

www.harscorail.com

## SERVICE BULLETIN MAINTENANCE OF WAY EQUIPMENT

DATE:	5-29-2013	<b>BULLETIN NO:</b>	13-004B
TITLE:	CONFIGURING RADIO FREQU MACHINE PRODUCT LINES	JENCY ZONES ON DRONE	AND LEAD
RATING:	DIRECTIVE (Action Is Required)	ALERT (Potential Problem)	
	X INFORMATION (Action Is Optional)	(Enhance Product)	MENT

PRODUCT SERIES / MODEL: Drone Tamper or Anchor Adjuster and Lead Machine

- SERIAL NO: All of the Above Drones and Lead Machine Models
- **SUMMARY:** Sometimes it may be necessary to limit both the Drone and Lead Machine communication frequency to allow other 900 930 MHz communication systems operating in close proximity to the Drone and Lead Machine to communicate in the same geographical area. These other 900 930 Mhz communication systems may experience interruptions in service if the frequencies are close.
- **OPERATIONAL IMPACT:** See the attached Instructional Guide to limit the frequency transmission zones in the 900 930Mhz frequency range on both the Drone and Lead Machine if the need arises.
- ACTION: This action should only be taken if potential interference issues are identified and must be performed on both the Drone and Lead machine to allow all 900 -930 MHz systems to operate in the same area. If desired, the frequencies can be reset once out of the geographical area of concern.
- **CONTACT:** If you have any questions or if we can be of any service, please contact:

Harsco Rail Service Department Columbia, SC Facility (803) 822-7546

#### SAFETY INFORMATION



FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURE TO REMOVE MACHINE FROM ALL ENERGY SOURCES. FAILURE TO COMPLY COULD RESULT IN SEVERE BODILY INJURY.

#### CONFIGURING RADIO FREQUENCY ZONES ON DRONE PRODUCT LINE

- Sometimes it may be necessary to limit both the Drone and Lead Machine communication frequency to allow other 900 - 930 MHz communication systems operating in close proximity to the Drone and Lead Machine to communicate in the same geographical area. These other 900 - 930 Mhz communication systems may experience interruptions in service if the frequencies are close.
- 2. See the attached Instructional Guide to limit the frequency transmission zones in the 900 930Mhz frequency range on both the Drone and Lead Machine if the need arises.
- 3. This action should only be taken if potential interference issues are identified and must be performed on both the Drone and Lead machine to allow all 900 -930 MHz systems to operate in the same area. If desired, the frequencies can be reset once out of the geographical area of concern.
- 4. **Important:** All radios operating in tandem must be re-configured to disable the frequency zones causing interference with the other radio equipment. For example, if a Drone Tamper is joined with a Mark IV Lead Tamper, then the radios on both machines must be configured the same.
- 5. The procedure to limit the communication frequency is the same on both the Drone and Lead Machine.

#### © 2013 HARSCO CORPORATION, ALL RIGHTS RESERVED

415 North Main Street Fairmont, MN 56031-1837 Tel: (507) 235-3361 Fax: (507) 235-7370 2401 Edmund Road, Box 20 Cayce-West Columbia, SC 29171-0020 Tel: (803) 822-9160 Fax: (803) 822-7471 200 South Jackson Road Ludington, MI 49431 Tel: (231) 843-3431 Fax: (231) 843-1644

Printed In U.S.A.





# **Configuring Radio Frequency Zones**

For the FreeWave HTP-900RE

Wireless Data Transceiver on the

HARSCO RAIL

Drone Tamper or Anchor Adjuster and Lead Machine

## **Table of Contents**

ntroduction	3
Hardware Setup	4
HTP-900RE Connections	4
Configuring the Laptop IP Address	5
Connecting Via Ethernet	9
Configuring the Radio Channel Frequencies	11

## Introduction

This document covers how to configure the active radio zones (channel frequency ranges) used by the FreeWave HTP-900RE wireless data transceiver.

This document lists the equipment necessary to configure the transceiver, as well as the steps required to perform such configuration using widely available tools.

This configuration is necessary to eliminate the usage of channels that may be in sporadic use by other radio equipment to prevent interference. Such interference may hinder operation of other devices using the same range of radio frequencies.

