1- IP Assignment

Allows for configuration of the NVR's network settings for IP communication. We recommend that this information is provided by the network administrator to avoid address conflicts with other devices on the network.

Note: The IP settings received via DHCP will be displayed in all fields after selecting Static IP. These settings should be changed to those assigned by the network administrator to ensure compatibility and prevent conflicts with existing devices on the network.

IP Type	By Default the NVR are set to DHCP, which will pull network settings from the Router. We recommend that static IP addresses are used to ensure that the NVR will remain accessible during setup and use.
IP Address	Current IP Address of the NVR. If DHCP is selected, this cannot be configured, and will appear Grayed out. ***Note: If a Static IP used it must be outside the DHCP range of the router to avoid conflicts with other devices on the network.***
Subnet Mask	Usually 255.255.255.0 but dependent on the network. . Check with the network administrator.
Gateway	This is usually the same address used to access the router. Check with the network administrator.
DNS 0	As provided by the ISP/network administrator. If not known, the default Gateway can usually be used.
DNS 1	As provided by the ISP/network administrator. If only one DNS address is known or provided, enter "0.0.0.0".
Web Page Port	**Recommended Port Numbering** Each NVR must have a unique port number in order to access from outside the local network. To make port numbering consistent, and easy to remember we recommend that the ports be 4 digits, and contain the last octet of the IP address of the NVR preceded by an 8. This will also ensure that a port that is commonly used for another well-known service is not assigned to the NVR. **Example:** **IP Address** **Port** 192.168.1.050 8050 192.168.1.100 8100 ***Note:*** *Accessing the NVR remotely requires additional configuration of other settings* *See step 6-Configure NVR for Remote Access* *in section 11-Additional Configuration for details.*

12.1.2- UPnP Port Forwarding

When enabled, allows for automatic configuration of UPnP Port forwarding with compatible routers.

Enabled	Select Enabled to allow the NVR to configure a compatible router's port forwarding via UPnP.
External HTTPS Port	External network port to be configured by a compatible router to access the NVR through HTTP.

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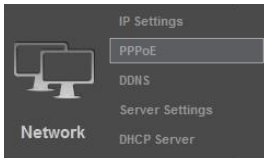
12.1- PPPoE

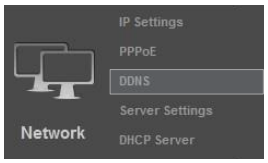


12.1.1- PPPoE Settings

Point-to-Point Protocol Over Ethernet (PPPoE) is a network protocol primarily used DSL (Digital Subscriber Line) providers and modems. This protocol requires a login to connect to the modem even when a router is used. Configuration of these settings is not required to operate the NVR on a standard network.

PPPoE	Enable to allow the NVR to access PPPoE for sending Email or saving to FTP.
Username	Login name from the service provider
Password	Password for the above username.
Send Mail	Enable to send an Email when the PPPoE is dialed.
Subject	Enter text to use as the subject line of the email.

12.1- DDNS



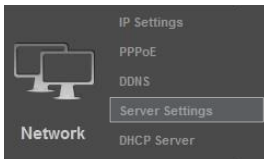
12.1.1- DDNS Settings

DDNS (Dynamic DNS) maps Internet Domain Names to an IP through services like Wirepathdns.com. When configured, the NVR is available remotely via a simple easy to remember name such as JonesIPNVR.Wirepathdns.com

Configuring DDNS is not required for remote access, but avoids having to pay for and remember a static IP address from the ISP.
See Section *6- Configure NVR for Remote Access* for details on configuring remote access.

DDNS	Enable to allow configuring and using a DDNS service.
Provider	Name of the DDNS service provider.
Hostname	Name to use when accessing the NVR remotely. Example: JonesIPNVR.
State	Current connection status of the DDNS service. This field will update automatically shortly after entering and applying a Hostname. . It can also be updated by selecting any other settings page and re-selecting the DDNS page.

12.1- Server Settings



A “server” in this case is an Email account or FTP site, either of which must be configured in order to send or save notifications, snapshots or short video recordings. While either method can be used, only Email is needed for notifications.

12.1.1- Mail Settings

Allows for email notifications to be sent based on various triggers

Motion/Alarm	Select these check boxes to enable sending Email notification when Motion or Alarms are detected. ***Note:*** *When NVR Record mode is Schedule, and Mail Schedule is configured for Alarm Mail, Motion Mail or Both, these check boxes will become checked and cannot be un-checked unless Mail Schedule is changed to No Mail, or Record Mode is changed to Manual, or Alarm Trigger.*
Mail Server	Enter the SMTP server used for sending emails.
Corporate Exchange Accounts	Contact the network admin for server information
Personal Email Accounts	Enter the SMTP server used to send emails. Example: smtp.gmail.com Note that the SMTP server must support and be configured for POP3. Refer to the email provider for details on using POP3 SMTP.
SMTP Port	Default port 25 may be used for most unsecure or anonymous accounts. When using a Secure Connection, most servers use port 465 for SSL or port 587 for TLS. Refer to the email provider for details on using their SMTP server. Corporate accounts require contacting the network admin for port information as the ports above may be blocked within the company’s firewall.
Username	Enter the name used to log into the SMTP server being used to send emails. Example: SnapAVtechDocs@gmail.com
Password	Enter the password used to access the email account SMTP server.
Sender’s Mail	This is used for notification purposes only and does not need to be the email account being used to send emails. We recommend that a name be used that identifies the NVR sending the email. Example: JonesNVR@Gmail.com. Note that some SMTP servers will strip this information and replace it with the Username of the account regardless of NVR configuration.
Receiver’s Mail	Enter the recipients email address.
Bcc Mail	Enter an additional Email address to send notifications to. Note that this is a Bcc; the main recipient will not see this address on their email.

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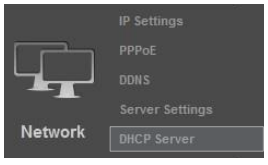
Secure Connect	Check this box to enable a secure connection when sending emails. This is required for most current SMTP servers. Refer to the Email provider or network administrator for information on the use of TLS and SSL.
Event Subject	Email notification Subject Line. May be edited.

12.1.2- FTP Settings

When an FTP server is configured, recorded video and snapshot files can be stored on the server for later access. Contact the network administrator for FTP server information.

Motion/Alarm	Select these check boxes enable sending images or video to FTP when Motion or Alarms are detected. ***Note:*** *When NVR Record mode is Schedule, and FTP Schedule is configured for Alarm FTP, Motion FTP or Both, these check boxes will become checked and cannot be un-checked unless FTP Schedule is changed to No FTP, or Record Mode is changed to Manual, or Alarm Trigger.*
FTP Server	FTP Site address. This is usually the same as one would use to access the FTP site from a browser or FTP client.
Username	Username used to log into the FTP Site.
Password	Password used for the Username account on the FTP.
Port	Port to use for FTP connection. This is usually 21.
Path	Directory on the FTP site to store content. ***Note:*** *We recommend using path names containing only letters, numbers and underscores to ensure reliable communications.* *Example: /ALARM/, /ALARM123/ or /ALARM_123/.*

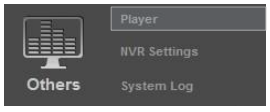
12.1- DHCP Server



The NVR can be used as a DHCP server for network devices. This should be used for network devices other than Wirepath IP surveillance devices, as they should be a static IP address, and only when a network Router is not present in the system.

Enabled	When selected the NVR can be used a DHCP server.
Start IP Address	Address to start for issuing IP addresses.
End IP Address	Address to end for issuing IP addresses.
Lease Time	The amount of time to lease the IP Addresses.

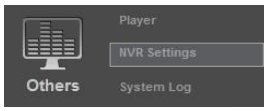
12.2- Player



"Player" is a link to download the IPHA0Viewer.exe program to the local PC. This program is required to load, view and convert off-line *.HA0 video files saved from the NVR.

See WPS-IP Recording Player instructions for details on downloading and using the player.

12.3- NVR Settings



The NVR settings menu is used to assign Cameras to the NVR, configure Camera settings such as Privacy masks and Motion Detection, configure settings for NVR Recording and Alarms, check status of and format the NVR HDD(s), and configure System settings.

