

Cambium PTP 670 Series Hazardous Location Guide



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About this guide

This guide identifies the specific requirements that must be met by the installer and operator of the Cambium Networks PTP 670 IECEx/ATEX/HAZLOC Series of radio products when the products are intended for use in Hazardous Locations.

Hazardous Locations are those covered by the ATEX regulations in Europe and the HAZLOC regulations in the USA. The IECEx scheme covers international requirements outside of Europe and the USA.

Version information

Document number and version: phn-4630_003v000 (Jan 2024).

User documentation

For full PTP 670 installation planning instructions and a list of components, download the PTP 670 Series

User Guide from: www.Cambiumnetworks.com/user_guides and the

PTP 670 Platform Hazardous Location Installation Guide from:

<http://www.cambiumnetworks.com/hazloc-guides>

Important safety information



Warning

To prevent fire and explosions when installing or operating the PTP 670 Series in hazardous locations, observe the instructions in this guide.

Limiting EIRP

Installation and operation of these products in locations where exposure to hazardous gases is expected will be subject to EIRP limiting by the PTP 670 IECEX/ATEX/HAZLOC series of radio products. Exceeding the EIRP limits will compromise safety.

The EIRP limit depends on the gas class/gas group prevalent in the operating location.

Installing connectorized ODUs

As shipped by the manufacturer, the equipment is set to meet the most stringent EIRP limits assuming an integrated antenna. Special care is therefore needed when operating connectorized versions of the radio with external antennas.

Special conditions

PTP 670

1. Connection and disconnection of terminals and plugs when the equipment is energised is strictly prohibited.
2. Only ATEX certified AC + DC Enhanced Power Injector models (EMT16ATEX0052X / IECEX EMT 16.0029X) provided by Cambium Networks Ltd may be used in conjunction with the equipment.
3. The connections into the hazardous areas from the AC + DC Enhanced Power Injector (EMT16ATEX0052X / IECEX EMT 16.0029X) or via the LPU (EMT16ATEX0051X / IECEX EMT 16.0028X) are at incendive energy levels and so they shall be made using protective shielded cable that provides protection from impact and damage in accordance with EN/IEC 60079-14.
4. Clean equipment with a damp or anti-static cloth only.
5. To be installed with user supplied passive antenna not to cause the radio output power to exceed the RF limits specified in EN/IEC 60079-0 cl. 6.6.1. – IIC = 2 W, IIB = 3.5 W, IIA = 6 W.
6. The AUX connection should be fitted with the supplied metal blanking plug when not used.
7. Connections to the AUX output are incendive and would require special precautions as per no 3.
8. The SFP port shall not be used when the equipment is installed in hazardous areas and must be fitted with the supplied metal blanking plug.
9. The equipment is not intended for repair by the user. Repair of this equipment shall be carried out by Cambium or Cambium's authorised representative.
10. It is the responsibility of the user to take suitable precautions to prevent exposure to aggressive chemicals that may react with metals or the polymeric materials used in the construction of this equipment.

Allowed operating envelope

The PTP 670 ATEX/HAZLOC Series of radio products have been certified for operation in the following hazardous locations:

ATEX

The products have been approved under an 'Intrinsic Safety' assessment as defined in EN/IEC 60079. Approval is given by IECEX certificate number IECEX EMT 16.0002X and ATEX certificate number EMT16ATEX0004X, issued by Element Materials Limited, with the specific level of coverage shown below.

- II 3 G Ex ic IIC T4 Gc
- II - Equipment group (surface applications)
- 3 - Equipment category (infrequent exposure)
- G - Atmosphere (Gas)
- ic - Protection concept (intrinsic safety)
- IIC - Gas group (up to and including Hydrogen and Acetylene)
- T4 - Temperature class (135°C)
- Gc - Equipment Protection Level

HAZLOC

The products have been assessed and found compliant with the requirements of ANSI 12.12.01 and CSA C22.2 No. 213 for the following conditions.

The approval is given by MET Labs under File Reference E113068, with the specific level of coverage shown below.

- Complies with ANSI 12.12.01 and CSA C22.2 No. 213
- Class I - Gases, Vapors and Liquids (surface applications)
- Div - 2 (Infrequent Exposure)
- Gas Groups - A, B, C, D (up to and including Hydrogen and Acetylene)
- Operating Temperature Code - T4 (135°C)

Part numbers and product labels

Part numbers

In order to meet specific radio regulations in the USA, Canada and the EU, Cambium supplies products approved for USA, Canada, EU and the rest of the world under different models and part numbers. These models and part numbers are shown in [Table 1](#) below.

Table 1 PTP 670 ATEX/HAZLOC ODU models/part numbers

ODU model / part number	Description
ODU model	
5068CHH	PTP 670 Connectorized ATEX/HAZLOC ODU
5068HH	PTP 670 Integrated ATEX/HAZLOC ODU
5068GHH	PTP 670 Connectorized+Integrated ATEX/HAZLOC ODU
Part Number	
C050067B015A	PTP 670 (4.9 to 5.9 GHz) ATEX/HAZLOC Integrated 23 dBi ODU (ROW)
C050067B016A	PTP 670 (4.9 to 5.9 GHz) ATEX/HAZLOC Connectorized ODU (ROW)
C050067B017A	PTP 670 (4.9 to 5.9 GHz) ATEX/HAZLOC Integrated 23 dBi ODU (EU)
C050067B018A	PTP 670 (4.9 to 5.9 GHz) ATEX/HAZLOC Connectorized ODU (EU)

Table of entity parameters

Table of entity parameters			
	Data / PoE in	Aux out	Ext-Antenna
Ui	60 V	-	-
Ii	2.1 A	-	-
Uo	-	60 V	3.55 V
Io	-	0.95 A	0.071 A








Product labels

The PTP 670 ATEX/HAZLOC Series radio products can be identified by their qualification labels. Regional examples are shown below.

Year of manufacture can be identified using the MSN or ESN. Contact your Cambium representative for confirmation if necessary.

Certification Label examples are below, for model 5068HH and 5068CHH (subject to regional variations):

Figure 1 PTP 670 (4.9 to 5.9 GHz) ATEX/HAZLOC Integrated 23 dBi ODU (ROW)

<p>Part No:C050067B015A</p>  <p>Model:5068HH</p>  <p>MSN:#####</p>  <p>ESN:#####</p> 	 <p>Cambium Networks™ Ashburton, TQ13 7UP, UK</p>	<p>PTP 670</p> <p>IP66</p>
<p>Power Requirements:55V --- 1.4A</p>		
<p>Ex ic IIC T4 Gc</p>  <p>II 3 G</p> <p>Tamb = -40C to +76C IECEX EMT 16.0002X EMT 16ATEX0004X</p>	<p>PSU:- Ui: 60 V Ii: 2.1 A</p> <p>Ext Antenna:- Uo: 3.55 V Io: 0.071 A</p> <p>Aux:- Uo: 60 V Io: 0.95 A</p>	 <p>E113068 COMPLIES WITH ANSI 12.12.01, CSA C22.2 No. 213 UL62368-1/UL60950-22 - CSA C22.2 No. 62368-1/60950-22 CLASS I, DIV 2, GROUPS A,B,C,D OPERATING TEMPERATURE CODE T4</p>

PTP 670 (4.9 to 5.9 GHz) ATEX/HAZLOC Integrated 23 dBi ODU (ROW)
Warning - Do Not Separate When Energized. Potential Electrostatic Charging Hazard - See Instructions

CAUTION: Read the User Guide before Installation. ATTENTION: Lisez le Guide de l'utilisateur avant l'Installation

MADE IN MEXICO

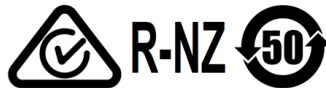









Figure 2 PTP 670 (4.9 to 5.9 GHz) ATEX/HAZLOC Connectorized 23 dBi ODU (ROW)

<p>Part No:C050067B016A</p>  <p>Model:5068CHH</p>  <p>MSN:#####</p>  <p>ESN:#####</p> 	 <p>Cambium Networks™ Ashburton, TQ13 7UP, UK</p>	<p>PTP 670</p> <p>IP66</p>
<p>Power Requirements:55V --- 1.4A</p>		
<p>Ex ic IIC T4 Gc</p>  <p>II 3 G</p> <p>Tamb = -40C to +76C IECEX EMT 16.0002X EMT 16ATEX0004X</p>	<p>PSU:- Ui: 60 V Ii: 2.1 A</p> <p>Ext Antenna:- Uo: 3.55 V Io: 0.071 A</p> <p>Aux:- Uo: 60 V Io: 0.95 A</p>	 <p>E113068 COMPLIES WITH ANSI 12.12.01, CSA C22.2 No. 213 UL62368-1/UL60950-22 - CSA C22.2 No. 62368-1/60950-22 CLASS I, DIV 2, GROUPS A,B,C,D OPERATING TEMPERATURE CODE T4</p>

PTP 670 (4.9 to 5.9 GHz) ATEX/HAZLOC Connectorized ODU (ROW)
Warning - Do Not Separate When Energized. Potential Electrostatic Charging Hazard - See Instructions

CAUTION: Read the User Guide before Installation. ATTENTION: Lisez le Guide de l'utilisateur avant l'Installation

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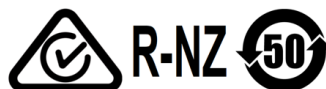


Figure 3 PTP 670 (4.9 to 5.9 GHz) ATEX/HAZLOC Integrated 23 dBi ODU (EU)

Part No:C050067B017A



Model:5068HH



MSN:#####



ESN:#####



Cambium Networks™

Ashburton, TQ13 7UP, UK

PTP 670

IP66

Power Requirements:55V --- 1.4A

Ex ic IIC T4 Gc



II 3 G

Tamb = -40C to +76C
IECEX EMT 16.0002X
EMT 16ATEX0004X

PSU:-
Ui: 60 V
Ii: 2.1 A

Ext Antenna:-
Uo: 3.55 V
Io: 0.071 A

Aux:-
Uo: 60 V
Io: 0.95 A



E113068 COMPLIES WITH ANSI 12.12.01,
CSA C22.2 No. 213 UL62368-1/UL60950-22 -
CSA C22.2 No. 62368-1/60950-22 CLASS I,
DIV 2, GROUPS A,B,C,D OPERATING
TEMPERATURE CODE T4

PTP 670 (4.9 to 5.9 GHz) ATEX/HAZLOC Integrated 23 dBi ODU (EU)

Warning - Do Not Separate When Energized. Potential Electrostatic Charging Hazard - See Instructions

CAUTION: Read the User Guide before Installation. ATTENTION: Lisez le Guide de l'utilisateur avant l'Installation



MADE IN MEXICO

Figure 4 Lightning Protection Unit and Grounding Kit accessory



Cambium Networks™

Ashburton, TQ13 7UP, UK

PTP-LPU

Model No:A005030

Made In Mexico



IP66/67



Ui: 60 V
Ii: 2.1A

Uo: 60V
Io: 2.1A

Ex ic IIC T4 Gc



II 3 G

Tamb = -40C to +76C
IECEX EMT 16.0028X
EMT 16ATEX0051X

E113068 COMPLIES WITH ANSI
12.12.01, CSA C22.2 No. 213
UL60950-1/22 - CSA C22.2 No.
60950-1/22 CLASS I, DIV 2,
GROUPS A,B,C,D OPERATING
TEMPERATURE CODE T4



MSN:#####



Warning - Do Not Separate When Energized. