



## ***Customer Service Bulletin*** ***Monitoring Products***

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**Bulletin Type: As Needed**

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**Date: 2011-06-10**

**SAP DIR #: 20012565**

**Subject:** CSB – PLFM Radio Ver 2.30.00 Upgrade

**CAR Number:** NA

**Distribution Scope:** WA Customers  
WA Technical Support, Product Service, & International Service Centers

**Product(s) Referenced:** Connex Vital Sign Monitor (CVSM) models 6400 with the radio option and 6500

**SW Version:** CVSM Host version 1.50.02 or earlier

**Serial No. / Lot Code:** CVSM - 103000002411 and earlier

**Summary:** Radio software (SW) version 2.30.00 has been released for the platform radio. Version 2.30.00 SW offers additional security options and addresses connectivity issues. The upgraded radio SW will ship with CVSM devices provisioned with host version 1.70.00. Devices with host SW version 1.50.02 or older will need to be upgraded to host version 1.70.00 to support the radio 2.30.00 SW.

- Issue:** Radio SW version 2.30.00 address the following issues:
- Corrects an issue where repeated reboots cause the settings to revert back to the original factory provisioned settings
  - Corrects an issue where the radio does not always report the correct RSSI value when viewed on the device or accessed through the Web Server
  - Corrects an issue where when the DHCP lease is renewed, the device will sometimes fail with a Radio not functional error

**New features:**

- Authentication/Encryption types for WEP64 , WEP128, WPA2AES Mixed Mode (AES + TKIP) and WPA2PSK Mixed Mode (AES + TKIP)
- Authentication/Encryption type setting functionality to LamarrServer

**Action:** Customers that are experiencing the issues listed above and have agreed to upgrade the radio software on their own will be supplied with a copy of this customer service bulletin (CSB) along with the required upgrade files. Use the procedure described in this document to update the radio software.

**CAUTION: This procedure may disable the radio if the upgrade is interrupted when the files are being written to flash. Before starting the upgrade ensure the CVSM battery is fully charged and/or connected to AC power.**

If the radio SW cannot be successfully upgraded, call Welch Allyn Technical Support to request an RMA.

**Reference to Standards:** 21 CFR Part 820, ISO 13485, MPD SOP-0002

**Additional References** 20012538 TSB – PLFM Radio Ver 2.30.00 Upgrade

**Technical Experience:** To perform this upgrade you must be skilled in configuring wireless networks, using Microsoft Windows XP or Windows 7, and the Welch Allyn Service Tool

<b>Required Tools:</b>	<b>Material no.</b>	<b>Description</b>
	408308	Welch Allyn Service Tool 1.5.0.0 (Available from WA web site)
	Off the shelf item	Wireless router 802.11 a/b/g*
	660-0138-00	Cable, patch 5' RJ45, T568B*
	4500-925	USB 2.0/5-pin type A to mini-B cable, gold, 6 ft.

\* if a wireless network is unavailable

**System Requirements** Windows PC with Windows XP SP3 or Windows 7

Internet Explorer 7 or 8

## Internet access to connect to PartnerConnect

### Required software files:

- To update the radio software you will need four files as follows:
- 1.nk\*.bin (\* is a placeholder for the release date i.e. 4\_1\_26)
  - 2.nk\*.sha1 (\* is a placeholder for the release date i.e. 4\_1\_26)
  - 3.Lamarr2\_SPI.cab
  - 4.Lamarr2\_SPI.sha1.txt

### Quality Process for failed units or components:

NA

### Procedure: Upgrade overview

The upgrade process will take approximately 20 to 30 minutes to complete.

Before starting the upgrade procedure Welch Allyn Technical Support will deliver the required upgrade files via PartnerConnect to your computer. To perform the upgrade locate the files on your computer, you will need to supply the full path name to the files. If the files were delivered in a compressed format you will need to extract them before using. Extract the following files from the radio SW 2.30 WinZip file:

File name	File Type
1. Lamarr2_SPI	CAB file
2. Lamarr2_SPI.sha1	Text document
3. NK_4_1_26	Binary
4. nk_4_1_26.sha1	Text document

To access the radio's configuration web page the PC running the service tool must be able to connect to the wireless network the radio is associated with. If the radio is already connected to a network accessible to the PC verify the RSSI value is between 0 dBm to -60 dBm, and proceed to **Access the radio's web interface**.

If the radio is not configured to a network or the network is inaccessible to the PC you may setup a simple wireless network with a wireless router to communicate between the CVSM's radio and the PC. See **Wireless network setup**.

### Wireless network setup

Follow these instructions to setup a simple network with a wireless router to communicate between the radio and the PC. To setup the CVSM to communicate with the router, follow the manufacturer's instructions to connect the PC to the router and logon to the router.

1. Configure the following wireless settings on the router:
  - Name (SSID)
  - Radio band (mode) a or b/g
  - Security: none, WPA2-AES, or WPA2-PSK
2. Configure the radio settings on the CVSM to match the router settings.

To access the radio configuration on the CVSM:

  - a) Touch the *Settings* tab
  - b) Touch *Advanced* tab

- c) Enter the access code '6345' and touch *OK*.
- d) Touch *Network* tab
- e) Touch *Radio* tab
- f) Enter the *SSID*
- g) Select the *radio band*
- h) If you are using security configure the *Authentication type* to match the router settings. If not set the *Authentication type* to *Open*.
- i) Touch *Configure radio* button
- j) Touch the *Status* tab, and wait for the radio to associate with the router. Radio, network, and session information are displayed in the *Status* screen to assist you in troubleshooting any connection issues.
- k) In the right hand *Session* pane check the *RSSI* value is between 0 dBm and -60 dBm (-50 dBm is better than -60dBm).

