



Spectralink Quick Network Connect

Administration Guide

Version 2.1.0.18

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Warranty

The *Product Warranty and Software License and Warranty* and other support documents are available at <http://support.spectralink.com>.

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About This Guide

This document explains how to install and use the Quick Network Connect.

QNC configures the phone so it can associate with the wireless LAN and pick up additional configuration settings from a server. It is the first step in the deployment process.

What is QNC?

Quick Network Connect utilizes a customized version of a commercially available Raspberry Pi to simplify the wireless provisioning of your Spectralink devices.

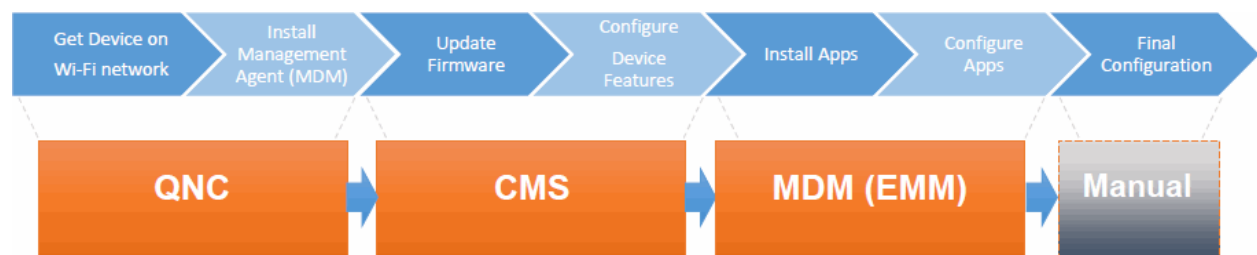
When connected to a PC, QNC provides a browser-based GUI that provides you with the wireless configuration parameters you need to set in order for your Spectralink devices to associate with the wireless LAN.

Once the configuration is completed, a connection between QNC and your Spectralink 84-Series handset(s) loads the wireless parameters into the handset. This document explains how to use QNC to configure and load wireless parameters into your Spectralink devices.

What is CMS?

CMS is a GUI program that is opened in a browser and provides an easy and intuitive way to configure the handsets and manage the deployment of many handsets at once. For CMS deployment see *Spectralink CMS Administration Guide*.

PIVOT Deployment process



What is MDM/EMM? (used on PIVOT only)

EMM is Enterprise Mobile Management, a term used to describe the management of mobile devices in a business context. EMM software is an offshoot of MDM or Mobile Device Management. EMM is the preferred approach as it is specifically designed for enterprise applications and devices.

MDM/EMM programs are used to manage applications. Applications need to be managed on PIVOT so that enterprise devices remain secure. The degree of control is a matter of enterprise policy. See *Spectralink 87-Series Applications Installation Guide* for complete information.

What is Manual Configuration?

Two types of menus are available, the familiar user-level menus used by all Spectralink phone models and administrator menus that are behind a password. Manual configuration refers to using these phone menus to set up each phone individually.

Practically any deployment will require some manual adjustments so this step is included to put the final polish on your deployment.

Product Support

Spectralink wants you to have a successful installation. If you have questions please contact the Customer Support Hotline at 1-800-775-5330.

The hotline is open Monday through Friday, 6 a.m. to 6 p.m. Mountain time.

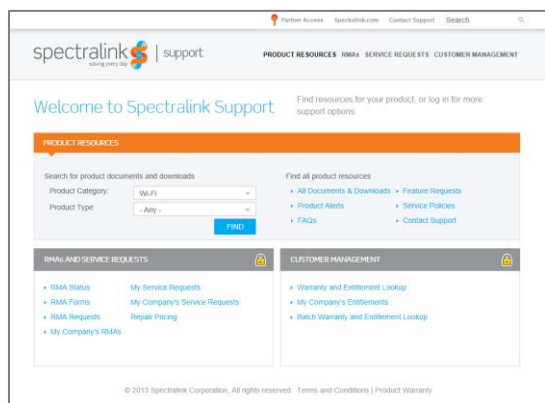
For Technical Support: <mailto:technicalsupport@spectralink.com>

For Knowledge Base: <http://support.spectralink.com>

For Return Material Authorization: <mailto:nalarma@spectralink.com>

Spectralink References

All Spectralink documents are available at <http://support.spectralink.com>.



To go to a specific product page:

Select the Product Category and Product Type from the dropdown lists and then select the product from the next page. All resources for that particular product are displayed by default under the All tab. Documents, downloads and other resources are sorted by the date they were created so the most recently created resource is at the top of the list. You can further sort the list by the tabs across the top of the list to find exactly what you are looking for. Click the title to open the link.

QNC documents and software can be found at: <http://support.spectralink.com/products/wi-fi/qnc>.

Specific Documents

AP Configuration Guides show you how to correctly configure access points and WLAN controllers (if applicable) and identify the optimal settings that support Spectralink devices. The guides are available on the View Certified page on the Spectralink support site at <http://support.spectralink.com/view>.

For information on IP PBX and softswitch vendors, see *Spectralink Call Server Interoperability Guide*.

Release Notes accompany every Spectralink software release. These describe the new and changed features and fixed problems in the latest version of the software. Check the Release Notes for important information about software compatibility.

PIVOT documents

PIVOT documents are available on the Spectralink support site at <http://support.spectralink.com/pivot>.

Quick Network Connect Administration Guide QNC provides step-by-step instructions for configuring wireless settings required for the smartphones to associate with the wireless LAN. QNC software and documents are available on the Spectralink support site at <http://support.spectralink.com/products/wi-fi/qnc>.

PIVOT by Spectralink CMS Administration Guide The CMS Admin Guide provides information about every setting and option available to the administrator on CMS. Time-saving shortcuts, troubleshooting tips and other important maintenance instructions are also found in this document. CMS software and documents are available on the Spectralink support site at <http://support.spectralink.com/cms>.

Spectralink Configuration Management System Administration Guide The CMS Administration Guide provides information about every setting and option available to the administrator on PIVOT and CMS. Time-saving shortcuts, troubleshooting tips and other important maintenance instructions are also found in this document. CMS software and documents are available on the Spectralink support site at <http://support.spectralink.com/cms>.

PIVOT by Spectralink Deployment Guide The Deployment Guide provides sequential information for provisioning and deploying the smartphones. It covers deployment using QNC and CMS as well as manual deployment.

PIVOT by Spectralink Configuration Guide The PIVOT Configuration Guide provides detailed information about PIVOT menu items that have been developed specifically for the PIVOT smartphone.

PIVOT by Spectralink Wi-Fi Security Implementation Guide Wi-Fi security prevents unauthorized over-the-air access to network components and the sensitive data that resides there. This Guide discusses the various method and explains how to implement each of them.

PIVOT 8744 Barcode Administration Guide This Administration Guide supports the PIVOT 8744 model which includes the onboard camera which can be configured to function as a barcode scanner. It provides information about supported symbologies for this model.

PIVOT 8753 Barcode Administration Guide This Administration Guide supports the PIVOT 8753 model which incorporates a barcode reader. It provides detailed information about supported symbologies for this model.

PIVOT by Spectralink QBC Administration Guide Provides instruction for implementation of the Quick Barcode Connector application. The *PIVOT by Spectralink User Guide* contains information about using with the smartphone feature.

