



Application Note

**Instructions for Configuring the
CradlePoint PHS300 with Librestream's
Onsight Mobile Collaboration System**

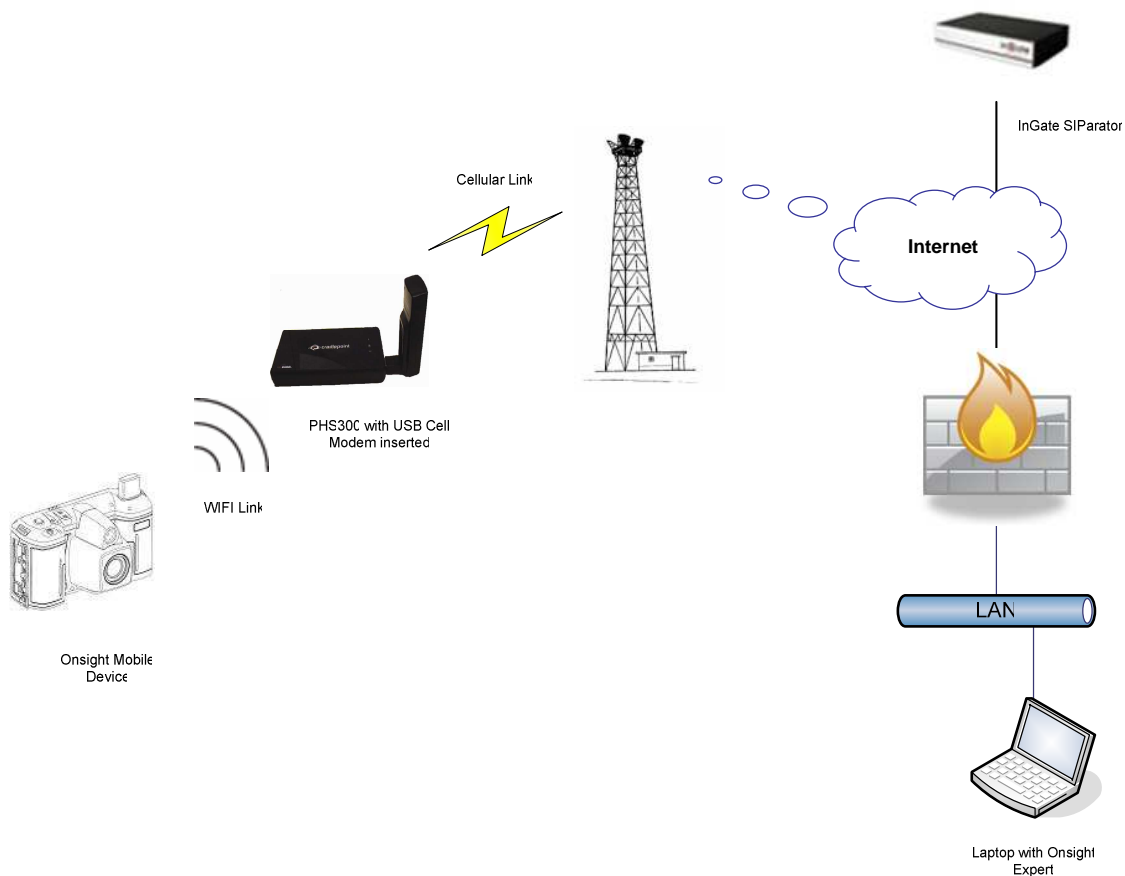
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1 Using Onsite with the CradlePoint PHS300

1.1 Overview

The CradlePoint PHS300 provides hotspot connectivity to the Onsite mobile device via an 802.11b/g WiFi link. The PHS300 provides internet access through a USB cell modem connection.



