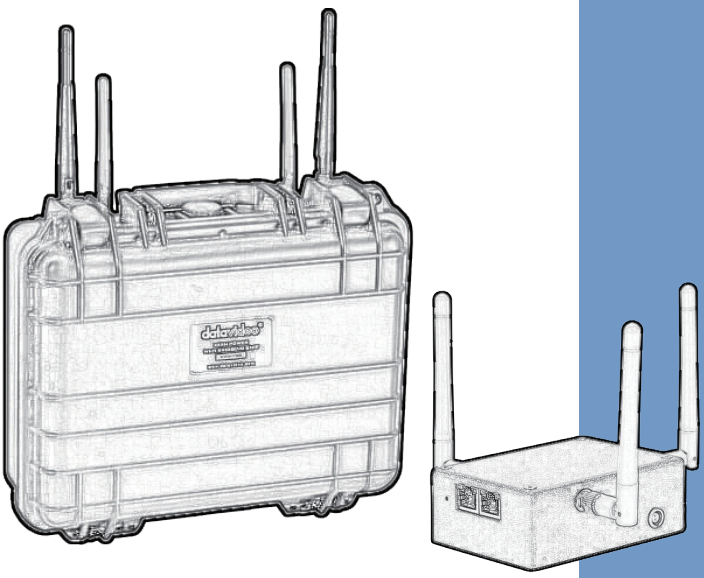
datavideo



LONG RANGE WIRELESS DISTRIBUTION

NVW-150/NVW-250

Instruction manual

www.datavideo.com

Contents

Packing List

NVW-150

Description	QTY
NVW-150 main unit	1
Ethernet cable	1
¼ hot shoe mount	1
International mains PSU	1
Instruction manual	1
3 dBi antenna	2

NVW-250

Description	QTY
NVW-250 main unit	1
Ethernet cable	1
Instruction Manual	1
5 dBi antenna	4

FCC NOTICE

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Connect the computer to an outlet on a circuit different from that to which the receiver is connected.
- Increase the separation between the computer and receiver.
- Consult the dealer or an experienced RF technician for help.

Caution: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

FCC Compliance Statement: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference, and
This device must accept any interference received, including interference that may cause undesired operation.

RF Exposure warning

The equipment complies with FCC RF exposure limits set forth for an uncontrolled environment. The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

ICES 003 Statement

This Class B digital apparatus complies with Canadian ICES-003.

Operation Modes

Bridge operating mode is selected by default. In this mode the device will act as a transparent bridge and will operate at Layer 2. There will be no network segmentation and the broadcast domain will be the same. Bridge mode will not block any broadcast or multicast traffic. Additional Firewall settings can be configured for Layer 2 packet filtering and access control. In bridge mode the device forwards all the network management and data packets from one network interface to the other without any intelligent routing. For simple applications this provides an efficient and fully transparent network solution. WLAN (wireless) and LAN (Ethernet) interfaces belong to the same network segment which has the same IP address space. The devices IP address is for management purposes only.

Router operating mode can be configured in order to operate at Layer 3 to perform routing and enable network segmentation, clients will be on a different IP subnet. Router mode will block broadcasts and is not transparent.

The device supports Multicast packet pass-through when in Router mode. The router can use the Network Address Translation (Masquerading) feature, NAT will act as the firewall between the LAN and WLAN networks. Additional Firewall settings can be configured for Layer 3 packet filtering and access control when in Router mode.

Access Point WDS Mode

This is mode is generally used for point-to-point or point-to-multi-point connections between NVW units. A unit in Access Point WDS mode should be used in conjunction other units in Station WDS

mode in order to build the point to point and multi-point connections. This is the most commonly used mode to connect two units, by using the WDS (Wireless Distribution System) protocol both devices are connected transparently just like having an Ethernet cable between them.

Station WDS Mode

A device in Station WDS mode must be connected to another unit configured in Access Point WDS mode. This is the most commonly used mode to connect two units, by using the WDS (Wireless Distribution System) protocol both devices are connected transparently just like having an Ethernet cable between them.

One unit is setup as Access Point WDS and the other as Station WDS (Transparent Client).	One unit is setup as Access Point WDS and several other devices as Station WDS (Transparent Clients).

Repeater WDS Mode

Repeater WDS Mode is used to extend the wireless range and coverage of the wireless network between units.

In Repeater mode, the unit acts as a relay by regenerating the signals it receives and retransmitting them to main network infrastructure.

Note: Repeater WDS requires another unit setup in Access Point WDS mode in order to work.

Station Mode

In **Station** mode the device acts as a wireless client.

Use this mode to connect the NVW unit to any standard access point or wireless router. When connected to an access point the wired

network ports are bridged to the wireless network. This mode translates all the packets that pass through device to its own MAC address, thus resulting in a lack of transparency.

Note: We cannot guarantee compatibility with all access points/routers.

Access Point Mode

The Access Point Mode is the default mode of the device. In this mode the unit simply bridges the wireless clients to other wired and wireless network infrastructure.

Router Mode

In Router Mode, the device operates as a router.

Either the wireless or Ethernet can be setup as the WAN connection.

Wireless as WAN is known as **Station + Router mode** (or **Wireless Routing Client** mode) or Ethernet as WAN is known as **AP + Router mode (**or **Gateway** mode). This device supports several types of broadband connections Static IP, Dynamic IP and PPPoE.

Quick Setup (Pairing multiple NVW Units)

By default the NVW-150 and NVW-250 units are configured ready to pair with each other, we simply need to specify which unit will be the access point and which unit(s) will be the station(s). Use this mode to create a long distance link between the two or more NVW units and then connect your devices at each end.

Configuration Walkthrough

One the first NVW-150 or NVW-250 Unit

1. Assign your computer a static IP address in the 192.168.168.X range (192.168.168.254 for example) and connect to the units Ethernet port.
2. Open a web browser (For example Google Chrome, Internet Explorer) and navigate to **192.168.168.1**.
3. Log-in to the web interface with the username **admin** and password **password.**
4. Select **BASIC WIRELESS** then **RADIO 1.**
5. Set the **Wireless Mode** to **Access point WDS.**.
6. **Optional:** Uncheck the **No Country Set** box and select your country of residence from the drop down menu. Please Note: Some countries have DFS (Dynamic Frequency Selection) characteristics enforced by regulations, this may cause a delay of 2 to 10 minutes for both devices to finish scanning and establish a connection.
7. Click **Apply Settings** and then save the changes.
8. **Optional:** If you do not intend to manually assign all connected devices IP addresses you may want to enable the devices DHCP server, this will automatically issue an IP address to any device connected to both NVW units (this only needs to be enabled on the device in **Access Point WDS** mode. To enable the DHCP server select **BASIC NETWORK** and set **DHCP Mode** to **DHCP Server.**
9. The first unit is now configured as the access point, additional units should be configured as stations.
10. The next steps are **optional** and apply to NVW-250 units only.

By default the NVW-250s secondary radio is configured as a 2.4Ghz local access point without any security, to change this configuration:

11. Select **BASIC WIRELESS** then **RADIO 2.**
12. **Optional:** Uncheck the **No Country Set** box and select your country of residence from the drop down menu. Please Note: Some countries have DFS (Dynamic Frequency Selection) characteristics enforced by regulations, this may cause a delay of 2 to 10 minutes for both devices to finish scanning and establish a connection.
13. Select either **NA** (5Ghz 802.11a/n) or **NG** (2.4Ghz 802.11g/n) for the **Wireless Profile** field. We recommend using **NG** for the local access point for increased device compatibility.
14. Finally you can configure wireless security for the local access point. To enable security select the **WPA2** option from the **Security** drop down menu and then enter your password of choice into the **WPA Preshared Key** field.
15. Click **Apply Settings** and then save the changes.

One the second NVW-150 or NVW-250 Unit

1. Connect your computer to the second units Ethernet port.
2. Open a web browser (For example Google Chrome, Internet Explorer) and navigate to **192.168.168.1.**
3. Log-in to the web interface with the username **admin** and password **password.**
4. Select **BASIC Network** and change the **IP Address** fields value to **192.168.168.2.**, you should increment the IP address for each additional unit you connect for example the unit after this should be assigned 192.168.168.3.

5. Click **Apply Settings** and then save the changes.
6. The second unit can now be accessed at **192.168.168.2** and the first at **192.168.168.1**. This means that when both units are connected you can access and configure each unit from either end of the link.
7. Open your web browser again and navigate to **192.168.168.2**, Log-In again if required.
8. Select **BASIC WIRELESS** then **RADIO 1.**
9. Set the **Wireless Mode** to **Station WDS.**
10. **Optional:** Uncheck the **No Country Set** box and select your country of residence from the drop down menu. Please Note: Some countries have DFS (Dynamic Frequency Selection) characteristics enforced by regulations, this may cause a delay of 2 to 10 minutes for both devices to finish scanning and establish a connection.
11. Click **Apply Settings** and then save the changes.
12. Both units are now configured and should pair after a short period.
13. **Optional:** You can configure the secondary radio as you did for the first unit.

Quick Setup (Use a single NVW unit as a WiFi access point)

Use this mode to connect simple wirelessly to your otherwise wired equipment, for example connecting a laptop or iPad to a NVS-20 encoder.