PIVOT by Spectralink Application Installation Guide The Applications Installation Guide provides detailed information about deploying any type of application, using an app store or MDM and manual processes for loading applications on the Spectralink 87-Series smartphone.

PIVOT by Spectralink User Guide The User Guide provides detailed information about using the features of the 87-Series smartphones.

PIVOT by Spectralink Web Developer's Guide The Web Developer's Guide provides Web application creators with information for developing and deploying Web applications that interface with Spectralink smartphones.

Best Practices for Deploying Spectralink 87-Series PIVOT Handsets provides detailed information on wireless LAN layout, network infrastructure, QoS, security and subnets.

For information on IP PBX and softswitch vendors, see *PIVOT by Spectralink Call Server Interoperability Guide*.

Spectralink 84-Series

The *Spectralink 84-Series Wireless Telephone Administration Guide* provides a comprehensive list of every parameter available on Spectralink 84-Series Wireless Telephones.

Spectralink Configuration Management System Administration Guide The CMS Administration Guide provides information about every setting and option available to the administrator on Spectralink 84-Series handsets and CMS. Time-saving shortcuts, troubleshooting tips and other important maintenance instructions are also found in this document. CMS software and documents are available on the Spectralink support site at <http://support.spectralink.com/cms>.

Spectralink 84-Series Wireless Telephone Deployment Guide using CMS This document explains deployment procedures when using the CMS system.

Spectralink 84-Series Wireless Telephone Deployment Guide This document introduces deployment concepts and the methods of provisioning the 84-Series handsets in any type of facility when not using CMS as a provisioning server.

Barcode Administration Guide Provides information about barcode symbologies and how to configure and implement the barcode feature on the handset. The *Spectralink 84-Series User Guide* also contains information about using the barcode feature.

Quick Barcode Connector Administration Guide Provides instruction for implementation of the barcode application. The *Spectralink 84-Series User Guide* contains information about using the barcode feature.

The *Spectralink 84-Series User Guide* offers comprehensive instructions on using each of the features deployed on the handsets.

The *Web Configuration Utility User Guide* is used for troubleshooting in certain isolated cases as explained in the text.

Conventions Used In This Document

Icons

Icons indicate extra information about nearby text.

**Note**

The Note icon highlights information of interest or important information that will help you be successful in accomplishing a procedure or understanding a concept.

**Spectralink recommends:**

Our recommendation for a specified aspect of the information.

**Caution**

The *Caution* icon highlights information you need to know to avoid a hazard that could potentially impact device performance, application functionality, successful feature configuration and/or affect handset or network performance.

**Admin Tip**

This tip advises the administrator of a smarter, more productive or alternative method of performing an administrator-level task or procedure.

**Tip**

The Tip icon highlights information that may be valuable or helpful for users to know, such as special techniques, shortcut methods, or information that will make user tasks easier to perform.

Typography

A few typographic conventions, listed next, are used in this guide to distinguish types of in-text information.

<i>Convention</i>	<i>Description</i>
Bold	Highlights interface items such as menus, soft keys, file names, and directories. Also used to represent menu selections and text entry to the handset.
<i>Italics</i>	Used to emphasize text, to show example values or inputs, and to show titles of reference documents available from the Spectralink Support Web site and other reference sites.
<u>Underlined blue</u>	Used for URL links to external Web pages or documents. If you click on text in this style, you will be linked to an external document or Web page.
Bright orange text	Used for cross references to other sections within this document. If you click on text in this style, you will be taken to another part of this document.
<code>Fixed-width-font</code>	Used for code fragments and parameter names.

This guide also uses a few writing conventions to distinguish conditional information.

<i>Convention</i>	<i>Description</i>
<MACaddress>	Indicates that you must enter information specific to your installation, handset, or network. For example, when you see <MACaddress>, enter your handset's 12-digit MAC address. If you see <installed-directory>, enter the path to your installation directory.
>	Indicates that you need to select an item from a menu. For example, Settings > Basic indicates that you need to select Basic from the Settings menu.

Chapter 1: QNC Provisioning

Initial provisioning sets configuration options so that the Spectralink phone can associate with the wireless LAN and access the Configuration Management Server, if one is being used.

When connected to a PC, QNC provides a browser-based GUI that provides you with the wireless configuration parameters you need to set in order for Spectralink devices to associate with the wireless LAN.

Once the configuration is completed, Spectralink devices can obtain the configuration through a USB connection.



Admin Tip

If using CMS, please set up CMS first so that the account key can be captured and configured.



Caution: Internet access

If you need to configure devices without access to the internet, use QNC for initial wireless connectivity to a closed WLAN using the configured SSID. Simply skip over any internet connectivity prompts.

Initial/OOB Provisioning Using QNC

PIVOT using CMS (or manual)

QNC will simplify the configuration of Spectralink 87-Series smartphones. The usual sequence is as follows:

- 1 Configure telephony and other settings using CMS or manual provisioning.
- 2 Set up the PC browser and LAN to host the QNC program.
- 3 Configure QNC with the wireless parameters you need to connect 87-Series smartphones to the WLAN.
- 4 Turn on 87-Series smartphones. Reset handsets to factory default if any menu options have been changed manually.
- 5 Select the desired QNC icon from the Home screen(s).

- » QNC USB requires a cable between QNC and 87-Series smartphones. Only one handset can download its configuration at a time.
- » QNC Wi-Fi delivers the configuration over the air. Two PIVOT smartphones can be configured at the same time wirelessly.

QNC uses the default SSID "Spectralink" which is pre-configured in PIVOT R1.8 and R2.1 and above.

- 6 Spectralink 87-Series smartphones will associate with QNC and download the configuration parameters set in QNC.
- 7 Spectralink 87-Series smartphones connect to the wireless LAN and download additional configuration parameters.
- 8 Provision additional configuration with the CMS --or manual entry.
- 9 Test the handsets.

Spectralink 84- Series using CMS

The QNC platform is designed to simplify the configuration of Spectralink 84-Series handsets. The usual sequence is as follows:

- 1 Prepare configuration per *Spectralink 84-Series Wireless Telephone CMS Deployment Guide*.
- 2 Set up the PC browser and LAN to host the QNC program.
- 3 Configure QNC with the wireless parameters you need to connect the Spectralink 84-Series handsets to the WLAN.
- 4 Turn on Spectralink 84-Series handsets. Reset handsets to factory default if any menu options have been changed manually.
- 5 QNC USB requires a cable between QNC and Spectralink 84-Series handsets. Only one handset can download its configuration at a time. Connect the handset to QNC through a USB port.
- 6 Spectralink 84-Series handsets will associate with QNC and download the configuration parameters set in QNC.
- 7 Spectralink 84-Series handsets connect to the wireless LAN and download additional configuration parameters.
- 8 Provision additional configuration with the CMS.
- 9 Test the handsets.

Spectralink 84-Series using a provisioning server

The QNC platform is designed to simplify the configuration of Spectralink 84-Series handsets. The usual sequence is as follows:

- 1 Set up the provisioning server and configuration files per *Spectralink 84-Series Wireless Telephone Deployment Guide*.
- 2 Set up the PC browser and LAN to host the QNC program.
- 3 Configure QNC with the wireless parameters you need to connect the Spectralink 84-Series handsets to the WLAN.
- 4 Turn on Spectralink 84-Series handsets. Reset handsets to factory default if any menu options have been changed manually.
- 5 QNC USB requires a cable between QNC and Spectralink 84-Series handsets. Only one handset can download its configuration at a time. Connect the handset to QNC through a USB port.
- 6 Spectralink 84-Series handsets will associate with QNC and download the configuration parameters set in QNC.
- 7 Spectralink 84-Series handsets connect to the wireless LAN and download additional configuration parameters.
- 8 Provision additional configuration as needed using provisioning server configuration files.
- 9 Test the handsets.