1.2 Requirements

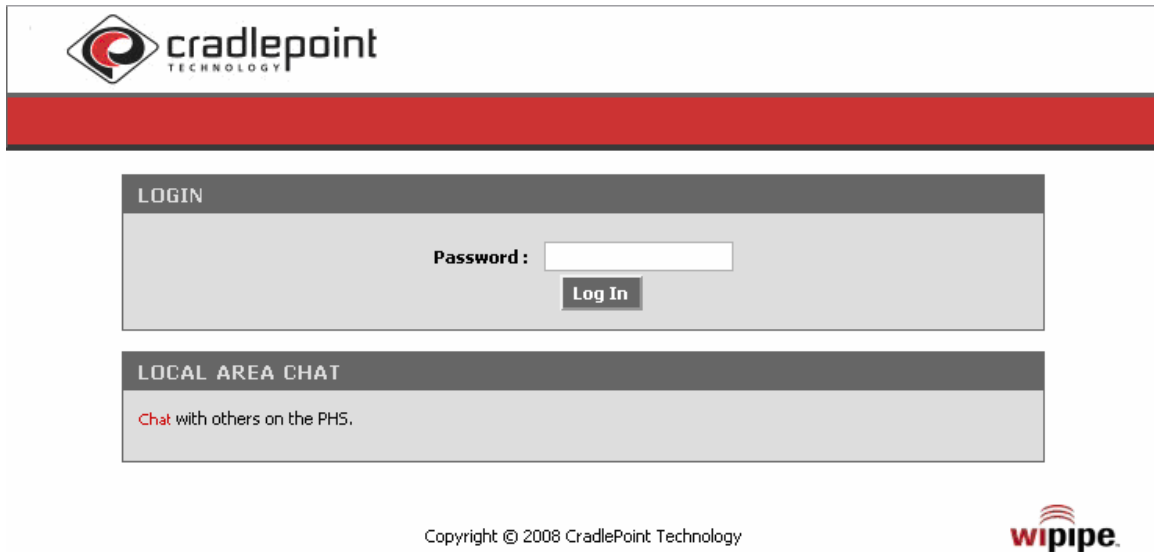
A cell modem and active data plan account are required in order for the PHS300 to connect to the Internet. See the CradlePoint supported devices list at www.cradlepoint.com.

The limiting factor in video quality is the available bandwidth provided by your Cellular Internet Service Provider. For best performance, select the highest speed cellular modem from your Cellular ISP. Also, verify that the high speed service is available in the area you will be operating Onsite.

This configuration requires a SIP registration server in order to make calls. Librestream has tested using the InGate SIParator and Tandberg VCS.

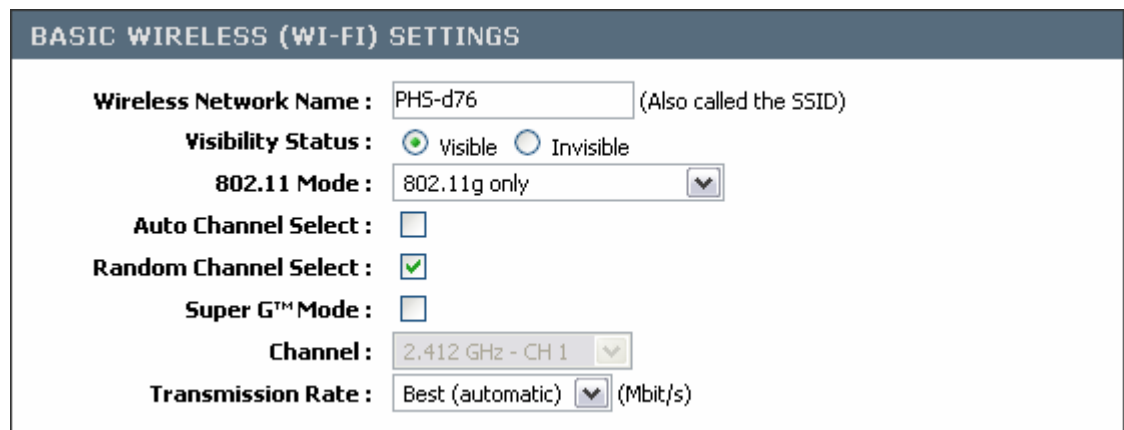
2 CradlePoint PHS300 Configuration

- Plug your USB cell modem into the PHS300.
- Power up the PHS300
- Connect your laptop to the PHS300.
 - The PHS300 has security disabled out of the box.
- From your laptop, launch a browser.
- Enter the IP address '192.168.0.1' in the address bar.
- Log in to the PHS300



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- The default password is the last 6 digits of the MAC address; it located on the back label of the PHS300. E.g. 02ed76
- On the Basic\Wireless (WI-FI) page make the following changes to enable WPA-Personal Security:
 - Select '802.11g only' for the 802.11 Mode.