An example is provided to demonstrate how to change the frequency zone configuration of the wireless data transceiver. In this example, a single frequency zone will be disabled, and it will subsequently not be used when the transceiver auto-detects which frequency zone to use during frequency hopping. The zones may subsequently be changed as needed to rectify interference or other operational issues to address field conditions.

**Important**: All radios operating in tandem must be re-configured to disable the frequency zones causing interference with the other radio equipment. For example, if a Drone Tamper is joined with a Mark IV Lead Tamper, then the radios on both machines must be configured the same.

The procedure to limit the communication frequency is the same on both the Drone and Lead Machine.

## Hardware Setup

#### Hardware Requirements

- Laptop with Ethernet port (RJ45 socket) Windows XP/Windows 7 OS.
- FreeWave HTP-900RE Wireless Data Transceiver (Harsco P/N 4018386)
- Cat. 5 patch cable (ethernet cable)
- 24 volt power supply
- 2 strand power cable
- 5.08 mm plug

#### Preparing the Network

- 1.) Attach the 5.08 mm plug to the power cable, and connect the power supply to the back of the transceiver. The polarity of the transceiver power is marked below the power socket.
- 2.) Connect the ethernet cable from the transceiver to the laptop.
- 3.) Power on the laptop and the transceiver.



HTP-900RE Connections

## **Configuring the Laptop IP Address**

The following instructions require administrator access to the laptop. If you do not have administrator privileges, then they must be given by a user with administrator access to the laptop.

First, configure the IP address of the laptop to connect to the web server on the FreeWave wireless transceiver. If the laptop has Windows 7, skip the following Windows XP section and <u>go to page 7</u>.

#### If using Windows XP:

1) Open the control panel "Network Connections".



2) Right click "Local Area Connection", and choose "Properties" from the context menu.

3) Select the "Networking" tab.

🕨 My ISP Properties 💿 🛛		
General Options Security Networking Advanced		
Type of dial-up server I am calling:		
PPP: Windows 95/98/NT4/2000, Internet 🛛 👻		
Settings		
This connection uses the following items:		
Internet Protocol (TCP/IP)		
🗹 🜉 QoS Packet Scheduler		
Bele and Printer Sharing for Microsoft Networks     Ele and Printer Sharing for Microsoft Networks     Elevent for Microsoft Networks		
Install Uninstall Properties		
C Description		
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.		
OK Cancel		

- 4) Select "Internet Protocol (TCP/IP)" from the list, and then click the "Properties" button.
- 5) Select the "Use the following IP address:" radio button, then enter the following IP address:

192.168.111.250

You may choose to open the "Advanced..." dialog to enter the subnet mask 255.255.255.0, and then click "OK":

Internet Protocol (TCP/IP) Proper	rties 🔋
General	
You can get IP settings assigned autr supports this capability. Otherwise, yo administrator for the appropriate IP se	omatically if your network u need to ask your network ttings.
<ul> <li>Obtain an IP address automatics</li> </ul>	ally
Use the following IP address: -	
IP address:	
O Use the following DNS server an Preferred DNS server:	ddresses:
Alternate DNS server:	
	Advanced
	OK Cancel

#### If using Windows 7:

1) Open the control panel "Network and Sharing Center".



2) Left click "Local Area Connection", and click "Properties"

[	Local Area Connection Status
	General
	Connection
	IPv4 Connectivity: Internet
	IPv6 Connectivity: No Internet access
	Media State: Enabled
	Duration: 02:16:10
	Speed: 100.0 Mbps
	Details
	Activity
	Sent — 💵 — Received
	Bytes: 6,110,660   43,843,054
	Image: Constraint of the second se
	Close

3) Select "Internet Protocol Version 4 (TCP/IPv4)" from the list, and then click the "Properties" button.