Box Contents

The following components are included in the QNC package:

- The QNC unit
- Universal USB power supply.
- A USB cable to connect QNC to the handset
- An Ethernet network cable for the network connection between QNC and your PC/laptop
- Spectralink Product Warranty and EULA
- Regulatory information

Set up QNC

Set up the wireless LAN infrastructure

Since QNC configures the wireless connection, the handset must be able to connect to the configured WLAN in order for QNC to complete the configuration successfully. Therefore, ensure that you have the correct SSID and security method with the correct passwords fully configured before configuring QNC.

If you are also deploying CMS R2.0 or above, install CMS before activating QNC. You will need to enter the unique customer account key and security credentials from the About Us tab in CMS so that Spectralink devices can access CMS once they connect to the WLAN.

Set up the hardware



Caution: Do not insert or remove USB device during power up.

All USB connections must be made prior to power up to avoid boot issues. If you are using a USB connection to transfer the configuration to the Spectralink devices, you can plug in the cable before powering up QNC or during the configuration steps.

QNC is pre-loaded with software.

- 1 Plug in the QNC power supply to a wall outlet. Plug the power supply into QNC. You can see the board lights through the vent.
- 2 Plug the provided network cable into the Ethernet port of QNC and connect the other end to your PC/laptop.

Configure your PC/Laptop

These instructions are generic in nature and may need to be adjusted to accommodate the existing configuration of your PC/laptop. The general idea is that you are disconnecting from any existing LAN and setting up a private LAN so that PC/laptop and QNC can talk to each other without interference.

- 1 If necessary, install Firefox® or Chrome™ browser on your PC/laptop. Internet Explorer® may work but is prone to interference and is not recommended.
- 2 Disable DHCP (automatic configuration) for the network port on the PC/laptop you plugged the Ethernet cable into. Manually set the PC/laptop Ethernet interface to use static IP 192.168.1.x where x is any address other than 1. Use subnet mask of 255.255.255.0.

Saving and Reusing the Configuration

Every time you change a setting and click the update configuration button, QNC saves the configuration to either an external jump drive if one is plugged into one of the USB ports or, if no jump drive is plugged in, the configuration file is saved on the internal sd card.

If you have additional devices to configure at another time with the same configuration settings, simply power up the QNC, plug in the jump drive if using one, and associate the phone to be configured.

Before you begin to configure the devices, determine which save method you will be using.

External jump drive

When saving the configuration on an external jump drive, insert the jump drive before the configuration procedure. The resulting zip file will be stored on the jump drive.

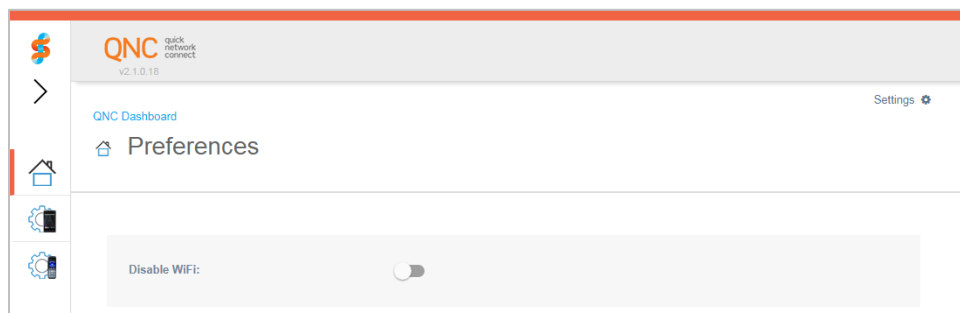
On the internal sd card

When saving the configuration on the internal sd card, be sure to remove the external jump drive, and to reboot the QNC, before beginning the configuration procedure.

QNC Preferences

QNC Preferences allows you to disable the Wi-Fi connection between QNC and the handset. This is a useful option if you are not using Wi-Fi for downloading the configuration to the phone and/or want to reduce Wi-Fi noise in your environment.

When Wi-Fi is disabled, you must use the USB method to download the configuration to the phone.



Chapter 2: PIVOT Parameters



Admin Tip: Where is the configuration going to be saved?

Before you begin the configuration process decide where the configuration is to be saved. See [Saving and Reusing the Configuration](#) for information. Ensure any jump drive is removed if you plan on saving the configuration on the internal sd card.

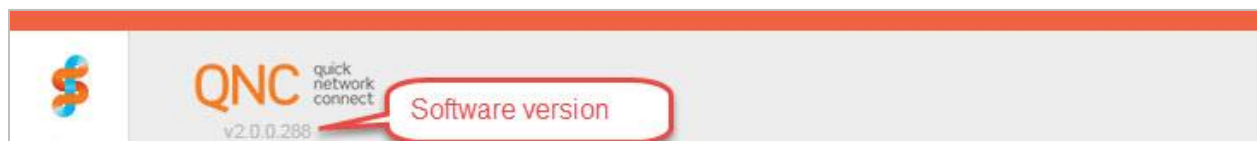


Admin Tip: Do QNC settings persist?

When configuring the parameters for wireless connectivity while also using CMS for further configuration, realize that QNC settings will persist unless overridden by CMS settings.

Start QNC

Open a browser and browse to the QNC IP address: **192.168.1.1**. The software version displays in the header.



Navigation

The navigation pane on the left side of the page provides intuitive icons to direct you to administrative pages for the two Spectralink models that QNC supports. The expanded version is opened by pressing the “>” at the top of the pane. It displays the menus for each step of the wizards. These menus also display as you cycle through the wizard.

You may use the menu options on the left or the arrows at the bottom of the screen to step through the configuration wizard.

The warning box at the top of the page lets you know what parameters must be set in order to update the configuration. Simply go through the pages and enter the requested parameter(s).



Each window has an **Update Configuration** button at the bottom of it. Before you can update the configuration you must first clear the warnings by entering the requested configuration parameters. Then click the Update button to save your entries and move to the next window. If no changes have been made in any given window, the button will not be available.

The screenshot shows the 'Wi-Fi Setup' window in the QNC application. The window has a sidebar on the left with a list of settings: 'Wi-Fi Setup', 'Additional Wi-Fi Settings', 'CMS Settings', 'Manage APKS', 'Phone Settings', and 'Custom Settings'. The 'Wi-Fi Setup' option is selected. The main content area displays a 'Warning!' message: 'Fix all the below listed issues to update configuration' with a sub-message 'x SSID is required.' Below the warning is a text input field for 'SSID *'. Underneath is a 'Security Type' section with five radio button options: 'Open Network' (selected), 'WEP Security', 'WPA-PSK', 'WPA2-PSK', and 'WPA2-Enterprise'. At the bottom right is a blue 'UPDATE CONFIGURATION' button. A blue arrow button with a right-pointing arrow is located at the bottom right of the main content area. Red callout boxes with white text point to various elements: 'PIVOT configuration option' points to the 'Wi-Fi Setup' sidebar item; 'PIVOT configuration menu' points to the 'Wi-Fi Setup' header; 'PIVOT configuration warning' points to the yellow warning box; 'Update configuration button' points to the 'UPDATE CONFIGURATION' button; and 'Wizard navigation arrow to next page' points to the blue arrow button.