BASIC WIRELESS (WI-FI) SETTINGS

Wireless Network Name: PHS-d76 (Also called the SSID)

Visibility Status: visible Invisible

802.11 Mode: 802.11g only

Auto Channel Select:

Random Channel Select:

Super G™ Mode:

Channel: 2.412 GHz - CH 1

Transmission Rate: Best (automatic) (Mbit/s)

- Enable 'WPA-Personal'.

WIRELESS (WI-FI) SECURITY MODE	
Security Mode :	<input type="radio"/> None <input type="radio"/> WEP <input checked="" type="radio"/> WPA-Personal

- Select WPA and TKIP.

WPA	
WPA requires stations to use high grade encryption and authentication. NOTE: WDS will not function with WPA security.	
WPA Mode :	WPA <input type="button" value="v"/>
Cipher Type :	TKIP <input type="button" value="v"/>
Group Key Update Interval :	3600 (seconds)

- Enter a Pre-Shared Key e.g. "123connectPHS"

PRE-SHARED KEY	
Pre-Shared Key :	***** (8 to 63 characters) <input type="button" value="Show Keys"/>

IMPORTANT: YOU MUST REMEMBER THE SECURITY SETTINGS IN ORDER TO CONNECT TO THE PHS300 AGAIN.

- Go to Tools\User Login and uncheck 'Require User Login:' to prevent the Cradlepoint from attempting to display a login web page on the Onsite Device. [Note: older Cradlepoint versions may have this setting located on an alternate menu. Please update your Cradlepoint from their website if you have an older version.]

USER LOGIN SETTINGS	
Require User Login :	<input type="checkbox"/>

- Save the Settings and reboot the PHS300.

WIRELESS (WI-FI)

Wireless Network Settings

Use this section to configure the wireless settings for your PHS. Please note that changes made on this section may also need to be duplicated on your Wireless Client.

To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP, WPA-Personal, and WPA-Enterprise. WEP is the original wireless encryption standard. WPA provides a higher level of security. WPA-Personal does not require an authentication server. The WPA-Enterprise option requires an external RADIUS server.

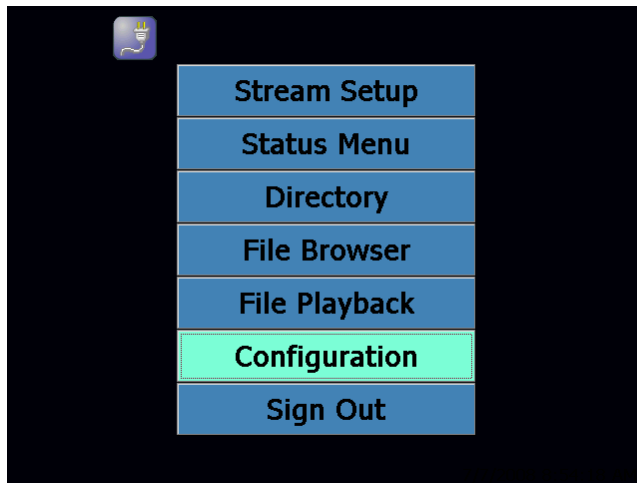
Save Settings **Don't Save Settings**

NOTE: You may choose alternate WI-FI security settings but you must enter the same settings into the Onsignt mobile device in order to connect it to the PHS300.

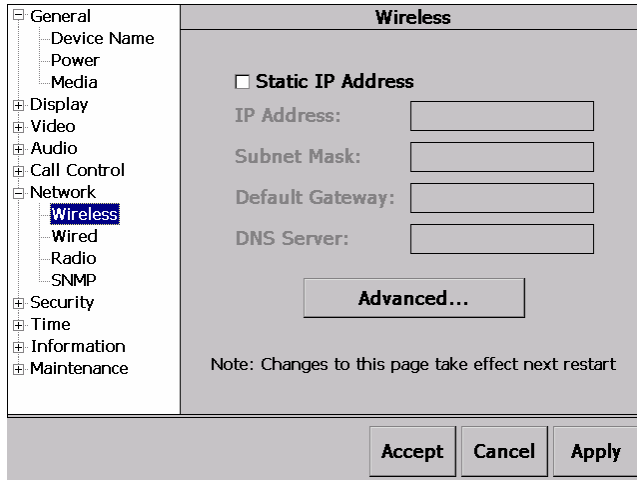
3 Onsignt Mobile Device WiFi Configuration