Configuration Walkthrough

1. Assign your computer a static IP address in the 192.168.168.X range (192.168.168.254 for example) and connect to the units Ethernet port.
2. Open a web browser (For example Google Chrome, Internet Explorer) and navigate to **192.168.168.1**.
3. Log-in to the web interface with the username **admin** and password **password.**
4. Select **BASIC WIRELESS** then **RADIO 1.**
5. Uncheck the **Hide SSID** box to make the wireless network visible.
6. **Optional:** Uncheck the **No Country Set** box and select your country of residence from the drop down menu. Please Note: Some countries have DFS (Dynamic Frequency Selection) characteristics enforced by regulations, this may cause a delay of 2 to 10 minutes for both devices to finish scanning and establish a connection.
7. Click **Apply Settings** and then save the changes.
8. **Optional:** If you do not intend to manually assign all connected devices IP addresses you may want to enable the devices DHCP server, this will automatically issue an IP address to any device connected to both NVW units (this

only needs to be enabled on the device in **Access Point WDS** mode. To enable the DHCP server select **BASIC NETWORK** and set **DHCP Mode** to **DHCP Server.**

9. Finally you can configure wireless security for the local access point. To enable security select the **WPA2** option from the **Security** drop down menu and then enter your password of choice into the **WPA Preshared Key** field.
10. This unit is now configured as the access point, your devices can connect the wireless network named **Bridge-R1.**
11. The next steps are **optional** and apply to NVW-250 units only. By default the NVW-250s secondary radio is configured as a 2.4Ghz local access point without any security, to change this configuration:
12. Select **BASIC WIRELESS** then **RADIO 2.**
13. **Optional:** Uncheck the **No Country Set** box and select your country of residence from the drop down menu. Please Note: Some countries have DFS (Dynamic Frequency Selection) characteristics enforced by regulations, this may cause a delay of 2 to 10 minutes for both devices to finish scanning and establish a connection.
14. Select either **NA** (5Ghz 802.11a/n) or **NG** (2.4Ghz 802.11g/n) for the **Wireless Profile** field. We recommend using **NG** for the local access point for increased device compatibility.
15. Finally you can configure wireless security for the local access point. To enable security select the **WPA2** option from the **Security** drop down menu and then enter your password of choice into the **WPA Preshared Key** field.
16. Click **Apply Settings** and then save the changes.

Hardware Configuration & Considerations

This section will show you how to install the hardware of the NVW-150 / NVW-250 unit and its optional accessories.

Antenna Selection

It is important to remember that antennas create gain by focusing or directing signals, this means that for an antenna to provide increased gain it will be focusing the signal in one direction so we must loose signal in another direction.

A 0dBi Omni-directional antenna creates a perfect spherical response meaning that the signal is spread equally in all directions (360 degree vertical and horizontal planes). A standard 3dBi Omni-directional antenna creates a doughnut shaped response, we have gained signal from the side of the antenna at the cost of losing it above the antenna (narrower vertical plane). This effect is increased when we move to say an 8dBi Omni-directional antenna, we now have a thin disc shaped response (even narrower vertical beam width) making it more important that both antennas are on the same level ground or angled appropriately.

With directional antennas such as a 19dBi panel we narrow both the vertical and horizontal planes to create a highly directional beam.

As standard the NVW-250 is fitted with 5dBi Omni directional antennas for the high power backhaul radio and the secondary radio, the NVW-150 is fitted with 3dBi antennas. These antennas provide a wide (almost spherical) signal spread so are ideal for cases when the secondary radio is to be used as a local access point and the primary radio is used to link two NVW units over moderate distances without

accurate alignment, or in cases where the NVW units will be moving. For longer range deployments we offer two optional antennas;

19 dBi Dual Polarised Panel Antenna

This directional antenna is ideal for linking two NVW-250 units (Point to point) over longer distances, its 25 degree horizontal beam width and dual polarisation (horizontal and vertical) greatly simplify alignment and allow dual stream data rates to be used increasing throughput. When used in conjunction with the standard 5dBi antennas on the secondary radio of the NVW-250 (used as an access point) this combination allows very long range links while still allowing client devices to roam freely within the local access points range.

8 dBi Omni-Directional Antenna

This Omni-directional antenna is ideal for linking two or more (Point to Multipoint) NVW-150 / NVW-250 units over longer distances. Its 360 degree horizontal beam width allows the unit in Access Point WDS mode to be located in a central location and have many more units in station WDS mode located around it. This antenna is also ideal for situations where the units may be moving but will stay on the same ground level.

Antennas and WiFi Power Limits

It is important to ensure that you obey local regulations relating to the permitted transmit power of WiFi devices. In the later sections of this manual you will see that by selecting your country of residence the device will automatically ensure it is using only permitted frequencies and a legal transmit power, however this is only the

transmit power at the antenna port you may need to further decrease the transmit power to stay within regulatory limits depending on the antennas used.

The limits for the UK are:

5Ghz Band B (5470-5725MHz) - License free use up to 1000mw 30dBm (EIRP)

2.4Ghz (2.412GHz ~ 2.472GHz) – License free use up to 100mw 20dBm (EIRP)

The EIRP power (Equivalent isotropically radiated power) is the combined emitted power of the radio and the gain of the antenna.

For example for 5Ghz if the device has a transmit power of 20dBm basic theory tells us you can use an antenna no stronger than 10dBi gain (20 +1 0 = 30dBm EIRP). In reverse if you have a 19 dBi panel antenna the devices transmit power must be restricted to approximately 11 dBm (19 + 11= 30dBm EIRP). However in reality you are allowed to take the loss from the cables and connectors into account, our **wireless link calculator (Available to download)** will help you to make these calculations.

Aggregate Power (MIMO)

The above examples assume only one transmit chain (antenna), when transmitting with multiple chains we must take the aggregate transmit power into consideration (See data sheet for aggregate power values). The aggregate transmit power only needs to be considered when using 802.11N data rates that use multiple streams

(MCS8 to MCS15) legacy 802.11a data rates and single stream 802.11n rates (MCS0 to MCS7) will only transmit/receive using one chain at a time.

Please note however that these single stream rates will still take advantage of the devices multiple antennas by using switched diversity (the device selects one of the antennas to transmit and receive on depending on signal strength). Switched diversity is particularly useful for scenarios when the NVW units will be moving at an angle that would severely alter the polarity of a single antenna (multiple antennas can be angled differently to cover the change between horizontal and vertical polarity). See the antenna alignment section for further information on polarity.

Antenna Ports

The NVW-150 product features two antenna ports both connected to one high power 5Ghz backhaul radio (these ports are labeled left and right in the software). The NVW-250 features four antenna ports, the inner two ports are connected to the high power backhaul radio and the outer two to the dual band secondary radio (these ports are labeled left and right in the software).

Power Input

The NVW-250 can be powered from industry standard v-lock batteries or powered over Ethernet* (Passive PoE 24V-48V, 802.3af PoE 48V-56V).

The NVW-150 can be powered from any DC 5- 20V DC Source (2 pin Lemo Pin 1 V-, Pin 2 V+, Pin 1 is closest to the red spot) or powered over Ethernet* (Passive PoE 9-24V).

Please Note: When the NVW-250 unit is powered via POE the internal power switch must be in the OFF position for the unit to function, the power output cannot be used in conjunction with POE.

***PoE Kit Sold Separately**

Power Output

When running from battery the NVW-250 also offers a power output port for powering external devices. The power output provides a regulated 12V 5A feed. The power output socket uses industry standard 4 pin XLR connectors (Pin 1 GND, Pin4 V+)

An optional power output cable is available offering XLR to 2 pin Lemo, 3.1 and 2.1mm barrel connectors.

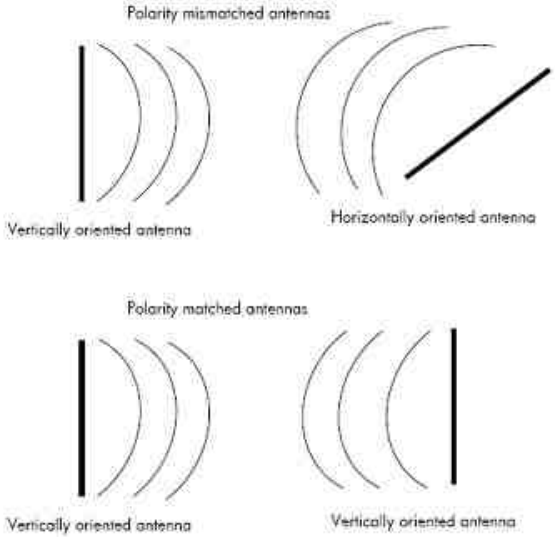
Antenna Alignment

The antenna alignment must be considered to ensure that the signal is strong. Remember that the height of the antennas above the nearest obstacle is critical and increases with longer distance links (As a general rule you should get the antennas as high as possible).

To gain a better understanding of the antenna height required for a given distance please use our **Wireless Link Calculator (Available to download).**

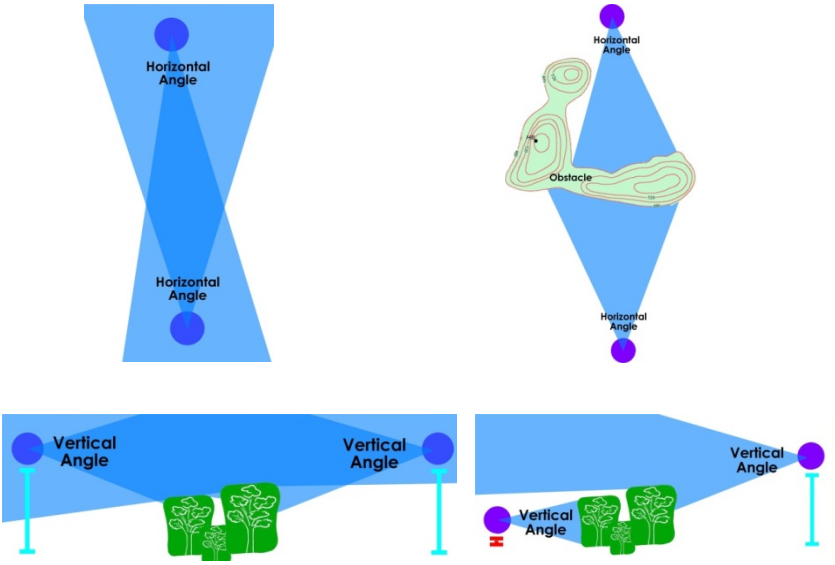
If using the devices supplied Omni directional antennas alignment is not so critical due to their wide signal spread however you should make sure that both units antennas are angled the same (to avoid a polarity mismatch). If an antenna is angled on one NVW unit it should also be angled on the other.