Wi-Fi Setup

- 1 Click the PIVOT configuration option to display the PIVOT configuration menu and the Wi-Fi Setup page
- 2 Enter the SSID that you will be using to connect to the wireless LAN.
- 3 Indicate the Security type. Additional options will display depending on which type you choose. Security options are thoroughly covered in the document *PIVOT by Spectralink Wi-Fi Security Implementation Guide*. Consult that document for additional information.

QNC quick network connect v2.0.0.288

87-Series

Wi-Fi Setup

Warning!
Fix all the below listed issues to update configuration
✖ SSID is required.

SSID *

Security Type

☒ Open Network

☐ WEP Security

☐ WPA-PSK

☐ WPA2-PSK

☐ WPA2-Enterprise

UPDATE CONFIGURATION

- 4 If required by your security type, enter the key type and the passphrase or hex key.



Admin Tip: Changing Security type with CMS

Note that you can set one security type to initially connect to the wireless LAN and then change it with the CMS once the handset is on the wireless LAN.

Additional Wi-Fi Settings

The screenshot shows the 'Additional Wi-Fi Setup' screen in the QNC application. The header includes the QNC logo and version 'v2.0.0.230'. The breadcrumb trail is '87-Series > Additional Wi-Fi Settings'. A yellow warning box states: 'Warning! Fix all the below listed issues to update configuration. * SSID is required.' The 'Frequency band' section has three radio buttons: 'Auto' (selected), '2.4 GHz only', and '5.0 GHz only'. The 'Settings' section has three checkboxes: 'Enable IPv6' (checked), 'Disable 802.11n' (unchecked), and 'Enable Proxy on Phone' (unchecked). At the bottom, there is a blue 'UPDATE CONFIGURATION' button. Navigation arrows are visible on the left and right sides of the main content area.

- 1 Wi-Fi frequency band options allow you to specify which band(s) you want to use: 2.4GHz, 5GHz or “Auto”. If Auto is selected, the handset scans both bands when it is trying to find the best AP.
- 2 You may enable IPv6 awareness to improve compatibility with IPv6 aware applications. However, IPv6 wireless networks are still NOT supported, and this setting should be set to off if networking problems are observed.
- 3 802.11n support can be disabled. It is enabled by default.
- 4 Wireless proxy options allow you to configure proxy settings for access to the internet. Enter the requested information for Host Name and Port. The “Bypass proxy for” field allows you to enter a list of locations that the handset can access directly rather than going through the proxy. This setting can be one domain or a comma-separated list of domains.

Configuration Management Setup

QNC quick network connect v2.0.0.238

87-Series > CMS Settings

Configuration Management Setup

Warning!
Fix all the below listed issues to update configuration
* SSID is required.

Are you using CMS?

☐ Yes - CMS 2.0+

☐ Yes - CMS 1.5

☒ No

UPDATE CONFIGURATION

- 1 Enter the URL of the CMS server. The network protocol used by the CMS server is either HTTP or HTTPS. The entry in this box must use the complete address starting with `http://` or `https://`. This must be the same address that was set up in CMS upon installation (in the `application_init.py` script).
- 2 The CMS heartbeat defaults to 60. This is the time interval between “check-ins” between the handset and the CMS. Use the following scale to determine what interval is best for your installation.

Number of handsets	Heartbeat interval
Up to 1000 handsets	No more frequent than every 1 minute.
Between 1000 and 2000 handsets	No more frequent than every 2 minutes.
Between 2000 and 3000 handsets,	No more frequent than every 3 minutes.
Between 3000 and 4000 handsets	No more frequent than every 4 minutes.
More than 5000 handsets	No more frequent than every 5 minutes.



Caution: If using HTTPS

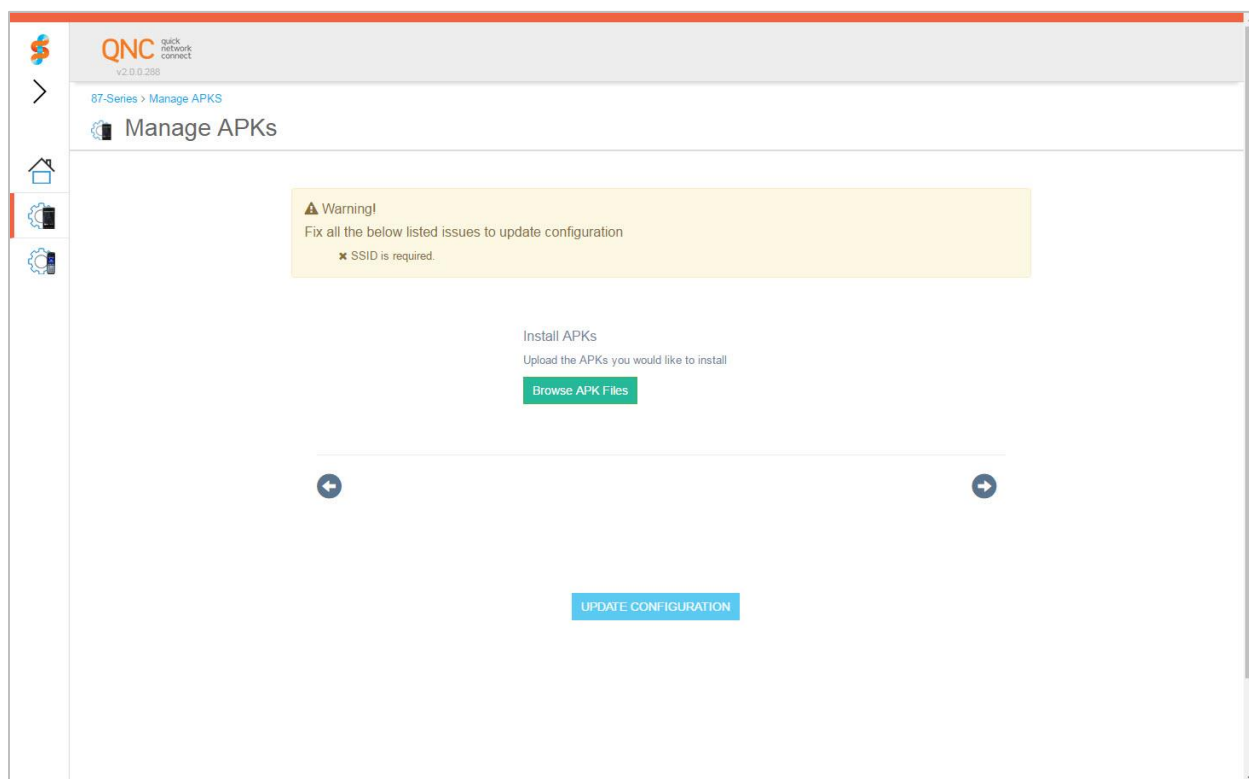
If you use an address for CMS that starts with `https://`, you must load an SSL certificate. If you do not load a certificate, the authentication handshake between the handset and the CMS will fail and there will be no connection.

- 3** If using HTTPS as your network protocol, you will need to enter the SSL certificate from the CMS server.