3.1 *Connect the Onsignt Mobile Device to the PHS300:*

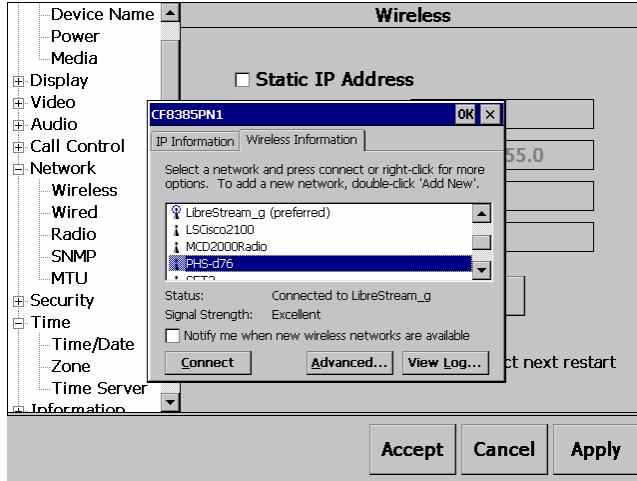
1. Turn the PHS300 (with cellular modem inserted) ON and verify the WLAN and Network Connection LEDs are lit.
2. Go to the Onsignt mobile device main menu. Tap the 'Configuration' button.



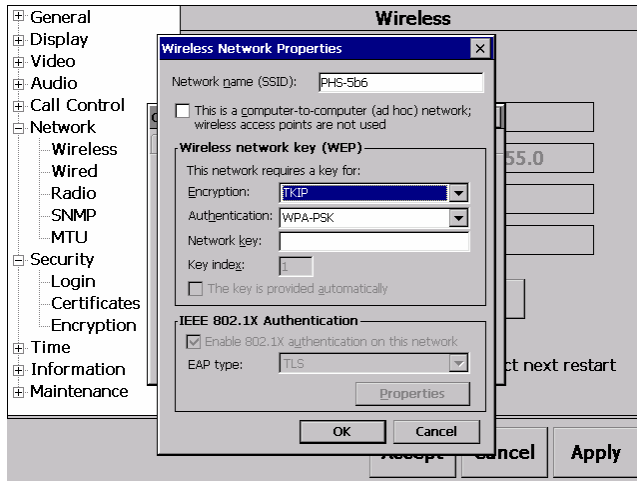
3. Confirm that the Network/Wireless 'Static IP Address' check box is not checked.



