1. PLUS Radios: HTP-900RE and HTP-900SEO

These sections describe the updates and known limitations in each software version for the HTP-900RE and HTP-900SEO PLUS Radios. The most recent version is listed first.

> **Important!**: Radios running versions 2.26 through 2.29 MUST upgrade to version 2.34.

> The latest software versions and the most recent list of known limitations and workarounds are available on www.freewave.com.

1.1. Version 3.14

Release Date: March 2017

PLUS Software 3.14 is released with product efficiency improvements.

1.2. Version 3.13

Release Date: August 2016

PLUS Software 3.13 is released for HTP-900RE and HTP-900SEO PLUS Radios.

In the **Security** window, in the **Miscellaneous** area, a new **Reboot Interval** list box option has been added.

- By default, the **Reboot Interval** is **Disabled**.
  - If **Disabled** is selected, the PLUS Radio will operate without automatically rebooting.
- When an interval (e.g., **1 Hour**, **1 Day**, **30 Days**) is selected, the scheduler automatically reboots the PLUS Radio when the reboot interval expires.

> **Note**: See the HTP-900RE and HTP-900SEO PLUS Radios **User Manual** for information to use this option.
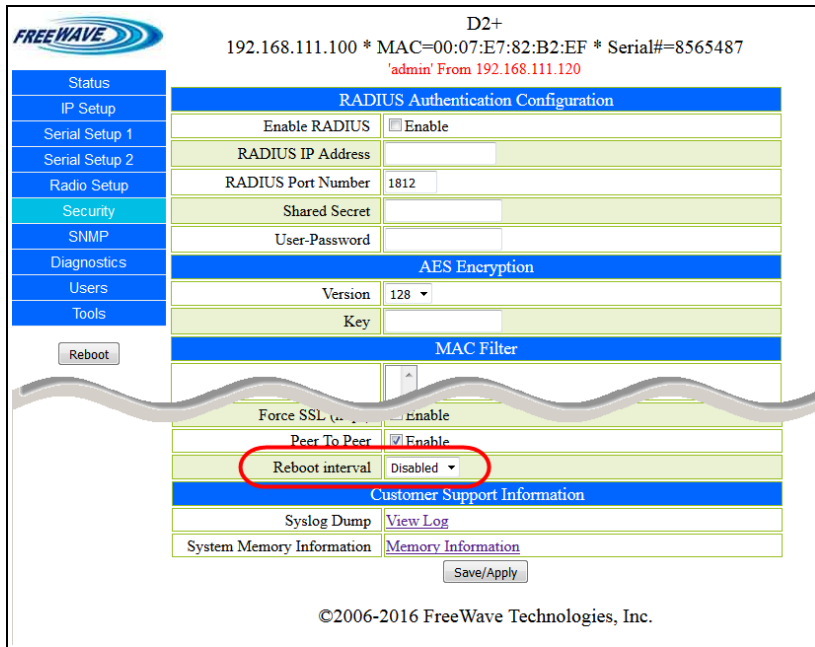
Figure 1: Security window - Reboot Interval list box

1.3. Version 3.11

Release Date: June 2016

PLUS Software 3.11 is released for HTP-900RE and HTP-900SEO PLUS Radios to correct the non-locked Frequency Zones.

- If any Frequency Zones are locked or restricted based on Model Number, v3.11 correctly displays the Frequency Zones that are locked and not available for setting or clearing.

1.4. Version 3.05

Release Date: May 2015

PLUS Software 3.05 is released for HTP-900RE and HTP-900SEO PLUS Radios to address the so-called 45-day lock-up issue experienced by several users.

- This issue appears as a lock-up of the radio, requiring a reboot, on a periodic basis.
  - This lock-up is caused by a memory register that overfills and corrupts nearby data.
- Units that are installed in different applications and with different equipment than the units that sparked this investigation, may experience the same issue, but with different time scales.

> **Note**: This version becomes the default version of firmware and is backward compatible with all supported previous versions.

Revision: Jul-2017

1.5. Version 3.01

Release Date: January 2015

PLUS Software 3.01 is released for the HTP-900RE and HTP-900SEO PLUS Radios to correct a number of software issues.

Additions and Changes

- Radios running version 3.01 are now compatible with Discovery Server.
- IP Multicast traffic originating from the Endpoint side of the network is now fully propagated over-the-air to the Gateway side of the network.
- When using UDP functions (e.g., **Multicast** or Discovery Server), a valid **Default Gateway** MUST be set.
- When using **UDP Unicast**, a behavior change has been introduced.
  - Prior to v3.01, the Gateway would send to the last device that sent it data regardless of what IP address was defined in the **Serial Setup** window, **UDP IP** text box.
  - Now, in v3.01, the Gateway will only send to the device IP address listed in the **UDP IP** text box.

Known Limitations and Workarounds

- With VLANs and some other specific configurations, TCP/IP traffic can periodically time out over links unless the **MTU** parameter is adjusted to be lower than the 1500 byte default value, with the networks also adjusted accordingly.