 - a** In CMS 2.0, go to the **About Us** window for the certificate.
 - b** Click **Copy to clipboard**. The certificate will be copied to the clipboard.
 - c** In QNC, open the Configuration Management Setup page and paste the certificate into the **SSL certificate** field.
- 4** Account Key. CMS 2.0 and above requires an account key be loaded into the phone that identifies it to CMS. If you are using CMS 2.0 or above, you will need the account key that CMS generates. This key is then loaded into the phone either manually or with QNC. See the About Us window in CMS for the account key.

Manage APKs

Install application files.



Spectralink recommends: Upload MDM client

Our recommended deployment model includes loading an MDM/EMM client and managing your apps through the MDM/EMM.



Admin Tip: Loading many apps through QNC

You may upload a maximum of 120Mb total combined size of all .apk files. There is no limit to the number of .apk files, only their combined size.

However, you will experience a delay in configuration when loading large or many apps and this is not the recommended method. Use an MDM/EMM for app loading and management.

If loading large apk files, you must allow time for the files to upload. Take a break for several minutes before moving to the next window.

Phone Settings

QNC quick network connect v2.0.0.230

87-Series > Phone Settings

Phone Settings

Warning!
Fix all the below listed issues to update configuration
* SSID is required.

Admin Password

☐ Show Password

NTP Address
2.android.pool.ntp.org

☒ Disable Google Play Store

UPDATE CONFIGURATION

- 1 Set the Admin password. This is where you can set a secure password for the Admin Settings menu in the handset than the default of “admin” to prevent unauthorized changes to the administrative parameters.



Caution: Special character limitations

Sometimes passwords and other text uses special characters that can be problematic in certain software applications. In the QNC program, the double backslash (two backslashes in a row, i.e. \\) functions as an escape character and therefore does not manage your entry accurately. The ampersand (&) and bracket characters (<>) are similarly problematic for CMS.

To be on the safe side, do not use these special characters in any fields:

- \\ (double backslash)
- & (ampersand)
- < > (open or close brackets)

- 2 Enter NTP server address information.
 - o The handset can get its time from the default server at Google™, but it must have internet access. The internet address is 2.android.pool.ntp.org. Retain the default to use this option.

- A local NTP server can be used for the time. Enter the IP address or a FQDN.



Admin Tip: Android requires an NTP server

Android devices require a constant source for time. You can use the default server that Google provides if the handsets have constant internet access. If the handsets do not have internet access, deploy an NTP server and enter its address in this field.

- 3** Control access to the Google Play™ Store. It is disabled by default.

Custom Settings

Spectralink service personnel may direct you to enter custom configuration parameters through this “back door”. Do not attempt to enter custom settings unless you have specific parameters provided by the Spectralink service department.

The screenshot displays the QNC (Quick Network Connect) v2.0.0.298 interface. The top header shows the QNC logo and version. The left sidebar contains navigation icons for home, settings, and a mobile device. The main content area is titled 'Custom Setup' and features a yellow warning box with the text: 'Warning! Fix all the below listed issues to update configuration' and '✖ SSID is required.' Below the warning is a 'Custom Settings' section with a text box containing the placeholder text: '"uri1":"value", "uri2":"value2", ...'. A note below the text box states: 'You can use this text box to paste any additional settings you may want to set. See documentation for formatting.' At the bottom of the main area is a blue button labeled 'UPDATE CONFIGURATION'.

Download Configuration to Phones

Once you have stepped through the applicable windows and updated the configuration, you are ready to upload the configuration parameters to your PIVOT smartphones.

See Chapter 4.

Chapter 3: Spectralink 84-Series Parameters

Use the *Spectralink 84-Series Wireless Telephone Deployment Guide* or *Spectralink 84-Series Wireless Telephone Deployment Guide using CMS* for additional information about the options presented by the QNC wizard.

See Appendix B for the specific configuration parameters that are being configured by the QNC wizard.

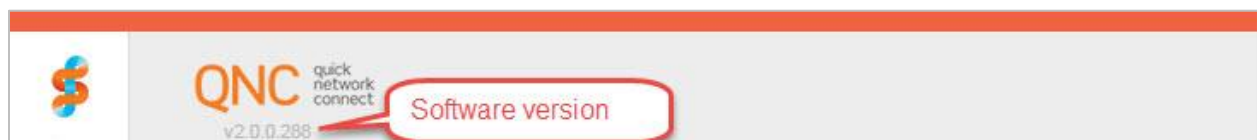


Admin Tip: Where is the configuration going to be saved?

Before you begin the configuration process decide where the configuration is to be saved. See [Saving and Reusing the Configuration](#) for information. Ensure any jump drive is removed if you plan on saving the configuration on the internal sd card.

Start QNC

Open a browser and browse to the QNC IP address: **192.168.1.1**. The software version displays in the header.



Navigation

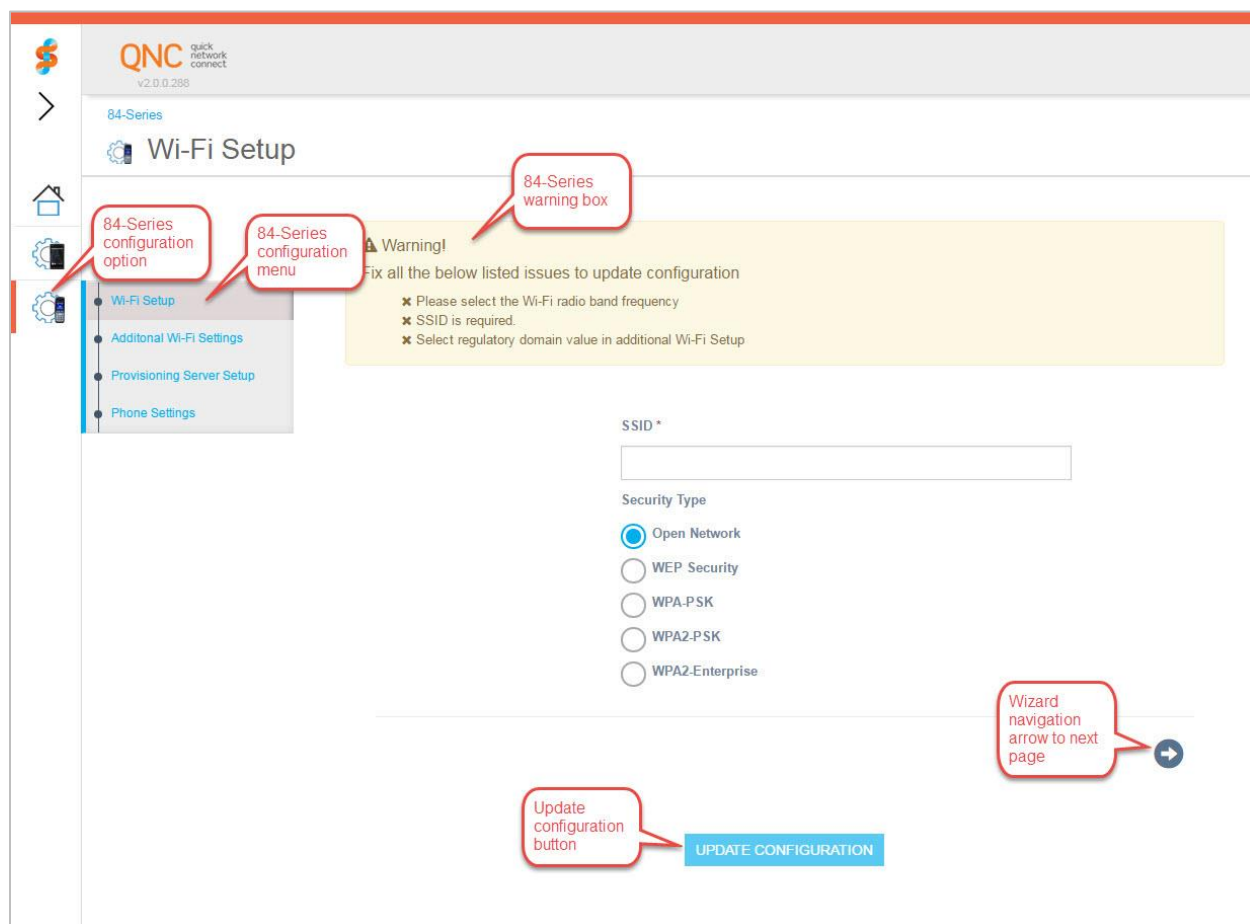
The navigation pane on the left side of the page provides intuitive icons to direct you to administrative pages for the two Spectralink models that QNC supports. The expanded version is opened by pressing the “>” at the top of the pane. It displays the menus for each step of the wizards. These menus also display as you cycle through the wizard.