4. Tap the 'Advanced' button.
5. Select the PHS300's Network ID (SSID) from the available networks list. E.g. PHS-d76

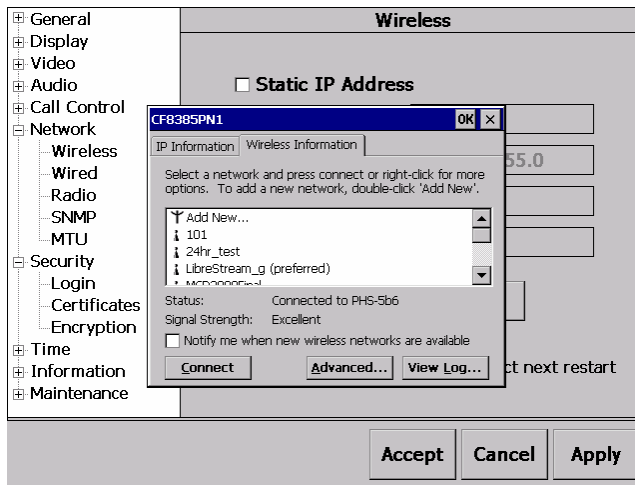


6. Press the 'Connect' button.

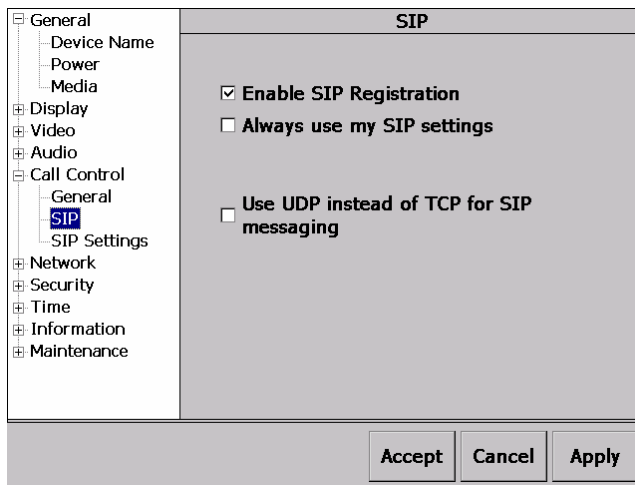


7. Enter the WPA-PSK (the PHS-300 calls this WPA-Personal) Network key as set on the PHS300.

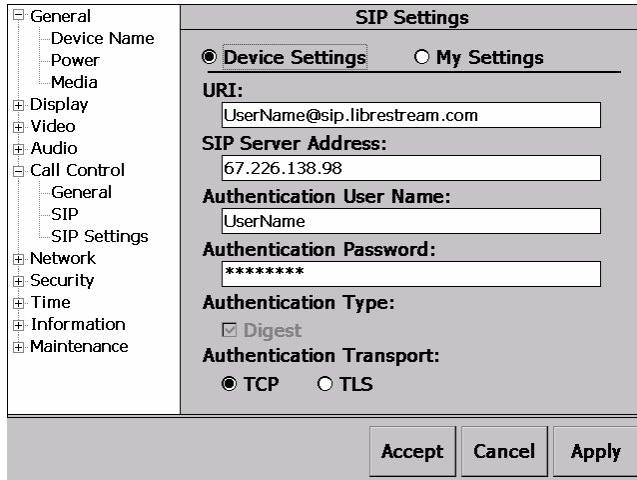
- E.g. "123connectPHS".
8. Press 'OK'.
 9. The Onsignt mobile device will connect to the PHS300 network.



10. Navigate to Configuration\Call Control\SIP. Check 'Enable SIP Registration'.



11. Select SIP Settings from the left-side panel.
12. Enter the 'Device Settings' to register to your SIP registrar.



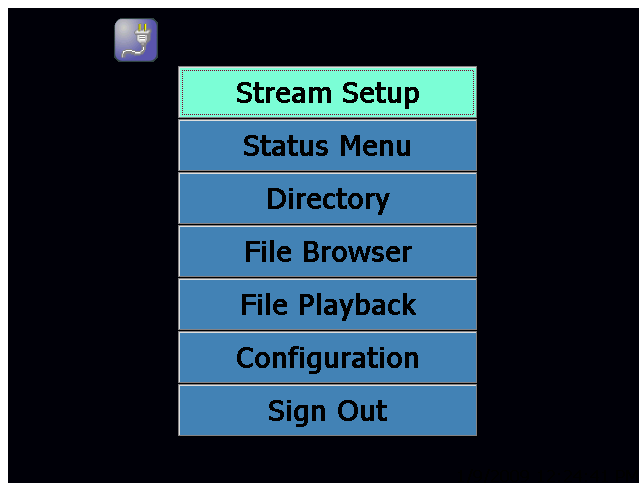
13. Press the 'Apply' button.
14. SIP calls can now be made from the Onsight mobile device over the PHS300's WiFi connection and the cell modem link to the Internet.

4 Optimizing the Call Experience

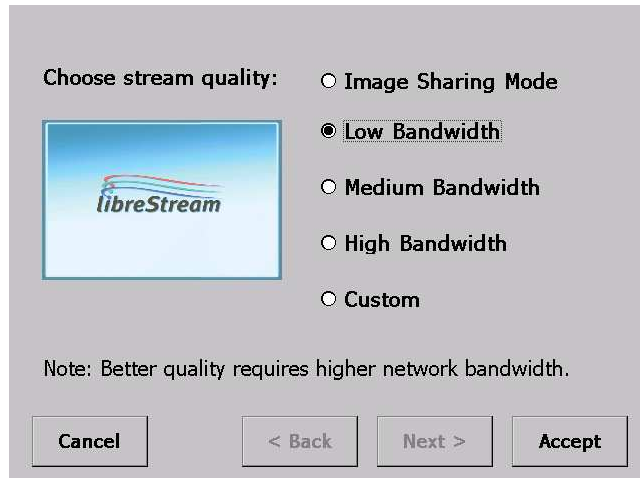
Due to the variable nature of cellular coverage it may be desirable to configure the Onsight mobile device to connect calls utilizing the least amount of bandwidth necessary to support audio and video. Once the session is established the user can switch to higher bandwidth video configurations (higher resolution) during the call.

