Motorola PTP 400 Series Release Note System Release 09-02

27th November 2007

Document Reference: PHN-0787-009v002

1 Trademarks, Product Names, and Service Names

May 9, 2006, Orthogon Systems was acquired by Motorola, Inc. (NYSE: MOT). This acquisition brought the full power of Motorola's wireless and broadband innovation and leadership to you, our partners and customers, offering you a broad range of mobile and broadband solutions, a full complement of support services and far-reaching global presence.

The OS-Gemini product range has now been renamed to the Motorola PTP 400 Series.

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1.1 Introduction

This document provides information for the Motorola PTP 400 Series System Release 09-01. This is a maintenance release. Motorola recommends that existing users upgrade to Motorola PTP 400 Series System Release 09-01.

1.2 Changes in 09-02

1.2.1 Support for New Region Codes

- Thailand 5.8/5.4 GHz (Region 20)
- Korea 5.4 GHz (Region 21)

1.2.2 New Hyperlink on Status Page

A hyperlink on the Status Page to the other side of the wireless link has been added.

1.2.3 Documented List of Antennas for 5.4 GHz Connectorized

The User Guide has been updated to include a list of antennas to support 5.4 GHz Connectorized product variant for FCC/IC.

1.2.4 Bug Fixes

When .NET3 was installed on a Windows PC the PTP 400 Series wireless units could not be contacted using Internet Explorer. This issue has now been resolved.

Added fix for field diagnostics buffer overflow.

Added fix for Region 11 channel baring and VLAN management VID upgrade bug (when upgrading from a pre-08-00 software version to 08-00 and later)

1.3 Changes in 09-01

1.3.1 VLAN Management 64-byte Packets

Previous issues of the software ignored and discarded 64-byte VLAN tagged management packets. This release corrects the problem.

1.4 Changes in 09-00

1.4.1 User Interface Look and Feel

The PTP 400 Series user interface has been updated to reflect Motorola Point-to-Point Wireless Solutions product branding, an example of which is shown overleaf. Please note that if you use the Recovery switch to reset the unit's IP address then the default IP address will remain as described in the documentation that was supplied when you purchased your product (for an Orthogon Systems OS-Gemini the Recovery Mode IP Address will be 10.10.10.10, for a Motorola Canopy 30/60Mbps Backhaul the Recovery Mode IP Address will be 169.254.1.1).