You may use the menu options on the left or the arrows at the bottom of the window to step through the configuration wizard.

The warning box at the top of the page lets you know what parameters must be set in order to update the configuration. Simply go through the pages and enter the requested parameter(s).



Each window has an **Update Configuration** button at the bottom of it. Before you can update the configuration you must first clear the warnings by entering the requested configuration parameters. Then click the Update button to save your entries and move to the next window. If no changes have been made in any given window, the button will not be available.



Wi-Fi Setup

- 1 Click the 84-Series configuration option to display the 84-Series configuration menu and the Wi-Fi Setup page
- 2 Enter the SSID that you will be using to connect to the wireless LAN.
- 3 Indicate the Security type. Additional options will display depending on which type you choose. Security options are thoroughly covered in the document *Spectralink 84-Series Wireless Telephone Deployment Guide*. Consult the wireless.cfg file instructions in that document for additional information.



Admin Tip: Warning box

The warning box lists required fields that have not yet been populated. Which fields are listed depends upon which configuration options are selected.

The screenshots below are for example purposes only and the entries will vary with different configuration options.

QNC quick network connect v2.0.0.298

84-Series

Wi-Fi Setup

Warning!
Fix all the below listed issues to update configuration

- ✖ Please select the Wi-Fi radio band frequency
- ✖ SSID is required.
- ✖ Select regulatory domain value in additional Wi-Fi Setup

SSID *

Security Type

☒ Open Network

☐ WEP Security




☐ WPA-P SK

☐ WPA2-P SK

☐ WPA2-Enterprise

UPDATE CONFIGURATION

WEP Security Options



☒ WEP Security

☐ WPA-PSK

☐ WPA2-PSK

☐ WPA2-Enterprise

☐ WEP Shared Key?

Default Key Index

WEP Key Length

WEP key 1

WEP key 1 password

WEP key 2

WEP key 2 password

WEP key 3

WEP key 3 password

WEP key 4

WEP key 4 password

WPA-PSK Options

☒ WPA-PSK


☐ WPA2-PSK

☐ WPA2-Enterprise

WPA(2)-PSK Wireless Security Information Is your security a passphrase or a hex key?

Passphrase / Hex key

Please enter Passphrase / Hex key



UPDATE CONFIGURATION

WPA2-PSK Options

☒ WPA2-PSK

☐ WPA2-Enterprise

WPA(2)-PSK Wireless Security Information Is your security a passphrase or a hex key?

Passphrase / Hex key

Please enter Passphrase / Hex key

UPDATE CONFIGURATION

WPA2-Enterprise Options

☒ WPA2-Enterprise

Fast Roaming

WPA2-Enterprise Security Type

UPDATE CONFIGURATION

Additional Wi-Fi Setup

Next, you must set the regulatory domain and the frequency.

The screenshot shows the 'Additional Wi-Fi Setup' page in the QNC web interface. The page has a sidebar on the left with icons for home, settings, and a mobile device. The main content area features a yellow warning box at the top with the following text:

Warning!
Fix all the below listed issues to update configuration

- ✖ Please select the Wi-Fi radio band frequency
- ✖ SSID is required.
- ✖ Select regulatory domain value in additional Wi-Fi Setup

Below the warning box, there is a 'Regulatory Domain' dropdown menu with the text '--Select An Option--'. Underneath this, there are two radio button options: 'Enable 2.4GHz Radio' and 'Enable 5.8GHz Radio'. At the bottom of the form, there is a blue button labeled 'UPDATE CONFIGURATION'. Navigation arrows (back and forward) are located above the update button.

Provisioning Server Setup

The provisioning server is where the configuration files are located. In this step, you will define parameters that enable the phone to locate and communicate with the provisioning server.



Admin Tip: Warning box

The warning box lists required fields that have not yet been populated. Which fields are listed depends upon which configuration options are selected.

The screenshots below are for example purposes only and the entries will vary with different configuration options.

QNC quick network connect
v2.1.0.18

84-Series > Provisioning Server Setup

Settings

Provisioning Server Setup

Warning!

Fix all the below listed issues to update configuration

- ✖ Please select the Wi-Fi radio band frequency
- ✖ SSID is required.
- ✖ Select regulatory domain value in additional Wi-Fi Setup
- ✖ Please Select provisioning server type
- ✖ Username is required for provisioning
- ✖ Password is required for provisioning

Are you using CMS?

☐ Yes

☒ No

☒ Enable DHCP

☐ Use Static Entry

Two key questions are asked here:

- Are you using CMS?
- If not using CMS, are you enabling DHCP or using Static Entry?

Look through the options presented for each type of setup and ensure you have the necessary information before proceeding.

Use CMS





Information about configuring CMS for Spectralink 84-Series is in *Spectralink 84-Series Wireless Telephone Deployment Guide using CMS*.

The screenshot shows a configuration interface for Spectralink Quick Network Connect (QNC). On the left is a vertical sidebar with icons: a Spectralink logo, a right arrow, a house, a gear with a phone, and a gear with a phone and a red bar. The main area contains the following fields:

- Are you using CMS?**
 - ☒ Yes
 - ☐ No
- Config Management Server URL**
 - Text box: An absolute Secure URL (usually starts with https://)
- Config Management Heartbeat**
 - Text box: Enter in number of seconds
- SSL certificate**
 - Text box (empty)
- Account Key**
 - Text box: Please enter a valid CMS key
- DNS (Domain Name System):**
 - Domain**
 - Text box: Please enter a valid DNS
 - DNS Server IP Address**
 - Text box: 0.0.0.0
 - Alt DNS Server IP Address**
 - Text box: Please enter a valid ALT DNS Server Ip address

At the bottom are two circular navigation buttons: a left arrow and a right arrow.