NOTE that the 4CH NVR has no physical Alarm inputs. So “Alarms” or “Alarm inputs”, as they pertain to the 4CH NVR, consist of either:

- The DI Input of a Wirepath IP Camera (when DI Input (Camera) is Enabled in Alarm Trigger Setup), or
- The Alarm input of a Wirepath Encoder (when DI Input (Camera) is Enabled in Alarm Trigger Setup), or
- In some cases, a Motion event as detected by a Wirepath IP Camera or Encoder.

Any differences in how these alarms or events are handled by the NVR will be specified below, when appropriate.

Save	***Note:*** *A Save button is located in the upper right of all NVR Settings screens. When finished editing in any screen, the Save button should be selected to ensure the settings are transferred to the NVR.*

12.3.1- Camera Tab

Use to assign and configure Cameras or Encoders used by the NVR.

Camera (number)	Select the NVR channel to view and configure. If no Camera is assigned to the channel, no image will appear.

12.3.1.1-Camera Setup Menu

Enable	Select to enable the channel on the NVR. If disabled, the channel will not appear in Single or Split Screen.
Mode	Select the mode to use for the camera:
Normal	Use Normal for Wirepath™ IP Cameras (recommended).
RTSP	Use RTSP for RTSP-enabled cameras or video sources. RTSP must be configured on the device.
IP Address	The IP address of the device to assign to the channel.
Port	Port being used by the device.
Username	Username used to access the device.
Password	Password used to access the device.
Exit	Exits menu without saving changes; Also used to Exit after having saved any changes.
Save	Saves currently entered values to the NVR.
Quick Search	Opens a menu to scan the network for connected devices. See *12.3.1.2-Quick Search Menu*
Connect	Connects to the device entered in the above fields. Provides confirmation of connection success or failure.

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12.3.1.2-Quick Search Menu

This menu is located in the NVR Setup menu and displays a list of connected IP devices. Use this menu to quickly assign devices to channels of the NVR.

Server Name	Name of the device
IP Address	Displays the IP Address of detected devices. When selected, all network information for the selected device is entered and the screen returns to the Camera Setup menu.
Edit	Select to edit the device Name and network settings.
Search Device	Scans the network for connected devices.
Exit	Exits the Quick Search menu and returns to the Camera Setup menu.

12.3.1.3-Camera Video Setup

The settings in this menu relate to the resolution and performance of the connected Wirepath™ device. The image maybe low quality, or not appear at all if the setting is not supported. While experimentation is good, referring to the specifications for the device is the best place to start before configuring these settings.

Resolution	Available Resolutions (High to Low Quality): • **1920x1080** • **1280x720** • **640x480** • **320x240** • **176x144**
Quality	Available Bit Rates (Low to High): • **1Mbps** • **2Mbps** • **4Mbps** • **6Mbps** • **8Mbps** ***Note: While higher bitrates increase image quality, they also increase network traffic and may cause image display issues when multiple devices are being accessed simultaneously.***
Frame Rate	Frame Rate (FPS) is adjustable from 5 to 30 in 5 frames per second intervals. ***Recommendation:*** *We recommend that Frame Rate is set to the default of 30 fps unless there is an issue with the image*. Faster frame rates will make the image appear more fluid as more information is produced each second. This may have an adverse effect on network traffic, and may not be supported by the display device. Slower frame rates will make the image appear less fluid as less information is produced each second. This may cause the image to appear jagged or "choppy" with fewer frames being transmitted.
Update	Updates the selected Wirepath camera with the current settings.
Exit	Returns to the Camera menu.

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12.3.1.4-Camera Image Setup

The settings in this menu allow for adjusting of the appearance of the Wirepath Camera or Encoder image.

Recommendation: We recommend that these settings be left at the default unless there are issues with the image.

Display	When set to On, the Camera Title will appear on the channel displayed by NVR as well as the browser GUI. When set to Off, the Camera Title will not be displayed.
Title	The entered text appears in the upper left hand corner of the image as it appears in single or Split Screen view.
Auto SEQ Dwell	When the NVR main GUI is in SEQ mode, this setting determines the length of time that the NVR will display the selected camera/channel before sequencing to the next camera/channel. Each camera can be configured with its own unique Dwell time.
Contrast	Controls the intensity of white in the video image as it relates to black, the intensity of white (light) artifacts increases with higher values. If set too low, foreground images will not be easily distinguishable from background images. If set too high, lighter images will bloom causing them to be washed out. ***Note:*** *This setting will not be displayed if the selected Camera or Encoder does not support it.*
Brightness	Controls the level for black (darker) in the video image, black appears closer to black as the number decreases. If set too low, gray (or similar dark colors) will appear as black making color identification difficult. If set too high, black will appear as gray making color identification difficult ***Note:*** *This setting will not be displayed if the selected Camera or Encoder does not support it.*
Hue	Also known as tint, adjusts the tone of artifacts that have color. As the value increases, green, blue, and red levels are increased adding tint to the image. ***Note:*** *This setting will not be displayed if the selected Camera or Encoder does not support it.*
Saturation	Known as color on displays and TVs, adjusts the intensity of color within the image. If set too high, the color will bloom causing artifacts to appear blurry. If set too low, the color will fade causing images to appear washed out. ***Note:*** *This setting will not be displayed if the selected Camera or Encoder does not support it.*
Sharpness	Controls the video focus (not lens) of the image. If set too high, artifacts will appear crisp and jagged at the edges. If set too low, artifacts appear blurred and smooth at the edges.
Default	Resets the Wirepath Camera or Encoder image settings to default settings.
Exit	Returns to the Camera menu.

12.3.1.5-Motion Setup

Provides 3 areas (or All) to select for detecting motion on the Camera. When configured, an action such as record, take a photo, and send notification will be performed after the motion is detected.
See step *3-Configure Motion Detection Areas* in section *11-Additional Configuration* for detail on how to configure motion detection.

Relay Dwell	Sets time from 1 to 99 seconds that the NVR relay output will toggle when a Motion event is detected. When set to Off, relay will not toggle when Motion is detected.
Buzzer Dwell	Sets time from 1 to 99 seconds that the NVR internal buzzer will sound when a Motion event is detected. When set to Off, buzzer will not sound when Motion is detected.
Area 1, 2, 3 Checkboxes	Select to enable the configured motion area(s). Note that all three Areas will be displayed, even if the currently selected Camera or Encoder supports only one or no Motion Areas.
Sensitivity	Adjusts the sensitivity level of the configured motion area (1 = Low, 10 = High).
Motion Area Setup	Select to open the Motion Area Setup window. See step *3-Configure Motion Detection Areas* in section *11-Additional Configuration*
Update	Updates the selected Wirepath Camera with the configured Motion settings.
Exit	Returns to the Camera menu.

12.3.1.6-Privacy Mask Setup

Provides 3 areas to select for masking areas of the image to avoid unwanted viewing.
See step *2-Configure a Privacy Mask* in section *11-Additional Configuration* for details.

Area 1, 2, 3 Checkboxes	Select to enable the configured Privacy Mask area. Note that all three Areas will be displayed, even if the currently selected Camera or Encoder supports only one or no Privacy Mask Areas.
Motion Area Setup	Select to open the privacy Mask Area Setup window. See step *2-Configure a Privacy Mask* in section *11-Additional Configuration*
Update	Updates the selected Wirepath Camera with the configured Privacy Mask settings.
Exit	Returns to the Camera menu.

12.3.1.7-NVR Audio Setup

Use to select the channels that will use Audio In and Audio Out. Select Save to save settings to the NVR, select Exit to return to the Camera menu.

12.3.1.8-Quick Setup

The Quick Setup menu allows for entry of IP Addresses, Ports, User names, Passwords, and selection of channels for Cameras to be assigned to the NVR. Cameras can also be enabled or disabled from this menu.

Note: *Quick Setup currently requires knowing or obtaining the required information to enter for all Cameras or Encoders to assign in this screen. The Wirepath IP Installer software utility will quickly and easily find and display this information for all connected Wirepath IP Cameras and Encoders.*

Select Save to save changes to the NVR, select Cancel to return to the Camera menu.

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12.3.2- Record Tab

The Record Tab is used to configure the Pre- and Post-Alarm Record Times, Record Mode, Mobile Streaming, and provides the ability to manually start or stop a recording.