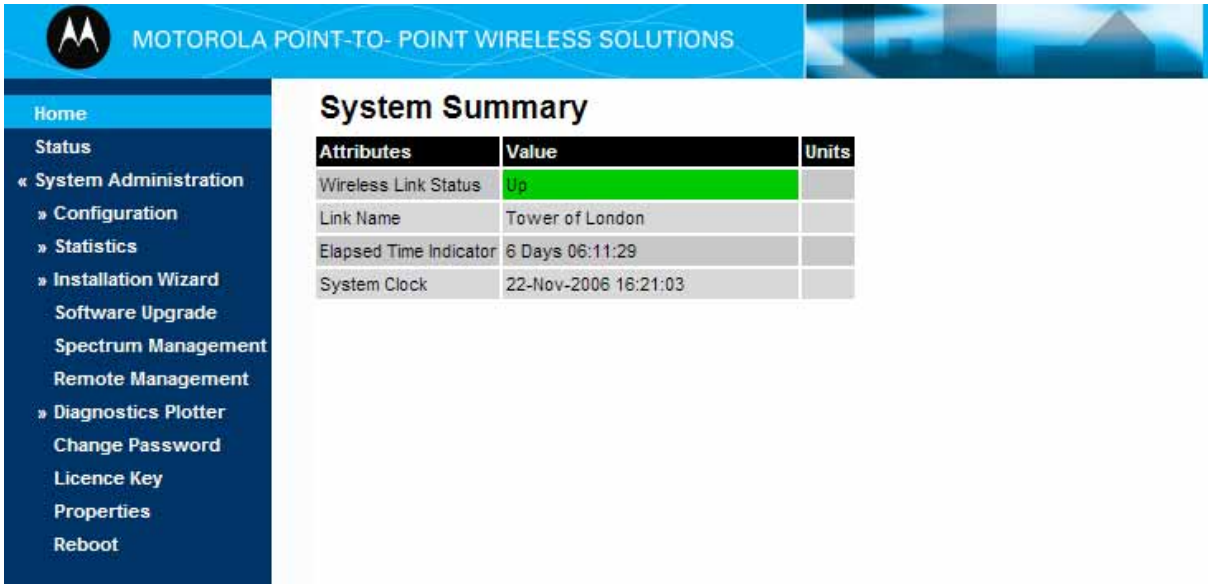

Figure 1 - New User Interface Look and Feel

1.4.2 SNMP Changes

1.4.2.1 SNMP MIB Changes

Since the PTP MIB may be accessed using both SNMP version 1 and version 2c, the MIB is now released in SMIv1 and SMIv2 format. At the same time, a number of minor ASN.1 parsing errors and warnings have been fixed and this has necessitated the renaming of some groups and enumeration values. In summary, the following changes have been made:

- The name of the MIB has changed to MOTOROLA-PTP-MIB.

- The p2p group has been renamed to ptp
- The mgmt group has been renamed to management
- The p2pTraps group has been renamed to ptpTraps
- All traps and notifications have been named as part of a new ptpTrapPrefix group (to match the trap OIDs)
- The productVariant enumerations have been renamed to correspond with the product name change (e.g. motorola-canopy-60mbps-backhaul has been renamed to motorola-ptp-xx400-full)
- The rangingMode enumerations have been renamed (e.g. auto-0-200-km has been renamed to auto-0-to-200-km)
- The transmitModulationMode and receiveModulationMode enumerations have been renamed (e.g. mod-64qam-7-8 has been renamed to mod-64qam-88-percent)
- The dfsImpulsiveInterferenceDetectedTrap has been renamed to dfsImpulsiveInterferenceTrap
- The value of the MIB II attribute sysObjectID is now correctly reported (1.3.6.1.4.1.17713.1).
- The state of the MIB II interfaces attribute ifLinkUpDownTrapEnable is now correctly reported.
- The state of the WiMAX attribute wmanIfBsSsArqSupport is now correctly reported.
- The SMIv2 format MIB presents enumerations in mixed case without hyphens (e.g. auto0to200km, mod64QAM88percent)

1.4.2.2 SNMP Traps

It is now possible to configure whether SNMP version 1 or SNMP version 2c traps are generated. This setting can be found in the SNMP section of the Remote Management configuration page. After an upgrade the system will continue to generate SNMPv2c traps by default.

The MIB II interfaces linkUp and linkDown traps are now correctly sent with all the parameters defined in RFC 2863 (for SNMPv2c) and RFC 1215 (for SNMPv1).

1.4.3 Improved Configuration Save and Restore

The Configuration Save and Restore mechanism has been improved to make it easier to save configuration files.

1.5 Known Issues in 09-00

None

2 Previous System Releases

Please note that the OS-Gemini product range has now been renamed to the Motorola PTP 400 series.

2.1 08-00 Overview

2.1.1 4.9 GHz Frequency Variant

System release 08-00 introduced the USA 4.9 GHz National Public Safety Band (4.940-4.990 GHz) – 49400 product.

There was no associated 08-00 system release for the 5.4Ghz or 5.8Ghz hardware variants.

2.2 07-01 Overview

2.2.1 Multiple VLAN Tag Anomaly

Previous versions of OS-Gemini software could behave anomalously in networks containing Ethernet frames with two or more VLAN tags. The OS-Gemini 07-01 system release corrects this problem.

2.2.2 Invalid Length Packet Handling

The internal stack previously logged the occurrence every invalid length IP packet it received to the internal log file. The process of writing to the internal log file in the presence of a burst of invalid length IP packets could cause unnecessary load on the wireless software. Logging of all invalid length IP packets to the internal log is now disabled.

2.2.3 Password Issues

There was the potential that certain combinations of MAC Address and System Administration password length could cause the password encryption process the corrupt the password. This is now fixed in the software release.