Sometimes angling the antennas slightly will help throughput when using multi stream data rates by separating the two signal paths. Likewise when using a single stream data rates multiple antennas can be angled differently to cover the change between horizontal and vertical polarity and help reliability (the unit will monitor all antennas and send/receive on the one with the best signal). See the 'Aggregate Power (MIMO)' section on the previous page for more information.



When using our optional directional panel the antenna radiates towards the front of the unit. The unit should be installed in a position whereby the front of the unit faces the direction you wish to send the signal to (the receiving antenna). To make alignment easier both units can be connected when at close range allowing the LED

signal indictors to be used when aligning over a larger distance (Only devices in station or station WDS mode will display signal strength). Our panel antenna is dual polarized, this means it contains two antennas one is vertical and the other horizontal and allows two data streams to be sent over great distances without interference between the streams (because of the horizontal and vertical mismatch)



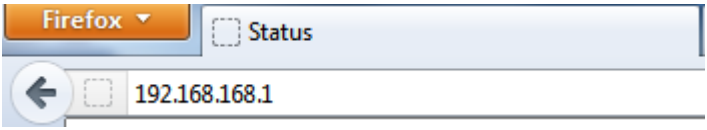
Info

When the antennas are at the same height, it is quite simple to align the antennas. However, when the antennas are at different heights, greater care has to be taken.

Advanced Configuration

The unit is configurable through any standard web browser. After connecting your computer to the units Ethernet port using the supplied RJ45 patch lead you need to assign an IP address to your computer so that it is in the same subnet as the NVW unit. The units default IP address is 192.168.168.1 so you must assign an address within the 192.168.168.x range (192.168.168.2 to 192.168.168.254).

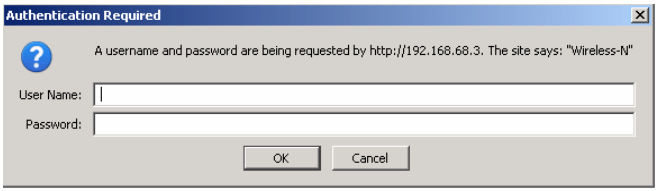
1. Launch your Web browser (Internet Explorer, Firefox, Chrome etc.)
2. At the **Address** bar type in http://192.168.168.1 and press **Enter** on your keyboard.



3. At the login prompt, enter the User Name and Password.

User Name: admin

Password: password



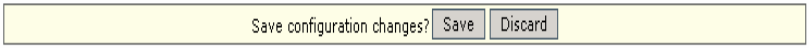
Web Interface Navigation

Main Menu Bar

How to save changes

After you make changes from each respective setup page click the **Apply Settings** button.

Next the prompt below will appear. You are asked to confirm if you want to save the changes permanently to the devices flash.



Clicking Save will write all configuration changes to flash. Clicking Discard will discard all current changes.

Basic Wireless

Select **RADIO 1** to configure the high power backhaul radio or **RADIO2** to configure the dual band secondary radio (NVW-250 only).

Enable the radio

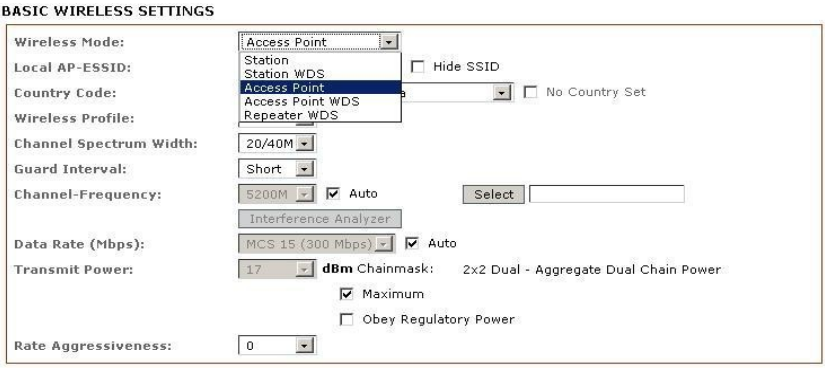
Check/Uncheck the checkbox to enable/disable the radio.

Basic Wireless Settings

All the basic wireless settings can be configured in this page. Operators can change the ESSID, regulatory country code, wireless profile, channel spectrum width, frequency, data rates, transmit power and rate aggressiveness.

Wireless Mode

There are 5 modes available.



Access Point

The Access Point Mode is the default mode of the device. In this mode the unit simply bridges the wireless clients to other wired and wireless network infrastructure. Devices in Station mode can connect to a device in Access Point mode.

Station:

This is a client mode that can be connected to a device in Access Point mode (or any other wireless access point/router). It is used to bridge the wireless connection to an Access Point, this mode forwards all the traffic to/from the network devices attached to the Ethernet interfaces. This mode translates all the packets that pass through to its own MAC address, thus resulting in a lack of transparency.

Access Point WDS (Recommended)

WDS is the acronym of Wireless Distribution System. This mode can be connected to another device in Station WDS mode. Using WDS protocol, it allows a client or station device to bridge wireless traffic transparently. This is the most commonly used mode to connect two NVW devices.

Station WDS: (Recommended)

WDS is the acronym of Wireless Distribution System. This mode can connect to a device in Access Point WDS mode. It enables packet forwarding at layer 2 level and unlike Station mode, it is fully transparent. This is the most commonly used mode to connect two NVW devices.

Note: The WDS protocol used is not defined as a standard, thus compatibility issues between equipment from different vendors may arise.

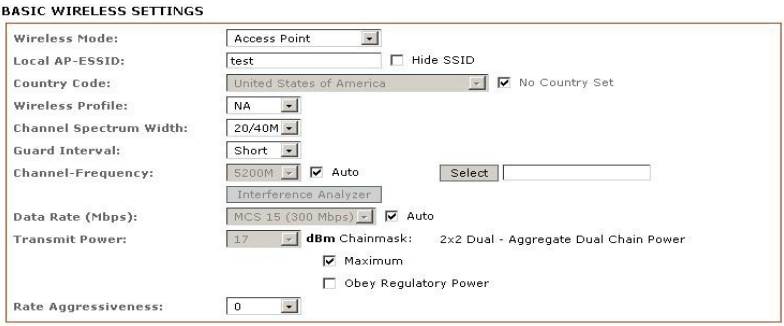
Repeater WDS

This mode consists of a device in Station WDS mode and a device in Access Point WDS mode. The Repeater WDS must first link up with a

device in Access Point WDS mode, then it can link up with a device in Station WDS modes. It acts as an extension to the link, more Repeaters can be added as necessary.

Note : The ESSID must be the same for the Remote AP and the Local AP. The channels used by the Repeater to link to another Repeater will follow the selected channel on the device in Access Point WDS mode.

Access Point Parameters Settings



Local AP-ESSID

This is the Service Set Identifier used to identify this units wireless LAN. It should be specified while operating in Access Point or Access Point WDS mode.

All the client devices within its range will receive broadcast messages from the access point advertising this SSID.

Hide SSID*:*

Once checked, this will disable advertising of the SSID of the

access point . This option is only available in Access Point, Access Point WDS and Repeater WDS mode only.

Country Code

Different countries have different power levels and also frequency selections. To ensure the devices operation follows regulatory compliance rules, the operator should make sure that correct country code where device will be used is selected. The channel list, output power limits, IEEE 802.11 and Channel Spectrum Width modes will be tuned according to the regulations of the selected country.

No Country Set*:*

Option when checked, only the frequency ranges are available.

802.11n 2.4GHz - 2412-2462MHz, **802.11n 5GHz -** 5180-5320MHz and 5745-5825MHz.

Wireless Profile:

NA is 11n 5GHz band and represents a mix of 802.11n and 802.11a modes.

NG is 11n 2.4GHz band and represents a mix of 802.11n, 802.11g and 802.11b modes.

Channel Spectrum Width

20M represents the data transmitted at a bandwidth of 20MHz. 20/40MHz represents the data transmitted at either 20MHz or 40MHz. In very noisy environments the NVW unit will automatically

fall back to 20MHz to be more resilient to the interference. In a situation when auto fall back does not happen, manually changing the channel spectrum width to 20MHz will to help reduce interference on the link and improve performance. 10Mhz and 5Mhz widths can also be used to further reduce interference and improve range, please note however that a 10Mhz width will provide approximately ¼ the throughout at 20Mhz and a 5Mhz width will provide approximately ¼ the performance. (Only supported between other units with 10/5Mhz support, all connected units must be configured with the same channel width)

Note: 40MHz bandwidth is non-standard for 802.11n/g mode, if you experience unstable performance change the channel width to 20Mhz.

Guard Interval : Guard band between packets. For long distance connections, select Long for improved performance over longer ranges.

Channel – Frequency

This is the frequency you can set for device to operate within. The frequency range available depends on the country domain you select in Country Code. For 5GHz frequency ranges some have DFS characteristics earmarked by regulations. Selecting one of these frequencies for operation may affect and delay of 2 minutes or more (possibly up to 10 minutes in some situations) for device to attempt to establish a connection.

Auto*:* When checked, during startup the device will automatically select the least interfering channel (or frequency) for operation.

Data Rate

Data Rates consist of both the legacy rates and the MCS (Modulation Coding Scheme – Only for 802.11n) rates.

6 – 54Mbps are Legacy 802.11a rates

MCS0 to MCS7 are 802.11n rates, which uses only 1 stream.

MCS8 to MCS15 are 802.11n rates, which uses 2 streams.

Auto*:* When enabled the data rate will be selected based on an advanced rate algorithm that takes into consideration the amount of errors at the data rate and fine tune to the best data rate it can use.

The data rate has a critical impact on performance as generally lower data rates are more immune to noise while higher rates are less immune, but are capable of higher throughput.

Transmit Power

The maximum transmit power displayed is determined by the country code and the selected radios maximum transmit power.

Note: When the operator changes the channel, if this new frequency has a higher permitted power output the power previously selected will remain unchanged. You need to readjust the power level to in order to take advantage of the higher output power available.

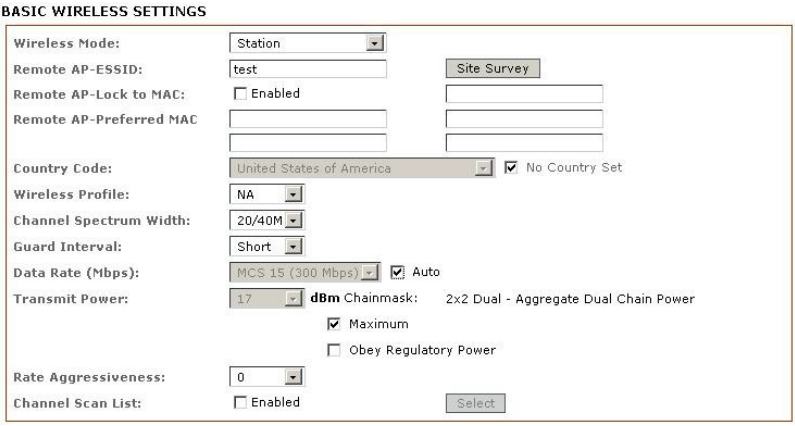
Maximum : checking this box will result in maximum TX output power overriding regulation.

Obey Regulatory Power : checking this box will obey TX output regulatory power by country.

Rate Aggressiveness

Allows user to reduce or increase the aggressiveness of the fully automatic algorithm. There are 2 scenarios that Rate Aggressiveness is useful. In a noisy environment lowering the aggressiveness will ensure better stability, choose from -3,-2,-1. The environment might be free of interference but the fully automatic algorithm might not select a high enough data rate, increasing the aggressiveness will increase the transmit rate and achieve a higher throughput, choose from +3, +2, and +1.

Station Parameters Settings



The options below are only available in **Station, Station WDS** and **Repeater WDS** modes unless otherwise stated.

Wireless Mode: Station

Remote AP-ESSID

This is the Service Set Identifier used by station to seek and connect to the access point of same the SSID.

Site Survey

Site Survey will search for available wireless networks in range on all the supported channels and will allow you to select one for association. In case the selected network uses encryption, you'll need to set security parameters in the wireless security section. Click Scan to re-scan the Access Points in range. Select the Access Point from the list and click close this window. The site Survey channel scan list can be modified using the Channel Scan List control.

Remote AP – Lock to MAC

Enter the MAC address of the remote access point the device is connected to. This option will make device only connect to this access point.

Remote AP - Preferred MAC

Enter the MAC address of the preferred access point you want the device to connect to when it first starts up. Up to 4 MAC addresses can be entered. Priority is from top to bottom. In the event all preferred MAC addresses are not available the device will then pick the matching SSID access point with the strongest signal.

Country Code

Different countries have different power levels and also frequency selections. To ensure the devices operation follows regulatory compliance rules, the operator should make sure that correct country code where device will be used is selected. The channel list, output power limits, IEEE 802.11 and Channel Spectrum Width modes will be tuned according to the regulations of the selected country.

No Country Set*:*

Option when checked; only these frequency ranges are available.

11n 2.4GHz is 2412-2462MHz, 11n 5GHz is 5180-5320MHz and 5745-5825MHz.

Wireless Profile:

NA is 11n 5GHz band and represents a mixed of 802.11n and 802.11a modes.

NG is 11n 2.4GHz band and represents a mixed of 802.11n, 802.11g and 802.11b modes.

Channel Spectrum Width

20M represents the data transmitted at a bandwidth of 20MHz. 20/40MHz represents the data transmitted at either 20MHz or 40MHz. In very noisy environments the unit will automatically fall back to 20MHz to be more resilient to the interference. In a situation when auto fall back does not happen, manually changing the channel

spectrum width to 20MHz will help to reduce interference on the link and improve performance. 10Mhz and 5Mhz widths can also be used to further reduce interference and improve range. Please note however that a 10Mhz width will provide approximately ¼ the throughout at 20Mhz and a 5Mhz width will provide approximately ¼ the performance. (Only supported between other units with 10/5Mhz support, all connected units must be configured with the same channel width)

Note: 40MHz bandwidth is non-standard for 802.11n/g mode, if you experience unstable performance change the channel width to 20Mhz.

Maximum: checking this box will result in maximum TX output power overriding regulation.

Obey Regulatory Power: checking this box will obey TX output regulatory power by country.

Channel Scan List

Check to enable Channel Scan List. Users can then mark and select

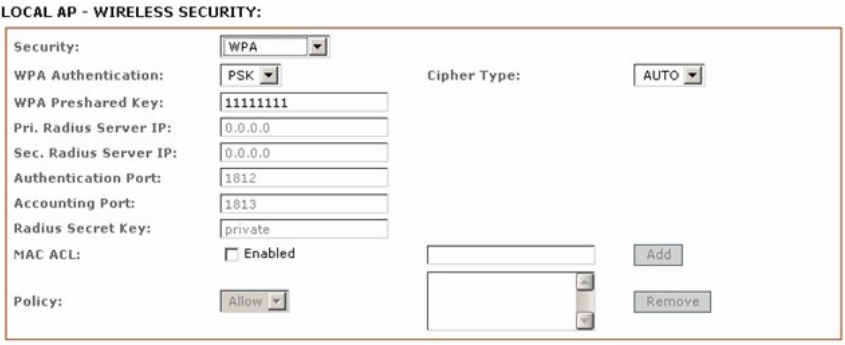
only frequencies they want the device to scan, this will increase scan speed. However, ensure the frequencies selected are available at the access point end.

Wireless Security

All the wireless security settings are set under this section.

The operation of the keys is the same for ALL the Wireless modes.

WPA or WPA2 Authentication



WPAPSK

PSK (Default): WPA or WPA2 with Pre-shared Key.

Cipher Type

TKIP: Temporal Key Integrity Protocol which uses RC4 encryption algorithm.

AES: Advanced Encryption Standard (AES) algorithm.

AUTO: Automatically select between both algorithms.

Preshared Key

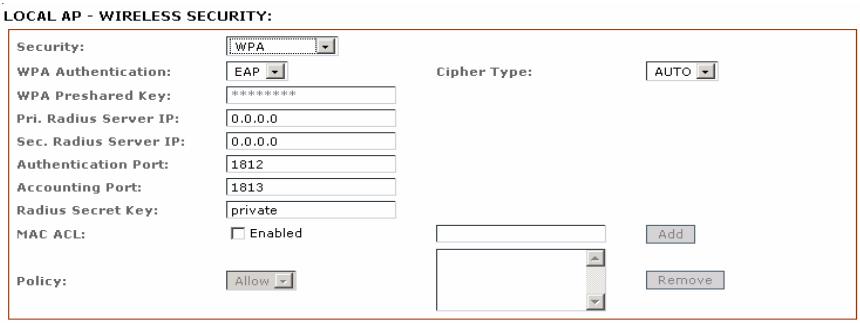
This option is available when **WPA** or **WPA2**, with **PSK** selected.

The pre-shared key is an alpha-numeric password between 8 and 63 characters long.

Important:

802.11n networks using WPA authentication should use the AES cipher type. Using the TKIP cipher type will limit maximum transmission speed to 54Mbps.

WPA + EAP



EAP – WPA or WPA2 with EAP (Extensible Authentication Protocol)

Firmware supported options for clients are: EAP-TTLS, and EAP-PEAP

Cipher Type

TKIP - Temporal Key Integrity Protocol which uses RC4 encryption algorithm.

AES - Advanced Encryption Standard (AES) algorithm.

AUTO (Default) – Automatically select between both algorithms.

Primary Radius Server IP

Enter the Primary Radius Server IP address.

Secondary Radius Server IP

Enter the Secondary Radius Server IP address.

Authentication Port

Enter the Authentication Port number of the Radius Server. Default is 1812.

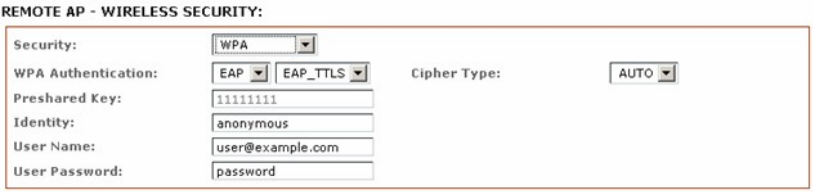
Accounting Port

Enter the Accounting Port number of the Radius Server. Default is 1813.

Radius Secret Key

Enter the Secret Key of the Radius Server. The device uses this to authenticate itself to the **Radius Server**.

WPA EAP-TTLS and WPA EAP-PEAP



This applies to the following modes only, (when **WPA** or **WPA2**, with **EAP** is selected).

Station, Station WDS, Repeater WDS mode.

Identity

Identification credential used by the wpa-supplicant for EAP authentication.

User Name:

Identification credential used by the wpa-supplicant for EAP tunneled authentication in unencrypted form.

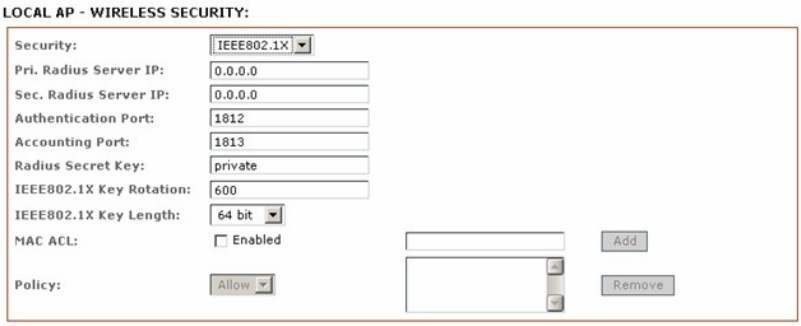
User Password:

Password credential used by the wpa-supplicant for EAP authentication

IEEE802.1x Settings

The operation of the Keys is the same for ALL the modes.

Note: Operating with IEEE802.1x security will limit the devices maximum wireless link speed 54Mbps.



These options apply to the following modes only, (when WPA EAP or IEEE802.1x).

Access Point, Access Point WDS, Repeater WDS modes.

Primary Radius Server IP

Enter the Primary Radius Server IP that Access Point will use to query server.

Secondary Radius Server IP

Enter the Secondary Radius Server IP that Access Point will use to query the server.

Authentication Port

Enter the Radius Server Authentication Port number to use. Default is 1812

Accounting Port

Enter Radius server Accounting Port to use. Default is 1813.

Radius Secret Key

Enter Radius server Secret Key that Access Point to use to

authenticate itself with radius server.

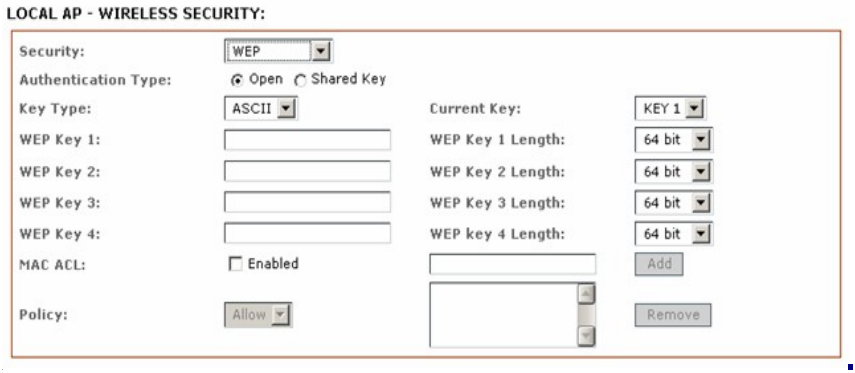
IEEE802.1x Key Rotation

Enter the time in seconds. After the time expires the device will initiate a key rotation authentication process for higher security.

IEEE802.1x Key Length

This is the key length of the initial seed key. Select 64 or 128bit.

WEP



The operation of the Keys is the same for ALL the modes.

Note: Operating with WEP security will limit the device to maximum wireless link speed of 54Mbps.

Authentication Type:

Open Authentication – (Default) No authentication. Recommend to use this standard option over shared authentication.

Shared Authentication – May not be compatible with all Access Points. Not recommended.

Key Type:

HEX or **ASCII** option specifies the character format for the WEP key if WEP security method is used.

Current Key:

Specify the Index of the WEP Key used. 4 different WEP keys can be configured at the same time, but only one is used.

WEP Key:

WEP encryption key for the wireless traffic encryption and decryption should be specified if WEP security method is used.

WEP Key Length:

64-bit (selected by default) or 128-bit WEP Key length should be selected if WEP security method is used. The 128-bit option will provide higher level of security.

For **64-bi**t – specify WEP key as 5 HEX (0-9, A-F or a-f) pairs (e.g. 00112233AA) or 5 ASCII characters.

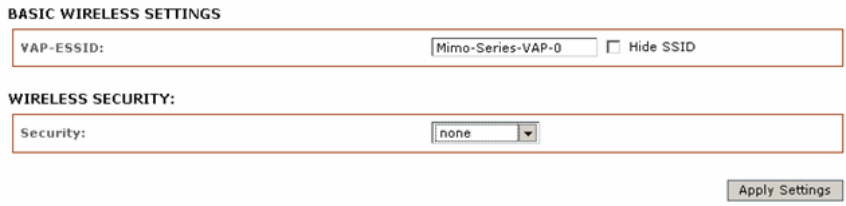
For **128-bit** – specify WEP key as 13 HEX (0-9, A-F or a-f) pairs

(e.g. 00112233445566778899AABBCC) or 13 ASCII characters.

Virtual Access Point (VAP)

Virtual AP (VAP) implements mSSID (Multi-SSID) whereby a single wireless card can be setup with up to 3 virtual SSID of BSSID

connections. Each VAP can be set with different security authentication mode.

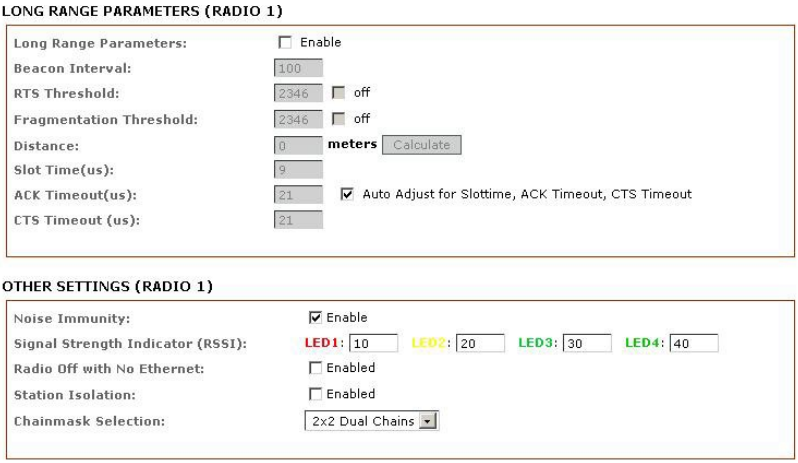


All VAPs are created from the same radio they all share the same wireless channel, country code, channel spectrum width and transmit power.

Note: Security options like IEEE802.1x and WPA-EAP uses radius server for authentication and accounting. You may not use different secret keys for each VAP.

Advance Wireless

Click **Advanced Wireless** tab from the menu and select **RADIO 1 or RADIO 2** to open the page below.



Long Range Parameters Setup

The advanced wireless page optionally lets you optimize the link for a specific distance. These options are for fixed point to point links only and should only be used by advanced users.

Long Range Parameters:

Check to enable parameters.

Beacon Interval: (default is 100 MS)

Define the time interval (in milliseconds) for the beacon to be broadcast. We recommend using the default value.

Distance:

Enter the distance in meters between both devices. Then click Calculate. The close approximate values for Slot Time, ACK Timeout, and CTS Timeout will be calculated to achieve the best possible performance and link reliability.

RTS Threshold:

The range is 0-2347bytes, or the word “off”. The default value is

2347 which means that RTS is disabled.

RTS/CTS (Request to Send / Clear to send) are the mechanisms used by the 802.11 wireless networking protocols to reduce frame collisions introduced by the hidden terminal problem. If the packet size the node wants to transmit is larger than the threshold, the RTS/CTS handshake gets triggered. If the packet size is equal to or less than threshold the data frame gets sent immediately.

Fragmentation Threshold:

specifies the maximum size for a packet before data is fragmented into multiple packets. The range is 256-2346 bytes, or the word “off”. Setting the Fragmentation Threshold too low may result in poor network performance.

The use of a fragmentation threshold can increase reliability because when sending smaller frames collisions are much less likely to occur, however lower values will result lower throughput as well. The default setting of 2346 is optimum for most network use cases.

Acknowledgement Timeout:

The device has an auto-acknowledgement timeout algorithm which dynamically optimizes the frame acknowledgement timeout value without user intervention. This is a critical feature required for stabilizing long-distance outdoor links.

Distance:

Specify the distance value in miles (or kilometers) using the slider or enter the value manually. Changing the distance value will change the ACK Timeout to the appropriate value of the distance.

ACK Timeout:

Specify the ACK Timeout. Every time the device receives the data frame it sends an ACK frame to the sender (if transmission errors are absent). If the sender receives no ACK frame from the device within a set timeout it re-sends the frame. If too many data frames are re-sent (the timeout is set too short or too long) it will result in poor throughput and performance.

Auto:

If enabled the ACK Timeout value will be derived dynamically. It is not recommended to use Auto Adjust option for long range links if the signal level is low or a high level of interference is present. If two or more stations are located at considerably different distances from the device in Access Point mode the highest ACK Timeout for the farthest station should be set at the AP side. It is not recommended to use Auto Adjust option for Point-to-Multipoint connections.

Noise Immunity:

Check to enable. When enabled the device will automatically adjust the noise to signal ratio for best performance. In low noise environments it is recommended to turn off this function.

Signal Strength Indicator (RSSI):

The default values are LED1 (RSSI value=7), LED2 (RSSI value=15), LED3 (RSSI value=22), LED4 (RSSI value=27)

Radio Off with No Ethernet:

When checked the unit automatically stops wireless broadcast when the Ethernet link is down.

Station Isolation:

When checked the device prevents wireless clients on same AP from discovering other clients. When enabled wireless stations connected to the same AP will not be able to interconnect on both layer 2 (MAC) and layer 3 (IP) level. This is effective for the associated stations and WDS peers also.

Chain Mask Selection:

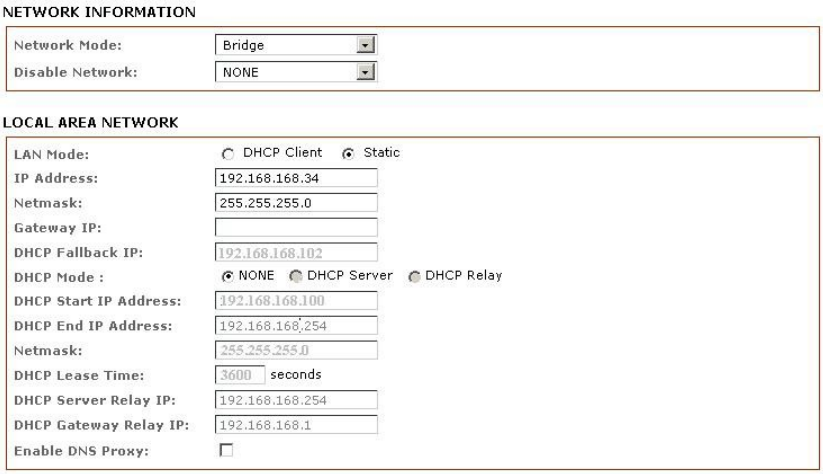
Available selections are: a) 1x1 Left Chain, b) 1x1 right Chain and c) 2x2 Dual Chain

Selecting 1x1 (Left/Middle/Right) Chain will force the radio card to operate with 1transmit and 1 receive stream and both transmit /receive on the left, middle or right port only.

Selecting 2x2 Dual Chain will enable radio card to operate with 2 transmit and 2 receive streams and automatically transmit / receive on any of the 2 ports.

Basic Network

Click **BASIC NETWORK** from the menu bar to open the page as shown below.



Network Mode: Bridging and Routing

Network Mode:

Select between Bridge (default) and Router mode.

LAN Setup

LAN Mode:

Static: (default) lets you enter a specific IP address for the device.

Default IP address is 192.168.168.1

DHCP Client: when set the device will learn its IP address automatically from an existing DHCP server.

Netmask:

Let's you set the class for the IP address. The default is class C (24 bit mask) 255.255.255.0

Gateway: (optional)

Enter the gateway IP address of the network the device is connected to if a gateway exists.

DHCP Fallback IP:

Should the device be in DHCP Client mode and fail to obtain an IP address from the DHCP server the user can access the device using this temporary fallback IP address.

DHCP Mode:

None: function disabled

DHCP Server: When enabled the device acts as an IP address distribution server so will automatically issue IP address and other network information to the DHCP Clients.

DHCP Relay: check to enable. Enter the IP address of the remote DHCP server where the DHCP Client request will be relayed to.

DHCP Start IP Address:

Enter the starting IP address to be issued.

DHCP End IP Address:

Enter the last IP address the server will issue.

DHCP Lease Time: (default is 3600 seconds or 1hour) Enter the new lease time in seconds.

DHCP Server Relay IP:

Enter the IP address of the remote DHCP server where the DHCP Client request will be relayed to get the IP address.

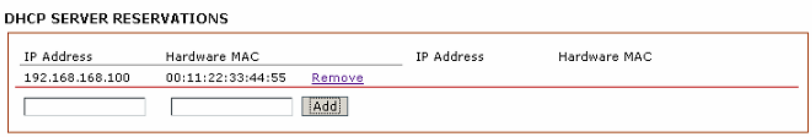
DHCP Gateway Relay IP:

Enter the IP address of the remote gateway where the DHCP Client request will be relayed to, to get the gateway IP address.

Enable DNS Proxy:

Check to enable this function. When enabled the device in router mode will act as proxy to resolve all DNS requests.

DHCP Reservations



Click **Add** to enter each devices IP and MAC address.

All active DHCP leases are displayed in the **Status** tab page from under the **More Status** selection.

Domain Name Server Entry

The Primary and Secondary DNS IP addresses allow the device to resolve domain names in order to reach certain servers like the internet time server and other services that use domain names.

Note: Ensure device gateway IP is also set to allow device to access to internet.

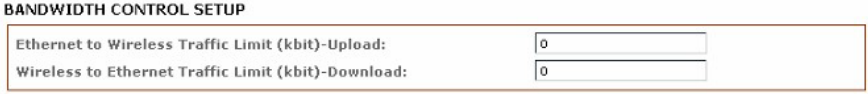
Primary DNS IP: (optional)

Enter the primary DNS IP address

Secondary DNS IP: (optional)

Enter the secondary DNS IP address

Bandwidth Control between Ethernet and Wireless

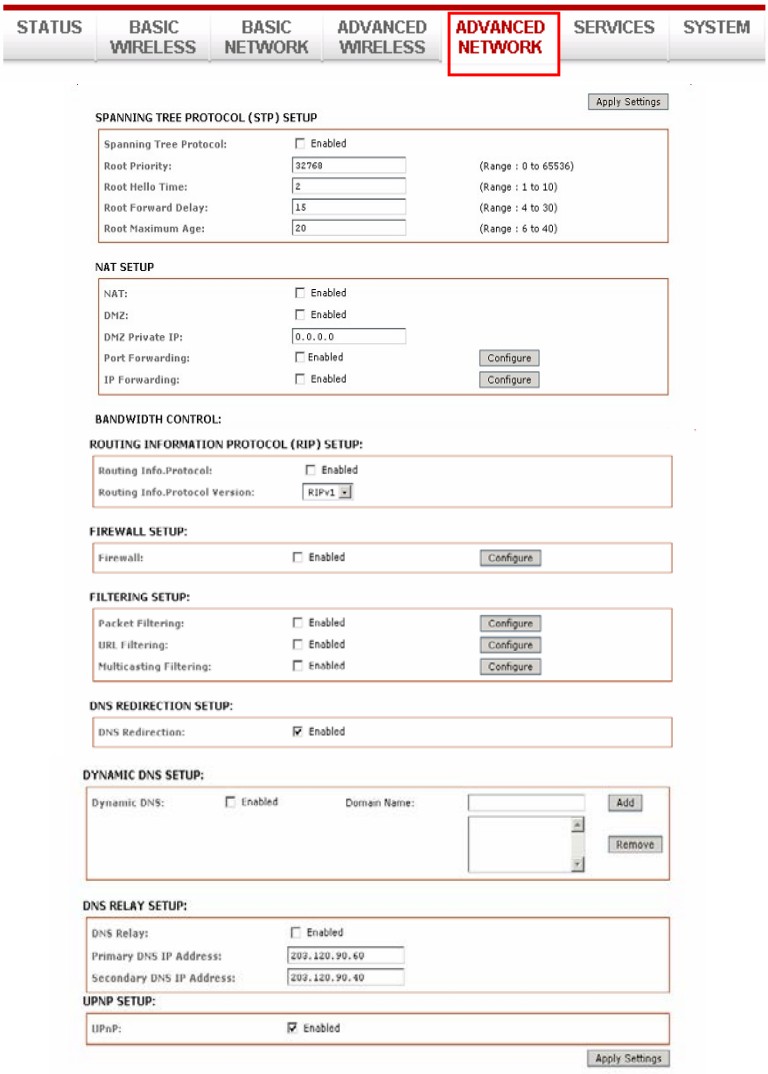


An entry of value “0” means no bandwidt*h* flow limit between the 2 interfaces.

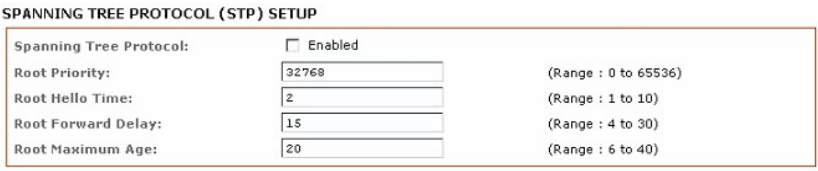
An entry of “2000” means 2000Kbit or 2Mbit limit traffic flow between the two interfaces. Default is “0”

Advanced Network

Note: This tab will not be visible when in device is in Bridge mode, only in router mode.



Spanning Tree Setup



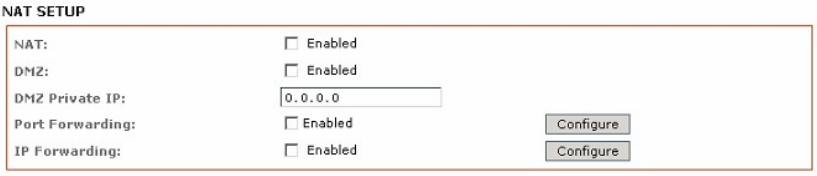
Spanning Tree Protocol: Default is **disabled**. Check on box to enable.

Root Priority: Default value is 32768. Smaller value has higher priority.

Root Hello Time: Default time is 2 seconds. **Root Forward Delay:** Default is 15 seconds **Root Maximum Age:** Default is 20 seconds

Changing to a lower time can cause high overheads on the network.

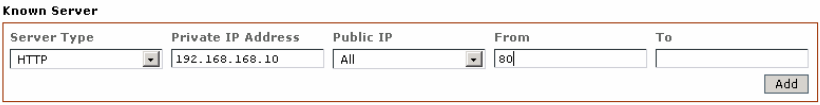
NAT Setup



NAT: Enabled when in Router mode, disabled when in Bridge mode.

DMZ: Default is disabled. Check on box to enable.

DMZ IP Address: Input the IP address of the local PC to receive the DMZ packets. Port Forwarding: Default is disabled. Check on box to enable.



Adding an entry from Known Server

Add an entry from this box and select an application from the list.

Server Type: click to select the application you want to add.

Private IP Address: Enter the local IP of the PC running the application

Public IP Address: To open the port to any people on the internet then select the default, All.

To open to only a specific IP, select Single and enter the IP address.

To open to only a specific range of IPs, select Range and enter IP address range.

Adding an entry from Custom Server

The Custom Server box lets you enter a new port number for an application or add new applications.

Server Type: Enter a brief name for the application.

Protocol: Select TCP or UDP

Public Port: select Single or Range

From: if a single port use this box only. If a port range enter the starting port number here.

To: if a single port, leave blank. If a port range enter the last port number here.

Private IP Address: Enter the local IP of the PC running the application

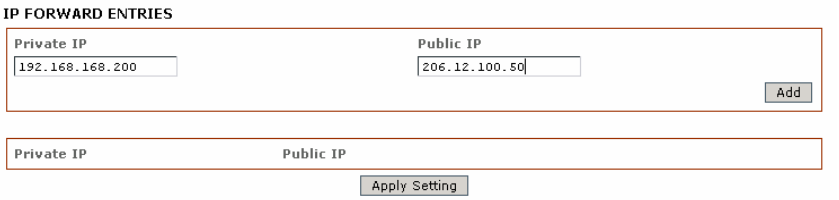
Private Port From: If a single port, enter same public port number or new port number.

If a port range, enter only the starting port number.

Public IP Address: To open the port to any people on the internet then select the default, All..

To open to only a specific IP, select Single and enter the IP address.

To open to only a specific range of IPs, select Range and enter IP address range.



IP Forwarding: Default is disabled. Check on box to enable.

Private IP: enter the local IP address to receive the forwarded

packets from the public IP

Public IP: enter the public IP address that when accessed will forward all the packets to the local IP Click Add to add to list.

ROUTING INFORMATION PROTOCOL (RIP) SETUP:

Routing Info.Protocol:	☐ Enabled
Routing Info.Protocol Version:	RIPv1

Routing Information Protocol: Default is disabled. Check on box to enable.

Router Info Protocol version: select RIPv1 or RIPv2

Firewall Setup

Firewall

	On	Comment	Policy	IP Type	Source IP/Mask	Src Port	Destination IP/Mask	Des Port
1.	☑	Web server	ACCEPT	TCP	0.0.0.0	80	192.168.168.10	81
2.	☑	Ftp server	ACCEPT	TCP	0.0.0.0	21	192.168.168.11	21
3.	☑	Block 445 port	DENY	TCP	0.0.0.0	445	0.0.0.0	445
4.	☑	Block 135	DENY	UDP	0.0.0.0	135	0.0.0.0	135
5.	☑	Block 136	ACCEPT	UDP	0.0.0.0	136	0.0.0.0	136
6.	☑	Block 137	ACCEPT	UDP	0.0.0.0	137	0.0.0.0	137
7.	☑	Block 138	ACCEPT	UDP	0.0.0.0	138	0.0.0.0	138
8.	☑	Block 139	ACCEPT	UDP	0.0.0.0	139	0.0.0.0	139
9.	☑	Internet Printer share	ACCEPT	TCP	206.123.27.99	631	192.168.168.12	631
10.	☐		ACCEPT	TCP				
11.	☐		ACCEPT	TCP				
12.	☐		ACCEPT	TCP				
13.	☐		ACCEPT	TCP				
14.	☐		ACCEPT	TCP				
15.	☐		ACCEPT	TCP				
16.	☐		ACCEPT	TCP				
17.	☐		ACCEPT	TCP				
18.	☐		ACCEPT	TCP				
19.	☐		ACCEPT	TCP				
20.	☐		ACCEPT	TCP				

Apply Cancel

Firewall Setup: Default is disabled. Check box to enable..

Comment: enter a brief name for the service.

Policy: select Accept or Deny for the apply rule

IP Type: select ICMP, TCP, and UDP packet type

Source IP/Mask: enter the source IP address and Netmask

Src Port: enter the source port number in the rule check

Destination IP/Mask: enter the destination IP and Netmask

Des Port: enter the destination port in rule check

Click **Apply** to save the rule or **Cancel** to clear the rule set.

Outbound Filtering Setup

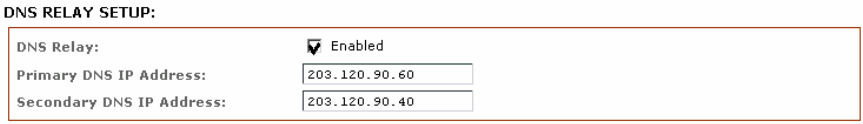
Filtering Setup: Default is disabled. Check box to enable.

DNS Redirection:

Default is enabled. Check box to disable. When enabled the device will act as a DNS proxy. Devices connected to this device set their DNS IP to router's IP address.

Dynamic DNS Setup:

Default is disabled. Check box to enable. Dynamic DNS lets the router's WAN dynamic IP address be linked and automatically updated to a domain name server hosting the service. This ensures users on the internet can always access the hosting services behind the device in router mode.



DNS Relay Setup:

Default is disabled. Check box to enable. These are the primary and secondary DNS IPs the devices proxy service will use to resolve the domain names on behalf of connected clients.

Primary DNS IP Address: Enter the primary DNS IP address

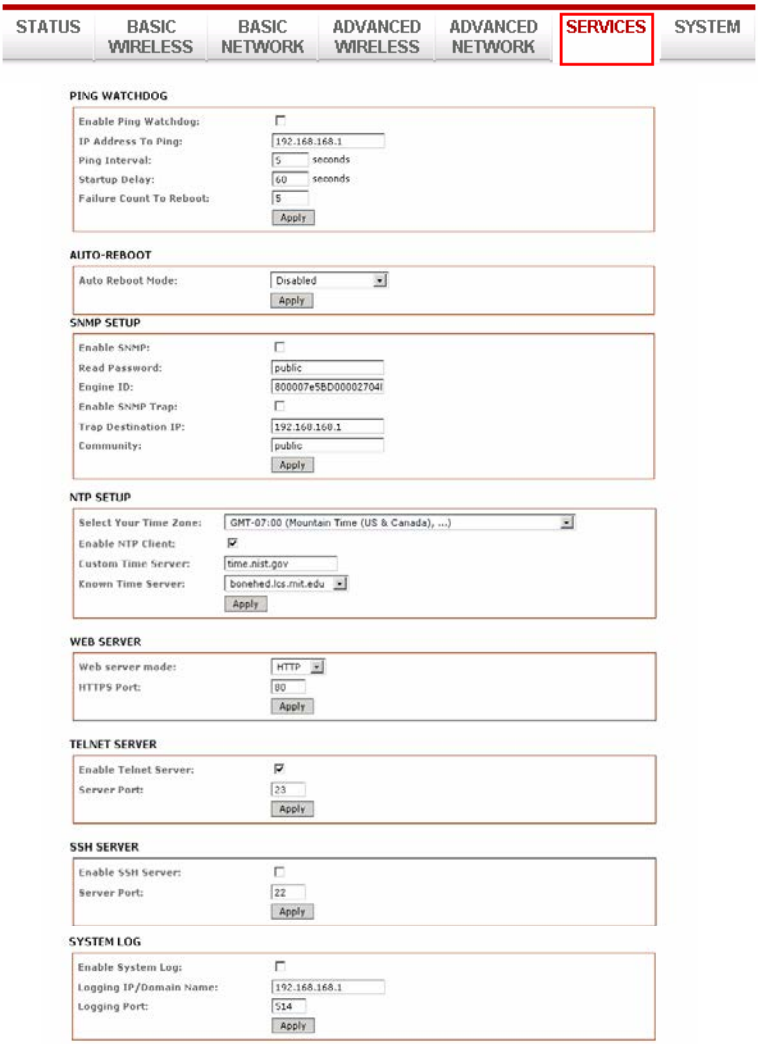
Secondary DNS IP Address: Enter the secondary DNS IP address

UPNP:

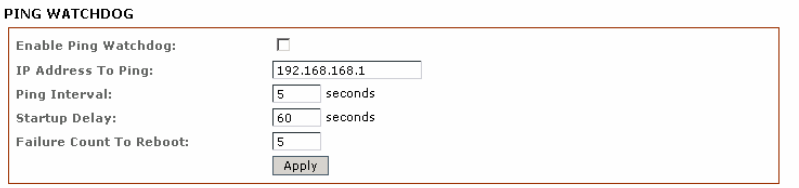
Default is disabled. Check box to enable. When enabled, devices running UPnP services can automatically open certain specific ports. For security reasons this service should generally not be enabled, instead we recommend manually opening required ports through the port forwarding service.

Services Tab

Click the **Services** tab from the menu to open the page below.



Ping Watchdog



Enable Ping Watchdog: Default is disabled. Check box to enable.

IP Address To Ping: Target IP address for the test monitor.

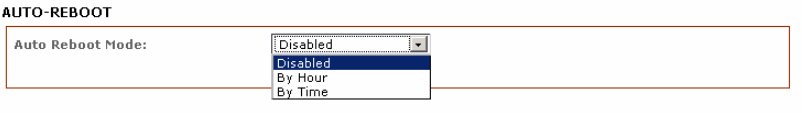
Ping Interval: Default is 5 seconds (minimum). This is the Ping test duration.

Startup Delay: Default is 60 seconds (minimum).

One time delay after device startup.

Failed Count to Reboot: Default is 5. This is the number of ping failures before the device starts the reboot process.

Auto-Reboot



Auto-Reboot Mode: Default is disabled. Select by Hour or By Time check.

This mode lets you preset a timer to automatically force a reboot. The timer can operate on a fixed number of hours or at a specified time of day.

By Hour: Enter the number of hours the device needs to run before starting the reboot process.

By Time: Enter the specific time of day in hh:mm (24-hour format) before starting the reboot process.

SNMP Setup

Enable SNMP: Default is disabled. Check box to enable.

Read Only Password: Password to query device.

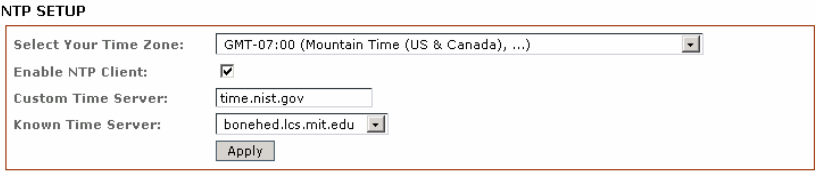
Engine ID: Default is 800007e5BD00002704D000007c

Enable SNMP Trap: Default is disabled. Check box to enable.

Trap Destination IP: Enter the IP to send the info to when the trap is triggered.

Community: Enter the SNMP community string.

NTP Setup



Enable NTP Client: Default is disabled. Check box to enable.

Select Your Time Zone: Select the country in which you reside.

Custom Time Server: Default is “time.nist.gov“Enter preferred time server domain or IP

Known Time Server: You can also select one from this list as your new time server.

Web HTTP Security

Web Server Mode: Default is HTTP. Option is HTTP and HTTPs

HTTP(s) Port: Default is 80 for HTTP and 413 for HTTPs.

Enter a new preferred port number.

Telnet Access Setup

Enable Telnet Server: Default is enabled. Uncheck box to disable.

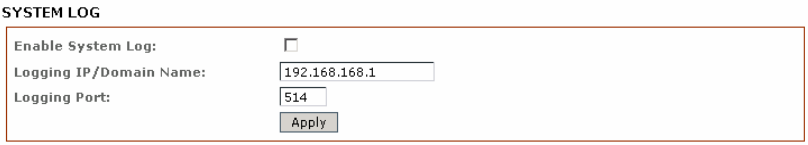
Server Port: Default is 23. Enter new preferred port number.

SSH Access Setup

Enable SSH Server: Default is disabled. Check box to enable.

Server Port: Default is 22. Enter new preferred port number.

System Log Setup



Enable System Logging: Default is disabled. Check box to enable.

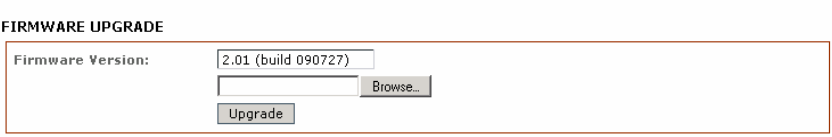
Logging IP /Domain Name: Enter the destination IP address of the device you want to receive the log.

Logging Port: Default is 514. Enter the new preferred port number.

System Tab

The System Page contains Administrative options. This page enables administrators to reboot the device, set it to factory defaults, upload a new firmware, backup or update the configuration and configure administrator's credentials.

Firmware Upgrade



Use this section to find out current software version and update the device with new firmware. System configurations are preserved when the device is updated with a new firmware version.

Firmware version: displays the version of the current firmware.

Upgrade: button opens the Firmware Upload window.

Firmware File: click the browse button to navigate to and select the new firmware file. The new firmware file is transferred to the systems memory after the Upload button is activated.

Close this window – button cancels the new firmware upload process.

Upgrade button should be activated in order to proceed with the firmware upgrade routine the (new firmware image should be uploaded into the system first). Please be patient, as the firmware upgrade routine can take 3-7 minutes. The device will be un-accessible until the firmware upgrade routine is completed.

It is highly recommended to back up the system configuration before uploading the new configuration.

Close this window – button closes the firmware upgrade window.

Host Name

The Host Name is the system wide device identifier. It is reported by the SNMP Agent to authorized management stations. The Host Name will be represented in popular Router Operating Systems registration screens and discovery tools.

Host Name: specifies the system identity.

Change button saves the Host Name.

Administrative and Read-only Account

In this section you can modify the administrator password. The default administrator's password should be changed on the very first system setup:

Administrator Username: specifies the name of the user.

Current Password: the administrator is required to enter a current password. It is required for password or Administrator Username change routines.

Default administrator login credentials:

User Name: **admin**

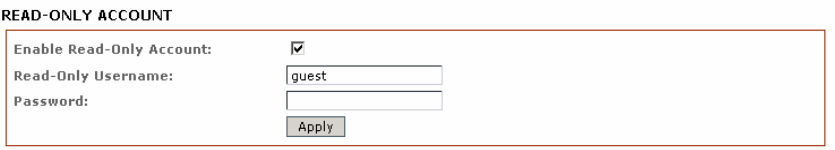
Password: **password**

New Password: the new password used for administrator authentication should be specified.

Verify Password: the new password should be re-entered to verify its accuracy.

Click Change button to save the changes.

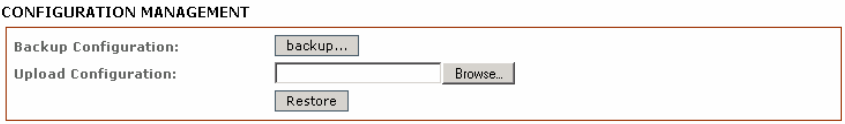
Enable Read-Only Account



Read-Only Username: new username for the read-only administrator should be specified.

Password: new password used for the read-only administrator should be specified.

Configuration Management



Backup Configuration: click the Download button to export the current configuration to a file.

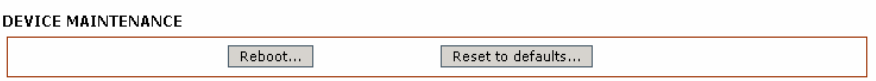
Upload Configuration: click the Browse button to navigate to and select the new configuration file.

Clicking the Upload button will transfer the new configuration file to the system.

The new configuration will be effective after the Apply button is activated and the system reboot cycle is completed. It is highly recommended to back up the system configuration before uploading a new configuration.

Use only configuration backups of the same type device - configuration backed up from NVW-150 units are not compatible with NVW-250 units and vice versa.

Device Maintenance



The controls in this section are for performing device maintenance routines:

Reboot: activate the Reboot control in order to initiate a full reboot cycle of the device. The system configuration is not modified after the reboot cycle completes. Any non-applied changes however will be lost.

Reset to Defaults: activate the Reset to Defaults control in order to initiate a reset to factory defaults routine. The running system configuration will be deleted and the default system configuration

(all the system settings with no exception) will be set.

After the **Reset to Defaults** routine is completed, the device system will return to the default IP configuration (192.168.168.1/255.255.255.0) and will start operating in Station-Bridge mode. It is highly recommended to back up the system configuration before the Reset to Defaults routine is initiated.

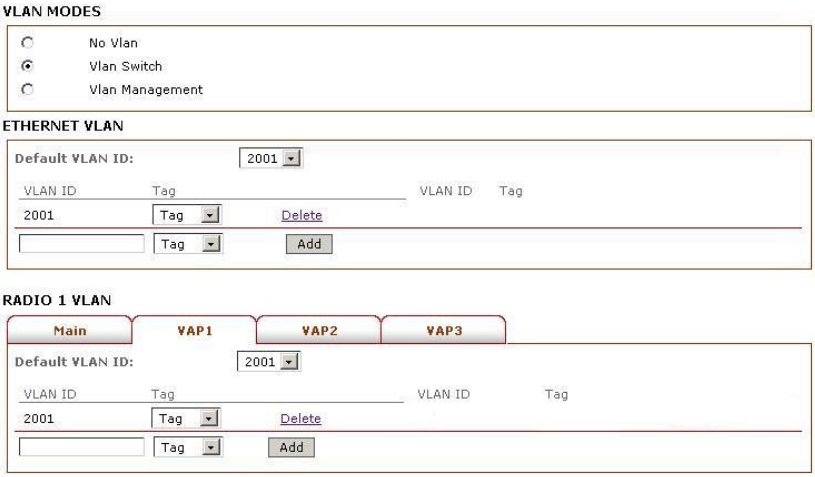
VLAN Tab

This page lets you create virtual local network connections through the devices Ethernet and wireless connections.

By default **VLAN** mode is disabled (**No Vlan** is checked)

VLAN Switch

To setup a VLAN network check the Vlan Switch box



To add a Tag VLAN ID for Ethernet port, type in the ID number select **Tag** and click **Add**

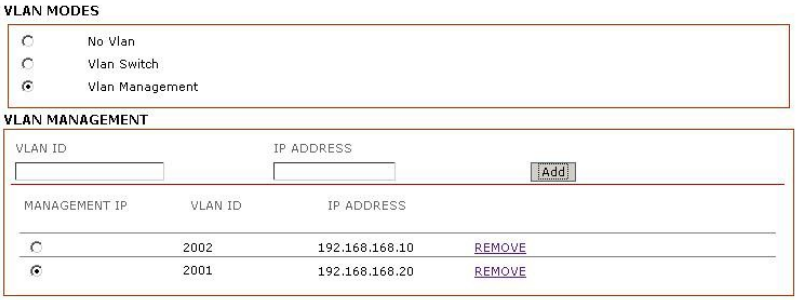
To add a Tag VLAN ID for MAIN wireless SSID, type in the ID number select **Tag** and click **Add** To add a Tag VLAN ID for VAP1 wireless SSID, type in the ID number select **Tag** and click **Add** To add a Tag VLAN ID for VAP2 wireless SSID, type in the ID number select **Tag** and click **Add** To add a Tag VLAN ID for VAP3 wireless SSID, type in the ID number select **Tag** and click **Add**

Warning: Adding a Tag VLAN ID can cause a loss of connection to devices web manager if the PCs Ethernet port or wireless connection does not have a Tag VLAN ID or does not have the same VLAN ID setup. If this case use the devices Reset button to clear the config and reconfigure. Refer to the Reset button operations section.

VLAN Management

Vlan management lets you control and limit the client connections that can open the devices web page.

Note: Vlan Management works only in tag vlan pass-through mode. i.e. when Vlan Switch is disabled. When Vlan Switch is enabled or configured, Vlan Management function stops operating.



Example:

Assuming there are 2 VLAN ID groups, 2001 and 2002 setup on the device. One entry in the Vlan Management has the Vlan ID 2001 with masquerade IP address 192.168.168.20, another entry in Vlan Management has the Vlan ID 2002 with masquerade IP address 192.168.168.10

You can only select one of the 2 entries to be the active Vlan ID and IP address. If the Vlan ID 2001 group is selected, then only computers in that Vlan ID group can open the devices web page using the IP address, 192.168.168.20 if there is no entry in Vlan Management, there is no restriction. All computers can open the devices web page by the default IP address setup in Basic Network page.

Service & Support

It is our goal to make your products ownership a satisfying experience. Our supporting staff is available to assist you in setting up and operating your system. Please refer to our web site www.datavideo.com for answers to common questions, support requests or contact your local office below.

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