  > **FREEWAVE Recommends**: Start with **1496 bytes** in this scenario.

- If the network includes Repeaters, the **Repeaters** parameter settings must be set to **Enabled** for ALL radios, not just the Gateway.
  - Setting only on the Gateway can result in packet loss.

  > **Warning!** Set the **Repeaters** parameter to **Enabled** on ALL radios in the network **before** upgrading to v3.01.
  > Doing so after the upgrade is complete can still result in packet loss.

- **Multicast** port CANNOT be changed using the **Configuration Windows**.
  - Use the serial interface to change this parameter.

1.5.1. Warning: Extreme Set-Up Parameters

Important!: As of release Version 3.05 (on page 2), this parameter setup has been addressed. The 30 day reboot recommendation is no longer in effect.

If the following Set-Up parameters are used, a reboot of the network is recommended every 30 days

IP Setup

IP Setup	
Parameter	**Setting**
Spanning Tree	Enabled
MTU	1498
VLANs	Enabled
NTP	Enabled
Syslog	Enabled

Serial Setup

Serial Setup	
Parameter	**Setting**
TCP Server	Disabled
TCP Client	Disabled
UDP	Disabled
Multicast	Disabled
Runtime Serial Setup 'U'	Enabled
Modbus RTU	Disabled

Security Setup

Security Setup	
Parameter	**Setting**
RADIUS	Enabled
Peer to Peer	Disabled

SNMP Setup

SNMP Setup	
Parameter	**Setting**
SNMP Agent	Enabled
SNMP Trap	Enabled

1.5.2. ERRATA Information

- When upgrading from v2.22, the **Power Up Dest. IP & Port** text boxes were replaced with the **UDP IP & Port** text boxes in v3.01.
- When upgrading from v2.34, the **Power-Up / mcast IP & Port** text boxes were replaced with the **UDP IP & Port** text boxes in v3.01.

> **Important!**: Contact FreeWave Technical Support for assistance with the **Alarm** and **Drop Link** features.
> These features have changed significantly from v2.22 and v2.34 to v3.01.

Using the serial ports as **Alarm Clients**, these parameters were hidden from the v3.01 **Serial Setup** window:

- **Enable Alarm** check box (v2.22 only)
- **Alarm IP & Port** text boxes (v2.22 only)
- **Utilize For Alarm** check box (v2.34 only)
- **Alarm Retry Limit (Attempts)** text box
- **Maintain / Drop Link** check box

If the HTP-900RE and HTP-900SEO device is configured as an Alarm Client **and**

- it is sending the alarms to another device acting as a Terminal Server **and**
  - if the **Maintain Link** is enabled (cleared check box in v2.22 and v2.34) **then**
    - the Client will open multiple sockets on the Terminal Server.
- ALL of the multiple sockets will remain open.

> **Warning!** The Terminal Server in v3.01 is limited to five (5) sockets.
> These sockets will quickly become full.
> Additional alarms from the Alarm Client to the Terminal Server will **NOT** be heard.
> Return messages from the Terminal Server to the Alarm Client will **NOT** be heard.

1.5.3. Specific Upgrade Notes for the Serial Setup window

Upgrading from v2.22 to v3.01

- **TCP Server Settings** (i.e., the **Enabled** check box is checked) is enabled on both ports regardless of what setting was enabled in the v2.22 **Mode** list box.
  - The **Mode** list box does not exist in v3.01.

> **FREEWAVE Recommends**: Disable (clear the **TCP Servers Enable** check box) if a different **Mode** was used in v2.22.

- In v2.22, the **Local IP Port** setting in the **UDP Settings** area is now in the **UDP Settings** area as the **Port** text box in v3.01.
- The v2.22 **Power Up Dest. IP & Port** text boxes and their values are NOT transferred to v3.01.

> **Note**: Settings established in previous versions are lost when upgrading to v3.01.

> **Important!**: If using the **UPD Unicast** mode, the user must re-program the **UDP** settings in ALL appropriate HTP-900RE and HTP-900SEO devices.

Upgrading from v2.34 to v3.01

- If a port is configured for **Multicast** only in v2.34 then, after upgrade to v3.01, it is set to **UDP** mode AND **Multicast** mode (i.e., their respective **Enable** check box is checked).

  > **FREEWAVE Recommends**: Disable (clear the **Enable** check box) for the mode NOT in the network.

- In v2.34, the **Local UDP Port** setting in the **UDP/MULTICAST Settings** area is now in the **UDP Settings** area as the **Port** text box in v3.01.
- The **Power-Up / mcast IP & Port** text boxes and their values in v2.34 are NOT transferred to v3.01.

  > **Note**: Settings established in previous versions are lost when upgrading to v3.01.

- In v2.34, the **UDP** and **Multicast** settings were combined.
  - In v3.01, the **Multicast IP and Port** settings are in their own area of the **Serial Setup** window.
    - When upgrading from v2.34, the user's previous **Multicast** settings are replaced with the FreeWave defaults.

