



NetComm Hotspot Dock (NHD1W)

User Guide



NetCommWireless

2400164
Rev 1

Important Notice

Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices such as the NetComm Wireless NHD1W are used in a normal manner with a well-constructed network, the NetComm Wireless NHD1W should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. NetComm Wireless accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using the NetComm Wireless NHD1W, or for failure of the NetComm Wireless NHD1W to transmit or receive such data.

Safety and Product Care of NHD1W

With reference to unpacking, installation, use and maintenance of your electronic device, the following basic guidelines are recommended:

- Do not use or install this product near water to avoid fire or shock hazard. For example, do not use or install this product near a bathtub, kitchen sink, laundry tub, or near a swimming pool. Also, do not expose the equipment to rain or damp areas (for example a wet basement).
- Do not connect the power supply cord on elevated surfaces. Allow it to lie freely. There should be no obstructions in its path and no heavy items should be placed on the cord. In addition, do not walk on, step on or mistreat the cord.

Warning : Disconnect the power line from the device before servicing.

- To safeguard the equipment against overheating, make sure that all openings in the unit that offer exposure to air are unobstructed.

Safety and Hazards of AirCard Mobile Hotspot

The AirCard mobile hotspot **MUST BE POWERED OFF** in all areas that may be susceptible to radio interference, in particular:

- Prohibited areas
Obey all signs and notices and follow all rules and regulations. Power off the mobile hotspot when instructed to do so or when you suspect that it may cause interference or danger.
- In areas where blasting is in progress
- Where explosive atmospheres may be present
Areas with a potentially explosive atmosphere are not always clearly marked. Such areas include gas stations, fuel depots, chemical transfer or storage facilities, areas where blasting is in progress, areas where the air contains chemicals or particles such as grain, dust, or metal powders, and any other area where you would normally be advised to turn off your cellular phone or vehicle engine.
- Near medical or life-support equipment
Medical equipment may be susceptible to any form of radio interference. In such areas the mobile hotspot can transmit signals that could interfere with this equipment.
- On board aircraft

In addition to Federal Aviation Authority (FAA) requirements, many airline regulations state that you must suspend wireless operations before boarding an aircraft. The mobile hotspot is capable of transmitting signals that could interfere with various onboard systems and controls. Failure to observe this instruction may lead to suspension or denial of cellular telephone services to the offender, legal action, or both. Some airlines may permit the use of cellular phones while the aircraft is on the ground and the door is open. The mobile hotspot may be used normally at this time.

- While operating a vehicle
The driver or operator of any vehicle should not use a wireless data device while in control of a vehicle. Doing so detracts from the driver or operator's ability to control and operate the vehicle. In some countries, using such communications devices while in control of a vehicle is an offence.

Caution: *Unauthorized modifications or changes not expressly approved by NetComm Wireless, Inc. could void compliance with regulatory rules, and thereby your authority to use this device.*

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Save Our Environment

When this equipment has reached the end of its useful life, it must be taken to a recycling centre and processed separately from domestic waste.

The cardboard box, the plastic contained in the packaging, and the parts that make up this device can be recycled in accordance with regionally established regulations. Never dispose of this electronic equipment along with your household waste. You may be subject to penalties or sanctions under the law. Instead, ask for disposal instructions from your municipal government.

Please be responsible and protect our environment.

Transport and Handling

When transporting the NHD1W, it is recommended to return the product in the original packaging. This ensures the product will not be damaged.

Note: Ensure the NHD1W is securely packaged with appropriate padding to prevent damage during courier transport.

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Consult our website for up-to-date product descriptions, documentation, application notes, firmware upgrades, troubleshooting tips, and press releases: www.netcomm.com.au.

Contents

Introduction	11
Prerequisites	11
Target Users	11
Product Overview	11
Package Contents	12
Product Features	12
LED Indicators	13
Interfaces	14
Default Settings	15
Get Started	17
Placement of your NHD1W	17
Avoid Obstacles and Interference	17
Cordless Phones	18
Choose the “Quietest” Channel for your Wireless Network	18
Hardware Installation	19
Connecting Wirelessly	20
Quick Wi-Fi Setup	20
Connecting via a Cable	20
Accessing Storage Devices	21
Operating Modes	23
Easy Mode	24
Small Office / Home Office	26
Power User	28
Login Tab	29
Wireless Tab	30
LAN 1 / WAN Tab	31
Advanced Settings	35
Home	35
Status	35
Internet Settings	36
LAN Configuration	36

WAN Configuration	38
Wireless LAN (WLAN).....	40
Configuration	40
Wi-Fi Protected Setup (WPS)	43
Services.....	44
Routing	44
DDNS	48
NTP	49
System Monitor	50
System	51
Log	51
Settings	52
Update Firmware.....	53
Administration	54
System Configuration.....	55
Logoff	55
Reboot.....	55
Specifications.....	57
Technical Specifications.....	57
Mechanical Specifications.....	58
FAQ.....	59
Regulatory Information.....	61
Regulatory Information for North America	61
Regulatory Information for EU countries.....	62
Regulatory Information for Australia	63

List of Figures

Figure 1: NHD1W Homepage – Basic Status Page	23
Figure 2: Easy mode – Status Tab	24
Figure 3: Easy Mode – NHD1W Docked/Undocked Scenarios	25
Figure 4: SOHO Mode – Basic Status Page	26
Figure 5: SOHO Mode – NHD1W Docked/Undocked Scenarios	27
Figure 6: Power User – Basic Status Page.....	28
Figure 7: Power User – Login Tab	29
Figure 8: Power User – Switch to Advanced View.....	29
Figure 9: Power User – Wireless Tab	30
Figure 10: Advanced View - Status.....	31
Figure 11: Power User - LAN1/WAN Tab	32
Figure 12: Power User Mode – NHD1W docked/undocked scenario.....	33
Figure 13: Advanced View - LAN Settings.....	36
Figure 14: DHCP Settings	37
Figure 15: DHCP Settings – Address Reservation List	37
Figure 16: WAN – STATIC (Fixed IP) Settings	38
Figure 17: WAN - DHCP Settings	38
Figure 18: WAN – Fail-over Settings	39
Figure 19: Advanced View – Wi-Fi Settings.....	40
Figure 20: Wi-Fi Security Settings - WPA1/WPA2.....	41
Figure 21: Wi-Fi Security Settings - WPA-PSK/WPA2-PSK.....	42
Figure 22: Wi-Fi Security Settings - 802.1x	42
Figure 23: Wi-Fi Protected Setup (WPS).....	43
Figure 24: Advanced View - Wi-Fi Station List.....	44
Figure 25: Static Route Settings	44
Figure 26: RIP Settings	45
Figure 27: NAT Settings.....	46
Figure 28: Advanced View - DMZ Settings	47
Figure 29: DDNS Settings	48
Figure 30: NTP Settings.....	49
Figure 31: System Monitor Settings	50
Figure 32: System Log.....	51

Figure 33: Load / Save Configuration Page 52

Figure 34: Advanced View - Firmware Update 53

Figure 35: Administration Configuration Items 54

Figure 36: System Configuration Items 55

Figure 37: Logoff 55

Figure 38: Reboot NHD1W 55



1: Introduction

This User Guide provides you all the information you need to set up, configure, and use the NHD1W.

Prerequisites

Before continuing with the installation of your NHD1W, please confirm that you comply with the minimum system requirements listed below.

- AirCard 76xS mobile hotspot activated on a 3G/4G network.
- Device with a working Ethernet or wireless (802.11b/g/n) network adapter.
- A Web browser such as Internet Explorer, Netscape Navigator, Mozilla Firefox, Opera, Safari.

* This device is only authorized to use with AirCard, FCC ID: N7NAC763S.

Target Users

The NHD1W provides 3 levels of operation modes that allow users access to exactly the features they need. This User Guide is intended for users who prefer single click, easy setup, as well as for advanced users who understand telecommunications terminology and concepts.

Product Overview

- 3 x 10/100 LAN Ethernet port
- 1 x 10/100 LAN / WAN Ethernet port for optional alternate Internet connectivity (ADSL/Cable/Satellite)
- 802.11n / 300 Mbps wireless¹ (backward compatible with 802.11b/g)
- Browser-based interface for configuration and management
- Wireless security options: WEP, WPA, WPA2
- 2 x USB ports for attaching USB storage devices to share with connected clients

¹ Speeds are dependent on network coverage. See your 3G/4G provider coverage maps for more details. The total number of Wi-Fi users can also affect data speeds. Maximum wireless signal rate and coverage values are derived from IEEE Standard 802.11g and 802.11n specifications. Actual wireless speed and coverage are dependent on network and environmental conditions included but not limited to volume of network traffic, building materials and construction/layout.

Package Contents

The NHD1W package consists of:

- NHD1W
- 12V/2A power supply
- Two 3G/4G dipole antennas
- Ethernet cable
- Quick Start Guide

If any of these items are missing or damaged, please contact NetComm Wireless Support immediately by visiting the NetComm Wireless Support website at: www.netcomm.com.au/Support.

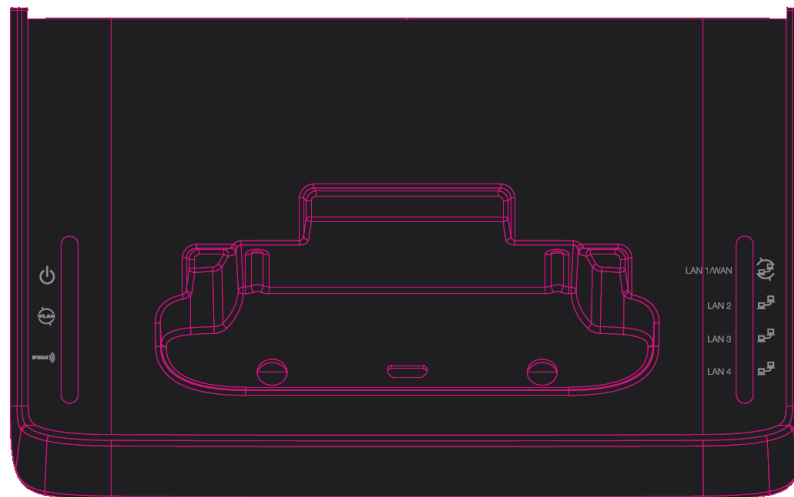
Product Features

The NHD1W creates a secure Wi-Fi network, providing Internet access for up to 16 users using the 3G/4G network. With quick and easy setup the NHD1W provides a landline experience without the need for fixed line connections. Simply plug the NHD1W into a power outlet, and then dock the AirCard mobile hotspot to access a 3G/4G Internet connection within minutes.

The NHD1W incorporates a WLAN 802.11b/g/n access point, four 10/100 Mbps Ethernet ports, with one able to act as a 10/100 Mbps Ethernet WAN port. Two USB ports provide connectivity to attached USB storage for connected clients. The NHD1W features the latest security options, such as WPA and WPA2 data encryption.

LED Indicators

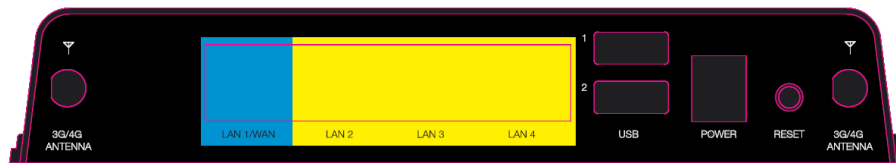
The NHD1W is designed to be placed on a desk top. All of the cables exit from the rear for better organization. The display (visible on the top of the NHD1W) provides information about network activity and the device status. See below for an explanation of each of the indicator lights.



Led Indicator	Definition
Power	Power status indicator: Off = No Power On = Power
WLAN	Wi-Fi status indicator: Off = Wi-Fi Off Solid = Wi-Fi On, no traffic Flash = Wi-Fi On, data traffic
WWAN	Internet WAN indicator: Off = No Internet connection Solid = Internet connected, no traffic Flash = Internet connected, data traffic
LAN1 / WAN	LAN1/WAN Port connection status indicators: Off = No cable connection Solid = Cable connection established Flash = Data traffic
LAN2 LAN3 LAN4	LAN 2-4 Port connection status indicators: Off = No cable connection Solid = Cable connection established Flash = Data traffic

Interfaces

The following interfaces are available on the rear panel of the NHD1W:



Interface	Function
3G/4G antenna connectors	Attach external 3G/4G antennas
LAN 1 / WAN	LAN or WAN port for wired Ethernet clients or bridged devices (for example, ADSL modem)
LAN 2 - 4	LAN Port for wired Ethernet clients (computers, laptops, etc.)
USB ports	Connect a USB storage device to share content with connected clients
Power connector	Connects to a DC 12V/2A power adapter
Reset	Hold this button down for over 12 seconds to reset to factory defaults

Default Settings

The following tables list the default settings for the NHD1W. Note that these default settings may change, once the AirCard mobile hotspot is docked in.

LAN (Management)			
	Easy mode	Small Home / Office mode	Power User mode
Static IP Address	192.168.1.254	192.168.2.1	192.168.2.1
Subnet Mask	255.255.255.0	255.255.255.0	255.255.255.0
Default Gateway	192.168.1.1	192.168.2.1	192.168.2.1

Wireless LAN (Wi-Fi)	
SSID (NHD1W)	Displayed on AirCard mobile hotspot's LCD screen.
Security Key (NHD1W)	

Web interface access (Power User mode only)	
Username	admin
Password	admin



2: Get Started

Placement of your NHD1W

Just like your mobile phone, the NHD1W's location will affect its signal strength to the 3G/4G base station (cell tower). The data speed achievable from the NHD1W is dependent on this signal strength, which is affected by many environmental factors. When choosing a location for your NHD1W, keep in mind that the NHD1W needs adequate signal strength to provide Internet connectivity.

Similarly, the wireless connection between your NHD1W and your Wi-Fi devices is stronger the closer your devices are to your NHD1W. Your wireless connection and performance will degrade as the distance between your NHD1W and devices increases. This may or may not be directly noticeable, and is greatly affected by the individual installation environment.

If you have concerns about your network's performance that might be related to range or obstruction factors, try moving the devices to a position between three to five meters from the NHD1W to see if distance is the problem.

If you experience difficulties connecting wirelessly between your Wi-Fi devices and your NHD1W, try the following steps:

- In multi-story homes, place the NHD1W on a floor that is as close to the centre of the home as possible. This may mean placing the NHD1W on an upper floor.
- Avoid placing the NHD1W near a cordless telephone that operates at the same radio frequency as the NHD1W (2.3 GHz / 4 GHz).

Avoid Obstacles and Interference

Avoid placing your NHD1W near devices that may emit radio "noise," such as microwave ovens. Dense objects that can inhibit wireless communication include:

- Refrigerators
- Washers and dryers
- Metal cabinets
- Large aquariums
- Metallic-based, UV-tinted windows

Note: While some of the items listed above can affect network performance, they will not prohibit your wireless network from functioning; if you are concerned that your network is not operating at its maximum effectiveness avoid placing your NHD1W near the devices listed. Please ensure that your NHD1W's 3G/4G external antenna is positioned vertically (toward the ceiling).

If your wireless signal seems weak in some spots, make sure that objects such as those listed above are not blocking the signal's path (between your devices and the NHD1W).

Cordless Phones

If the performance of your wireless network is impaired after considering the above issues, and you have a cordless phone:

- Try moving cordless phones away from your NHD1W and your wireless-enabled computers.
- Unplug and remove the battery from any cordless phone that operates on the 2.3 GHz / 4 GHz band (check manufacturer's information). If this fixes the problem, your phone may be interfering with the NHD1W.
- If your phone supports channel selection, change the channel on the phone to the farthest channel from your wireless network. For example, change the phone to channel 1 and move your NHD1W to channel 11. See your phone's user manual for detailed instructions. If necessary, consider switching to a 900 MHz or 5 GHz cordless phone.

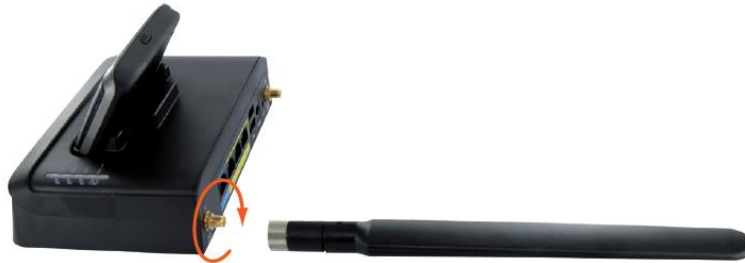
Choose the “Quietest” Channel for your Wireless Network

In locations where homes or offices are close together, such as apartment buildings or office complexes, there may be wireless networks nearby that can conflict with your wireless network. Use the Site Survey capabilities found in the software provided with your wireless adapter to locate any other wireless networks that are available (see your wireless adapter's user manual), and switch your NHD1W and computers to a channel as far away from other networks as possible. Refer to section Wireless LAN (WLAN) on page 40.

Experiment with more than one of the available channels, to find the clearest connection and to avoid interference from neighbouring cordless phones or other wireless devices.

Hardware Installation

1. Attach the supplied antennas to the ports marked "3G/4G ANTENNA". [Attach in a clockwise direction, as shown by the red arrow in the photo below.]



2. Turn the metal part to screw in the antenna until it tightens, then hold the metal part while turning the antenna to a vertical position.
3. Connect the power adapter to the POWER socket on the back of the NHD1W. Plug the power adapter into the wall socket. The WLAN and WWAN LEDs blink for approximately 30 seconds while the NHD1W boots up.



4. Follow the instructions provided with your AirCard mobile hotspot to connect to the Internet. Then dock the AirCard mobile hotspot into the NHD1W.

You are ready to use the NHD1W!

Note: Without the AirCard mobile hotspot, the NHD1W is not functional out of the box.

Connecting Wirelessly

1. Ensure Wi-Fi is enabled on your device (for example, computer/laptop/smartphone/printer/camera).
2. Open the wireless network manager on your device and connect to the network name shown on the LCD screen of your AirCard mobile hotspot.
3. When prompted for your wireless security settings, enter the Security Key shown on the LCD screen of the AirCard mobile hotspot.
4. Wait approximately 30 seconds for the connection to establish.

After the setup process is completed, you will be connected to the Internet. You can connect up to 16 Wi-Fi devices to your NHD1W.

Quick Wi-Fi Setup

Quick Wi-Fi Setup allows users to quickly connect to a Wi-Fi network without the use of a keyboard. This is sometimes referred to as Wi-Fi Protected Setup (WPS). The feature is available on many more recent products such as cameras, printers, smart phones, and laptops.

1. Press the **WPS** button on your AirCard mobile hotspot docked in the NHD1W until the **WLAN** LED on the NHD1W starts flashing.
2. Within 2 minutes press the **WPS** button on the wireless device you want to connect or select the WPS-related option in the device's software.

The NHD1W and your wireless device will communicate and establish the connection.

Connecting via a Cable

1. Connect the provided Ethernet cable to the port marked LAN1/WAN, LAN 2, LAN3 or LAN4 at the back of the NHD1W.
2. Connect the other end of the Ethernet cable to your computer.
3. Wait approximately 30 seconds for the connection to establish.

After the setup process is completed, you will be connected to the Internet. You can connect up to 4 devices via Ethernet cable to the ports marked LAN1/WAN or LAN 2-4.

Accessing Storage Devices

The NHD1W provides access to the connected USB storage devices on USB ports 1 and 2, as well as the microSD card in the AirCard mobile hotspot.

Note: The microSD card in the AirCard mobile hotspot can be accessed via the NHD1W only if the file sharing option in the AirCard mobile hotspot is configured for USB Tethered mode. See the AirCard mobile hotspot's user guide for configuring the file sharing option.

To access your storage devices:

1. Plug in your USB storage device.
2. If accessing the microSD card in the AirCard mobile hotspot, configure the file sharing option to USB Tethered mode.
3. Make sure you are connected to the NHD1W via Ethernet LAN ports or via Wi-Fi.
4. The method used to read/write the files in the storage devices depends on your computer's operating system.

Windows

1. Open Windows Explorer.
2. Type the network address [\\swi.hub](http://swi.hub) in the address bar to see the connected storage devices. The storage devices will be labelled Disk A, Disk B or Disk C for each of the connected devices.

You can now drag and drop (copy and paste) your files from or to the storage devices.

Mac

1. In Mac, open up a Finder window.
2. Select Go -> Connect to Server.
3. Enter server address smb://swi.hub.
4. Select the volumes you want to mount on "swi.hub". The storage devices will be labelled Disk A, Disk B or Disk C.

Linux

In Linux machine, you can see the storage devices (SMB shares) using smbclient program (for example, `smbclient -L swi.hub` command will list the shares available).

Smartphones

Several Samba client applications are available for accessing the connected storage devices. You can download and install them; please see the manual or the manufacturer's web site of the storage device.

3: Operating Modes

The NHD1W has 3 operating modes offering varying levels of function and configuration options.

- Easy (default)
- Small Office / Home Office
- Power User

You can select the operating mode from the NHD1W homepage. Regardless of the operating mode selected, any device connected to the NHD1W can access it by using the address <http://swi.hub>. This opens the management console, where you can:

- View the status of the NHD1W.
- Make changes to the NHD1W, including changing the operating mode.
- Access the AirCard mobile hotspot's homepage.

Note: Refer to the Default Settings (page15) for the default IP Address in use in each of the operating modes.

The screenshot displays the Sierra Wireless AirCard Hub management console in a Mozilla Firefox browser window. The page features the Sierra Wireless logo and a navigation menu with 'Help'. A central status panel, titled 'HotSpot Status', provides the following information:

Device	Docked
Operation Mode	Easy
WWAN Connection	Up
Signal Strength	-59 dBm (strong)
Provider	Telstra
SIM Status	SIM OK

Below the status panel is a 'HotSpot Web UI' link. To the right, a message states: 'You may select an operating mode for the router. The default mode is "Easy".' Three radio buttons are available for selection: 'Easy' (selected), 'Small Office / Home Office', and 'Power User'. Each mode has a brief description of its intended use. At the bottom right, there is an image of the NHD1W device with a smartphone docked on top.

Figure 1: NHD1W Homepage – Basic Status Page

Easy Mode

Easy mode uses the settings of the docked AirCard mobile hotspot. In this mode you are only able to view the status of the Internet connection through the hotspot.

The status tab provides basic connection related information, such as AirCard mobile hotspot dock status, WWAN connection status, 3G/4G signal strength (dBm), current 3G/4G provider, the SIM status.

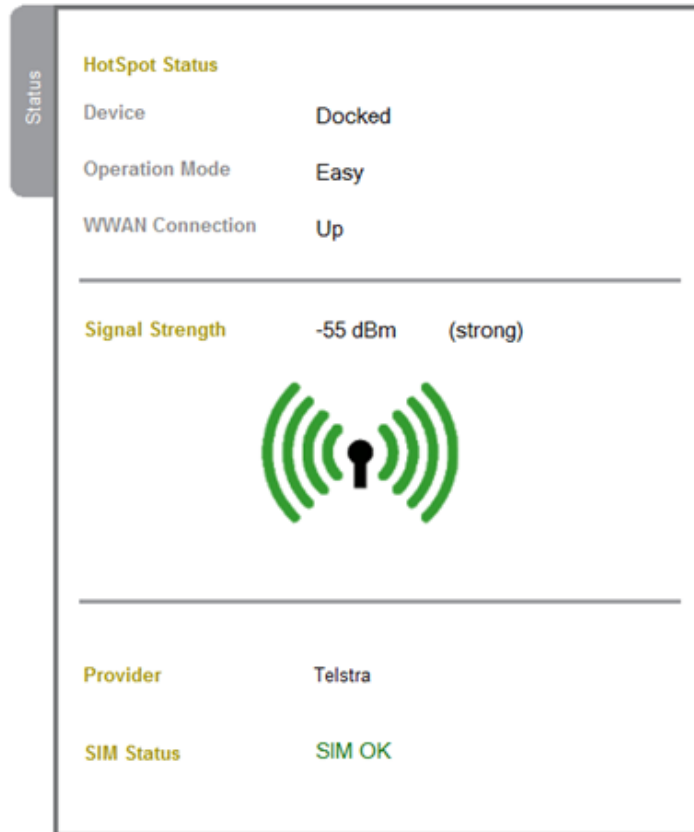


Figure 2: Easy mode – Status Tab

The NHD1W also provides access to any connected USB storage devices. These can be accessed by using the network address: <\\swi.hub>.

In Easy mode, the Ethernet LAN ports are activated only when the AirCard mobile hotspot is docked.

Note: In Easy mode, the Wireless Network SSID is the same as the SSID of the AirCard mobile hotspot. Connecting to this wireless network provides access to the Internet connection through the docked AirCard mobile hotspot. The IP Address assigned to the NHD1W is in the same subnet as that of the AirCard mobile hotspot.

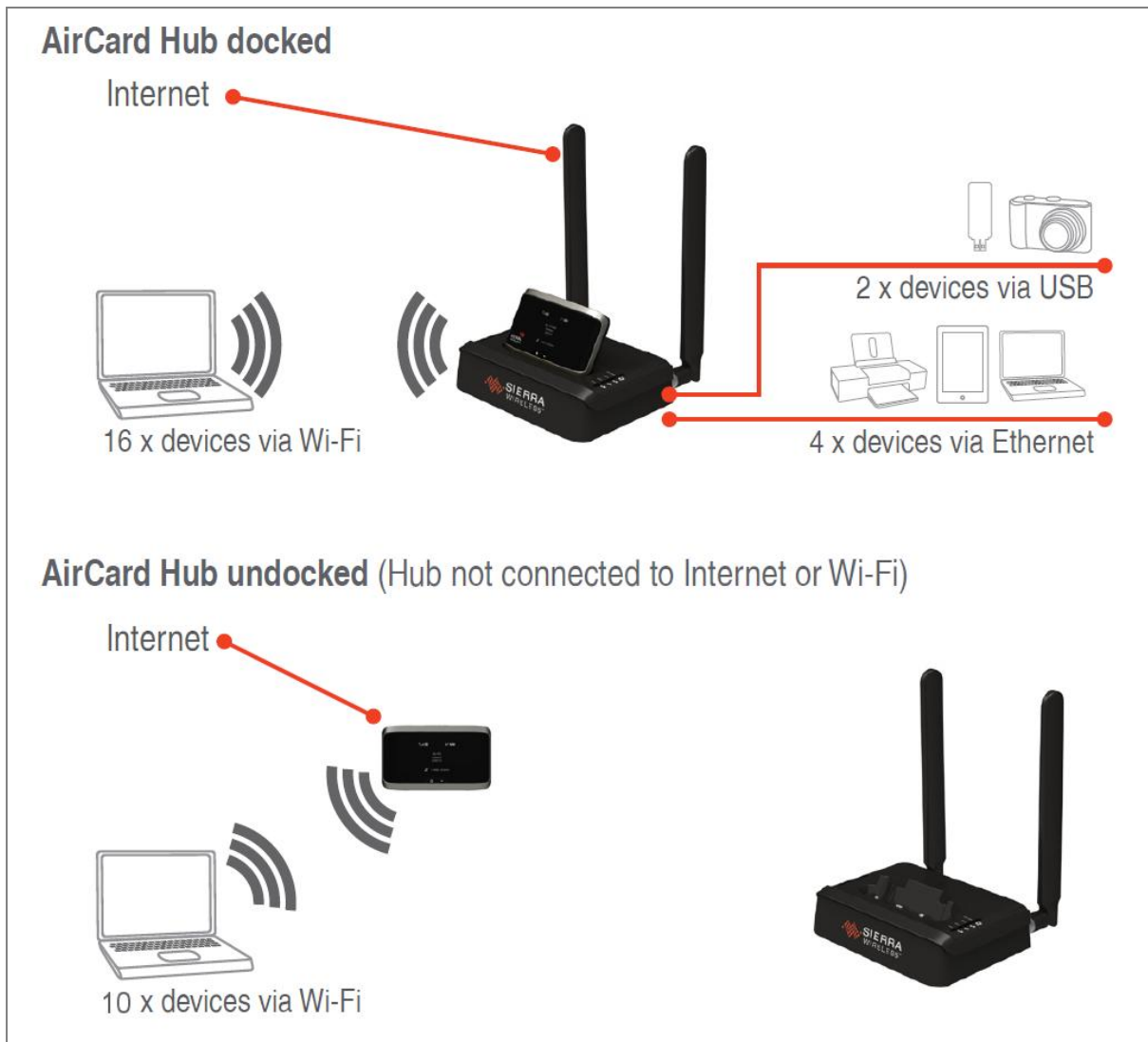


Figure 3. Easy Mode – NHD1W Docked/Undocked Scenarios

Small Office / Home Office

Small Office / Home Office (SOHO) mode also uses the settings on the docked AirCard mobile hotspot.

In Small Office / Home Office mode, the NHD1W also offers a standalone wireless network that provides access to any connected USB storage devices. These can be accessed by both Ethernet and wireless users by using the network address: swi.hub.



Figure 4: SOHO Mode – Basic Status Page

Note: In Small Office / Home Office mode, the wireless network SSID of the NHD1W is the AirCard mobile hotspot’s SSID with ‘-C’ or ‘_C’ added at the end. The IP Address assigned to the NHD1W is based on the AirCard mobile hotspot’s IP address, with the subnet incremented by 1.

Connecting to this wireless network provides access to the attached USB storage devices. Internet access is provided by the docked AirCard mobile hotspot. If the AirCard mobile hotspot is undocked, Internet access is only available by connecting to the AirCard mobile hotspot’s SSID.

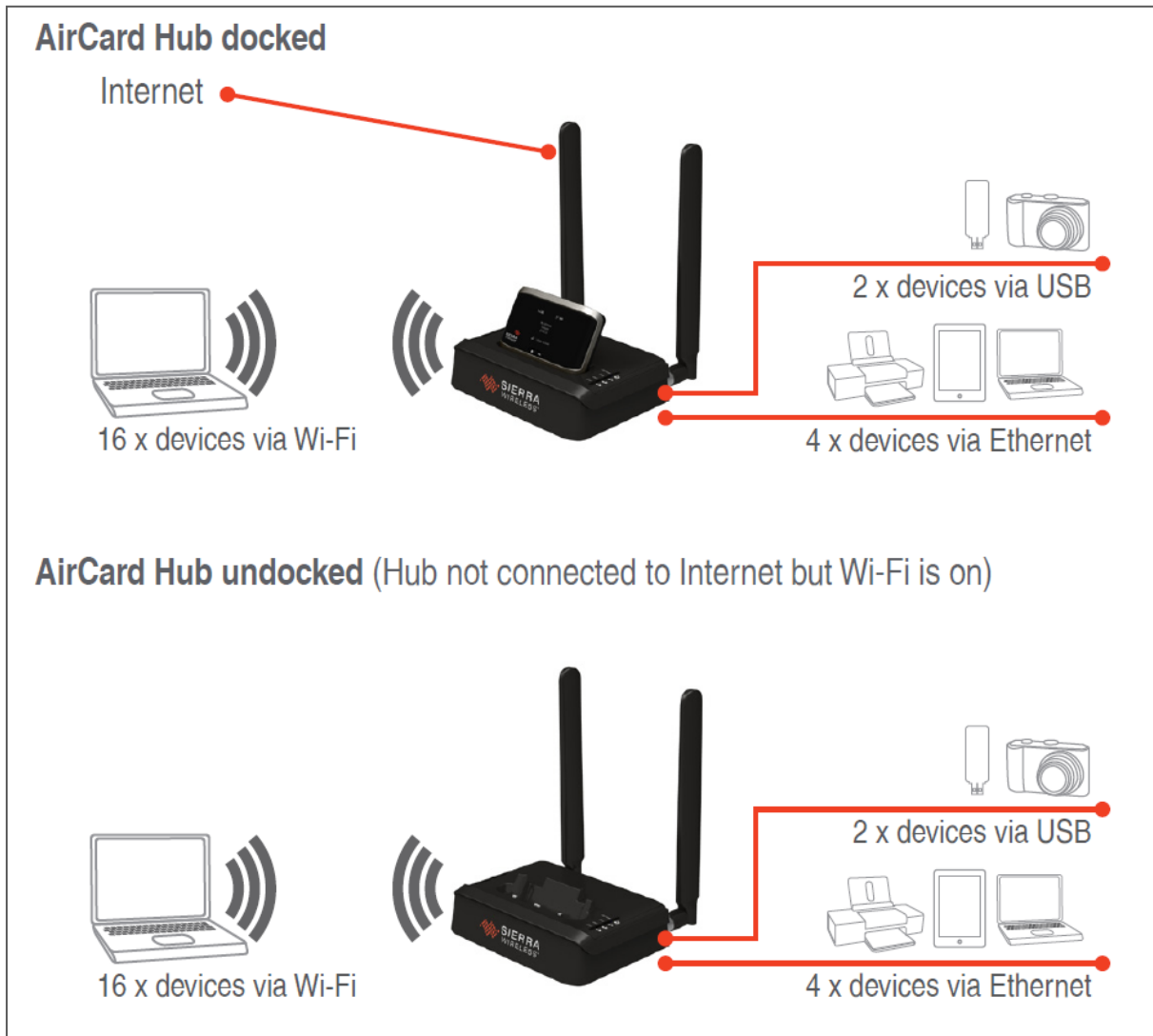


Figure 5: SOHO Mode – NHD1W Docked/Undocked Scenarios

Power User

Power User mode also uses the settings on the docked mobile hotspot. In this mode, however, you can also configure the basic wireless network settings, WAN port function as well as in-depth configuration options for the NHD1W.

You can use the WAN port to connect the NHD1W to an ADSL modem or other xDSL device to provide access to the Internet.



Figure 6: Power User – Basic Status Page

Note: In Power User mode, the wireless network SSID of the NHD1W is the AirCard mobile hotspot’s SSID with ‘-C’ or ‘_C’ added at the end. The IP Address assigned to the NHD1W is based on the AirCard mobile hotspot’s IP address, with the subnet incremented by 1.

Connecting to this wireless network provides access to the attached USB storage devices. Internet access is provided by the docked AirCard mobile hotspot. If the AirCard mobile hotspot is undocked, Internet access is available by connecting to the AirCard mobile hotspot’s SSID. Alternatively, LAN1/WAN port can be configured as WAN port to connect to an ADSL modem or other xDSL device.

Login Tab

In Power User mode, you will see the Login tab next to the Status tab. Click the Login tab to access and configure advanced settings. Unless the administrator Username and Password were previously changed, you can login with the default Username and Password provided in Default Settings (page 15).

The screenshot shows a web interface with two tabs: 'Status' (grey) and 'Login' (red). The 'Login' tab is selected. It contains a form with two input fields: 'Username' with the text 'admin' and 'Password' with five black dots. Below the fields is a horizontal line and a paragraph of text: 'Please enter the login credentials for your router into the above fields and press submit to log into the router's Setup Console. If you are unsure of the details, please note the default settings are admin for both fields.' Another horizontal line is below the text. At the bottom are two buttons: 'Submit' and 'Clear'.

Figure 7: Power User – Login Tab

Alternatively, you can switch to the advanced view by clicking the “**Switch to advanced view**” link that is displayed after you select Power User.

You may select an operating mode for the router. The default mode is “Easy”.

- Easy
Easy mode is best for users that just want to extend the functionality of their hotspot. (The cradle will not function when the hotspot is not present).
- Small Office / Home Office
Small Office/Home Office mode is best for users that want to both extend their hotspot capability as well as have a local network when the mobile hotspot is not present.
- Power User** **Switch to advanced view**
Power User mode opens all advanced user options for the cradle and is meant for users that possess a comfort level with networking technology.

Figure 8: Power User – Switch to Advanced View

Wireless Tab

This tab allows you to configure basic Wi-Fi settings for this device, such as changing the Wi-Fi Network Name (SSID) and Password.

The screenshot shows the 'Wireless' configuration tab. On the left sidebar, 'Wireless' is highlighted in red. The main content area includes:

- WiFi Network Name (SSID):** A text input field containing 'AC760S-0BAD-C'. Below it is a note: '(This is the name of your personal wireless network and will appear when you search for wireless networks to connect to.)'
- WiFi Password (WPA2-PSK):** A password input field with masked characters.
- Confirm Password:** A second password input field with masked characters. Below it is a note: '(This is the password to connect to the internet [Click here to display](#))'
- Save:** A button at the bottom of the form.

Figure 9: Power User – Wireless Tab

Basic View - Wi-Fi settings

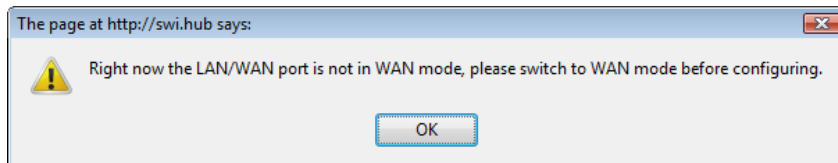
Field	Definition
Wi-Fi Network Name (SSID)	The SSID (Service Set Identifier) is the name of your wireless network. Use a unique name to identify your wireless device so that you can easily connect to it from your wireless clients. This field is case sensitive and can be up to 32 characters.
Wi-Fi Password	Enter the password you would like to use.
Confirm Password	Retype the Wi-Fi password to confirm.

LAN 1 / WAN Tab

This tab allows you to configure the WAN port function. You can select from the following types of WAN connection:

- DHCP (Automatic Configuration – default)
- Static (fixed IP)

Unless the LAN1/WAN port was previously configured as WAN port, you will be prompted with the following warning message.



Click OK to continue; the System Status page will open. From this page, in the Ethernet Port Status section, you can select LAN1/WAN port to be a LAN port or WAN port. Then click Home to go back to the basic status page and to continue configuring your LAN1/WAN port.



Figure 10: Advanced View - Status

DHCP

The default setting is DHCP mode. In this mode network settings are automatically configured via DHCP protocol for the existing connection offered by an ADSL modem or xDSL device. To use this, select DHCP from the WAN Connection Type drop-down menu and click **Save**.

STATIC (Fixed IP)

With Static (Fixed IP) mode, you must enter the network information for the connection. To use this, select STATIC (fixed IP) from the WAN Connection Type drop-down menu, enter the required IP Networking information, and then click **Save**.

Figure 11: Power User - LAN1/WAN Tab

Field	Definition
IP Address	Enter the IP Address the NHD1W will use for the WAN port connection.
Subnet Mask	Enter the Subnet Mask the NHD1W will use for the WAN port connection.
Gateway	Enter the Gateway IP Address the NHD1W will use for the WAN port connection.
Primary / Secondary DNS Server	Enter the DNS Server IP Addresses the NHD1W will use for the WAN port connection.

In Power User mode, the NHD1W also offers a standalone wireless network that provides access to any connected USB storage devices. These can be accessed by both Ethernet and wireless users by using the network address: lswi.hub.

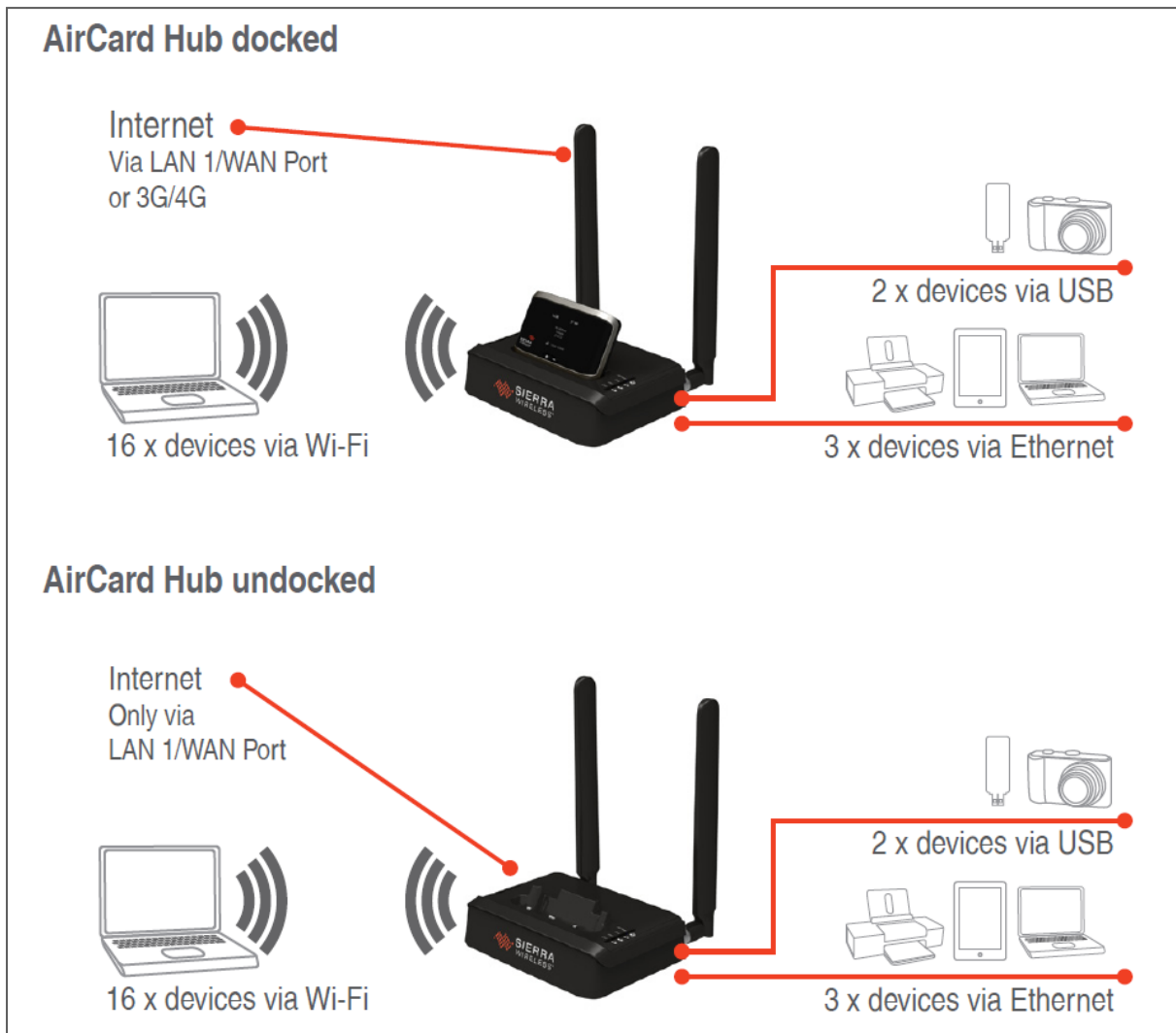


Figure 12: Power User Mode – NHD1W Docked/Undocked Scenarios



4: Advanced Settings

The advanced settings pages are displayed only when the NHD1W is in “Power User” mode.

These pages provide a more in-depth ability to configure the NHD1W.

Home

Click the Home menu item to return you to the basic status page.

Status

The status page as shown in Figure 10 on page 31 provides system related information of the NHD1W. By default, the status page shows System Information, WAN, LAN and Ethernet Port Status. Each section shows information relevant to the connection type or function.

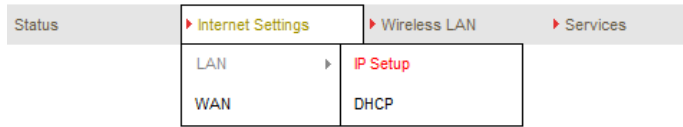
If the LAN, WAN or Ethernet Port status is hidden, click the relevant link below the menu bar. To view all the status page items, click the All Status button.

LAN1/WAN port

The LAN1/WAN port can also operate as a WAN port for connecting to a bridged Ethernet device, such as an xDSL modem. Use the drop-down menu to select the LAN or WAN mode applicable for your environment.

Internet Settings

Select the Internet Settings menu to configure LAN or WAN settings.



LAN Configuration

The LAN drop-down menu item allows you to display the IP Setup and DHCP settings.

IP Setup

From this page you can configure the LAN functionality of the NHD1W. You can change the LAN IP Address, LAN Subnet Mask and DNS Masquerading options.

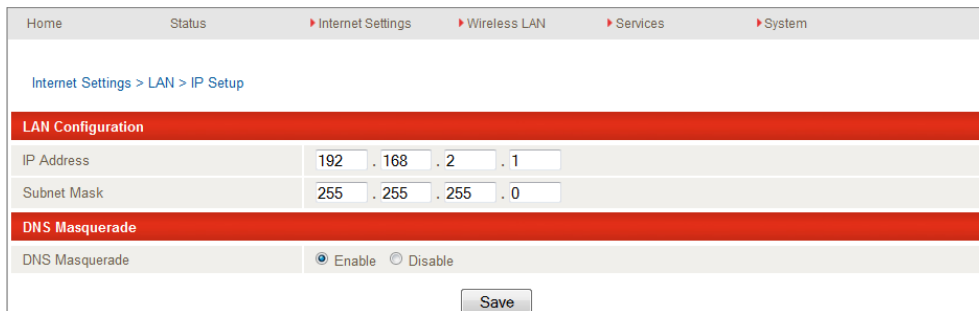


Figure 13: Advanced View - LAN Settings

Name	Description
IP Address	The local IP address of NHD1W
Subnet Mask	The subnet mask for the local network.
DNS Masquerade	Select to enable or disable DNS masquerading for connected clients.

Click **Save** to save the settings.

DHCP

From the DHCP page you can adjust the DHCP settings used by the NHD1W. The DHCP settings are then passed onto any device connecting via DHCP. You can manually set the following settings:

- DHCP Start Range
- DHCP End Range
- DHCP Lease time
- Default Domain Name Suffix
- Primary and Secondary DNS Server
- Primary and Secondary WINS Server
- NTP Server (Option 42)

- TFTP Server (Option 66)
- Option 150
- Option 160 (VoIP options)

Home		Status	Internet Settings	Wireless LAN	Services	System	
All Items DHCP Relay Configuration							
> DHCP Configuration							
DHCP	<input checked="" type="radio"/> Enable <input type="radio"/> Disable						
DHCP Start Range	192 . 168 . 2 . 2						
DHCP End Range	192 . 168 . 2 . 99						
DHCP Lease Time	86400 (seconds)						
Default Domain Name Suffix							
DNS Server 1 IP Address	192 . 168 . 2 . 1						
DNS Server 2 IP Address	0 . 0 . 0 . 0						
WINS Server 1 IP Address	0 . 0 . 0 . 0						
WINS Server 2 IP Address	0 . 0 . 0 . 0						
NTP Server (Option 42)	0 . 0 . 0 . 0						
TFTP Server (Option 66)							
Option 150							
Option 160							
> Address Reservation List							
Computer Name	MAC Address	IP Address					Add
> DHCP Client List							
Computer Name	MAC Address	IP Address	Expire Time				
Save Refresh							

Figure 14: DHCP Settings

After entering the applicable details, click **Save**.

You can also assign a particular IP address to a specific device every time that device makes a DHCP request as follows:

1. Click **Add**.

> Address Reservation List						
Computer Name	MAC Address	IP Address				Add
		0 . 0 . 0 . 0	<input checked="" type="checkbox"/> Enable			Remove

Figure 15: DHCP Settings – Address Reservation List

2. Enter a name for the computer or device.
3. Enter the computer or device's MAC address.
4. Enter the IP address to assign.
5. Click **Save** to apply the changes.

WAN Configuration

The WAN page allows you to configure the optional WAN Ethernet port. Select the WAN connection type suitable for your environment and configure parameters according to the selected connection type.

STATIC (Fixed IP)

If your WAN connection uses a static IP address, please select “STATIC (Fixed IP)” and fill in the required information in the fields provided.

The screenshot shows the WAN Configuration interface. At the top, there are navigation tabs: Home, Status, Internet Settings, Wireless LAN, Services, and System. Below this, a breadcrumb trail reads 'Internet Settings > WAN'. A red header bar contains the text 'WAN Configuration'. Underneath, the 'WAN Connection Type' is set to 'STATIC (fixed IP)'. Below this, there is a section for 'Static Mode' with the following fields: IP Address, Netmask, Gateway, Primary DNS Server, and Secondary DNS Server. Each field has a corresponding input box. At the bottom right of the form is a 'Save' button.

Figure 16: WAN – STATIC (Fixed IP) Settings

Name	Description
IP Address	Enter the IP address assigned by your Internet Service Provider (ISP)
Netmask	Enter the Subnet mask assigned by your ISP
Gateway	Enter the WAN Gateway assigned by your ISP
Primary/ Secondary DNS Server	Enter the DNS address assigned by your ISP

Click **Save** to save the settings.

DHCP

This connection will get the IP address from the Internet service provider. Leave everything as default unless instructed by your Internet Service Provider.

The screenshot shows the WAN Configuration interface with the 'WAN Connection Type' set to 'DHCP (Auto config)'. Below this, there is a section for 'DHCP Mode' with a 'DHCP Mode' dropdown menu and a 'Hostname' input field.

Figure 17: WAN - DHCP Settings

Field	Description
Hostname	Enter the host name of your computer. This is optional, and only required if your service provider asks you to do so.

Click **Save** to apply the settings.

Fail-over Settings

If the LAN1/WAN port is configured in WAN mode, you can select WAN port or WWAN port to access the Internet connection.

Figure 18: WAN – Fail-over Settings

When both WAN and WWAN connections are available, the NHD1W uses the WAN connection as the primary connection and the WWAN connection as the backup connection. In this case you can select one of the four connection types:

Connection Type	Description
WAN	The failover function is disabled and the NHD1W will use WAN connection only.
WWAN	The NHD1W will use WWAN connection only. AirCard mobile hotspot will be required for Internet connection.
WWAN Failover if WAN link down	The NHD1W uses WAN connection as a primary connection and WWAN connection as a backup connection. When the WAN connection is physically disconnected, the NHD1W will start using WWAN connection for Internet access.
WWAN Failover with WAN ping	The NHD1W uses WAN connection as a primary connection and WWAN connection as a backup connection. The NHD1W will periodically ping the assigned servers. When none of the servers respond to the ping message, the NHD1W will switch to use WWAN connection for Internet access. The periodic ping settings can be configured by opening the System Monitor page under Services menu.

Click **Save** to apply the settings.

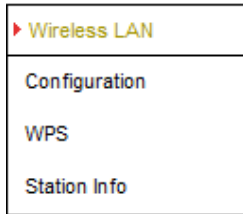
Air Card and Dock(EUT)

EUT supports 2 modes:

1. EUT WLAN function can direct network transmission to other client devices.
2. a. When hotspot router plugged in, EUT WLAN function is disabled. The router would share the WWAN capability to other client devices, through WLAN function on the plugged-in router.
- b. When the router plugged in, the WWAN RF signal would be directed to external antenna on EUT, to enhance WWAN receiving capability. At this moment, the WWAN RF signal would not transmit/receive through original antenna on the router.

Wireless LAN (WLAN)

Select Wireless LAN menu to open wireless network configuration pages. You can open up pages to configure WLAN configuration, to configure WPS setup, or to view WLAN station information.



Configuration

On this page you can define the wireless settings for the NHD1W.

Figure 19: Advanced View – Wi-Fi Settings

Wireless Setup

Option	Definition
Radio On/Off	Wi-Fi is turned on by default. Changing this option to OFF will turn OFF the wireless functionality on the NHD1W; you will not be able to connect to your NHD1W wirelessly.
Country	Select your country.
Network Mode	There are 5 modes to select from: <ul style="list-style-type: none"> • 11b/g mixed mode • 11b only • 11g only • 11n only • 11b/g/n mixed mode
Frequency (Channel)	This setting configures the frequency that the wireless radio uses for wireless connectivity.

The Security Settings section allows you to configure the wireless security for your NHD1W. Setting up sufficient wireless security can prevent unauthorized access to your wireless network.

Security Settings

Option	Definition
Network Name (SSID):	The SSID (Service Set Identifier) is the name of your wireless network. Use a unique name to identify your wireless device so that you can easily connect to it from your wireless clients. This field is case sensitive and can be up to 32 characters. You should change the default SSID for added security.
Network Authentication	You can choose from the following wireless security options: <ul style="list-style-type: none"> • Disabled • Open • Shared • WPA • WPA-PSK • WPA2 • WPA2- PSK • WPA-PSK-WPA2-PSK • WPA1-WPA2 • 802.1x. <p>See the next page for an explanation of the different security types available.</p>
WDS Mode:	WDS (Wireless Distribution System) is a feature that enables the wireless interconnection of access points, and allows a wireless network to be expanded using multiple access points without a wired backbone to link them. Each WDS Access Point needs to be set with the same channel and encryption type.

Network Authentication Options

WPA1/WPA2

WPA (Wi-Fi Protected Access) authentication is suitable for enterprise applications. It must be used in conjunction with an authentication server, such as RADIUS, to provide centralized access control and management. It provides a stronger encryption and authentication solution.

Security Settings	
SSID:	<input type="text" value="AC762-NTC1"/>
Network Authentication:	<input type="text" value="WPA1-WPA2"/>
WPA Pre-Shared Key:	<input type="text" value="••••••••"/> Click here to display
WPA Group Rekey Interval:	<input type="text" value="600"/>
RADIUS Server IP Address:	<input type="text" value="0.0.0.0"/>
RADIUS Port:	<input type="text" value="1812"/>
RADIUS Key:	<input type="text" value="••••••••"/>
WPA Encryption:	AES

Figure 20: Wi-Fi Security Settings - WPA1/WPA2

WPA-PSK/WPA2-PSK

WPA-PSK (TKIP) and WPA2-PSK (AES) are newer types of security. These types of security give a more secure network compared to WEP. Enter the key in the WPA Pre-Shared Key field. The key needs to be more than 8 characters and less than 63 characters and it can be any combination of letters and numbers.

Security Settings	
SSID:	AC762-NTC1
Network Authentication:	WPA-PSK-WPA2-PSK
WPA Pre-Shared Key:	•••••••• Click here to display
WPA Group Rekey interval:	600
WPA Encryption:	AES

Figure 21: Wi-Fi Security Settings - WPA-PSK/WPA2-PSK

Note: The configuration for WPA-PSK and WPA2-PSK is also identical. Your NHD1W uses WPA2-PSK by default.

802.1x

To use 802.1x security, you need to have a RADIUS server on your network that acts as the authentication server. Please type in the details for your RADIUS server in the fields required.

Security Settings	
SSID:	AC762-NTC1
Network Authentication:	802.1X
RADIUS Server IP Address:	0.0.0.0
RADIUS Port:	1812
RADIUS Key:	••••••••
802.1x WEP	<input checked="" type="radio"/> Disable <input type="radio"/> Enable

Figure 22: Wi-Fi Security Settings - 802.1x

Most wireless adapters in computers and laptops support at least WEP and WPA.

Note: After configuring wireless security, you also need to configure your wireless adapter to use the same security settings before you can connect wirelessly. Not all wireless adapters support WPA-PSK/WPA2-PSK/WPA/WPA2 security; please refer to your wireless adapter user guide for more details. It is strongly recommended to set up a simple wireless security such as WPA-PSK (when the wireless client supports WPA-PSK) in order to secure your network.

Wi-Fi Protected Setup (WPS)

The NHD1W supports the WPS feature that allows users with suitable devices to quickly connect to a Wi-Fi network without the use of a keyboard.

Home Status ▶ Internet Settings ▶ Wireless LAN ▶ Services ▶ System

Wireless LAN > WPS

WPS Introduction

This page allows you to configure WPS (WiFi Protected Setup) for your Router. WPS provides a simple method to establish a secure wireless connection between wireless clients and your Router. Once WPS is enabled, you will only need to press a button (Push Button Mode), or enter a PIN (PIN Mode) on both the wireless client and your Router to enable a secure connection between the two.

WPS Config

WPS

WPS Summary

Status	Send M2
WPS Configured	No
SSID	AC760S-0BAD-C
WPS Auth Mode	WPA2-PSK
WPS Encrypt Type	AES
WPS Default Key Index	2
WPS Key(ASCII)	12345678
PIN	61654242

WPS Progress

WPS mode PIN PBC

Figure 23: Wi-Fi Protected Setup (WPS)

If the WPS is enabled by selecting Enable, then WPS Summary and WPS Progress sections are displayed, as shown in Figure 23 above. You can select either PIN mode or PBC mode.

WPS mode	Definition
PIN	When this mode is selected, you need to enter a PIN on both the wireless client and your NHD1W to enable a secure wireless connection. For instructions on displaying the PIN, see the user manual of your wireless device.
PBC	When the PBC (Push Button Configuration) mode is enabled you need to press the WPS button on the AirCard mobile hotspot to initiate the process to enable a secure wireless connection.

Note: The WPS feature is available on many more recent products, such as cameras, printers, smart phones, and laptops. Check the user guide that came with your device to find out if this feature is supported and to configure your device.

Station Info

The Station List shows the wireless clients currently associated with your NHD1W.

Wireless LAN > Station Info						
Station List						
This page allows you to view a list of the wireless clients that are currently associated with your Router.						
SSID: AC760S-0BAD-C						
MAC address	Host Name	IP Address	RSSI	PSM	BW	Connected Time
00:27:19:F6:8B:21	PDG27	192.168.2.17	-42	PWR_ACTIVE	40M	03:31:38

Figure 24: Advanced View - Wi-Fi Station List

Services

Select the Services menu to configure Routing, DDNS, NTP and System Monitor settings.

Services	System
Routing	Static
DDNS	RIP
NTP	NAT
System Monitor	DMZ

Routing

From this menu, you can open the Static Routes, RIP Routing, NAT settings, or DMZ settings page.

Static

The Static Routes page is used to add or delete static routes. Static routes are used to facilitate communication between devices on different networks.

Home	Status	Internet Settings	Wireless LAN	Services	System			
Services > Routing > Static								
Static Routes								
Route no	<input type="text"/> (1-65535)							
Route Name	<input type="text"/>							
Destination IP Address	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>							
IP Subnet Mask	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>							
Gateway IP Address	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>							
Metric	<input type="text"/> (1-65535)							
<input type="button" value="Add"/>								
Item	Route Name	Destination IP Address	Subnet Mask	Gateway IP Address	Metric			
Static Route table empty								
Active Routing Table								
Item	Destination	Gateway	Netmask	Flags	Metric	Ref	Use	Interface
0	192.168.2.0	0.0.0.0	255.255.255.0	U	0	0	0	br0

Figure 25: Static Route Settings

Some routes are added by default by the NHD1W on initialization such as the Ethernet subnet route for routing to a device on the Ethernet subnet. A PPP route is also added upon obtaining a WAN PPP connection.

To add static routes:

1. Enter the required values in the fields for the route being added.
2. Click **Add**.

Note: You must increment the "Route no" by 1 for each route in the "Route no" field; otherwise that route will be overwritten.

The Active Routing table at the bottom will then show the new route added.

To delete Static Routes, click the "Delete Entry" text (in blue).

RIP

RIP (Routing Information Protocol) is used for advertising routes to other routers. Thus, all the routes in the NHD1W's routing table are advertised to other nearby routers. For example, the route for the NHD1W's Ethernet subnet could be advertised to a router on the PPP interface side, so that a router on this network will know how to route to a device on the NHD1W's Ethernet subnet. You will need to add the routes appropriately in the Static Routes section on page 44.

Home	Status	Internet Settings	Wireless LAN	Services	System
Services > Routing > RIP					
RIP Routing					
RIP Enable	<input type="radio"/> Enable <input checked="" type="radio"/> Disable				
Version	2				
Save					

Figure 26: RIP Settings

To configure RIP Settings:

1. Select Enable on the RIP Page.
2. Select RIP version.
3. Click **Save**.

Note: Some routers ignore RIP.

NAT

The NAT page is used to configure the Network Address Translation rules currently in use on the NHD1W. The NHD1W is in NAT mode by default.

Figure 27: NAT Settings

This is only needed if you need to map inbound requests to a specific port on the WAN IP address to a device connected on the Ethernet interface, for example, a web camera.

Option	Definition
Mapping no	For each mapping you're defining, enter a unique number, and then enter the details in the following fields.
Protocol	Specify the protocol to use for the port mapping (TCP, UDP, All protocols).
Source IP Address	Specifies either a "Friendly" IP address that is allowed to access the NHD1W, or a wildcard IP address of 0.0.0.0 that allows all IP addresses to access the NHD1W.
Incoming Port Range	Specify the external port(s) to listen to.
Destination IP Address	Local Area Network address of the device to forward inbound requests to.
Destination Port Range	Local Area Network port(s) to forward connections to.

To configure Port Forwarding:

1. Enter the IP Mapping configuration information as appropriate.
2. Click **Save NAT**.

Note: If the "Incoming Port Range" specifies a single port, then the destination port can be set to any port. If the "Incoming Port Range" specifies a range of port numbers then the "Destination Port Range" **MUST** be the same as the "Incoming Port Range".

To delete a port forwarding rule, click the corresponding "Delete Entry" link from the list of IP Mappings.

DMZ

If you have a client PC that cannot run an Internet application (for example, games) properly from behind the NAT firewall, then you can open up the firewall restrictions to allow unrestricted two-way Internet access by defining a DMZ Host.

The DMZ function allows you to re-direct all packets going to your WAN port IP address, to a particular IP address in your LAN. The difference between the virtual server and the DMZ function is that the virtual server re-directs a particular service/Internet application (for example FTP, websites) to a particular LAN client/server, whereas DMZ re-directs all packets (regardless of services) going to your WAN IP address to a particular LAN client/server.

Figure 28: Advanced View - DMZ Settings

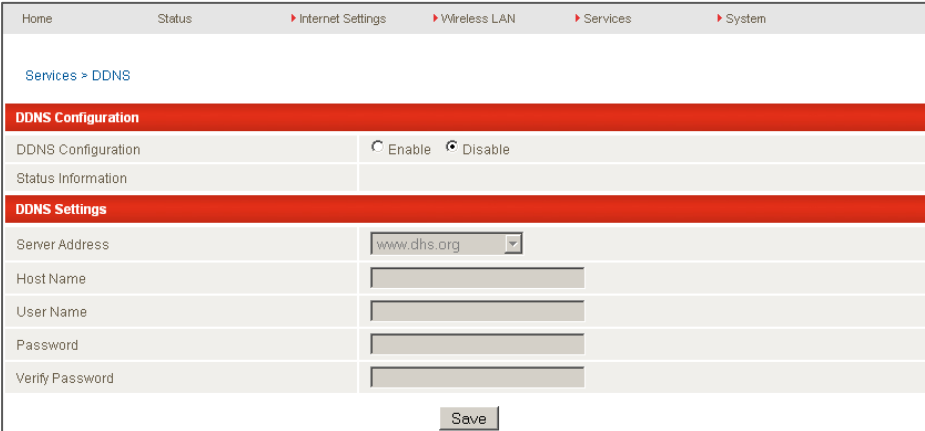
Option	Definition
DMZ Settings:	Enable/disable DMZ.
DMZ IP Address:	Fill in the IP address of a particular host in your LAN network that will receive all the packets originally going to the WAN port/Public IP address of your NHD1W.

To configure DMZ Settings:

1. For DMZ Settings, click **Enable**.
2. Enter DMZ IP Address.
3. Click **Save**.

DDNS

The DDNS page is used to configure the Dynamic DNS feature of the NHD1W. You can select from a number of dynamic DNS hosts.



The screenshot shows the DDNS configuration page. At the top, there is a navigation bar with links for Home, Status, Internet Settings, Wireless LAN, Services, and System. Below this, the breadcrumb path is 'Services > DDNS'. The main content area is divided into two sections: 'DDNS Configuration' and 'DDNS Settings'. In the 'DDNS Configuration' section, there are two radio buttons: 'Enable' (which is selected) and 'Disable'. Below this is a 'Status Information' section. The 'DDNS Settings' section contains several input fields: 'Server Address' (a dropdown menu with 'www.dhs.org' selected), 'Host Name', 'User Name', 'Password', and 'Verify Password'. A 'Save' button is located at the bottom right of the settings section.

Figure 29: DDNS Settings

Dynamic DNS provides a method for the NHD1W to update an external name server with the current WAN IP address. The following DDNS Providers are available:


- www.dhs.org
- www.dyndns.org
- www.dyns.cx
- www.easydns.com
- www.justlinux.com
- www.ods.org
- www.tzo.com
- www.zoneedit.com

To configure dynamic DNS:

1. Select DDNS Configuration Enable.
2. Select the Dynamic DNS service that you wish to use. Enter your dynamic DNS account credentials.
3. Click **Save**.

NTP

The NTP page is used to select the NTP server used for network time synchronization.



The screenshot shows a web interface for NTP configuration. At the top, there is a navigation menu with links: Home, Status, Internet Settings, Wireless LAN, Services, and System. Below the menu, there is a breadcrumb trail: Services > NTP. The main content area is titled "NTP Configuration" and contains two rows of settings. The first row is "Enable NTP server" with radio buttons for "Enable" (selected) and "Disable". The second row is "NTP Server Address" with a text input field containing "0.netcomm.pool.ntp.org". A "Save" button is located at the bottom right of the form.

Figure 30: NTP Settings

The NTP (Network Time Protocol) settings allow your NHD1W to synchronize its internal clock with a global Internet Time server. This setting affects functions such as System Log entries and Firewall settings, where the current system time is displayed.

You can use the default NTP server or enter one manually if required.

To configure NTP Settings:

1. Select Enable for Enable NTP server.
2. Enter NTP Server Address.
3. Click **Save**.

System Monitor

The System Monitor page is used to configure the behaviour of the Periodic Ping monitor function.

Figure 31: System Monitor Settings

The Periodic Ping Reset Monitor configures the NHD1W to transmit controlled ping packets to 2 specified IP addresses. If the NHD1W does not receive responses to the pings, the NHD1W reboots.

This works as follows:

1. After every “Periodic PING Timer” configured interval, the NHD1W sends 3 consecutive pings to the “Destination Address”.
2. If all 3 pings fail, the NHD1W sends 3 consecutive pings to the “Second Address”.
3. The NHD1W then sends 3 consecutive pings to the “Destination Address” and 3 consecutive pings to the “Second Address” every “Periodic PING Accelerated Timer” configured interval.
4. If all accelerated pings in step 3 above fail, the number of times configured in “Fail Count”, the NHD1W reboots.

Note: Do not set the “Periodic PING Timer” to a value less than 60 seconds; this is to allow the NHD1W time to reconnect to the 3G/4G network following a reboot.

5. If any ping succeeds, the NHD1W returns to step 1 and does not reboot.

To disable the Periodic Ping Reset Monitor set “Fail Count” to 0.

Note: The traffic generated by the periodic ping feature is counted as chargeable usage; please keep this in mind when selecting how often to ping.

Configure a Forced Reset

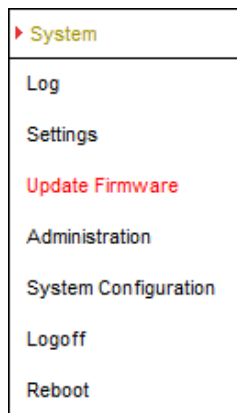
The NHD1W can optionally be configured to automatically reboot after a period of time specified in minutes. This ensures that the NHD1W will restart if some anomaly occurs. This is useful in remote installations.

This feature is available by clicking **Services > System Monitor**.

The default value is 0, which disables the Forced Reset Timer. The maximum value is 65535 minutes.

System

Select the System menu to view system information or to configure system level settings.



Log

The Log page is used to download or display the current System Log of the NHD1W.

Date & Time	Machine	Level	Process	Message
Friday, 27 January 2012 12:20:41 PM	swi	user.notice	update_resolv.sh	getting the default gateway
Friday, 27 January 2012 12:20:41 PM	swi	user.notice	06_dns_down	updating /etc/resolv.conf
Friday, 27 January 2012 12:20:40 PM	swi	user.notice	ip-down.d/www_led	done.
Friday, 27 January 2012 12:20:40 PM	swi	user.notice	ip-down.d/www_led	setting WWW LED to 0...
Friday, 27 January 2012 12:20:40 PM	swi	user.notice	ip-down.d/www_led	eth net rdb = 'eth.0' / eth wan port status = "

Figure 32: System Log

The System Log enables you to troubleshoot any issues you may be experiencing with your NHD1W. You can specify the level of detail (types of messages) to display, as shown in the following table.

Display Level	Definition
All	Display all system log messages.
Debug	Show extended system log messages with full debugging level details.
Info	Show informational messages only.
Notice	Show normal system logging information.
Warning	Show warning messages only.
Error	Show error condition messages only.

You can also download the current System Log to your computer for off-line viewing. To do this, click the Download Log File link at the bottom of the page.

Settings

The settings page is used to back up or restore the NHD1W's configuration or to reset it to factory defaults.

The screenshot shows the 'Settings' page in a web interface. At the top, there is a navigation bar with links: Home, Status, Internet Settings, Wireless LAN, Services, and System. Below this, a breadcrumb trail reads 'System > Load/Save > Settings'. The page is divided into three main sections, each with a red header:

- Save a copy of current settings:** This section contains two input fields labeled 'Password' and 'Confirm Password', followed by a 'Save' button.
- Restore saved settings:** This section contains a 'File' input field, a 'Browse...' button, and a 'Restore' button.
- RESTORE FACTORY DEFAULTS:** This section contains a single 'Restore' button.

Figure 33: Load / Save Configuration Page

Note: To perform an update, you must be logged into the NHD1W as the root user (see the Administration section on page 54 for more details).

To save a copy of the NHD1W's configuration:

1. Enter the root manager Password and click **Save**.

This will download a copy of the NHD1W's current settings to your PC.

Note: Do NOT edit the contents of the file downloaded file; if you modify it, you might not be able to use it to restore the NHD1W's configuration later.

You can change the name of the file but the filename extension must remain ".cfg".

To restore the NHD1W's configuration using downloaded file:

1. Click **Browse**.
2. Select the configuration file you wish to restore.
3. Click **Restore** under Restore saved settings.

To restore the NHD1W's configuration to the factory defaults:

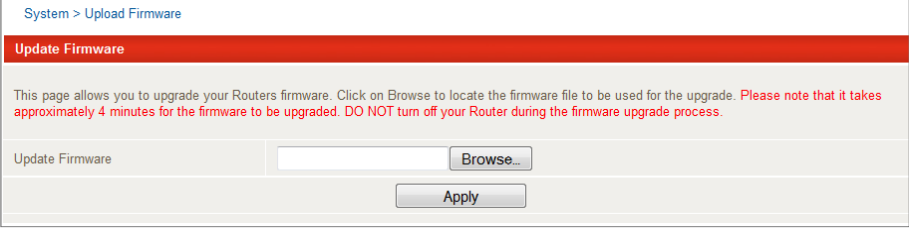
1. Click **Restore** under RESTORE FACTORY DEFAULTS.

The NHD1W will then restart.

Update Firmware

This page allows you to upgrade the NHD1W's internal software (firmware).

The upgrade process takes approximately 4 minutes. During the firmware upgrade process, all the lights on the front of the NHD1W will flash.



System > Upload Firmware

Update Firmware

This page allows you to upgrade your Routers firmware. Click on Browse to locate the firmware file to be used for the upgrade. **Please note that it takes approximately 4 minutes for the firmware to be upgraded. DO NOT turn off your Router during the firmware upgrade process.**

Update Firmware

Figure 34: Advanced View - Firmware Update

Warning: Do NOT turn off the NHD1W during the firmware upgrade process. It is recommended to use Ethernet LAN interface for firmware upgrades.

To upgrade the firmware of your NHD1W:

1. Download the upgrade image file from the NetComm Wireless support site www.netcomm.com.au.
2. Click the **Browse** button and navigate to the location of the firmware file that you've downloaded.
3. Click **Apply** to start the upgrade process.
4. Follow the on-screen prompts.

Once completed, your NHD1W will reboot to the Easy mode operation.

Administration

The Administration page is used to enable or disable remote administration and set the username / password required to access the NHD1W remotely.

Figure 35: Administration Configuration Items

Option	Definition
Remote Administration	Enable or disable remote HTTP access to the NHD1W.
Remote Administration Port	Set the port to use for remote HTTP access.
Admin Password	Enter the new password for the selected user account.
Confirm Password	Re-enter the new password for the selected user account.

Note: It is not necessary to change the password if you are only changing the incoming port number.

To access the NHD1W's configuration pages remotely:

1. Open a browser window (for example Internet Explorer, Firefox, Safari).
2. In the address bar, enter the NHD1W's WAN IP address and assigned port number, for example "10.10.10.10: 8080".

Note: You can find the NHD1W's WAN IP address by clicking the "Status" menu. The Local field in the WWAN section shows the NHD1W's WAN IP address.

3. Click **Login** and type "admin" in the Username and "admin" in the Password fields (without quotes). Then click on **Submit**.

System Configuration

The System Configuration page is used to specify an external syslog server or enable the diagnostics function.

Figure 36: System Configuration Items

Option	Definition
IP / Hostname [:PORT]	The IP address and port of the external syslog server that the logging information will be sent to.
Diagnostic Configuration	Enable or disable the diagnostics function on the NHD1W.
Diagnostic TCP Port	The port that the diagnostic server software is listening on.

Logoff

The logoff item logs you out of your web configuration session.

Figure 37: Logoff

Reboot

The reboot item reboots the NHD1W. This can be useful if you have made configuration changes you want to implement or want to reboot the NHD1W.

Figure 38: Reboot NHD1W

>> 5: Specifications

Technical Specifications

Model	Description
CPU	Ralink RT3352F
Connectivity	3x 10/100 Ethernet LAN, 1x 10/100 Ethernet LAN/WAN, WLAN (up to 16 connections) 2x USB ports
Antenna connector	2 x SMA (female connector)
LED indicators	Power WLAN WWAN, LAN1/WAN LAN2 LAN3 LAN4
Operating temperature	0 ~ 50 degrees Celsius
Ambient temperature (Power Supply Unit)	0 ~ 35 degrees Celsius
Storage temperature	-20 to 65 degrees Celsius
Power input	12VDC – 2A
Wi-Fi antennas	802.11 b/g/n - 2.4 GHz, 2x2 MIMO internal antennas
3G/4G antennas	Multi band dipole 698-960/1710-2170/2500-2700MHz

Mechanical Specifications



NHD1W dimensions	
Length (l)	160 mm
Height (h1)	30 mm
Height (with antennas) (h2)	200 mm
Width (w1)	105 mm
Width (with antennas) (w2)	150 mm
Weight	322 g
Weight (with antennas)	416 g



6: FAQ

Does the NHD1W require any configuration out of the box?

No; the NHD1W is a plug-and-play device. Plug the device into an electrical outlet and, once the WLAN and WWAN indicator lights stop flashing, you can use the device. For Wi-Fi connectivity, the SSID (Service Set Identifier) and network key (password) are displayed on the AirCard mobile hotspot's LCD screen. If you would like to customize your settings you can enter <http://swi.hub> into your Web browser to access the NHD1W's homepage.

The NHD1W was connected but cannot get back online. What should I do?

You may need to enable the periodic ping timer using the System Monitor feature (see page 50). This ensures that, if the connection drops (that is, outage on the network), that the NHD1W will reboot after a number of failed pings and then force a re-connect. A timer setting of around 15 minutes should be sufficient.

Note: *The traffic generated by the periodic ping feature is counted as chargeable usage; please keep this in mind when selecting how often to ping.*

What should I do if the NHD1W is rebooting frequently?

Check the **Services > System Monitor** settings (see page 50) on the NHD1W homepage and see if the "Force Reset every" timeout is set to a value other than 0. A value of 1, for example means the unit will reboot every minute regardless of what happens. Reset it to 0 if you don't want this feature, or set it to a larger value if you don't want the NHD1W to reboot so often.

Can I change the name and password of my wireless network?

Yes, but the NHD1W uses the wireless network credentials from your AirCard mobile hotspot. You can modify these settings by logging in to your AirCard mobile hotspot's homepage.

If you are operating in Power User mode, you can change your NHD1W settings from the NHD1W's homepage (<http://swi.hub>) and switching to advanced view. You can change the SSID (Service Set Identifier), the security standard (WPA, WPA2, WEP) and your Wi-Fi password.

How do I share my Internet connection with other users?

Give the SSID (Service Set Identifier) and Wi-Fi network password for your NHD1W to all users you want to share your Wi-Fi Internet connection with. Each user will need to select the NHD1W SSID, on their Wi-Fi enabled computer or device and enter the Wi-Fi network password you provide. Alternatively, users can use the WPS feature, if their devices support it. See Quick Wi-Fi Setup on page 20.

I forgot my Management Console password. What can I do?

If you have forgotten your Management Console password and cannot log in as administrator, reset your NHD1W back to default settings. To reset your device, press and hold the reset button on the back of your NHD1W for more than 12 seconds, until all the indicator lights on the unit will flash. After a reset, the NHD1W will boot up into Easy mode.

Note: *Resetting the NHD1W using the RESET button will also reset any custom settings and passwords you may have already set up.*



7: Regulatory Information

Regulatory Information for North America

This device is only authorized to use with AirCard, FCC ID: N7NAC763S.

Antenna Information is as shown below:

Antenna Type: External Antenna

Antenna Gain: 850 band: 1.00 dBi; 1900 band: 1.75 dBi; LTE Band 4: 1.75dBi; LTE Band 7: 3.00dBi

Caution: *The antennas of NHD1W must be 20 cm or more from users during operation, to satisfy FCC / IC RF exposure requirements.*

Where appropriate, the use of the equipment is subject to the following conditions: If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

United States FCC Information –

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 equipment generates, uses and can radiated 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 equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

If you have purchased this product under a United States Government contract, it shall be subject to restrictions as set forth in subparagraph (c)(1)(ii) of Defense Federal Acquisitions Regulations (DFARs) Section 252.227-7013 for Department of Defense contracts, and as set forth in Federal Acquisitions Regulations (FARs) Section 52.227-19 for civilian agency contracts or any successor regulations. If further government regulations apply, it is your responsibility to ensure compliance with such regulations.

This device complies with Industry Canada licence-exempt RSS standard(s).
Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

IC Regulations:

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

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Regulatory Information for EU countries

To ensure safe use, the NHD1W must be 20 cm or more from users during operation. NetComm Wireless hereby declares that the NetComm Wireless NHD1W conforms to all the essential requirements of Directive 1999/5/EC:



The Declaration of Conformity made under Directive 1999/5/EC is available for viewing at the following location in the EU community:

Suite 5, the Hub
Fowler Avenue
Farnborough Business Park
Farnborough, United Kingdom GU14 7JP

Notice: *User restrictions for Wi-Fi operation apply in France. Please check with French authorities before using this device in France.*

Regulatory Information for Australia

To ensure safe use, the modem must be 20 cm or more from users during operation.

The Australian Communications & Media Authority (ACMA) requires you to be aware of the following information and warnings:

1. This unit may be connected to the Telecommunication Network through a line cord which meets the requirements of the AS/CA S008-2011 Standard.
2. This equipment has been tested and found to comply with the Standards for C-Tick as set by the ACMA. These standards are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio noise and, if not installed and used in accordance with the instructions detailed within this manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur with the installation of this product in your home or office. If this equipment does cause some degree of interference to radio or television reception, which can be determined by turning the equipment off and on, we encourage the user to try to correct the interference by one or more of the following measures:
 - Change the direction or relocate the receiving antenna.
 - Increase the separation between this equipment and the receiver.
 - Connect the equipment to an alternate power outlet on a different power circuit from that to which the receiver/TV is connected.
 - Consult an experienced radio/TV technician for help.
3. The power supply that is provided with this unit is only intended for use with this product. Do not use this power supply with any other product or do not use any other power supply that is not approved for use with this product by NetComm Wireless. Failure to do so may cause damage to this product, fire or result in personal injury.

WWAN FCC ID: N7NAC763S is authorized for use with this product.

Antenna information as below:

Antenna type: External Antenna

Antenna gain:

850 Band : 1.00 dBi

1900 Band : 1.75 dBi