Local Area Connection Properties		
Networking Sharing		
Connect using:		
Intel(R) 82579LM Gigabit Network Connection		
Configure		
This connection uses the following items:		
McAfee NDIS Intermediate Filter		
🗹 💂 QoS Packet Scheduler		
File and Printer Sharing for Microsoft Networks		
✓ Internet Protocol Version 6 (TCP/IPv6)		
Internet Protocol Version 4 (TCP/IPv4)		
Link-Layer Topology Discovery Mapper I/O Driver		
Link-Layer Topology Discovery Responder		
4		
Install Uninstall Properties		
Description		
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.		
OK Cancel		

4) Select the "Use the following IP address:" radio button, and then enter the following IP address and subnet mask, and click "OK":

192.168.111.250

255.255.255.0



## **Connecting Via Ethernet**

After configuring the IP address of the laptop, open a web browser (Internet Explorer is preferred), and enter the following URL:

#### http://192.168.111.101/

This assumes the IP address of the transceiver has already been configured to be 192.168.111.101. If these do **not** work, try:

http://192.168.111.100/

or

#### http://192.168.111.102/

You should be prompted with a logon screen. Enter **admin** as the username and password, and click "OK".

Windows Security		
The server 192.168.111.101 at FreeWave requires a username and password.		
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).		
	admin       •••••       Image: Remember my credentials	
	OK Cancel	

You should then be at the FreeWave transceiver homepage.

If you are unsuccessful in connecting to the FreeWave transceiver, contact software engineering at Harsco Rail.

Note that once you are finished configuring the FreeWave transceiver, you must revert the laptop IP address setting back to automatically obtaining it via DHCP. Refer to the <u>Configuring</u> the Laptop IP Address section of the document for details on how to access the Internet Protocol properties configuration window.

After you have opened the IP properties configuration window, select the "Obtain an IP address automatically" radio button, then click the "OK" button to apply the change:

You can get IP settings assigned at this capability. Otherwise, you nee for the appropriate IP settings.	utomatically if your network supports d to ask your network administrator tically
IP address:	192 . 168 . 111 . 250
S <u>u</u> bnet mask:	255.255.255.0
<u>D</u> efault gateway:	
<ul> <li>Obtain DNS server address at</li> <li>Use the following DNS server</li> <li>Preferred DNS server:</li> </ul>	addresses:
Alternate DNS server:	
🔲 Valjdate settings upon exit	Ad <u>v</u> anced

## **Configuring the Radio Channel Frequencies**

Select the "Radio Setup" index on the left of the browser, and then uncheck the "902.6-903.8" MHz option.

FREEWAVE	HT+ 192.168.111.101 * MAC=00:07:E7:87:48:C6 * Serial#=8865990 'admin' From 192.168.111.250	
B Sofue	Operation Mode	
Serial Setup 1	Network Type	Point-To-Point 👻
Serial Setup 2	Modem Mode	EndPoint -
Radio Setup	Transmission C	haracteristics
Security	Frequency Key	5 🗸
SNMP	1 7 7	902 6-903 8 904 4-905 6 906 2-906 9 907 5-908 7
RMS	Zones	♥ 909.3-909.9 ♥ 910.5-911.8 ♥ 912.4-913.0 ♥ 913.6-914.8
Diagnostics	Zones 915.5-916.7 917.3-917.9 918.5-919.8 920.4-	
Users	N. D. 1. (5)	♥ 921.6-922.8 ♥ 923.4-924.1 ♥ 924.7-925.9 ♥ 926.5-927.1
TOOIS	Max Packet Size	9 •
Reboot	Min Packet Size	
	Transmit Power	
	Retry Timeout	255 -
	RF Data Rate	867 kbps 👻
	Long Distance	Disabled 👻
	Point-To-Point	Parameters
	Transmit Rate	Normal 👻
	Call Book	Call Book
	Multipoint Parameters       Addressed Repeat       3 •	
	Broadcast Repeat	3 -
	Slave Connect Odds	9 • AND THEN Try Forever •
	Master Tx Beacon	1 out of every 1 🔻 Slots
	Network ID	255
	Repeaters	Disabled 🔻
	Subnet ID (RX)	F -
	Subnet ID (TX)	F -
		Save/Apply
	@2006	

©2006-2011 FreeWave Technologies, Inc.

Then click the "Save/Apply" button at the bottom of the screen. Click the "Reboot" button to the left, and verify that when the settings are reloaded that the zone modification was retained through the transceiver reboot cycle.

## This Page Is Intentionally Blank