2.3 07-00 Overview

2.3.1 Introduction of a 5.4GHz hardware variant

The new 5.4GHz hardware variant operates between 5.470 to 5.725GHz (defined as the ETSI 5 GHz band B).

2.3.2 Packet Filtering default setting changed

Packet Filtering is required when a OS-Gemini link is bridging "non-switch-based" networks (i.e. the units are connected to 10/100bT HUBS) to prevent unnecessary traffic being bridged across the wireless link.

However, the vast majority of installations use switch-based networks, and so the additional packet filtering capability in the OS-Gemini system provides no benefit.

In addition, an increasing number of installations include a parallel backup/standby mechanism, and in such installations having packet filtering enabled in OS-Gemini can result in a temporary interruption of traffic flow across the wireless link.

Therefore, as from 5x45-07-00, Packet Filtering within OS-Gemini has been disabled by default.

IF YOU ARE USING A NON-SWITCH-BASED NETWORK THEN YOU SHOULD RE-ENABLE PACKET FILTERING AFTER YOU HAVE UPGRADED TO 5x45-07-00.

2.4 5x45 Features

This software release is a major release that will upgrade existing 5810, 5815, 5820, 5825, 5830 and 5840 equipment to the newly available 5x45 standard.

The following features are included in this release:

2.4.1 Support for the 5.4GHz Hardware Variant

The Orthogon Systems OS-Gemini product range has a new frequency variant to compliment its existing 5.8GHz product range. The new 5.4GHz hardware variant operates between 5.470 to 5.725GHz (defined as the ETSI 5 GHz band B), utilising 11MHz channels widths and variable base 12MHz raster.

2.4.2 Graphical Installation Tools

To aid the installation of wireless links two graphical installation aids have been introduced in 5x45:

A PDA installation screen (accessed at http://<IP Address>/pda.cgi)

A larger installation screen available from the main HTTP management interface.

The design of the installation screen has been deliberately kept simple and uncluttered. An example of the installation screen is shown in Figure 2. Both the PDA and the large format installation screen have the same content and only differ in size. The PDA installation screen is 232 by 220 pixels and the larger installation screen is 464 x 300.

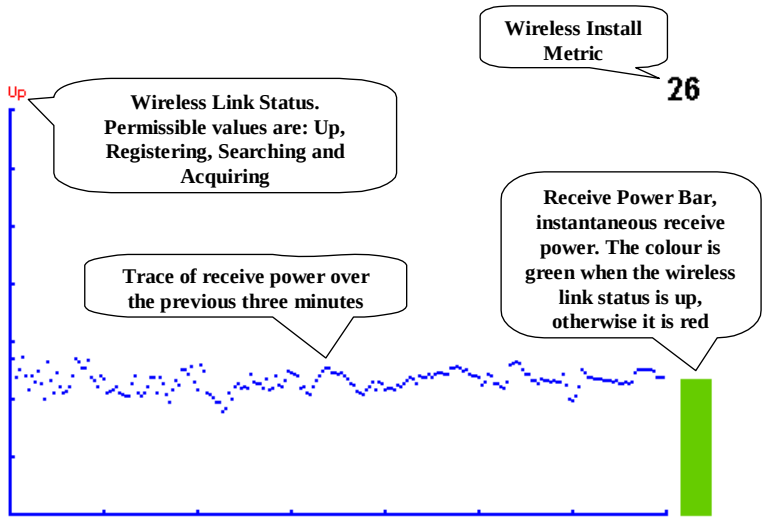

Figure 2: Installation Screen

The screen displays the receive power of the last three minutes. This will allow the installer to slowly sweep the antenna during installation and monitor the variation in signal strength with angular position. The screen automatically refreshes every three seconds.

The screen also displays the current state of the wireless link in two ways. Firstly the actual state of the wireless link is written in the top left hand corner of the screen. The instantaneous receive power bar also encodes the state of the wireless link using green to signify that the wireless link is up and red for all other states.

Lower skilled installation teams use the wireless install metric, the objective is to maximise the metric to perform a good upgrade. For the more technically aware the installation metric is simply the instantaneous receive power in dBm + 100.

It is hoped that the installation screen will aid the small population of installers that find it difficult to differentiate the small changes in tonal output when peaking up long range and or marginal links.

2.4.3 Enhanced Diagnostic Tools

To further enhance the diagnostic capabilities of the OS-Gemini the storage of link performance histograms has been extended to 31 days of storage. 5x45 introduces three levels of cascading histograms:

- Histogram 1: 1 hour at a resolution of 1 second
- Histogram 2: 24 hours at a resolution of 1 minute
- Histogram 3: 30 days at a resolution of 1 hour

2.4.3.1 Diagnostic Plotter

New for OS-Gemini is the system administration diagnostic plotter facility (see Figure 3).

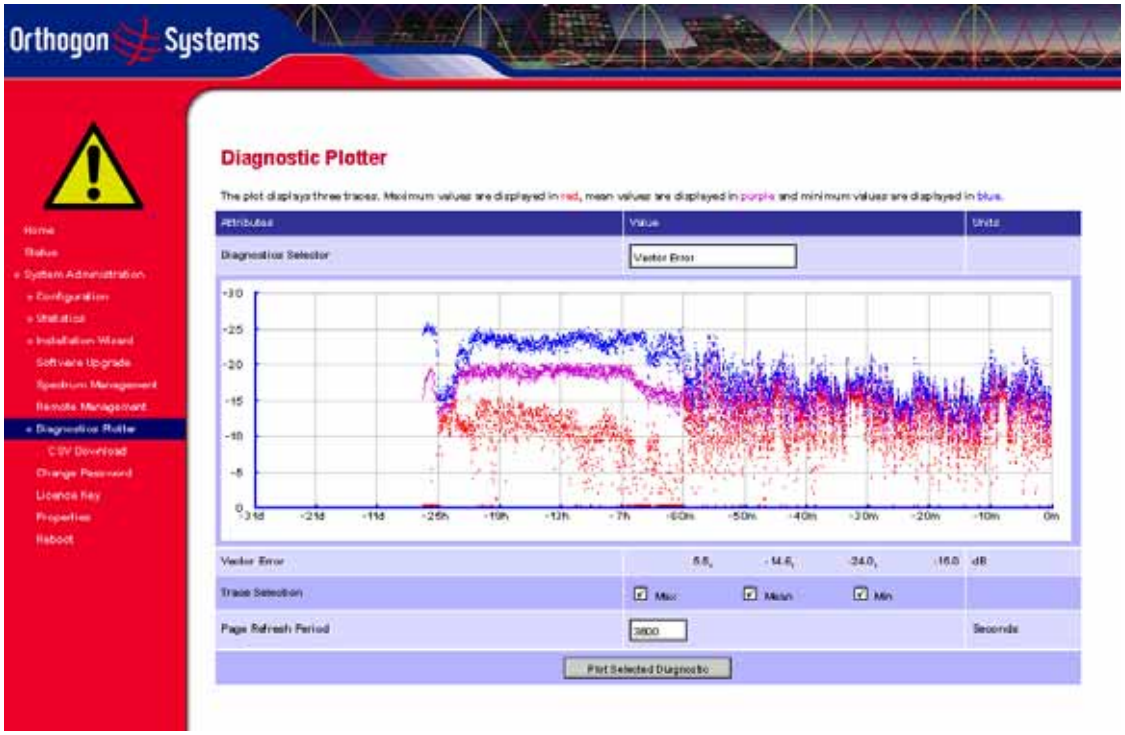

Figure 3: Diagnostic Plotter

The diagnostic plotter allows the system administrator to view the cascading histogram data in an easily accessible graphical form. The plot always displays three traces, maximum, minimum and mean by default. The diagnostic selector allow the user to select the various categories of histogram. The available histograms are:

- Vector Error
- Rx Power
- Tx Power
- Signal Strength Ratio V/H
- Link Loss
- Rx Data Rate
- Tx Data Rate
- Aggregate Data Rate

- Receive SNR
- Rx Gain

The diagnostic plotter itself uses a bespoke x-axis which compresses the timeline of the plot without sacrificing resolution.

The Trace selection allows the user to control which traces are plotted (maximum, mean and minimum).

As with other management pages the page refresh period can be used to interactively monitor the wireless link.

2.4.3.2 CSV Download

The histogram data is made available as CSV[1] files via the system administration CSV download facility.

3 Documentation and Downloads

The PTP 400 Series Handbook can be downloaded from:

http://www.orthogonsystems.com/support/support.html

The PTP 400 Series MIB, Operational Software and this Release Note can be downloaded as a ZIP file from:

http://www.orthogonsystems.com/support/software.html

[1] CSV is an ASCII text based comma separated variable format that is usually associated to the Microsoft Excel spreadsheet application, but the file can be opened by any text based editing software.

4 Upgrade Procedure

Warning: The same version of software must be run at both ends of the link. Failure to follow this requirement may result in loss of connectivity with the other end of the link necessitating a site visit for resolution.

Warning: When upgrading from 5810 or 5815 this version of software changes the channel raster to 6MHz. The upgrade will cause any channel barring to be lost. The user should make a note of any channel bars applied before the upgrade and re-apply them when the upgrade is complete.

Warning: Make a note of your system configuration in the table at the end of this note as you will need it if you wish to restore the original state of the system.

Step 1 Save the configuration of both wireless units using the 'Save & Restore' configuration submenu. Archive the configuration files.

Step 2 Download the software release (PTP400-09-00.dld) to a suitable place on your PC.

Step 3 Start up two web browsers and connect one to each end of the link.

Step 4 On the master end of the link select: **System Administration – Spectrum Management**. Make a note of any channel barring that has been applied.

Step 5 On **each** end of the link select: **System Administration - Software Upgrade**. Browse to the location containing PTP400-09-00.dld and select it. Upload the software image and when prompted program the image into non-volatile memory, but **DO NOT** reboot the unit.

Step 6 Both ends of the link should now contain the PTP 400 Series software image programmed into non-volatile memory and will be displaying a **Reset unit** button. If they do not, rectify the problem by repeating the above steps.

Step 7 Reboot the **FAR END** unit by pressing the web page **Reset unit** button

Warning: Failure to reboot the far end first will result in the near end running PTP400-09-00.dld and the far end running an older version of code, under these circumstances link connectivity will be lost and a site visit to the far end will be required.

Step 8 Reboot the **NEAR END** unit by pressing the web page **Reset unit** button

Step 9 Wait until the link recovers.

If upgrading from 5810 or 5815 the following additional steps will be required:

Step 10 It is now necessary to run through the installation wizard at both ends of the link to enable new functionality and store the link range for fast link acquisition. This is done by selecting **System Administration – Installation Wizard**, pressing **next** until you get to page 3, and then pressing the **Confirm Configuration and Reset Unit** button. This should again be carried out **FAR END FIRST**.

Step 11 Wait until the link recovers. This is indicated on the home and status web pages.

Warning: **Failure to do this before proceeding to Step 12 will prevent the link range from being stored correctly.**

Step 12 At both ends of the link select System Administration – installation wizard and press the **Disarm Installation Agent** button. Provided the link is up the range will be stored. You will be given a warning at this point if this process has failed.

Step 13 At the master end of the link select **System Administration – Spectrum Management** and re-apply any channel bars that are required.

System Configuration Table

Prior to changing the software running on the link the table below should be used to record the current configuration.

Configuration	Near End Unit	Far End Unit
Link Name		
Link Location		
IP Address		
Subnet Mask		
Gateway IP Address		
VLAN Configuration		
MAC Address		
Target MAC address		
Master/ Slave mode		
Link Mode Optimisation		
Link Symmetry		
Throughput Optimisation		
ARQ State		
Max Transmit Power		
Ranging mode/ dist		
Barred Channels		
Spectrum Management Control		
Lower Center Frequency / Fixed Tx & Rx Frequencies		
Ethernet Config		
Ethernet Auto MDIX		
Local Packet Filtering en/dis		
Licence Keys		