4.1 Low Bandwidth Configuration:

1. Go to the Onsight mobile device main menu.
2. Select 'Stream Setup'

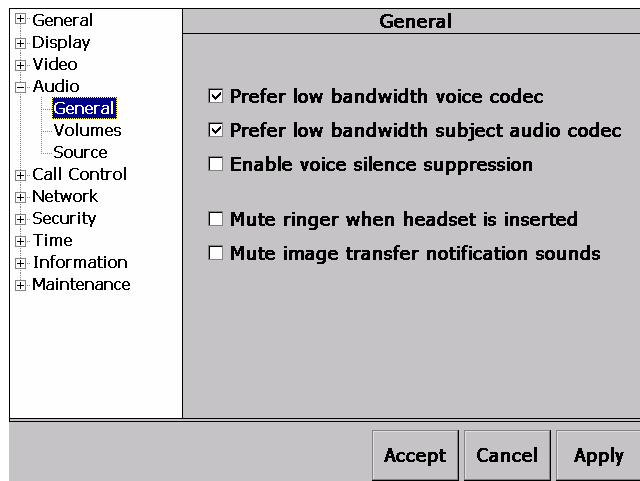


3. Select 'Low Bandwidth' and press 'Accept'.



NOTE: In situations where audio is degraded when streaming video, select 'Image Sharing Mode', this will allow collaboration using a jpeg image rather than live video.

4. Tap the 'Configuration' button on the Main menu.
5. Select the Audio\General menu option.
6. Select the following:



7. Press 'Accept'.

5 Troubleshooting

1. I can connect a call but the audio or video stream is degraded.
 - a. End the call.
 - b. On the OnSight mobile device 'Go to Configuration\Audio\General':
 - i. Select 'Prefer low bandwidth voice code' and 'Prefer low bandwidth subject audio codec'.
 - ii. Go to 'Stream Setup' and select 'Low Bandwidth'
 - c. Make the call again.
 - d. If 'Low Bandwidth' video is still degraded.
 - i. End the call.
 - ii. Go to 'Stream Setup' and select 'Image Sharing Mode'.
 - iii. Make the call.

2. The PHS300 doesn't recognize the USB cell modem. The cell modem's power led is ON but the Network Connection LED is OFF on the PHS300.
 - a. Do you have the latest firmware installed on the PHS300?
 - i. Go to Tools\Status and verify the version of firmware is the latest.
 - b. Is your Cell modem a supported device?
 - c. Has your data plan been activated?
 - d. Your Internet Service Provider may require username/password information to be entered in order to connect the cell modem. This information is provided by your ISP and can be entered on the PHS300's Basic\WAN page under 'Cellular Modem PPP Settings'.
3. The PHS300 can't establish a cellular connection. The Cell modem's power LED is ON but the Cell modem's network connection LED (if available) is OFF.
 - a. Verify the Cellular signal strength that the cell modem is reporting is good to excellent.
 - i. Connect to the PHS300's web interface.
 - ii. Go to Status\Device Info\WAN
 - iii. Verify the following
 1. Cellular Signal Strength
 2. Network Status: Established
 - iv. If the WAN connection reports 'Disconnected' press "Connect".
 - b. If a Cellular connection cannot be established relocate the PHS300 to an unobstructed area and try again. The PHS300 may have to be located at a further distance than the point of interest in order to acquire a cellular signal. The WIFI range (distance of the Onsite mobile device from the PHS300) can be up to 90m (100 yards). E.g. The PHS300 can be sitting by a window while the Onsite mobile device is up to 90m from that point. Obstructions such as interior walls may diminish the WIFI range.
4. The Onsite mobile device can't connect to the PHS300 WI-FI network with security enabled.
 - a. Verify the PHS300's WLAN LED is ON.
 - b. Verify the correct WiFi security settings have been entered on the Onsite mobile. E.g. Pre-Shared Key.
5. If you have forgotten the PHS300 login or WI-FI security settings, do the following.
 - a. Reset the PHS300 to factory defaults, press the reset button located in the battery well. See the PHS300 Quick Start Guide for details.
6. To View the PHS300 Status information, connect to its web interface and go to the Status page. The following status is available:
 - a. Device Info
 - b. Wireless (WI-FI)
 - c. Modem Info
 - d. Routing
 - e. Logs
 - f. Statistics
 - g. Active Sessions