Not using CMS, Enable DHCP


>




☒ Enable DHCP
☐ Use Static Entry

Server Type

Server Username

Username

Server Password

Password

☐ Show Password

DNS (Domain Name System):
Domain



Please enter a valid DNS

DNS Server IP Address

0.0.0.0




Alt DNS Server IP Address

Please enter a valid ALT DNS Server Ip address



UPDATE CONFIGURATION

Not Using CMS, Use Static Entry



☐ Enable DHCP

☒ Use Static Entry

Server Address

Please enter a valid server address

Server Type

Server Username

Username

Server Password

Password

☐ Show Password

DNS (Domain Name System):

Domain

Please enter a valid DNS

DNS Server IP Address

0.0.0.0

Alt DNS Server IP Address

Please enter a valid ALT DNS Server Ip address

Phone Settings

A few settings are needed for the phone to be able to coordinate with the rest of the network. Enter the required information.

The screenshot displays the 'Phone Settings' interface of the QNC (Quick Network Connect) application. The header shows 'QNC quick network connect v2.0.0.298'. The breadcrumb trail indicates '84-Series > Phone Settings'. A yellow warning box at the top lists three issues: 'Please select the Wi-Fi radio band frequency', 'SSID is required', and 'Select regulatory domain value in additional Wi-Fi Setup'. Below the warning, there are three configuration fields: 'Admin Password' (with a 'Show Password' checkbox), 'SNTP Address', and 'Local GMT Offset' (a dropdown menu currently set to '(GMT-07:00) Arizona, Chihuahua, La Paz, Mazatlan, Mountain'). A blue 'UPDATE CONFIGURATION' button is located at the bottom right of the form area.

Upload Configuration to Devices

Once you have stepped through the applicable windows and updated the configuration, you are ready to upload the configuration parameters to your Spectralink devices.

Chapter 4: Load Wireless Parameters into the Handsets

PIVOT

QNC permits both wireless and wired transfer of parameters to PIVOT. If using the wireless method, two Spectralink phones can be configured at a time. If using the wired method, only one phone can be configured at a time.

PIVOT R1.8, R2.1 and above can be configured wirelessly.



Caution: Wireless security

When QNC transfers the security configuration to the handset via a USB cable and not over the air, it is considered to be a very secure transfer of information.

If you select the wireless option, you can use a less secure Wi-Fi method and then move to a more secure method using CMS.

If you are not using HTTPS between CMS and the handsets, be aware that the over-the-air transfer of security information with the CMS, is a potential security risk.

EAP-TLS is the exception to this as it sets up mutual authentication when configured with QNC according to Spectralink recommendations.

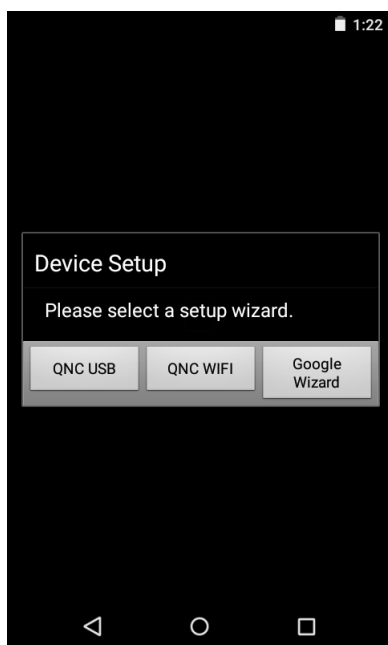
84-Series

QNC permits wired transfer of parameters to Spectralink 84-Series devices. If using the wired method, only one phone can be configured at a time unless multiple QNCs are deployed.

Load the Configuration into PIVOT Smartphones

- 1 Insert a fully-charged Battery Pack into the phone(s).
- 2 (Conditional) If the handset has been modified from out of the box configuration, perform a Reset to Factory. [Navigate to **Settings> Admin Settings> Reset Settings> Factory data reset.**]
- 3 QNC Method activation for PIVOT: The startup screen offers configuration by either QNC or the Google Wizard. Tap the QNC method for PIVOT R1.8 and R2.1 and above.

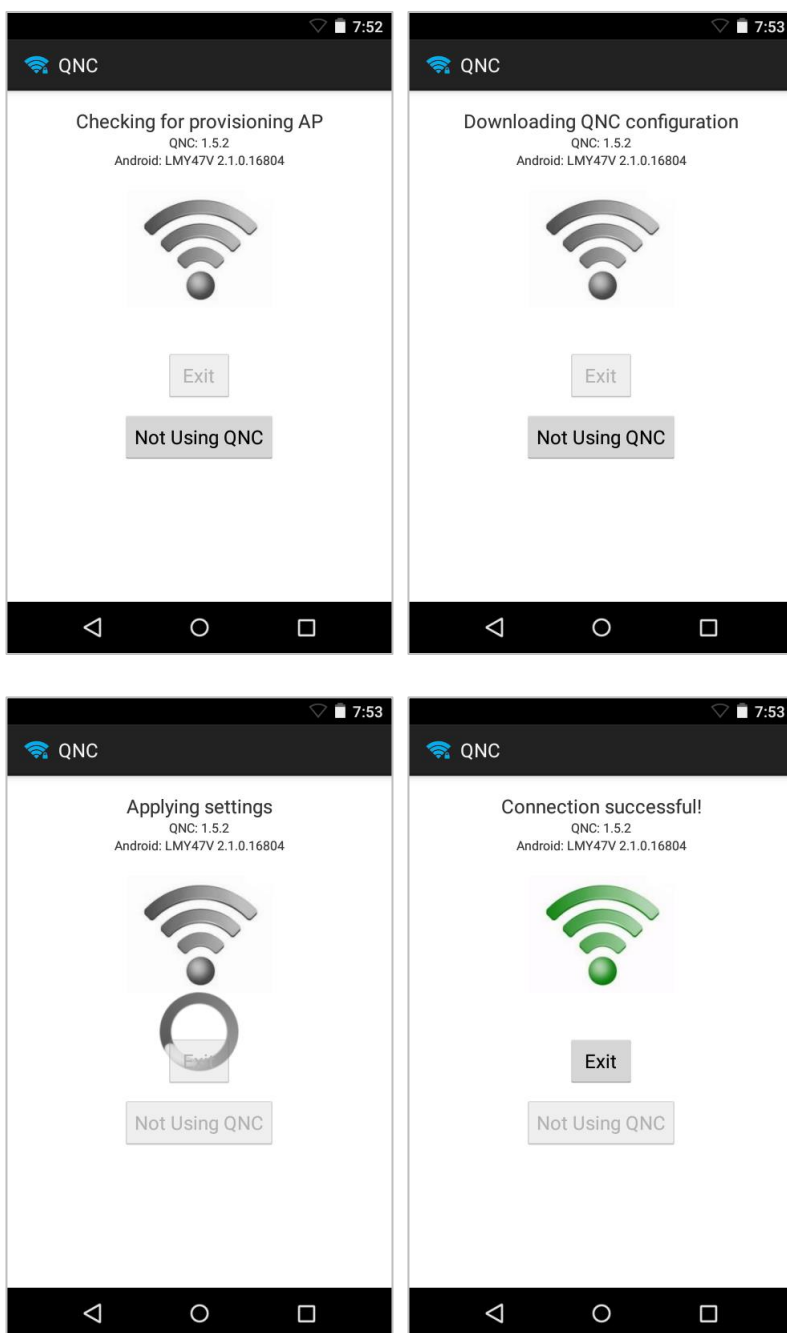
Startup screen R2.1 and above



Admin Tip: Where is the QNC app?