Pre Alarm	Amount of time from 0 to 30 seconds prior to the event to start the recording
Post Alarm	Amount of time from 0 to 30 seconds after to the event to stop the recording
Record Mode	Sets the method to start a recording. Available Choices: **Manual** — Recordings can be started by the Record button on the NVR GUI only. **Schedule** — Recordings are started based on a configured schedule. When Schedule is selected, menus will appear to configure schedules for timed recording, sending Email notifications and sending video to an FTP site. See sections: *12.3.2.1 (A) Schedule Setup* *12.3.2.1 (B) Mail Schedule Setup* *12.3.2.1 (C) FTP Schedule Setup* **Alarm Trigger** — Recordings are started when a Motion event is detected or an alarm input is triggered.
Record	Manually Start or Stop recording.

12.3.2.1 (A) Schedule Setup

Use this menu to setup a schedule for recording video based on a preset schedule. Recordings are stored on the HDD.

Schedule	Split Screen with Days of the Week and Time of day for recordings. Enabled, or Disabled days and times appear as colors as listed below. **Full Record:** Recording occurs, and is saved to the HDD at the scheduled day / time without a trigger. **Alarm Record:** Recording occurs, and is saved to the HDD at the scheduled day / time when motion is detected or a connected alarm is triggered. **No Record:** No Recording occurs at the scheduled day / time.
Event Type Selection Buttons	Sets the cursor to the selected event type for assigning to a Day/Time.

Selecting Day/Time for Recording to HDD

A. Select the button for the type of event for recording.
B. Select the Day/Time to schedule in the Split Screen. Multiple Days/Times can be selected by holding down the left mouse button and dragging the cursor over the area for the Days/Times.
C. Click on Save in the top right corner next to the list of tabs.
D. Click on Exit to return to the Record menu.

12.3.2.1 (B) Mail Schedule Setup

Use this menu to configure the types of events for which to send email at the scheduled Day/Time. A recording will be saved to the HDD, and sent via email as configured in section *12.1.1-Mail Settings*.

Schedule	Split Screen with Days of the Week and Time of day for recordings. Enabled, or Disabled days and times appear as colors as listed below. **No Mail:** No Mail notification will be sent. **Alarm Mail:** Recording occurs, is saved to the HDD, and mail is sent at the scheduled day / time when a connected alarm is triggered. **Motion Mail:** Recording occurs, is saved to the HDD, and mail is sent at the scheduled day / time when a motion event is triggered. **Both:** Recording occurs, is saved to the HDD, and mail is sent at the scheduled day / time when a motion event, or a connected alarm is triggered.
Event Type Selection Buttons	Sets the cursor to the selected event type for assigning to a Day/Time.

Selecting Day/Time for Recording to HDD with Mail Notifications

A. Select the button for the type of event for recording.
B. Select the Day/Time to schedule in the Split Screen. Multiple Days/Times can be selected by holding down the left mouse button and dragging the cursor over the area for the Days/Times.
C. Click on Save in the top right corner next to the list of tabs.
D. Click on Exit to return to the Record menu.

12.3.2.1 (C) FTP Schedule Setup

Use this menu to setup a schedule a Day/Time to save recordings to an FTP location. Recordings are stored to the FTP location configured in section *12.1.2-FTP Settings*.

Schedule	Split Screen with Days of the Week and Time of day for recordings. Enabled, or Disabled days and times appear as colors as listed below. **No FTP:** No saving to FTP occurs at the scheduled day / time. **Alarm FTP:** Recording occurs, and is saved to the FTP location when a connected alarm is triggered. **Motion FTP**: Recording occurs, and is saved to the FTP location when a motion event is triggered. **Both:** Recording occurs, and is saved to the FTP, when a Motion event is detected, or a connected alarm input is triggered.
Event Type Selection Buttons	Sets the cursor to the selected event type for assigning to a Day/Time.

Selecting Day/Time for Recording to FTP

A. Select the button for the type of event for recording.
B. Select the Day/Time to schedule in the Split Screen. Multiple Days/Times can be selected by holding down the left mouse button and dragging the cursor over the area for the Days/Times.
C. Click on Save in the top right corner next to the list of tabs.
D. Click on Exit to return to the Record menu.

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12.3.2.1 (D) Mobile Stream Setup

Mobile	Enable or Disable the ability to view or record from a mobile device GUI. Must be Enabled to access the NVR from the Wirepath WPS-IP iPhone, iPad or Android apps. ***Recommendation:*** *To ensure that a mobile stream is always available, we recommend that this feature is left enabled.*

12.3.3- Alarm Tab

The Alarm is used to configure the operations of the NVR Alarm In/Out.

12.3.3.1-Alarm Trigger Setup

Alarm Auto Switch	Selects the NVR local display action to occur when a Motion event is detected or an alarm input is triggered. • Disable: NVR local display does not change • Full Screen: NVR local display switches to Full Screen view for the Camera that detected Motion or has its DI input triggered. • Split Screen: NVR local display switches to Split Screen view when any Motion is detected or Alarm is triggered. NVR should return to the previous screen when the Post-Record time for an event is complete..
Video Loss Detection	Enable or Disable. When enabled, the NVR handles Video Loss for any channel as an Alarm event.
DI Input (NVR)	Enables or Disable. When enabled, the NVR handles the Digital Input (DI) on the Wirepath IP Camera as an Alarm.

12.3.3.2-Alarm Output Setup

Ext. Alarm Buzzer Time	Sets the time in seconds for the NVR buzzer to sound on an external Alarm trigger.
Video Loss Buzzer	Sets the time in seconds for the NVR buzzer to sound on Video Loss.

12.3.4- HDD Tab

Use this menu to configure HDD Overwrite Mode and Auto Deletion, or to format the HDD and view storage information.

Overwrite Mode	When set to On, new recordings will overwrite any stored recordings when the HDD is full.
Auto Deletion	On or Off. When On, allows the NVR to record only for the amount of days selected in Reserve Day below.
Reserve Day	Displayed only when Auto Deletion is On. Sets the number of days of recording(s) to be stored on the HDD before older recordings are deleted.
Storage Information	Displays the capacity and available storage of the internal HDD, and connected USB storage devices. Select Exit to return to the HDD menu.
Format HDD	Formats the HDD. A warning will appear allowing for proceeding, or canceling the format request. *Note that when selected from a browser, an admin-level user has already logged in, so there is no additional prompt for login credentials.*

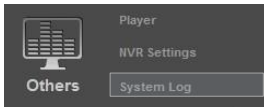
12.3.5- System Tab

Use this menu to configure NVR system functions such as Name, ID Number, Date Format, Monitor Resolution, and items to display over the video image.

NVR Name	Displays the current name of the NVR. *Note that the NVR Name can only be changed from the browser System Information menu.*

NVR ID	Sets an ID to identify the NVR for IR Remote control to avoid interfering with other NVRs that are in the same location. When set to "0", the NVR will respond to any ID selected on the remote control. See section *6.3-IR Remote* for more details. ***Note:*** leaving the NVR ID set to "0" increases the chance that IR commands sent to other devices in the system will interfere with NVR operation.
Date Format	Selected the Date Format to use for displaying the date on the image and identifying recordings.
Monitor Resolution	Sets the output resolution to use for the VGA and HDMI outputs.
Status Display Setup	Use to enable or disable the following in the status display: • **NVR Title** • **Record Information** • **Date and Time** • **NVR IP Status**

12.4- Log List



Displays a log of all system-level NVR activities (remote login, HDD format, DHCP address assignment, etc.).

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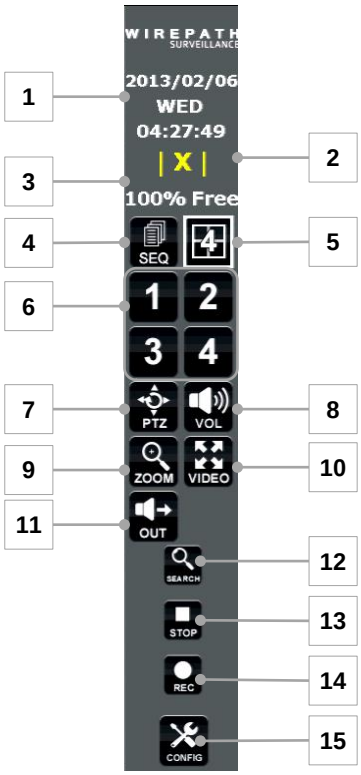
13- Local Display Interface

13.1- Right Side Navigation

The local NVR display interface can be navigated using the IR remote or the mouse. These controls are located on the right hand side unless Video (full screen display) is selected on the OSD or the remote.