1.6. Version 2.34

Release Date: October 2014

PLUS Software 2.34 is released for HTP-900RE and HTP-900SEO radios to correct a number of software issues.

> **Note**: The critical bug fix is the RF Link Lock issue seen in some networks.

Additions and Changes

These are the issues corrected in PLUS Software 2.34:

- PLUS Ethernet Gateway radios (HTP-900RE and HTP-900SEO radios) locking up after 30 to 75 days.
- Global software upgrade causes radio to be non-functional.
- Default PLUS settings leave radio in a transmitting mode.

Known Limitations and Workarounds

- Radios running version 2.34 are not compatible with Discovery Server.
  - Use the serial setup to obtain IP addresses.

- If your network includes Repeaters, the **Repeaters** parameter in the Radio Setup settings must be set to **Enabled** for **all** radios, not just the Gateway. Setting only on the Gateway can result in packet loss.

> **Warning!** Set the **Repeaters** parameter to **Enabled** on all radios in the network **before** upgrading to 2.34.
> Doing so after the upgrade is complete can still result in packet loss.

- IP Multicast traffic originating from the Endpoint side of the network is not fully and properly propagated over-the-air to the Gateway side of the network.
    - Multicast traffic from the Gateway side of the network **is** properly propagated over-the-air to the Endpoint side of the network.
    - Therefore, the Multicast functionality for the terminal server is broken for any Endpoint/Repeater where you need to send responses to the serial link on the Gateway radio's terminal server.
- With VLANs and some other specific configurations, TCP/IP traffic can periodically time out over links unless the **MTU** parameter is adjusted to be lower than the **1500 byte** default value, with the networks also adjusted accordingly.

> **FREEWAVE Recommends**: Start with **1400 bytes** in this scenario.

- Modem Stats require a radio link to be accurate.

> **Note**: Local Diagnostics are NOT supported.

- IP addresses throughout the configuration Web pages allow entries higher than 255.
    - Take care when entering IP addresses to ensure they are accurate.
- Special characters such as: &, =, +, %, < or > should NOT ot be used in any free text field in the configuration Web pages or Tool Suite.
- Time stamps included in SYSLOG messages appear in Unix time format.
    - In addition, with **NTP Client** enabled, the time shown in the configuration Web page status is in Unix time format and reported as GMT.
- Changing the MAC address filter using the global change functionality at the Gateway does not change the MAC address filter list in the Endpoints.
- Changing the **Transmit Rate** parameter using the terminal interface accessed through the serial port does not change the setting's value.
- Serial Port 2 does not maintain the correct setting for the **Runtime Serial Setup** parameter.

1.7. Version 2.22

Release Date: April 2011

Additions and Changes

- Added NTP options to the web server and the config server.
- Added logging to local file and to remote syslog server.
- Added ability to view log in separate window to the Security page.
- Added logging reboot messages.
- Changed the Program Radio function to program all zones to 0xFFFF if in mode 3 or 7.
- Added the Users page for user-level and password management.
- Moved the Password Manager to the Users page.
- Added the global Save/Apply functionality to IP, Serial, Radio, Security, SNMP, and Users pages.
- Added global Enable/Disable button to Tools page.
- Added one second timeout to slaves during global upgrade to minimize rewind requests for packets that were already in the masters Tx buffer.

Additional Notes

FreeWave now supports only these versions:

SSLv3 256 bits AES256-SHA	TLSv1 256 bits AES256-SHA
SSLv3 128 bits AES128-SHA	TLSv1 128 bits AES128-SHA
SSLv3 168 bits DES-CBC3-SHA	TLSv1 168 bits DES-CBC3-SHA
SSLv3 128 bits RC4-SHA	TLSv1 128 bits RC4-SHA
SSLv3 128 bits RC4-MD5	TLSv1 128 bits RC4-MD5

> **Tip** With the addition of the **Users** page, you can now define who can edit the settings on the radio. Setting users up on this page can affect whether they can save settings through Tool Suite and the Web pages.

Known Limitations and Workarounds

- Modem Stats require a radio link to be accurate.
- **Master Tx Beacon** is not supported on a setting higher than **1** in Multipoint networks with Repeaters.

Learn More

For additional product information, visit www.freewave.com.

For additional assistance, contact a local reseller, or contact FreeWave Technologies, Inc. at 303.381.9200 or 1.866.923.6168, or by e-mail at moreinfo@freewave.com.

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The HTP-900RE and HTP-900SEO complies with FCC Part 15 rules. Operation is subject to the following two conditions: 1) This device may not cause harmful interference and 2) this device must accept any interference received, including interference that may cause undesired operation.

HTP-900RE and HTP-900SEO must be professionally installed using only the included equipment and is only approved for use when installed in devices produced by FreeWave or third party OEMs with the express written approval of FreeWave Technologies, Inc. Changes or modifications should not be made to the device.

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Release Notes are subject to change without notice.

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