

# **Cambium PTP 650 Series Release Notes**

## **System Release 650-01-42**



**Cambium Networks™**

# 1 INTRODUCTION

This document provides information for the Cambium Networks PTP 650 Series System Release PTP 650-01-42.

Software updates for PTP products are available from:

[www.cambiumnetworks.com/support/ptp/software](http://www.cambiumnetworks.com/support/ptp/software)

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## 2 RELEASED PRODUCTS

### 2.1 Embedded software

ODU software:

- Boot software, BOOT-01-00
- Recovery software, RECOVERY-01-02
- Application software, 50650-01-42

Management Information Base (MIB):

- 650-01-41

PTP-SYNC:

- Boot Loader, v0.04
- Firmware, v00.09
- Main application software, v01.01

### 2.2 Hardware

No new hardware products are introduced in System Release 650-01-42.

### 2.3 Warranties and Upgrades

No new warranties or upgrades are introduced in System Release 650-01-42.

### 2.4 Link Planner software

System Release 650-01-42 is supported by LINKPlanner 4.3.11

## 2.5 User guide

PTP 650 Series User Guide System Release 650-01-42, phn-3341 009v000.

## 3 NEW FEATURES

### 3.1 Modifications to Japan 4.9 GHz regulatory bands

System Release 650-01-42 introduces the following changes to Regulatory Bands for Japan 4.9 GHz:

- (a) In RB 78, RB 88 and RB 89, Link Symmetry options have been extended to support:
  - 5 MHz: 1:1
  - 10 MHz, 20 MHz: 1:3, 1:2, 1:1, 2:1, 3:1
- (b) Channel bandwidth 15 MHz is no longer supported for RB 78 and RB 88.
- (c) The maximum transmitter power in RB 88 has been increased from 16 dBm to 17 dBm.
- (d) The maximum transmitter power in RB 78 is now 14 dBm or 37 dBm EIRP, whichever is the smaller.

### 3.2 DFS operation in U-NII-2C

System Release 650-01-42 introduces support for FCC U-NII-2C under the rule changes introduced in FCC 14-30 (these are known as the “new rules”). The rule changes require the ODU to be able to detect a radar signal over 100% of the operating bandwidth, compared with 80% under the “old rules”. This change is intended to promote more effective detection when operating co-channel with a terminal Doppler weather radar (TDWR). At the same time, the band available for U-NII devices has been extended to cover all of the spectrum between 5470 MHz to 5725 MHz, making a further 50 MHz available for unlicensed use. All devices imported or offered for sale in the US after 2 June 2016 must comply with the new rules.

System Release 650-01-42 supports U-NII-2C under the new rules using Regulatory Band RB 9. RB 9 is similar to the existing RB 12, and similar to the existing RB 13 except that in RB 9 the available spectrum includes 5600 MHz to 5650 MHz.

Operation in Canada continues to be supported using RB 13.

Operation in Chile, Colombia and Kenya continues to be supported using RB 12.

### 3.3 Add Site Name to System Summary page

The Site Name attribute has been added to the System Summary page as a read-only control.

## 4 PROBLEMS AND LIMITATIONS CORRECTED

### **Spectrum Expert Real Time display does not work when the link is down**

In earlier releases, the Realtime display in the Spectrum Expert is not visible in the Local Receive Spectrum when the wireless link is down, even though the rest of the Local Receive Spectrum pane continues to be updated. In 650-01-42, the Realtime display is visible (if enabled by the Spectrum Expert Display Mode attribute) regardless of the wireless link status.

### **Acquisition Tx power back-off is too large in some regulatory bands**

In System Release 650-01-41, the transmitter power for the acquisition modulation mode is sometimes reduced relative to the expected level, increasing the difficulty of establishing a link. Once the link has established, OFDM modulation modes are used at the expected power levels, and operation is not affected.

The problem is restricted to 650-01-41, and to regulatory bands where the maximum transmit power for the Acquisition mode is less than -2 dBm. This includes RB 12 and RB 38.

## 5 KNOWN PROBLEMS OR LIMITATIONS

### 5.1 Network Management

#### **ODU does not adjust MTU based on receiving Packet Too Big message**

The PTP 650 ODU does not adjust its MTU in use for the management agent upon receiving an ICMPv6 packet too big message.

#### **ODU does not appear to respond to MLD queries**

The unit does not process IPv6 Multicast Listener Discovery version 1 (MLDv1) general listener query messages reliably.

### 5.2 TDD Synchronization

#### **Not Synchronizing with 3460 $\mu$ s Frame duration and no GPS deployed**

A Master ODU does not provide synchronization in the situation where all of the following are true: (a) frame duration is configured for 3460  $\mu$ s and (b) no GPS is deployed and (c) timing for the site derived from the Cluster Master ODU.

### 5.3 Network synchronization

#### **Phase error caused by disconnecting and reconnecting SyncE slave port**

There is sometimes a large phase transient at PTP 650 Sync E outputs if the ODU makes a transition from tracking to holdover triggered by physical disconnection of the incoming Sync E reference. This large phase transient does not occur if the transition to holdover is triggered by a change in the QL of the received reference.

## **Wander transfer function fails EEC Option 1 and Option 2 in G.8262**

The peak gain of the wander transfer function within the passband of the tracking loop is 0.7 dB compared with the 0.2 dB requirement in ITU-T recommendation G.8262.

The bandwidth of the tracking loop in PTP 650 is somewhat greater than the 0.1 Hz requirement for EEC Option 2 networks, and consequently PTP 650 does not comply with the wander transfer limits in Table 13 of G.8262. This is not likely to be a problem in typical applications of PTP 650, where the number of Synchronous Ethernet nodes is small.

## **6 TECHNICAL SUPPORT**

For Technical Support, please visit our support pages at:

[www.cambiumnetworks.com/support](http://www.cambiumnetworks.com/support)

Or contact the PTP Technical Support helpdesk using the phone numbers available from:

<http://www.cambiumnetworks.com/support/technical.php>

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