



Wi-REACH Classic

User Manual

Version 1.09



Version	Comments
1.03	Initial version
1.04	Changes for firmware version 8.08.q11
1.05	Changes for firmware version 8.08.q15 - New modem logging to file function
1.06	Changes for firmware version 8.08.q23 - Host name is displayed on DHCP clients page - Minor document editing
1.07	Minor document editing due to default SSID change
1.08	Changes for firmware version 8.08.q30 - Addition of country and provider selector in Cellular configuration screen - Additional modems supported - Increase download throughput
1.09	MAJOR RELEASE Changes for firmware version 8.08q42 - Wi-REACH Classic operates in full Access Point mode - Up to 8 WiFi stations - New WiFi security modes - WPA-PSK - WPA2-PSK - WPA/WPA2 Mixed Mode - Show number of connected stations in main status page

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About This Guide

Thank you for purchasing Wi-REACH Classic – a standalone personal mobile hotspot.

You can now share a wireless internet connection with your friends, family and colleagues.

The purpose of this User Manual is to familiarize you with the functionality and operation of Wi-REACH Classic.

This manual is updated from time to time. Its contents will usually coincide with the most recent Wi-REACH Classic firmware version.

The most recent version can be found on Connect One's web site –

www.connectone.com – follow the links to Wi-REACH Classic support page.

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1 Product Overview

Connect One's Wi-REACH™ Classic Standalone Mobile Hotspot connects WiFi enabled devices to the internet through the mobile network. Whether on the beach, in the car, on the train or in the park, you and your friends can quickly and easily access the internet with only one button to push.



Share a 3G/4G internet connection

Wi-REACH Classic combines the connectivity merits of WiFi with the excellent mobile coverage of 3G/4G cellular. You connect to Wi-REACH Classic via WiFi and the hotspot is connected via a 3G/4G modem to the mobile network.

1.1 How to Use this Manual

This manual will assist you in setting up your Wi-REACH Classic after your initial purchase.

You may also use this manual as a reference guide in operating Wi-REACH Classic.

2 Getting Started

This section describes the content of the Wi-REACH Classic package and provides unpacking and first-time configuration instructions. The final section of this chapter offers several ways to test the Wi-REACH Classic connection.

2.1 What's in the Package?

The Wi-REACH Classic package includes the following items:

- Wi-REACH Classic
- USB cable (used for charging)
- 90° USB adapter
- 110V/220V power supply
- Release CD that contains this manual

Note: Before you can connect to the 3G/4G network, you will need to have a 3G/4G USB modem with an activated SIM card. Your local cellular provider should have this available along with data packages which you can choose according to your needs.

For the latest list of supported 3G/4G USB modems please see
<http://www.connectone.com/media/upload/3G-USB-LIST.pdf>

If your USB modem is not on the list, please contact WiReach@connectone.com as your modem may have been added but is not on the list yet.

2.2 Additional Documentation

The release CD contains this manual.

Note: Because documentation, utilities and firmware files change from time to time, please be sure to check for the latest versions on the Connect One Web site:
<http://www.connectone.com>.

2.3 Panel Buttons and Indications

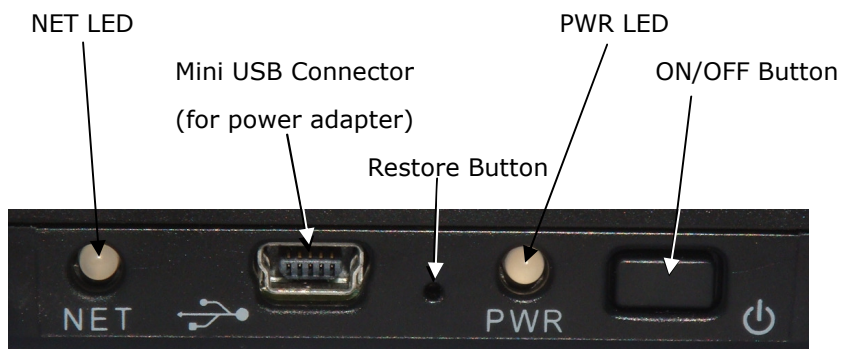
PWR LED

Color	State	Indication
None	None	Power is OFF
RED	Solid	Power is ON
RED	Flashing slow	Battery low
YELLOW	Solid	Power is OFF and Battery is charging
ORANGE	Solid	Power is ON and Battery is charging

NET LED

Color	State	Indication
None	None	No USB stick installed
RED	Solid	USB stick installed, not connected
RED	Flashing fast	USB stick installed, not supported
BLUE	Solid	USB stick installed and ready
BLUE	Flashing slow	Connected to Network
PURPLE	Solid	Battery fully discharged

Panel Buttons and Indications:



2.4 Unpacking and Installing

Wi-REACH Classic installation is simple and all the required accessories are supplied with the device (except for the USB 3G modem which you should already have).

➤ **To install Wi-REACH Classic:**

- 1 Before you can use Wi-REACH Classic, you will need to charge its battery, insert the SIM card into the USB 3G modem and keep the modem handy for the procedure "Installing a USB Modem" further down.

Note: Charge the battery with the power supply provided for at least 3 hours before first use when the unit is turned OFF. Alternatively, connect the power supply and keep this connection during the installation.