1. **Date and Time Display**
   Displays the current date and time of the NVR.

2. **Recording Indicator**
   - When the NVR is recording (scheduled or manual), REC will appear in Red.
   - When not recording, [X] is displayed in Yellow.
   - When recording due to Motion or an Alarm, [A] is displayed in Yellow.

3. **HDD Percentage**
   Displays the current percentage of free space on the HDD.

4. **SEQ**
   Sequences through all cameras configured on the NVR in a single view.

5. **Split Screen**
   Display all 4 channels of the NVR in a Split Screen.

6. **Single Channel Selection**
   Displays a single view of the selected channel number.

7. **PTZ**
   Opens the PTZ menu to control a connected PTZ Camera.
   Note: *The menu will not appear if the selected camera is not a PTZ Camera.*

8. **Audio Volume**
   Mutes or un-Mutes the Audio Output from the NVR.

9. **Digital Zoom**
   Enabled digital Zoom. Left click and drag to select desired Zoom area. Click on the zoomed area to return to normal view.

10. **Full Screen Video**
    Displays current view as Full Screen, right side controls are not visible in this mode. Left click to return to normal view.

11. **Audio Out**
    Turns Audio Out to Camera On or Off. This button does not appear when viewing a single camera.

12. **Search**
    Open Search menu for Recordings, Events, logs and backup.

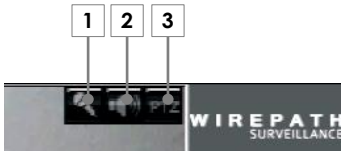
13. **Stop**
    Stops the currently playing recorded content.

14. **Record**
    If NVR is not currently recording, immediately begins recording all channels. Press Record again to stop recording.

15. **Config (Configuration Menu)**
    Opens the NVR's configuration menu.

13.2- Single Image Controls

When viewing a single image, controls for Audio, and PTZ notification will appear in the upper right hand corner of the image.

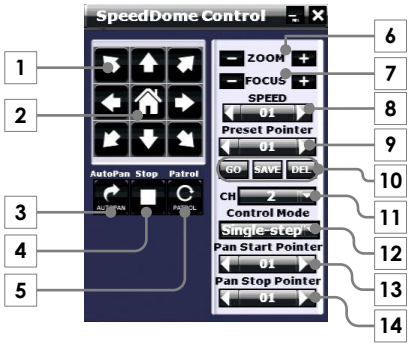


1. Camera Audio
Turns the cameras microphone input On and Off of the selected channel. When turned on, the local audio output is also turned on.

2. Audio Out
Turns the NVR Audio In On or Off to send audio to the selected channel.

3. PTZ Indicator
Illuminates when PTZ controls are On for the selected channel. This will only appear when a PTZ camera is selected.

13.3- PTZ Camera Controls



1. Navigation Buttons
Up, Down, Left and Right and Diagonals.

4. Home
Returns camera to the preset Home position.

5. Auto Pan
Starts auto panning of the camera from the pointer selected in Pan Start Pointer.

6. Stop
Stops Auto Pan and Patrol.

7. Patrol
Steps the camera through the saved preset locations.

8. Zoom
Adjusts the Zoom in and out of the camera image.

9. Focus
Adjusts the focus of the camera image.

10. Speed
Sets the speed for navigation buttons.

11. Preset Pointer
List of numbered presets to move the camera to commonly used areas of interest.

12. Preset Edit

Go	Starts selected preset.
Save	Saves the current location, and zoom to the selected preset number.
DEL	Deletes the currently selected preset.

13. Channel
List of NVR channels with PTZ-capable devices, to switch focus of the current view.

14. Control Mode
Single-Step or Continuous.

15. Pan Start Pointer
Preset pointer to use to start Auto Pan.

16. Pan Stop Pointer
Preset pointer to use to stop Auto Pan

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14- Local Configuration Menu

The local and browser configuration menus contain the same settings for the NVR. Changes to settings are synced in real time and are available in both menus as they are made.

14.1- Camera Menu

14.1.1- Camera Setup

Channel Tabs	Selects channels 1 to 4 to allow connection.
Camera Quick Search	Opens the Camera Quick Search menu that provides a list of IP cameras and encoders connected to the network. See section *14.1.1.1-Camera Quick Search Menu*
Mode	Connection mode to the camera or encoder. Normal Standard connection to a Wirepath IP Camera or Encoder. RTSP Connects to an RTSP video source.
Enable Checkbox	Enables the channel for viewing on the NVR.
IP Address	Current IP Address of the Camera. If DHCP is selected, this cannot be configured, and will appear Grayed out. ***Note: The static IP used must be outside the DHCP range of the router to avoid conflicts with other devices on the network.***
Port	Port used by the Camera or Encoder on the network.
User Name	Account used to log into the Wirepath IP Camera or Encoder ***Note: An Administrator account must be used to connect to a Wirepath Camera or Encoder, access streaming video, and make and save changes to camera settings.***
Password	Password for the above account.
Connect Camera	Connects to the camera and assigns to the selected channel.

14.1.1.1-Camera Quick Search Menu

This menu opens from the Camera Setup menu when the Camera Quick Search button is selected.

Server Name	Name of the Wirepath Camera or Encoder.
IP Address	IP Address of the Camera or Encoder. Selecting the IP Address adds th selected information and returns to the Camera Setup Menu.
Edit	Opens the Network Setup menu for the Camera or Encoder.
Search Device	Scans the network for connected Wirepath Cameras and Encoders, and refreshes the list.
{Number}	When more than eight Wirepath Cameras or Encoders are detected, the arrow moves to the next page of up to eight more devices. The left arrow moves to the previous page., if any.
Exit	Returns to the Camera menu.

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14.1.2- Camera Video Setup

Channel Tabs	Selects channels 1 to 4.
Resolution	Available Resolutions (High to Low Quality): • **1920x1080** • **1280x720** • **640x480** • **320x240** • **176x144**
Quality	Available Bit Rates (Low to High): • **1Mbps** • **2Mbps** • **4Mbps** • **6Mbps** • **8Mbps** ***Note:*** *While higher bitrates increase image quality, they also increase network traffic and may cause image display issues when multiple devices are being accessed simultaneously.* **Setting Notes** Due to the differences for quality settings between the camera and the NVR, bitrate may appear blank. Changing this setting in the NVR will change the setting in the camera.
Frame Rate	Frame Rate (FPS) is adjustable from 5 to 30 in 5 frames per second intervals. ***Recommendation:*** *We recommend that Frame Rate is set to the default of 30 fps unless there is an issue with the image*. Faster frame rates will make the image appear more fluid as more information is produced each second. This may have an adverse effect on network traffic, and may not be supported by the display device. Slower frame rates will make the image appear less fluid as less information is produced each second. This may cause the image to appear jagged or "choppy" due to transmission of fewer frames.
Exit	Returns to the Camera Menu.

14.1.3- Camera Image Setup

Channel Tabs	Selects channels 1 to 4.
Display	When selected the image will be displayed for adjusting
Title	Displays the current Title of the channel
Auto SEQ Dwell	When the NVR main GUI is in SEQ mode, this setting determines the length of time that the NVR will display the selected camera/channel before sequencing to the next camera/channel. Each camera can be configured with its own unique Dwell time.
Contrast	Controls the intensity of white in the video image as it relates to black, the intensity of white (light) artifacts increases with higher values. If set too low, foreground images will not be easily distinguishable from background images. If set too high, lighter images will bloom causing them to be washed out. This setting cannot be edited if the selected Camera or Encoder does not support it.
Brightness	Controls the level for black (darker) in the video image, black appears closer to black as the number decreases. If set too low, gray (or similar dark colors) will appear as black making color identification difficult. If set too high, black will appear as gray making color identification difficult This setting cannot be edited if the selected Camera or Encoder does not support it.
Hue	Also known as tint, adjusts the tone of artifacts that have color. As the value increases, green, blue, and red levels are increased adding tint to the image. This setting cannot be edited if the selected Camera or Encoder does not support it.
Saturation	Known as color on displays and TVs, adjusts the intensity of color within the image. If set too high, the color will bloom causing artifacts to appear blurry. If set too low, the color will fade causing images to appear washed out. This setting cannot be edited if the selected Camera or Encoder does not support it.
Sharpness	Controls the video focus (not lens) of the image. If set too high, artifacts will appear crisp and jagged at the edges. If set too low, artifacts appear blurred and smooth at the edges.
Default	Resets the Wirepath Camera or Encoder image settings to default settings.