Note: If the CVSM is in the same room with the router and the *RSSI* value is still too low consult the service manual to trouble shoot the radio.

### **Access the radio's web interface**

1. Connect the device to the PC running the service tool with the USB cable
2. Launch the service tool and logon
3. In the service tool select the device to be upgraded to open the Welch Allyn Connex Device tab
4. In the service tool verify there is a Radio IP address in the device information pane (this is the area just below the device tab).
  - If you see a Radio IP address, continue with step 5
  - If you do not see a Radio IP address, go to the section titled, "**Wireless network setup**", above.
5. Select the *Configure* tab
6. Select the *Change* button in the current settings pane
7. Select the *Radio* tab
8. Follow the onscreen prompt and click *Configure*. The Welch Allyn Software Tool connects you to the radio manufacturer's configuration web page. Proceed to:  
**Update the radio software**

### **Update the radio software**

If the radio's web interface is not open; launch the radios web page as described in ,  
**"Access the radio's web interface"**

1. In the Web Admin menu, select, *Radio card firmware Upload*
2. Click on the *browse* button and navigate to the directory containing the upgrade files and select the nk\*.bin file
3. Launch Windows Explorer and browse to the same location as the nk\*.bin file and open nk\*.sha1 file (right click and open with Notepad).
4. Select and copy all text characters in the first line up to (but not including) " \*nk bin".
5. Paste copied text into SHA1 checksum box on the radio card firmware upload page.
6. Click Apply to begin the upgrade. This process will take 20-30 minutes (depending on network speed). An information message is displayed on the monitor; "Radio Software upgrade in progress. Do not shut down".

Note: The status string in the radio frame displays the file loading and the percentage complete.

7. When the files have been transferred and a checksum is complete, the software will then be written to the radios memory. At this point, the Web page changes to show the following message:

Web Admin >

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Radio card firmware has been uploaded and the checksum is good.

The firmware will now be burned to flash

!\*\*\*\*\* WARNING \*\*\*\*\*!

This procedure will take approximately 7 minutes.

After the firmware programming is complete, the radio card will  
automatically boot the new firmware image and reconfigure itself.

**DO NOT POWER THE INSTRUMENT OFF DURING THIS PROCESS**

!\*\*\*\*\*!

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8. Wait approximately 7 minutes for the task to complete. While the software is being burned to flash the status string and information message advises, "Radio card rebooting; please wait." When the flash process is complete the information message changes to "Advanced settings." If the information message displays "Advanced settings", proceed to step 12.
9. If after 10 minutes the information message has not changed to "Advanced settings". Touch the power button to place the device in standby mode, touch the display to wake the device. If the screen has not refreshed reboot the CVSM as follows:
  - a) From Advanced settings touch Exit
  - b) Touch Settings
  - c) Touch Device
  - d) Touch Power down
  - e) Push the power button to restart the monitor.
10. Verify radio settings. Navigate to the advanced settings, Radio tab as follows:
  - a. Touch *Settings*
  - b. Touch *Advanced*
  - c. Enter *6345* and touch *OK*
  - d. Touch *Network*
  - e. Touch *Radio*

If the SSID and Authentication settings have been reset to factory defaults it will be necessary to reconfigure the radio as described in the **Wireless network setup**, step 2.

If the radio settings have not changed touch the Status tab and wait for the radio to initialize, associate and receive an IP address.

11. When the radio has initialized and received an IP address, return to the Web Admin page. If the radio settings were reset it may be necessary to restart the radio's web interface as described in, "**Access the radio's web interface.**"
12. In the Web Admin menu, select "Load cab file".
13. In the Cab file text box, click *browse* and navigate to the directory containing the Lamarr2\_SPI.cab file, and select it
14. Use the Windows Explorer to browse to the same location as the CAB file and open the associated Lamarr2\_SPI.sha1 (text document) (right click and open with Notepad).
15. Select all the open text characters up to (but not including) the space before the filename.
16. Copy and paste the text into the SHA1 checksum box on the Load CAB file page

17. Click the Apply button to begin Lamarr2\_SPI.cab file download and flash writing. This process will take approximately 1-2 minutes. An information message is displayed on the monitor; "Radio Software upgrade in progress. Do not shut down". While the software is being updated the status string displays the percentage complete of the file download, then advises, "Radio card rebooting; please wait." When the flash process is complete the information message changes to "Advanced settings"
18. The Web page will display the following message: "Radio Card is Rebooting Now"
19. Wait at least 2 minutes for the radio to reboot and do post-update configuration
20. Return to the radio web page in the Windows Browser and confirm the Device Information section of the web page shows the new SW versions. The version information may alternately be confirmed on the Network Status tab on the CVSM.
21. This completes the radio update.
22. Close the browser
23. Return to the service tool. In the Change device configuration settings box click the save or cancel button to close the Change the device configuration settings dialog box.

### **END OF PROCEDURE**

#### **Notes:**

1. Contact the Welch Allyn Complaints Department to initiate or process a medical device complaint resulting from this or other issues.
2. Drawings, illustrations, and part numbers in this document are for reference purposes only and subject to change.

### **End of Bulletin**

#### **Revision History**

<b>Version</b>	<b>Description</b>	<b>Change #</b>	<b>Init</b>	<b>Release Date</b>	<b>Appr</b>
A	CSB – PLFM Radio Ver 2.30.00 Upgrade		GCS	2011-06-10	D*

D\* - Refer to SAP DIR digital signature log for approval details.