Note: To use the power supply, connect the USB cable provided to the power supply USB connector and select the correct AC plug for your area. The mini USB plug on the end of the cable connects to the Wi-REACH Classic mini USB connector.



- 2 Press the power switch.

The PWR LED will turn ON and the NET LED will flash BLUE once.

Note: PWR LED color will depend on whether you are running on battery power, or with a power supply connected. (see LED indications chart for more details)

2.4.1 Configuring Wi-REACH Classic via WiFi and a web browser

This section describes how to configure Wi-REACH Classic via your web browser.

In order to access Wi-REACH Classic with your browser, you first need to connect your computer or device to Wi-REACH Classic via WiFi.

➤ To connect to Wi-REACH Classic:


- 1 Make sure Wi-REACH Classic power is ON.
- 2 Find and connect to Wi-REACH Classic using the WiFi manager application on your computer or device. This process varies depending on your computer/device and operating system.
- 3 Select "Wi-REACH 12345678" from the wireless networks found and connect to it.

The 8 digits are unique to your Wi-REACH Classic, and are also printed on a label on the back of your unit.

Wi-REACH Classic is shipped from the factory with no WiFi security configured.

- 4 In your web browser's address bar, type in <http://192.168.0.1> and Enter.

Wi-REACH Classic's internal configuration web site will be displayed showing the General Information page.



Home
Cellular
WiFi
DHCP
Gateway
Profiles
Remote Update
Admin
Login


General Info

Connection Info

Modem Info

General Information

IP Address 0.0.0.0	Connected Stations 0
SSID Wi-REACH 12345678	Security None
System Status	Firmware Version ID808q42 13.4.2011 (WRCH)
MAC Address 0019882AE0BA	Modem Status No USB Modem attached

Active Profile: Profile0
Battery Status: 

➤ **To configure cellular parameters:**

- 5 Select "Cellular". The Cellular configuration page will be displayed.

Wi-REACH Personal Hotspot

ConnectOne
The Device Networking Authority

Home Cellular WiFi DHCP Gateway Profiles Remote Update Admin Login

Cellular Configuration

Country

Provider

Dial String


APN

User Name

Password

NOTE: This Country/Provider selector should be used as a guide to filling in the cellular parameters as our data may not be fully up to date. Your cellular provider is ultimately the best source for this information.

For changes to take effect, recycle power to WI-REACH.

Active Profile: Profile0 Battery Status: 

You may select your Country and Provider from the drop-down lists.

If you know the configuration for your cellular provider, or if your provider is not on the list, you can fill the parameters manually. Erase the "APN" text and fill out the APN that you received from your cellular provider, and User Name and Password if needed.

If you have a CDMA modem, fill out "CDMA" (without the quotes) in the APN field, and fill in #777 as the Dial String.

Select **"Save"**.

➤ **To configure WiFi parameters:**

- 6 Select "WiFi". The WiFi configuration page will be displayed.

You can change the configuration as you wish.

Note: Wi-REACH Classic is shipped from the factory with a unique SSID so that your Wi-REACH Classic will not be confused with other Wi-REACH Classic hotspots in your immediate area. This unique SSID is also printed on a sticker on the back of your unit.

You may change this SSID as you wish (for example "Wi-REACH_YourName")

When selecting a security setting, a **Security Key** needs to be entered.

Note: For WPA and WPA2, at least 8 characters need to be entered.

Note: For WEP64, 5 ASCII characters or 10 hex characters need to be entered. For WEP128, it's 13 ASCII or 26 hex characters.

Example for WEP64: 12345 (ASCII) or 3132333435 (hex – which is the hex representation of 12345 ASCII).

When you complete your selections, select "Save".

Note: If you changed the settings, the new settings will be used the next time the Wi-REACH Classic is powered ON.

2.4.2 Installing a USB Modem

➤ **To connect Wi-REACH Classic to the network:**

- 1 Make sure Wi-REACH Classic is turned OFF.

- 2 Insert the USB modem into the Wi-REACH Classic and turn ON Wi-REACH Classic.
- 3 Find and connect to Wi-REACH Classic using the WiFi manager application on your computer or device. This process varies depending on your computer/device and operating system.
- 4 Select "Wi-REACH 12345678" (or the SSID you changed to in the previous step) from the wireless networks found and connect to it.
- 5 In your web browser's address bar, enter <http://192.168.0.1> and Enter. Wi-REACH Classic's internal configuration web site will be displayed.

Wi-REACH Personal Hotspot

Home Cellular WiFi DHCP Gateway Profiles Remote Update Admin

Login

General Info

Connection Info

Modem Info

General Information

IP Address	0.0.0.0	Connected Stations	0
SSID	Wi-REACH 12345678	Security	None
System Status		Firmware Version	ID808q42 13.4.2011 (WRCH)
MAC Address	0019882AE0BA	Modem Status	No USB Modem attached

Active Profile: Profile0

Battery Status:



On the Wi-REACH Classic, the NET LED will initially turn **RED**. After the modem is recognized and ready, the NET LED will turn a **solid BLUE**. Finally, when the modem goes online, the NET LED will **flash BLUE slowly**. Once the modem goes online, the **IP Address** will show the address received from the cellular provider, the **System Status** will show "Connected to ISP", and the **Modem Status** will show "USB modem online".

Wi-REACH Personal Hotspot

Home Cellular WiFi DHCP Gateway Profiles Remote Update Admin

Login

General Info

Connection Info

Modem Info

General Information

IP Address	10.195.176.184	Connected Stations	2
SSID	Wi-REACH 12345678	Security	None
System Status	Connected to ISP	Firmware Version	ID808q42 13.4.2011 (WRCH)
MAC Address	0019882AE0BA	Modem Status	USB modem online

Active Profile: Profile0

Battery Status: 

Note: The amount of time it will take the modem to go online depends on the type of modem and the specific cellular provider you are connecting to. In general, this process may be as fast as 30 seconds, or as slow as about 2 minutes.

If the modem does not go online, pls recheck the APN, username and password you entered in the Cellular configuration page.

Once the modem is online, you can browse to an internet location.

Note: If you are unable to immediately browse to an internet location, wait a few seconds and try again since DNS information is usually retrieved from the cellular provider only after going ONLINE.

3 Using Wi-REACH Classic

This section describes how to use Wi-REACH Classic as a personal hotspot.

3.1 General

Wi-REACH Classic is a personal hotspot that you can carry with you wherever you go, and provide internet connectivity to PCs or devices with WiFi capability where you have 3G/4G coverage.

Wi-REACH Classic works in conjunction with a USB 3G/4G modem dongle with an activated data plan.

Example use scenarios:

- You travel to a conference with your colleagues from work, and you can't seem to find an available open WiFi service. Turn ON Wi-REACH Classic and you and your colleagues will have instant connectivity.
- You arrive at a customer location to demo your product which requires you to connect to the internet. You cannot gain access to your customer's WiFi because it requires a password, and the IT people do not allow guests onto the customer's network.
Turn ON Wi-REACH Classic and you have instant WiFi access to the internet – you can also allow the customer access to the internet via your personal hotspot to view a demo you prepared.
- You are driving in your car with the family and your kids want to access a social network while you are driving. Turn ON Wi-REACH Classic and each one of them can access the internet with their WiFi-enabled device or PC.

3.2 Wi-REACH Classic Features and Configuration

3.2.1 Status Information

- 1 The General Info page shows the following info:

Wi-REACH Personal Hotspot


ConnectOne
The Device Networking Authority

Home Cellular WiFi DHCP Gateway Profiles Remote Update Admin Login

General Info Connection Info Modem Info

General Information

IP Address	10.195.176.184	Connected Stations	2
SSID	Wi-REACH 12345678	Security	None
System Status	Connected to ISP	Firmware Version	ID808q42 13.4.2011 (WRCH)
MAC Address	0019882AE0BA	Modem Status	USB modem online

Active Profile: Profile0 Battery Status: 

IP Address is the address received from the 3G/4G operator, and the **System Status** shows the connection status to that operator.


Connected Stations are the number of WiFi stations or devices currently connected to Wi-REACH Classic.

SSID, MAC Address and **Security** relate to the WiFi connection.

Firmware Version is the version of the Wi-REACH Classic software currently in the unit.

Modem Status shows the status of the USB modem.

2 The Connection Info page shows the following:

Wi-REACH Personal Hotspot



[Home](#)
[Cellular](#)
[WiFi](#)
[DHCP](#)
[Gateway](#)
[Profiles](#)
[Remote Update](#)
[Admin](#)
[Login](#)

[General Info](#)
[Connection Info](#)
[Modem Info](#)

Connection Information

Current Time Online	0:04:50		
Accumulated Profile Time	0:09:18	Entire Profile Time	0:09:18
Current Bytes Received	2.12KB	Current Bytes Sent	2.35KB
Accu. Profile Bytes Received	4.44KB	Accu. Profile Bytes Sent	3.45KB
Entire Profile Bytes Received	4.44KB	Entire Profile Bytes Sent	3.45KB

Active Profile: Profile0

Battery Status: 

Current Time Online shows how long it has been since the Wi-REACH Classic went ONLINE.

Accumulated Profile Time is how much ONLINE time has been accumulated for the current profile. The **Active Profile** is shown at the bottom left.


Entire Profile Time is the total of all profiles ONLINE time.

Current Bytes Received and **Current Bytes Sent** are the total number of bytes received/sent during the current ONLINE session.

Accu. Profile Bytes Received and **Accu. Profile Bytes Sent** are the total number of bytes received/sent accumulated for the current profile.

Entire Profile Bytes Received and **Entire Profile Bytes Sent** are the total number of bytes received/sent for all profiles.

3 The Modem Info page shows the following:

Wi-REACH Personal Hotspot



[Home](#)
[Cellular](#)
[WiFi](#)
[DHCP](#)
[Gateway](#)
[Profiles](#)
[Remote Update](#)
[Admin](#)
[Login](#)

[General Info](#)
[Connection Info](#)
[Modem Info](#)

Modem Information

Modem Manufacturer	ZTE INCORPORATED	Modem Model ID	MF637
Modem Revision	P673A3V1.0.0B04	Modem S/N	356516020074923
Modem IMSI	425010702603056		

Active Profile: Profile0

Battery Status: 


This is the information retrieved from the USB modem.

3.2.2 Cellular Configuration

The Cellular configuration page shows:

Wi-REACH Personal Hotspot

Home Cellular WiFi DHCP Gateway Profiles Remote Update Admin [Login](#)



Cellular Configuration

Country

Provider

Dial String


APN

User Name

Password

NOTE: This Country/Provider selector should be used as a guide to filling in the cellular parameters as our data may not be fully up to date. Your cellular provider is ultimately the best source for this information.

For changes to take effect, recycle power to WI-REACH.

Active Profile: Profile0
Battery Status: 

Wi-REACH Classic contains a database of providers around the world with the relevant cellular configuration for each provider. You may use the **Country** and **Provider** drop-down lists to select your provider. Once you select the Provider, its parameters will be filled in automatically. You can still make changes in the fields as needed.

Dial String is the number required to dial and get ONLINE with the USB modem. This is set by the cellular operator. The most common for GSM modems is ***99#** which is the default shipped with the Wi-REACH Classic. If you have a CDMA modem, the most common dial string is **#777**.


APN (Access Point Name) **User Name** and **Password** are set by the cellular operator. You will need to get this info from your cellular operator, or this information may exist on the internet with a quick search.

Note: If you have a CDMA modem, fill out **"CDMA"** (without the quotes) in the APN field.

3.2.3 WiFi Configuration

The WiFi configuration page shows:

Wi-REACH Personal Hotspot



Home Cellular **WiFi** DHCP Gateway Profiles Remote Update Admin
Login

WIFI Configuration

Channel 9


SSID Wi-REACH 12345678

Security NONE

Security Key

For changes to take effect, recycle power to WI-REACH.

Save
Reset Form

Active Profile: Profile0
Battery Status: 

Channel is the WiFi channel used by Wi-REACH Classic. Try to use a channel as far away from the channel used by any surrounding access points. For example, if you know there is another access point on channel 1, you should use a channel which is at least 5 channels away from that access point, i.e. 6. This prevents interference between the existing access point, and your personal hotspot.

SSID is the name given to an access point or hotspot, which is used to identify that hotspot when using the WiFi manager application on your device or PC. Wi-REACH Classic is shipped from the factory with a unique SSID containing a unique 8 digit code (i.e. "Wi-REACH 12345678"). You may want to change this SSID to something more personal (for example "Wi-REACH_YourName"), but still different enough so that it will not be confused with other Wi-REACH Classic units in the area.

Security Key is the WiFi security and can be WEP64, WEP128, WPA, WPA2 or mixed WPA/WPA2.

When selecting a security setting, a **Security Key** needs to be entered.

Note: For WPA and WPA2, at least 8 characters need to be entered.

Note: For WEP64, 5 ASCII characters or 10 hex characters need to be entered. For WEP128, it's 13 ASCII or 26 hex characters.

Example for WEP64: 12345 (ASCII) or 3132333435 (hex – which is the hex representation of 12345 ASCII).

3.2.4 DHCP Configuration

- 1 The DHCP configuration page shows:

Wi-REACH Personal Hotspot

ConnectOne
The Device Networking Authority

Home Cellular WiFi **DHCP** Gateway Profiles Remote Update Admin Login


DHCP Parameters DHCP Clients

DHCP Server Configuration

Server Status: Enabled

Base IP Address	192.168.0.1
Max Number of Clients (0 - Disable DHCP, 1 - 8)	5
Lease Time (minutes)	60
Primary DNS Address	192.118.11.77
Alternate DNS Address	192.118.9.177

Save Reset Form

Active Profile: Profile0 Battery Status: 


You can change the **Base IP address** of Wi-REACH Classic, along with the **Maximum Number of Clients** that can connect to Wi-REACH Classic at the same time.

Computers or devices connecting to Wi-REACH Classic will receive consecutive IP addresses starting at Base IP Address + 1.

You may also enter a **Primary and Alternate DNS Address** as static values, or if left empty, these values will be received from your cellular provider during the modem connection. It is advisable to leave these values empty as DNS values may be changed by your cellular provider from time to time.

It is also advisable to leave the **Lease Time** of the IP addresses at 60, which means connected devices will renegotiate their IP address every 60 minutes.

- 2 DHCP Clients shows the IP Addresses given out by the Wi-REACH Classic DHCP server, their MAC addresses and Host Names.


Wi-REACH Personal Hotspot


[Home](#)
[Cellular](#)
[WiFi](#)
[DHCP](#)
[Gateway](#)
[Profiles](#)
[Remote Update](#)
[Admin](#)
[Login](#)

[DHCP Parameters](#)
[DHCP Clients](#)

DHCP Clients

MAC Address	Assigned IP Address	Host Name
9084BD818BB4	192.168.0.2	top-iPhone
0012B0DC8177	192.168.0.3	development-nb
0019DB0B1052	192.168.0.4	ati-Laptop

Active Profile: Profile0
Battery Status: 

3.2.5 Gateway Configuration

As part of its routing function, Wi-REACH Classic keeps a NAT (Network Address Translation) table to enable each device or PC connected via WiFi to access the internet via the WAN (3G/4G) connection.

However, none of the PCs or devices connected via WiFi can be accessed from the internet since they do not have public IP addresses and are assigned private IP addresses by the Wi-REACH Classic DHCP server.

If there is a need to enable a connection from the internet to one of the PCs or devices connected to the Wi-REACH Classic, a Port Forwarding Rule needs to be defined.

- 1 The Port Forwarding configuration page shows:

Wi-REACH Personal Hotspot

ConnectOne
The Device Networking Authority


Home Cellular WiFi DHCP Gateway Profiles Remote Update Admin Login

Port forwarding rules Gateway Clients

Gateway Configuration

Description	WAN Port	Local IP	Local Port	Type (TCP/UDP)
PFW0	<input type="text"/>	<input type="text"/>	<input type="text"/>	BOTH ▾
PFW1	<input type="text"/>	<input type="text"/>	<input type="text"/>	BOTH ▾
PFW2	<input type="text"/>	<input type="text"/>	<input type="text"/>	BOTH ▾
PFW3	<input type="text"/>	<input type="text"/>	<input type="text"/>	BOTH ▾
PFW4	<input type="text"/>	<input type="text"/>	<input type="text"/>	BOTH ▾
PFW5	<input type="text"/>	<input type="text"/>	<input type="text"/>	BOTH ▾
PFW6	<input type="text"/>	<input type="text"/>	<input type="text"/>	BOTH ▾
PFW7	<input type="text"/>	<input type="text"/>	<input type="text"/>	BOTH ▾
PFW8	<input type="text"/>	<input type="text"/>	<input type="text"/>	BOTH ▾
PFW9	<input type="text"/>	<input type="text"/>	<input type="text"/>	BOTH ▾

Save Reset Form

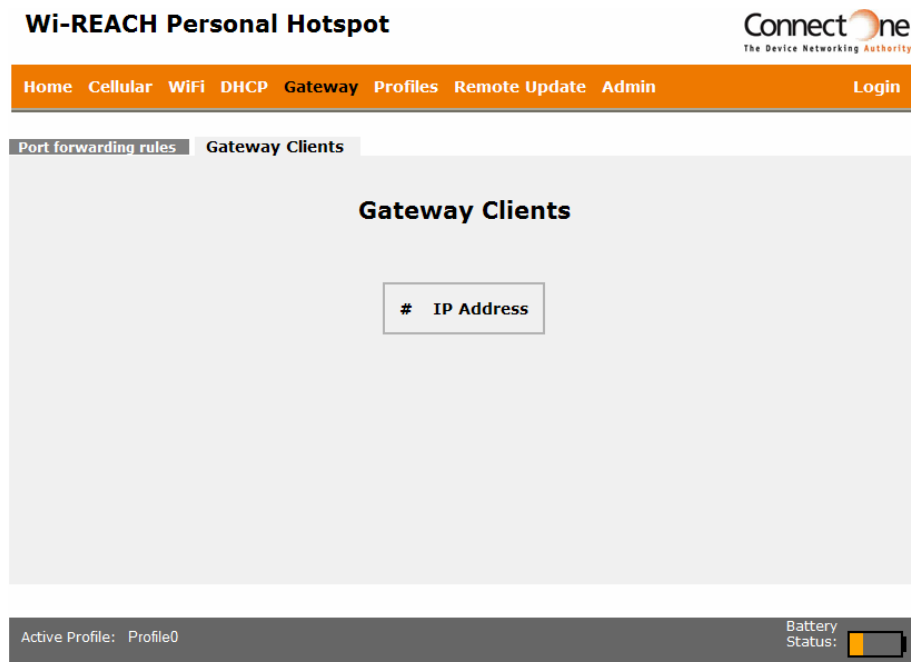
Active Profile: Profile0 Battery Status: 

The **WAN Port** is the port to be used on the public internet side. The **Local IP** is the IP address of the device or PC connected via WiFi to Wi-REACH Classic that needs to be accessed from the internet. The **Local Port** is the port on the device or PC through which it will be accessed. A rule can be defined for a TCP, UDP connection, or both.

For example, if the WAN port is 8000, Local IP is 192.168.0.3, and Local Port is 80, data arriving from the internet on port 8000 will be routed to the device or PC that has local IP address 192.168.0.3 port 80, and vice versa.

Note: Since Wi-REACH Classic provides IP addresses dynamically as devices or PCs connect to it, it is advisable to set the Local IP as a static IP address on the device or PC connected to Wi-REACH Classic.

2 The Gateway Clients information page shows:



This information page shows which PC or device is using the port forwarding rules.

3.2.6 Profiles

Wi-REACH Classic provides the ability to store up to 7 configuration profiles.

When moving around, you may need to connect to several 3G/4G operators, use several USB modems, etc.

For each configuration you use, you can save a profile and give it an identifiable name.

The Profiles page shows:

Loading a saved profile:

Choose the profile you want to load from the drop-down list.

Saving the current profile:

Select "Save Profile" and enter a name for that profile when a text entry window is shown.

After the profile is saved, its main parameters are displayed.

Reset Data Counters resets the data counters displayed in the Connection Info page.

Reset Timers resets the timers displayed in the Connection Info page.

3.2.7 Remote Update

The remote update section contains the ability to update 2 types of files.

Modem Table – this is a modem table file – as new modems will be supported by Wi-REACH Classic, a new table can be updated.

A modem table contains new modems that have been added since the last firmware version. When a new firmware version is released, it will contain all the modems supported up to the version release date.

So, to make sure your Wi-REACH Classic supports all the recent modems, you should first update to the most recent firmware version, then update the recent modem table.

Firmware – this is the firmware of the Wi-REACH Classic product. It is a file with an "imz" extension.

Wi-REACH Personal Hotspot

ConnectOne
The Device Networking Authority

Home Cellular WiFi DHCP Gateway Profiles Remote Update Admin Login

Modem Table upload

Browse...


Submit

Firmware imz file to upload

Warning: After starting the upload do not stop the process until seeing the 'upload complete' screen

Browse...

Submit

Active Profile: Profile0 Battery Status: 

Firmware update process is as follows:

- 1 Unzip the firmware file (can be downloaded from Connect One's web site) and save **i2128dxxxxxxWRCH.imz** to your computer where you will be able to retrieve it later on.
- 2 Make sure Wi-REACH is OFF and the modem is NOT inserted.
- 3 Turn ON Wi-REACH.
- 4 Connect to the Wi-REACH using your WiFi and browse to <http://192.168.0.1>.
- 5 Select "Remote Update" from the top menu line.
- 6 Select "Browse" under "**Firmware imz file to upload**", and select the **i2128dxxxxxxWRCH.imz** file you saved to your computer in Step 1.
- 7 Select "Submit".


- 8 After a few seconds, you should see "**Firmware x.xx.xxx upload is complete**", "Configuration site is down".
- 9 Wait about 15 seconds, and refresh the web page to re-connect to Wi-REACH management website. (<http://192.168.0.1>)

3.2.8 Administration

The Admin page shows:

Wi-REACH Personal Hotspot

Home Cellular WiFi DHCP Gateway Profiles Remote Update **Admin** Login



The Device Networking Authority

Administrative tools

Change Password

Operational setup

Memory buffer size in bytes (0 - 20000)

USB Interface ID

Change these values only after consulting an authorized technician

Modem Keep alive settings

☒ Disable
☐ Enable

Interval (in seconds)

Main Server address

Alt. Server address

For changes to take effect, recycle WI-REACH power

Modem Connection Log

Active Profile: Profile0
Battery Status:

1 Change Password:

You may enter or change a password for managing and configuring Wi-REACH Classic. If the password is not left blank, you will need to enter the password when entering a page that allows changing parameters.

Important Note: No password is denoted by a blank password.

After changing the password, you will need to **Reset Wi-REACH** for the new password to take effect.

2 Operational setup:

Memory buffer size sets the size of the upload buffer to the internet. The larger buffer size allows better upload speed to the internet. If you are sending a lot of data, (for example, sending large email messages), you should set the buffer to its maximum size. If, on the other hand, you do regular browsing with an occasional large message to send out, you should set the buffer to its midpoint level.

USB Interface ID should not be changed unless you are requested to do so by a qualified technical support person. This number is related to the USB implementation of the modem manufacturer.

3 Modem Keep Alive settings:

"Keep Alive" is a term used for making sure the modem stays connected to the cellular provider all the time. Providers may bring down the connection when there is no traffic, so the connection may be considered as "on-demand" instead of "always-on". In most cases, "Keep Alive" is not required, but in case it is, these settings will allow to **Enable** or **Disable** this capability.

The "Keep Alive" function is implemented using the PING protocol. By "pinging" a known server on the internet, the Wi-REACH Classic generates PING traffic at a given **Interval**, thereby keeping the connection alive all the time.

You may configure 2 servers for this function – a **Main Server Address** and an **Alt. Server Address**. It is important that the server addresses are known servers on the public internet which will always answer a PING request.

You may fill in a server name like www.server.com, or an IP address like 123.45.67.89.

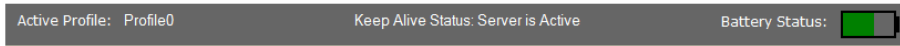
Interval: interval between PING requests in seconds

Main Server Address: a known server on the public internet

Alt. Server Address: another known server on the public internet

In case there are no responses to the PING requests from the configured servers when the "Keep Alive" function is enabled, the Wi-REACH Classic will attempt to re-connect the modem to the cellular network.

Note: When "Keep Alive" is enabled, you should see the status of this service at the bottom of the web page. The status will first appear after the **Interval** time you have set.



4 Modem Connection Log:

This logging facility is used in case there are problems in modem connection, or if the modem is not recognized by Wi-REACH Classic.

Selecting "Create Modem LOG" initiates a logging process beginning with a reset of Wi-REACH Classic and several minutes of log thereafter.

Once the logging process begins, you will see a timer countdown showing how much time is left in the process.

Wi-REACH Personal Hotspot



Home Cellular WiFi DHCP Gateway Profiles Remote Update Admin

Login

Logging in progress please wait...

2:26

Active Profile: Profile0

Battery Status: [Green bar icon]

Once complete, you will be asked to save the log file.


Wi-REACH Personal Hotspot

ConnectOne
The Device Networking Authority

Home Cellular WiFi DHCP Gateway Profiles Remote Update Admin Login

Log file created

[Click Here to Save log file](#)

Active Profile: Profile0Battery Status: 

Save the log file, and send to wireach@connectone.com for analysis with a brief description of your modem and problem.

4 Restore to Factory Defaults

Wi-REACH Classic's non-volatile memory contains a backup of the initial firmware and parameters which were originally shipped with the unit from the factory.

If for some reason there is a need to restore Wi-REACH Classic to its initial firmware, the following procedure should be followed:

Important Note: All firmware versions which may have been updated to the unit will be erased, including parameters, updated modem tables, etc.

- 1** Make sure the unit is **OFF**, and there is **no modem connected**.
- 2** Press the restore button (pin hole located just to the left of the PWR LED) with a paperclip ("feel" the click and keep pressing), and then momentarily press the PWR switch.
- 3** Let go of the restore button after about 1 second (once you let go, the NET LED will start flashing showing the unit has entered restore mode).
If the NET LED does not flash after you let go, repeat the process from step 1.
- 4** When the unit is flashing, press again the restore button with the paperclip to initiate the restore process. The NET LED will turn solid for the duration of the restore process.
- 5** After the restore process is complete, the PWR LED will turn ON to designate restore complete.

After the restore process, you will need to configure Wi-REACH Classic for operation – see the section in this manual on unpacking and installing.

5 WiFi Connection Tips

To use or configure Wi-REACH Classic, you will need to connect to it with a device that has WiFi capability.

When turned ON, Wi-REACH Classic automatically establishes an ad-hoc WiFi access point, regardless if a USB modem is connected or not.

➤ **Wi-REACH Classic WiFi Range**

The typical WiFi range for Wi-REACH Classic is about 30 meters (about 100 feet) in a home environment, and up to 100 meters in an unobstructed outdoor environment.

➤ **Connecting to Wi-REACH Classic with a WiFi Manager Application**

Every computer or device has its own WiFi manager to manage the WiFi connection process, therefore, you should connect to Wi-REACH Classic using the same process you use to connect to any other WiFi connection you are used to.

Wi-REACH Classic is shipped from the factory with a unique SSID consisting of "Wi-REACH" and an 8 digit unique code (for example "Wi-REACH 12345678").

Therefore, when connecting to Wi-REACH Classic the first time, you should look for this name in the list of WiFi networks in the WiFi Manager application.

If you have changed the SSID in the "WiFi" configuration page, then you should look for that name in the list of WiFi networks.

➤ **Using more than 1 Wi-REACH Classic**

Make sure each Wi-REACH Classic has a unique SSID.

If more than one unit with the same SSID will be turned ON in the immediate area, you will not be able to know which Wi-REACH Classic you are connected to.

➤ **Managing WiFi Users**

Any user connected to Wi-REACH Classic has access to its configuration website at <http://192.168.0.1>. If you do not want to allow users full access to the configuration website, you should enter a password in the "Admin" configuration page. This will allow regular users access just to the main information page in the configuration website.

Wi-REACH Classic contains a DHCP server which provides IP addresses to WiFi users that connect to it. Based on the max number of clients (default is 5) you set in the "DHCP" configuration page, that many users can get connected. You will be able to see how many IP addresses the DHCP server has given out in the "DHCP Clients" tab in the "DHCP" configuration screen.

However, Wi-REACH Classic will also allow clients with static IP addresses within its IP segment to also route data and connect to Wi-REACH Classic. Those clients will not appear in the "DHCP Clients" tab.

If you do not want people "stealing" connectivity from you, you should set the WiFi security in the "WiFi" configuration screen.

6 Power and Battery Tips

The battery in Wi-REACH Classic is a 2000mA Li-ion polymer rechargeable battery.

In regular operation, it should last for 4-5 hours of operation after a full charge. Battery operation time varies depending on the type of modem used (each modem has different power requirements), the amount of data routed through the modem (the more data routed, the more power consumed) and the cellular reception in the area you are located (bad reception consumes more power).

➤ Battery re-charging

Using the power adapter provided, it should take about 2 to 2.5 hours to fully charge the battery from zero charge **while the Wi-REACH Classic is powered OFF**.

Note: It will take about 4 times as long to recharge the battery during Wi-REACH Classic operation, than while the Wi-REACH Classic is powered OFF.
(See explanation below regarding working with Wi-REACH Classic with power connected)

Wi-REACH Classic's battery can be recharged in 1 of 2 ways:

1. Using the power adapter provided, or
2. Using 2 USB ports on a laptop computer

The power adapter provided is rated at 5V, 1A and connects to the Wi-REACH Classic at the mini USB connector via the supplied USB double-headed cable (only 1 USB head needs to be connected to the power adapter).

The reason for the 2 USB heads on the cable is to enable a connection to 2 USB ports on a laptop computer to charge the Wi-REACH Classic from the laptop instead of the power adapter. On laptop computers, each USB port is limited to 0.5A, and by connecting to 2 ports, a total of 1A can be drawn from the laptop USB connectors. When this method is used, it is important to connect the 2 USB heads on the cable directly to the laptop computer USB ports, and not via a USB hub. Most likely, the hub will not be able to provide a high enough current at each USB connector – especially if the USB hub does not have its own power supply.

➤ Battery Fully Discharged

If the Wi-REACH Classic is left on and the battery fully discharges, the NET LED will turn purple to indicate this condition.

At this point, turn OFF Wi-REACH Classic and recharge its battery as described above.

➤ LED indications

While running on battery power, the **PWR LED** is used to indicate:

1. Solid RED – Wi-REACH Classic is ON
2. Slow flashing RED – Low battery condition, the Wi-REACH Classic should be re-charged. Once you see this indication, you should have about 15-30 minutes of use left.

➤ **Working with Wi-REACH Classic with power connected:**

While power is connected to Wi-REACH Classic, the battery is recharged, and the unit can be operated. However, since much of the power from the power adapter is required by Wi-REACH Classic to operate, the amount of power supplied to the battery for recharging is much less than when the unit is OFF.

Note: It will take about 4 times as long to recharge the battery during Wi-REACH Classic operation, than while the Wi-REACH Classic is powered OFF.

It is important to use the power adapter supplied when connecting the unit to power.

7 USB Modem Tips

Wi-REACH Classic supports many USB 3G modems, and the updated list of modems known to be supported can be found on www.connectone.com.

Wi-REACH Classic supports modems that adhere to the USB CDC (Communication Device Class) specification and standard AT Commands.

Note: if a modem is not supported by Wi-REACH Classic, when it is inserted into Wi-REACH Classic, the NET LED will eventually flash (fast) RED.

➤ Types of USB Modems

There are usually two types of USB modems:

1. Standard modems (usually older modems)
2. Composite modems (usually newer modems)

Composite modems are modems that contain the modem drivers on the modem itself with no need for a driver CD. These modems when plugged into a USB port, identify themselves initially as a Mass Storage Device like a CD-ROM or Flash Disk for the purpose of loading the modem drivers from the internal modem memory. After the driver is loaded, it sends a command to the modem to switch it from Mass Storage mode to Modem mode. At that point the modem is identified as a standard modem and AT Commands can be sent to it.

Wi-REACH Classic contains a long list of supported modems and methodologies for switching composite modems from Mass Storage mode to Modem mode. Unfortunately, this switching mechanism is not standard among modem manufacturers, and therefore support may be added to Wi-REACH Classic for newer modems over time.

If you have a fairly new modem, there is a high probability that it is a composite modem, so please make sure it is on the updated list of modems supported by Wi-REACH Classic.

Modems that are not on the list may still be supported by Wi-REACH Classic if they adhere to one of the switch methodologies already supported by Wi-REACH Classic, and you may contact Connect One support at WiReach@connectone.com with the modem details to find out if they may be supported.

➤ CDMA Modems vs. GSM Modems

CDMA modems, unlike GSM modems, do not use a SIM, and do not need an APN configured.

The common dial string for GSM modems is *99#, and for CDMA modems #777.

If you have a CDMA modem, you should enter "CDMA" (without the quotes) into the APN field in the Wi-REACH Classic Cellular configuration page. The Wi-REACH Classic then understands to build the modem initialization strings accordingly.

➤ **USB Modem Heating During Operation**

USB modems have a tendency to heat up during operation. Some modems have an internal mechanism to turn off or disconnect the modem when it gets too hot. When this happens, Wi-REACH Classic will try to turn on the modem and reconnect it to the cellular network, but in some cases, you may need to power off Wi-REACH Classic, let the modem cool a while, and then turn the unit back on.

The modem usually heats up when larger amounts of data are routed through it, and/or the reception in your area is not very good.

➤ **SIM Card Insertion**

Each modem has a slot to insert a SIM card. It is fairly easy to incorrectly insert the SIM card into the modem (i.e. upside down, or backwards), so care should be taken to insert the SIM card correctly. You should revert to your modem documentation if you are having difficulties with this.

If the SIM card is not inserted correctly into the modem, the Wi-REACH Classic will not go online, and the NET LED will usually stay a solid BLUE.

➤ **Cellular Provider APN, username and password**

Before a 3G USB modem can connect to the cellular provider, it must be configured with the correct APN (Access Point Name) of that cellular provider.

For 3G service, most providers have a specific APN that needs to be used.

The best place to get this APN information is from your cellular provider.

The APN info may also be found within the configuration area of the modem driver you may have installed on a computer.

The internet is also a good place to look for the APN for your cellular provider – you may search by entering your provider's name and the text "APN".

To make this configuration easier, Wi-REACH Classic contains a Country/Provider selector in the Cellular configuration screen of its embedded configuration web site (accessed by browsing to <http://192.168.0.1>). This Country/Provider selector can be used as a guide to filling in the cellular parameters.

In most cases, this selector will fill in the correct parameters. If the parameters have recently been changed by the provider, you may still fill them in manually.

For many cellular providers, only the APN needs to be configured to the modem to connect correctly. Some cellular providers, however, require a "username" and "password" to be configured as well.

Again, the best place to get this information is from your cellular provider.

The APN, username and password can be configured in Wi-REACH Classic in the "Cellular" configuration screen after browsing to the Wi-REACH Classic configuration website (see the Getting Started section in this manual).

CDMA service does not require an APN.

It will require a username and password specific to the cellular provider's requirements.

For example, Verizon USA CDMA service requires the following:

- dial string: #777
- username: {your modem phone number}@vzw3g.com
- password: vzw

Virgin Mobile USA CDMA service requires the following:

- dial string: #777
- username: Internet
- password: Internet

Other providers will require similar configurations.

➤ **Logging modem connection process**

Beginning in Wi-REACH Classic firmware version 8.08.q15, a logging feature was added to the "Admin" page whereby a logging process can be initiated to log the modem connection process.

A log file can then be saved and sent for analysis to wireach@connectone.com.

This log file can assist Wi-REACH Classic technical support personnel in analyzing a connection problem for a specific modem and cellular provider.

See the "Administration" section of this manual for more information on this feature.