The QNC app is intentionally disabled after using it. If it is not available in the Launcher, it can be found in the Apps library. To restore it to the Launcher, navigate to **Settings> Admin settings> Apps** and swipe to the right-most screen. The QNC app will be there. Tap the icon and enable it. You will then see it back in the Launcher.

- 4 PIVOT will associate with QNC and load the configuration.



You may now disconnect the USB cable from PIVOT, if using one.

- 5 PIVOT will then step you through the Google wizard.
- 6 PIVOT will now download the rest of its configuration from the CMS server, if it has been configured. If not using a CMS, manually configure the rest of your settings in the handset.
- 7 Test the first few handsets to be sure your configuration is working as desired.

Load the Configuration into the 84-Series Handsets

- 1 Apply power to 84xx handset.
- 2 (Conditional) If the handset has been modified from out of the box configuration, perform a Reset to Factory. [Navigate to **Settings > Advanced Settings > Default Password is 456 > Administration Settings > Reset To Defaults > Reset To Factory.**]
- 3 Connect micro-USB cable between the 84xx handset and QNC.
- 4 The handset will download the wireless configuration and then reboot making a “tweedle” sound. If handsets do not immediately (within 10 seconds) download and reboot after plugging the USB into them, you can manually force the configuration download by navigating to the Settings menu on the handset: **Settings> (1)Basic Settings> (6)Update Configuration > Yes**. If you use this option, **Updating...** remains on the display until it is finished.

Check the status bar. Bars indicate that there is a wireless connection and it is safe to disconnect from QNC.

- 5 Disconnect the USB cable from 84xx handset. The handset will find the CMS server or the provisioning server. If using CMS, the handset will update the software to R5.3.
If using a CMS server, and it is configured with handset code per *Spectralink 84-Series Wireless Telephone Deployment Guide using CMS*, the handset will appear on the Pending list in CMS.
If using a provisioning server, and it is configured with handset code per *Spectralink 84-Series Wireless Telephone Deployment Guide*, the handset will download the rest of its configuration.
- 6 Test the first few handsets to be sure your configuration is working as desired and then use the Optimizations pointers below if deploying a quantity of handsets.



Admin Tip: How long does it take for the devices to download the rest of the configuration files?

When handsets connect to the WLAN, they will seek the rest of the configuration files that are located on the provisioning server. The handsets may take 5-10 minutes to fully configure and be ready for end user functionality.

Optimization Pointers for Quantity Deployment

Once you have proven that one handset can download the CMS updates and come up on your network, speed up the deployment of the rest of the handsets by following these pointers:

- 1** Ensure you have a fully charged battery for each handset.
- 2** All handsets must be in factory default state. If handsets have been modified, return them to the factory default state.
- 3** If using wireless deployment, install batteries and power up the next set to deploy wirelessly. They will connect to QNC per the instructions above and connect to the WLAN.
- 4** If using the USB cable, one at a time, plug in each handset. The handset will download the configuration and connect to the LAN. Unplug the handset and repeat with next handset.

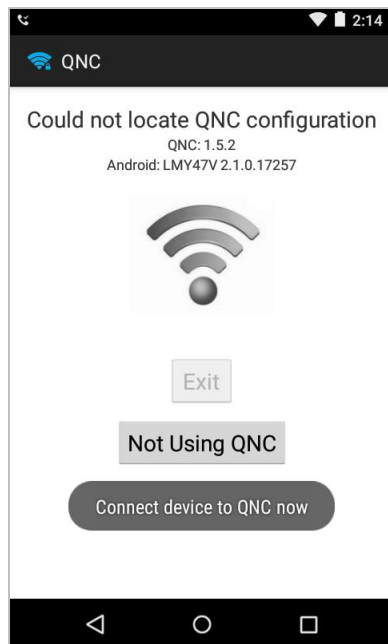
Chapter 5: Troubleshooting

If you have faulty hardware or errors in the configuration, QNC may not function properly. Here are several tips for correcting possible sources of problems.

PIVOT

Could not locate...

If the phone does not recognize the QNC server, the “Could not locate...” screen will persist, even after you have plugged the phone into the QNC box:



This error is usually caused when the configuration has not been saved. Re-configure QNC settings and click the Save button on each screen.

Configuration failure

If you get some sort of failure during the configuration process, note the failure message and tap the **Exit** button on the phone. Note that if you tap **Not Using QNC** the Google Wizard will start. If that happens, you can either run the Google Wizard or restore to defaults via the manual recovery menu and try running QNC again after checking the points below.



Admin Tip: Using the Recovery menu

The Recovery menu allows you to restore the handset to defaults if you cannot access the Admin menu.

Remove battery. Press and hold the volume down button while reinserting battery and wait for vibrate confirmation. Release volume down button and follow the Recovery Menu options for wiping the data and restoring to defaults.

- Can you connect to the QNC wizard. Check the PC LAN settings. Are they properly configured. See [Set up QNC](#).
- Was the correct version loaded on the jump drive when you updated the software. See [Appendix A: Updating QNC Software](#).
- If you get a “Failed to connect” message, there is an error with the wireless configuration. Tap **Exit** and disconnect the phone. Go through the QNC configuration again and identify the problem. It could be an incorrect SSID, security method or a password error. Correct the configuration and then reconnect the phone and select QNC.



Caution: Do not use the Google Wizard

Use the **Exit** button to go back to the startup buttons. **Not Using QNC** will start the Google Wizard and your handset will only be partially configured.

Connect device to QNC now...

This message means that the phone couldn't find the QNC using wireless. Try these fixes:

- Use a USB connection
- Power cycle the QNC

84-Series

Download problems?

- 1 (Conditional) If the handset has been modified from out of the box configuration, perform a Reset to Factory. [Navigate to **Settings > Advanced Settings > Default Password is 456 > Administration Settings > Reset To Defaults > Reset To Factory.**]
- 2 Connect micro-USB cable between the 84xx handset and QNC.
- 3 The handset will download the wireless configuration and then reboot making a “tweedle” sound. If handsets do not immediately (within 10 seconds) download and reboot after plugging the USB into them, you can manually force the configuration download by navigating to the Settings menu on the handset: **Settings> (1)Basic Settings> (6)Update Configuration > Yes**. If you use this option, **Updating...** remains on the display until it is finished.

Switching storage mode?

If the memory stick is removed, the QNC has to be rebooted (power cycled) to properly switch to internal storage.

Appendix A: Updating QNC Software

The software version currently being run on QNC is noted in the browser page banner. To determine if a later version is available, go to the Spectralink Support site and browse to the x page. The QNC software is located under the Downloads tab with the version included in the link title. If a later version is listed, click the link and download the software.

To upgrade the Spectralink QNC

- 1** Download the update from the Spectralink webpage.
- 2** Extract the files from the zip to a convenient location.
- 3** Copy the QNC.img file into the root directory of a USB flash drive.
- 4** Use “eject” to eject the jump drive and ensure that the operating system has notified that it is ok to remove the USB drive. Remove the jump drive.
- 5** Insert the USB flash with the QNC.img file into QNC USB port.
QNC will detect the update and load it. It will power cycle when the load is complete.
- 6** Verify the upgrade was successful by starting the browser and viewing the version number in the page header.

Appendix B: Products Mentioned in this Document

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