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14.1.4- Motion Setup

Provides 3 areas (or All) to select for detecting motion on the Encoder. When configured, an action such as record, take a photo, and send notification can be performed after the motion is detected.

Channel Tabs	Selects channels 1 to 4.
Relay Dwell	Sets time from 1 to 99 seconds that the NVR relay output will toggle when a Motion event is detected. When set to Off, relay will not toggle when Motion is detected.
Buzzer Dwell	Sets time from 1 to 99 seconds that the NVR internal buzzer will sound when a Motion event is detected. When set to Off, buzzer will not sound when Motion is detected.
Area 1, 2, 3 Checkboxes	Select to enable the configured motion area(s). Note that all three Areas will be displayed, even if the currently selected Camera or Encoder supports only one or no Motion Areas.
Sensitivity	Adjusts the sensitivity level of the configured motion area (1 = Low, 10 = High).
Motion Area Setup	Select to open the Motion Area Setup window to allow setting the selected Area. **To Set An Area For Detection** E. Place the mouse at the upper left hand corner of the area for detection, hold down the left mouse button and drag the box over the area, and release the mouse button. ***Note:*** *If the entire camera image is desired for detection, click the right mouse button and select Enable All from the menu.* F. After selecting the area, click the right mouse button and select Save and Exit to set the area. **Removing the Area for Detection** A. Right mouse button and select Clear All from the menu. **Exit Without Saving** A. Right click and select Exit Without Saving to abandon changes and return to the Motion Setup menu.

14.1.5- Privacy Mask Setup

Provides 3 areas to select for masking areas of the image to avoid unwanted viewing.

Channel Tabs	Selects channels 1 to 4.
Area 1, 2, 3 Checkboxes	Select to enable the configured Privacy Mask area.
Area Setup	Select to open the Privacy Mask Area setup window to allow setting the select Area number. See Section *14.1.6-Privacy Mask Area Setup*

14.1.6- Privacy Mask Area Setup

Opens when the Privacy Mask Area Setup is selected in the Privacy Mask Setup Menu.

To Set An Area For Masking

A. Place the mouse at the upper left hand corner of the area to mask, hold down the left mouse button and drag the box over the area, and release the mouse button.

Note: *If the entire camera image is desired for masking, click the right mouse button and select Enable All from the menu.*

B. After selecting the area, click the right mouse button and select Save and Exit to set the area.

Removing the Area for Masking

A. Right mouse button and select Clear All from the menu.

Exit Without Saving

A. Right click and select Exit Without Saving to abandon changes and return to the Privacy Mask Setup menu.

14.1.7- Camera Audio Setup Menu

Channel 1, 2, 3, 4 Checkboxes When selected, audio for the selected channel(s) is active.

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14.1.8- Quick Setup Menu

The Quick Setup Menu allows of manual access of camera IP addresses, and ports as list by channel.

Camera Quick Search	Opens the Camera Quick Search menu that provides a list of IP Cameras and encoders connected to the network. See section *14.1.1.1-Camera Quick Search Menu.*
Enable Checkbox	Enables the camera for viewing on the NVR.
IP Address	***IP Address of a Camera or Encoder to be assigned.***
Port	Port to use to access the Camera or Encoder on the network.
User Name	Account used to log into the camera. ***Note:*** *For Wirepath IP Cameras and Encoders, an Administrator account must be used.*
Password	Password for the above account.
CH (Channel)	Channel that the Camera or Encoder is or will be assigned to.
Save/Cancel	After editing all of the above information for the desired Cameras, Encoders and NVR channel assignments: • Select Save to save this configuration to the NVR. • Select Cancel to abandon changes and return to the Camera Setup menu.

14.2- Record Menu

The Record Tab is used to configure the Pre- and Post-Alarm Record Times, Record Mode, Mobile Streaming, and provides the ability to manually start or stop a recording.

Pre Alarm	Amount of time from 0 to 30 seconds prior to the event to start the recording
Post Alarm	Amount of time from 0 to 30 seconds after to the event to stop the recording
Record Mode	Sets the method to start a recording. Available Choices: **Manual** Recordings can be started by the Record button on the Split Screen View only. **Schedule** Recording are started based on a configured schedule. When Schedule is selected, menus will appear to configured schedules for timed recording, sending Email notifications and sending video to an FTP site. See sections: *14.2.1-* Schedule Setup *14.2.2-* Mail Schedule Setup *14.2.3-* FTP Schedule Setup **Alarm Trigger** Recordings are started when a Motion event is detected or an alarm input is triggered.

14.2.1- Schedule Setup

Use this menu to setup a schedule for recording video based on a preset schedule. Recordings are stored on the HDD.

Schedule	Split Screen with Days of the Week and Time of day for recordings. Enabled, or Disabled days and times appear as colors as listed below. **Full Record:** Recording occurs, and is saved to the HDD at the scheduled day / time without a trigger. **Alarm Record:** Recording occurs, and is saved to the HDD at the scheduled day / time when Motion is detected or a connected alarm is triggered. **No Record:** No Recording occurs at the scheduled day / time.
Event Type Selection Buttons	Sets the cursor to the selected event type for assigning to a Day/Time.

Selecting Day/Time for Recording to HDD

A. Select the button for the type of event for recording.
B. Select the Day/Time to schedule in the Split Screen. Multiple Days/Times can be selected by holding down the left mouse button and dragging the cursor over the area for the Days/Times.
C. Click on Save in the bottom right corner to save changes and return to the Record menu.
D. Click on Cancel to abandon changes and return to the Record menu.

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14.2.2- Mail Schedule Setup

Use this menu to configure the types of events for which to send Email at the scheduled Day/Time. A recording will be saved to the HDD, and sent via Email.

See section 14.4.4- Mail Setup

Schedule	Split Screen with Days of the Week and Time of day for recordings. Enabled, or Disabled days and times appear as colors as listed below.

- **No Mail:** No Email notification will be sent during the scheduled day / time.
- **Alarm Mail:** Recording occurs, is saved to the HDD, and Email is sent when a connected alarm is triggered.
- **Motion Mail:** Recording occurs, is saved to the HDD, and Email is when a motion event is triggered.
- **Both:** Recording occurs, is saved to the HDD, and Email is sent when a motion event, or a connected alarm is triggered.

Event Type Selection Buttons	Sets the cursor to the selected event type for assigning to a Day/Time.

Selecting Day/Time for Recording to HDD with Mail Notifications

A. Select the button for the type of event for recording.
B. Select the Day/Time to schedule in the Split Screen. Multiple Days/Times can be selected by holding down the left mouse button and dragging the cursor over the area for the Days/Times.
C. Click on Save in the bottom right corner to save changes and return to the Record menu.
D. Click on Cancel to abandon changes and return to the Record menu.

14.2.3- FTP Schedule Setup

Use this menu to setup a schedule a Day/Time to save recordings to an FTP location. Recordings are stored to the FTP location configured.

See section 14.4.5- FTP Setup

Schedule	Split Screen with Days of the Week and Time of day for recordings. Enabled, or Disabled days and times appear as colors as listed below.

- **No FTP:** No saving to FTP occurs during the scheduled day / time.
- **Alarm FTP:** Recording occurs, and is saved to the FTP location when a connected alarm is triggered.
- **Motion FTP**: Recording occurs, and is saved to the FTP location when a motion event is triggered.
- **Both:** Recording occurs, and is saved to the FTP, when a motion event is detected, or a connected alarm is triggered.

Event Type Selection Buttons	Sets the cursor to the selected event type for assigning to a Day/Time.

Selecting Day/Time for Recording to FTP

A. Select the button for the type of event for recording.
E. Select the Day/Time to schedule in the Split Screen. Multiple Days/Times can be selected by holding down the mouse button and dragging the cursor over the area for the Days/Times.
F. Click on Save in the bottom right corner to save changes and return to the Record menu.
G. Click on Cancel to abandon changes and return to the Record menu.

14.2.4- Mobile Streaming Setup

Mobile	Enable or Disable the ability to view or record from a mobile device GUI. Must be Enabled to access the NVR from the Wirepath WPS-IP iPhone, iPad or Android apps. ***Recommendation:*** *To ensure that a mobile stream is always available, we recommend that this feature is left enabled.*

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14.3- Alarm Menu

14.3.1- Alarm Trigger Setup

Alarm Auto Switch	Selects the NVR local display action to occur when a Motion event is detected or an alarm input is triggered. • Disable: NVR local display does not change • Full Screen: NVR local display switches to Full Screen view for the Camera that detected Motion or has its DI input triggered. • Split Screen: NVR local display switches to Split Screen view when any Motion is detected or Alarm is triggered.
Video Loss Detection	Enable or Disable. When enabled, the NVR handles Video Loss for any channel as an Alarm event.
DI Input (Camera)	Enables or Disable. When enabled, the NVR hands the Digital Input (DI) on the Wirepath IP Camera as an Alarm.

14.3.2- Alarm Output Setup

Ext. Alarm Buzzer Time	Sets the time in seconds for the NVR buzzer to sound on an external Alarm trigger.
Video Loss Buzzer	Sets the time in seconds for the NVR buzzer to sound on Video Loss.

14.3.1- Alarm Event Setup

Select the checkboxes to enable the desired events for the alarm.

Note: *These settings only affect logging for Event Search – they have no impact on buzzers, triggered recording, etc.*

Power On Event	When enabled, logs Power On events so they are displayed in Event Search. When Disabled, Power On events are not logged.
Video Loss Event	When enabled, logs Video Loss events so they are displayed in Event Search. When Disabled, Video Loss events are not logged.
Record Event	When enabled, logs Record events so they are displayed in Event Search. When Disabled, Record events are not logged.
DI Input Event	When enabled, logs DI Input events so they are displayed in Event Search. When Disabled, DI Input events are not logged.
Shutdown Event	When enabled, logs Shutdown events so they are displayed in Event Search. When Disabled, Shutdown events are not logged.
Motion Event	When enabled, logs Motion events so they are displayed in Event Search. When Disabled, Motion events are not logged.
Stop Record Event	When enabled, logs Stop Record events so they are displayed in Event Search. When Disabled, Stop Record events are not logged.

14.4- Network Menu

14.4.1- IP Address Setup

Allows for configuration of the NVR network settings for IP communication. We recommend that this information is provided by the network administrator to avoid address conflicts with other devices on the network.

Note: If a static IP used it must be outside the DHCP range of the router to avoid conflicts with other devices on the network.

IP Type	By Default the NVR are set to DHCP, which will pull network settings from the Router. We recommend that static IP addresses are used to ensure that the Camera will remain accessible during setup and use.
IP Address	Current IP Address of the Camera. If DHCP is selected, this cannot be configured, and will appear Grayed out. ***Note: The static IP used must be outside the DHCP range of the router to avoid conflicts with other devices on the network.***
Subnet Mask	Usually 255.255.255.0 but dependent on the network. . Check with the network administrator.
Gateway	This is usually the same address used to access the router. Check with the network administrator.
DNS 1	As provided by the ISP/network administrator. If not known, the default Gateway can usually be used.
DNS 2	As provided by the ISP/network administrator. If only one DNS address is known or provided, enter “0.0.0.0”.
Web Page Port	Port used by the Camera on the network. **Recommended Port Numbering** Each Camera must have a unique port number in order to access from outside the local network. To make port numbering consistent, and easy to remember we recommend that the ports be 4 digits, and contain the last octet of the IP address of the Camera preceded by an 8. This will also ensure that a port that is commonly used for another well-known service is not assigned to the Camera. **Example:** **IP Address** **Port** 192.168.1.050 8050 192.168.1.100 8100 ***Note:*** *Accessing the camera remotely requires additional configuration of other settings* *See step 6-Configure NVR for Remote Access* *in section 11-Additional Configuration for details.*

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14.4.2- PPPoE Setup

Point-to-Point Protocol Over Ethernet (PPPoE) is a network protocol primarily used DSL (Digital Subscriber Line) providers and modems. This protocol requires a login to connect to the modem even when a router is used. Configuration of these settings is not required to operate the camera on a standard network.

PPPoE	Enable to allow the NVR to access PPPoE for sending Email or saving to FTP.
Username	Login name from the service provider
Password	Password for the above username.
Password Confirm	Re-enter the password to confirm.
State	Current State of the PPPoE connection.
Send Mail After Dialed	Enable to send an Email when the PPPoE is dialed.
Subject	Enter text to use as the subject line of the email.

14.4.3- DDNS Setup

DDNS (Dynamic DNS) maps Internet Domain Names to an IP through services like Wirepathdns.com. When configured, the NVR is available remotely via a simple easy to remember name such as JonesIPNVR.Wirepathdns.com

Configuring DDNS is not required for remote access, but avoids having to pay for and remember a static IP address from the ISP.
See step *6-Configure NVR for Remote Access* in section *11-Additional Configuration* for details.

DDNS	Enable to allow configuring and using a DDNS service.
Provider	Name of the DDNS service provider.
Hostname	Name to use when accessing the Camera remotely. Example: JonesIPNVR.
Update Interval	Time interval in minutes to update the DDNS service with current external IP address. (1440 = every 24 hours)
State	Current connection status of the DDNS service. This field will update automatically shortly after entering and applying a Hostname.

14.4.4- Mail Setup

A "server" in this case is an Email account or FTP site, either of which must be configured in order to send or save notifications, snapshots or short video recordings. While either method can be used, only Email is needed for notifications.

Allows for Email notifications to be sent based on various triggers

Enable	**Alarm**	Notifications will be sent when an alarm event occurs.
	Motion	Notifications will be sent when a motion event occurs.
	Note: *When NVR Record mode is Schedule, and Mail Schedule is configured for Alarm Mail, Motion Mail or Both, these check boxes will become checked and cannot be un-checked unless Mail Schedule is changed to No Mail, or Record Mode is changed to Manual, or Alarm Trigger.*	
Mail Server	Enter the SMTP server used for sending emails.	
	Corporate Exchange Accounts	Contact the network admin for server information
	Personal Email Accounts	Enter the SMTP server used to send emails. Example: smtp.gmail.com Note that the SMTP server must support and be configured for POP3. Refer to the email provider for details on using POP3 SMTP.
SMTP Port	Default port 25 may be used for most unsecure or anonymous accounts. When using a Secure Connection, most servers use port 465 for SSL or port 587 for TLS. Refer to the email provider for details on using their SMTP server. Corporate accounts require contacting the network admin for port information as the ports above may be blocked within the company's firewall.	
Username	Enter the name used to log into the SMTP server being used to send emails. Example: SnapAVtechDocs@gmail.com	
Password	Enter the password used to access the email account SMTP server.	
Sender's Mail Address	This is used for notification purposes only and does not need to be the email account being used to send emails. We recommend that a name be used that identifies the camera sending the email. Example: JonesNVR@Gmail.com. *Note that some SMTP servers will strip this information and replace it with the Username of the account regardless of camera configuration.*	
Receiver's Mail	Enter the recipients email address.	
Bcc Mail	Enter an additional Email address to send notifications to. Note that this is a Bcc; the main recipient will not see this address on their email.	

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Subject	Subject to use for the email.
Secure Connect	Check this box to enable a secure connection when sending emails. This is required for most current SMTP servers. Refer to the Email provider or network administrator for information on the use of TLS and SSL.

14.4.5- FTP Setup

When an FTP server is configured, recorded video and snapshot files can be stored on the server for later access. Contact the network administrator for FTP server information.

Enable	**Alarm**	Notifications will be sent when an alarm event occurs.
	Motion	Notifications will be sent when a motion event occurs.
		Note: *When NVR Record mode is Schedule, and FTP Schedule is configured for Alarm FTP, Motion FTP or Both, these check boxes will become checked and cannot be un-checked unless FTP Schedule is changed to No FTP, or Record Mode is changed to Manual, or Alarm Trigger.*
FTP Server		FTP Site address. This is usually the same as one would use to access the FTP site from a browser or FTP client.
Username		Username used to log into the FTP Site.
Password		Password used for the Username account on the FTP.
Port		Port to use for FTP connection. This is usually 21.
Path		Directory on the FTP site to store content. ***Note:*** *We recommend using path names containing only letters, numbers and underscores to ensure reliable communications.* *Example: /ALARM/, /ALARM123/ or /ALARM_123/.*

14.4.6- DHCP Server Setup

The NVR can be used as a DHCP server for network devices. This should be used for network devices other than Wirepath IP surveillance devices as they should be a static IP address, and only when a network Router is not present in the system.

Enabled	When selected the NVR can be used a DHCP server.
Start IP Address	Address to start for issuing IP addresses.
End IP Address	Address to end for issuing IP addresses.
Lease Time	The amount of time to lease the IP Addresses.

14.4.7- UPNP Port Forwarding Setup

When enabled, allows for automatic configuration of UPnP Port forwarding with compatible routers.

Enabled	Select Enabled to allow the camera to be detected by computers using UPnP.
External HTTP Port	External network port to be configured by a compatible router to access the Camera through HTTP.

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14.5- Password Menu

This menu allows for requiring a password to modify perform configuring or modifying certain parameters of the NVR.

HDD Format Password Confirmation	When Enabled (checked), prevents a user of the NVR local GUI from formatting the NVR HDD unless they can provide appropriate login credentials (admin, or user with HDD Setup permission). When disabled, any user with access to the NVR local GUI can reformat the NVR HDD.
Anonymous Remote User Login	When Enabled (checked) the NVR can be accessed remotely via web browser without the use of login credentials. These users have the ability to: • View Video • Use Zoom, Mute, Video (Full), Record, and Picture • Change the GUI size Recommendation: **To avoid unwanted access to the Cameras we recommend that this feature be set to Disabled (unchecked).**
Local User Login	When Enabled, users of the NVR local GUI can select and view cameras, but must enter login credentials to operate PTZ, use Search features or access DVR configuration and settings. Disabled by default (assumes any user with access to the NVR local GUI is authorized admin privileges).
Keyboard Lock	When selected, users will need to enter a password to use the keyboard to configure or modify settings.
Auto Logout	When selected, the NVR local display will lock when the configuration menu is closed. Users will need to enter a password in order to view, or modify the NVR and its settings.

14.5.1-

There are 2 levels of users: Administrator which is the default Admin account, and Guest accounts. The Admin account is the only account that is set as an administrator at all times. An unlimited number of guest accounts can be added.

14.5.1.1- User List:

	Opens the User Credentials Menu that can be used to edit the credentials of the user. See section *14.5.1.1-User Credentials Menu*.
	Opens the User Credentials Menu that can be used to add a new user and establish their access and permissions See section *14.5.1.1-User Credentials Menu*. ***Note:*** *The Administrator account cannot be removed.*

14.5.1.1-User Credentials Menu

This menu appears when the Permission or Add User is selected in the User Management menu.

User Credentials

User	Usernames can only contain Letters and Numbers. Spaces and special characters such as underscores will not be accepted. Note: There is only one Administrator account, and it cannot be deleted. However, additional Users can be selectively granted some, or all admin-level privileges.
Password	Password used to login
Password Confirm	Confirm password used to login

NVR Function Checkboxes

The NVR function checkboxes allow for the creation of multiple level Administrators and users. Users will have access the function when the checkbox is selected.

Note: *Option to select individual setup menus will not appear unless Menu Setup is selected.*

Masking Channel Checkboxes

When selected, user will not be able to view the camera on the channel selected. This is useful when there are areas that only high level users require access to.

14.6- HDD Menu

This menu allows for configuring the HDD functions, formatting of the HDD, and information on the HDD storage status.

Overwrite Mode	When set to On, recordings will overwrite any stored recordings when the HDD is full.
Auto Deletion	On or Off. When On, allows the NVR to record only for the amount of days selected in Reserve Day below.
Reserve Day	Displayed only when Auto Deletion is On. Sets the number of days of recording(s) to be stored on the HDD before older recordings are deleted.

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14.6.1- Storage Information

Displays a list of installed HDDs, and connected USB drives, and their current state.

Disk	HDD/USB number
Capacity	Total size of the HDD/USB
Free	Amount of free space available on the HDD/USB

14.6.1- Format HDD

Formats the HDD. A warning will appear allowing for proceeding, or canceling the format request.

Admin login credentials are required if HDD Format Password Confirmation is selected in the Password Menu.

See section *14.5- Password Menu*

14.7- System Menu

This menu is used to configure system settings of the NVR such as date/time, adjust the monitor output, and perform software updates.

NVR Name	Displays the current name of the NVR, and allows for changing.
NVR ID	Sets an ID to identify the NVR for IR Remote control to avoid interfering with other NVRs that are in the same location. When set to "0", the NVR will respond to any ID selected on the remote control. ***Note:*** *Leaving the NVR ID set to "0" increases the chance that IR commands sent to other devices in the system will interfere with NVR operation.* See section *6.3-IR Remote* for more details.
Date Format	Selected the Date Format to use for displaying the date on the image and identifying recordings.
Version	Current firmware version of the NVR.

14.7.1- Software Update

Unlike the web interface, updating software on the local interface is performed via a connected USB drive. Download the latest software from www.Snapav.com, and save to a USB drive. The software may be in a folder that can be selected.

Status	Current Status of the update.
Progress	Progress of the update.
Browse	Opens a window to browse a connected USB drive.
Upgrade	Starts the update process using the file selected in browse.

14.7.2- Time Setup

Date	Calendar display indicating the current date, change the date by using the Month, Day, Year selection boxes, or by selecting the date in the calendar.
Time	Clock and selection boxes displaying the current time.

NTP Setup

Enable	Select to enable the use of an NTP server to set the date and time.
NTP Sever	Enter the name of an NTP server to use. Recommendation: **We recommend that the default (pool.ntp.org) be used as it pulls from multiple redundant servers.**
Time Zone	Time Zone can only be adjusted when NTP, or Manual are selected.

14.7.3- Status Display Setup

Allows for enabling or disabling the status display items that appear in the camera view, and right side control pane.

14.7.4- Configuration Setup

This menu allows for loading default settings, saving, or uploading NVR settings files.

Item Checkboxes	Select to save the setting, data for unchecked boxes will not be saved to the configuration file.

Load Default

Loads default settings for the NVR.

Caution! Settings will be overwritten with default values, save a copy of the configuration file before loading defaults.

Load from USB

Select to load a saved configuration file from a connected USB drive.

Caution! Current NVR Settings will be overwritten.

Save to USB

Save the current configuration to a connected USB drive.

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14.7.5- Daylight Saving Time

Enable Daylight Savings	When enabled, Daylight Saving Time Start and Stop parameters can be configured. By default this is set to On.

14.7.6- Monitor Adjust

As opposed to Camera Image settings, these settings affect the entire VGA display output of the NVR, including the GUI.

Note: These settings have no effect on the HDMI video output.

Contrast	Controls the intensity of white in the video image as it relates to black, the intensity of white (light) artifacts increases with higher values. If set too low, foreground images will not be easily distinguishable from background images. If set too high, lighter images will bloom causing them to be washed out.
Brightness	Controls the level for black (darker) in the video image, black appears closer to black as the number decreases. If set too low, gray (or similar dark colors) will appear as black making color identification difficult. If set too high, black will appear as gray making color identification difficult
Hue	Also known as tint, adjusts the tone of artifacts that have color. As the value increases, green, blue, and red levels are increased adding tint to the image.
Saturation	Known as color on displays and TVs, adjusts the intensity of color within the image. If set too high, the color will bloom causing artifacts to appear blurry. If set too low, the color will fade causing images to appear washed out.
Default	Resets Brightness, Contrast, Hue, and Saturation to the default value of 50.
Resolution	Available Resolutions (High to Low Quality): ***NOTE: Changing display resolution will force the NVR to reboot*** • **1920x1080** • **1280x720** • **1280x1024** • **1024x726** • **Auto (selects highest resolution supported by the connected display, if EDID detected)**

15- Specifications

Video	
Multi Operation	Hexaplex - Simultaneous Live View, Record, Playback, Control Systems Control, Remote Access, Backup
Display Channel	4Ch
Support Ip Cam Resolution	Up to 1080P (2 MP)
Display Frame Rate	Up to 30 FPS @ NTSC per CH
Split Windows	1, 4
Video Output Resolution	VGA HDMI 1024x768 1024x768 1280x720 1280x720 1280x1024 1280x1024 1920x1080 1920x1080 AUTO AUTO

Recording	
Video Compression Format	H.264
Recording Rate	Up to 30 FPS @ NTSC all CHs
Max Bitrate	Up to 8 Mbps PER CH / 32 Mbps TOTAL
Recording Mode	Manual / Schedule / Alarm

Playback & Search	
Time Search	Yes
Event Search	Yes

OSD & Control Interface	
On Screen Display & Setup	Time / Date / Setup Menu
Local Graphic User Interface (GUI) Control	Yes
Mouse Control	Yes
IE Browser Control	Yes

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Video Backup Playback Viewer	Yes

Storage & Backup Device	
Internal HDD Support	SATA HDD x 2 / (1) 1TB HDD preinstalled
External USB Backup Device	Yes

Network	
Ethernet	Yes (10/1000M/1000M)
Web	Internet Explorer 6.0 or above
DDNS	Yes (wirepathdns.com with geo-redundant USA servers)
FTP	Yes
E-Mail	Yes
Network IP	Static/ Dynamic/ PPPoE
Multi-Remote Client	Yes (4 Clients Simutaneously)

Alarm	
Motion Detection	Yes
Video Loss Detection	Yes
Pre/Post Alarm	Yes
Alarm Activated Recording	Yes

Setup & Functions	
Daylight Saving Time	Yes
Privacy Mask	Yes
PTZ Control	Yes
Digital Zoom	Yes
Password Control	Yes
Key-Lock	Yes
Multi-Language	Yes

Audio	
Audio Output	3.5mm x 1
Audio Input	3.5mm x 1
Audio Backup	Yes
Audio Streaming	Yes

Others	
Accessories	Remote (with battery) x 1 Adapter(With Power Cord) x 1 Mouse x 1 CD x 1 Quick Start Guide x 1 HDD Mounting Hardware
Power Input	12V DC 4.16A
Consumption	6.36W (w/o HDD)
Dimensions	5.69"(L)* 4.53" (W) * 6.99(H)
Weight	4.85 lbs (w/1TB HDD*1)
Operation Temperature	32° - 113° F

External Power Supply(included)	
External Power Supply	12VDC 4.16A
Operating Voltage	100-240VAC 1.6A 50-60Hz
Consumption	80W Max.(with 4 HDDs)
Operating Temperature	32 - 113 F
Ratings / Certifications	UL FCC CE
Dimensions	L: 4.30in. W: 2.45in. H: 1.25in. (power supply only)

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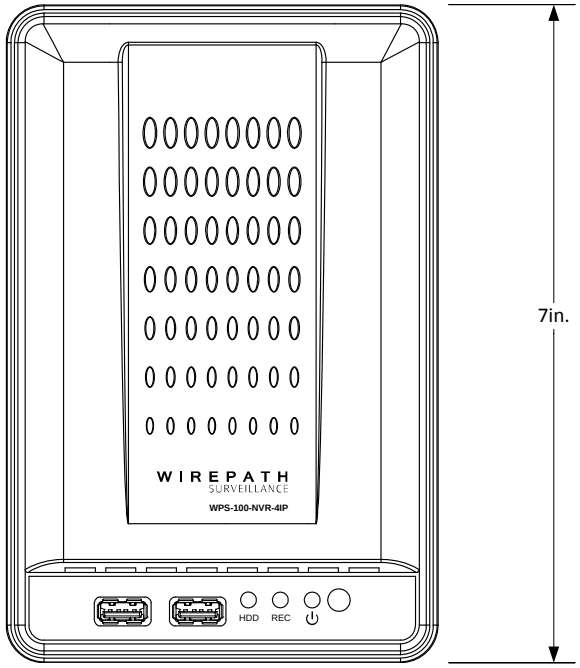
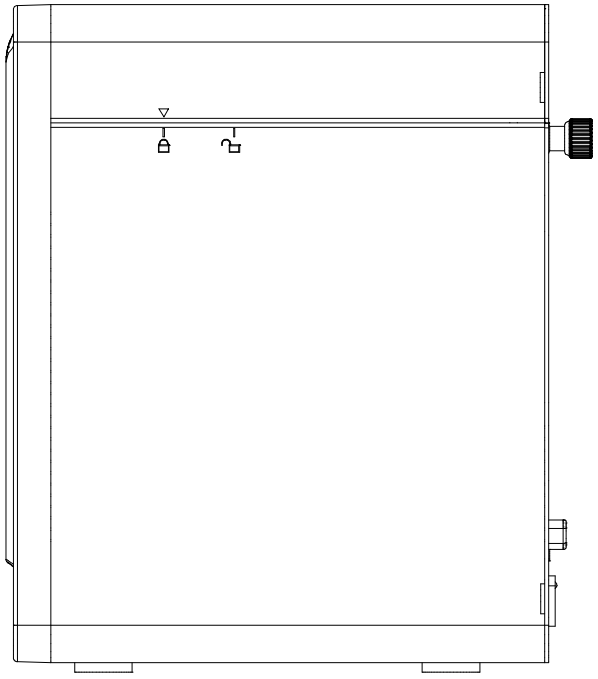
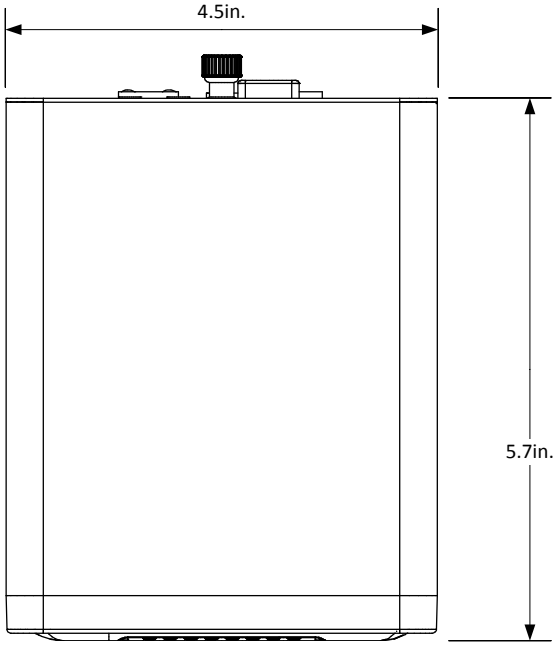
16- Dimensions







17- Warranty

3-Year Limited Warranty
This Encoder has a 3-Year Limited Warranty. The warranty includes parts and labor repairs on all components found to be defective in material or workmanship under normal conditions of use. This warranty shall not apply to products which have been abused, modified, disassembled or improperly installed. Products to be repaired under this warranty must be returned to Wirepath™ Surveillance or a designated service center with prior notification and an assigned return authorization number (RA).

18- Contacting Technical Support

Phone: (866) 838-5052
Email: Techsupport@snapav.com

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19- Technical Information Glossary

19.1- RTSP (Real Time Streaming Protocol)

RTSP, or Real Time Streaming Protocol, is a network protocol designed to allow media devices to stream content over Ethernet to devices on the same network or even to devices over the Internet. Instead of using a separate server or video recorder to control the video feed to remote devices, using RTSP in our IP cameras allows the direct control of the stream from within the camera. This technology enables Wirepath™ products to stream video to devices even if they can't support any of our remote viewing apps.

19.2- HTTP vs. HTTPS

HTTP, or HyperText Transfer Protocol, is the set of rules computers follow to send and receive data when they access servers over the Internet. Almost all communication between your Internet browser and a web server you access is being sent on this protocol. By default, HTTP communication happens through port 80. HTTP is not a secure form of communication, meaning that other people or computers could be overhearing the messages sent over this protocol. Usually this is fine since information sent over HTTP is very routine requests and replies to allow your browser to load websites. If you are sending private information, like credit card info or passwords, an HTTP is not a safe way to send or receive it.

HTTPS, known as Secure HyperText Transfer Protocol, is typically used for passing any data over the Internet that must remain confidential. It is very similar in most respects to standard HTTP. However, whereas HTTP can be viewed by anyone at any time with the right knowledge, HTTPS connections go through an extra validation process and then open a private "tunnel" using encryption so that only the sending and receiving computer can read the data. Most HTTPS connections use "SSL" or "TLS" type encryption to establish an encryption key that are handed to the computers at each end of a transmission, but not the ones in the middle. HTTPS connections typically use port 443. HTTPS is typically a little slower than HTTP, but the payoff is security.

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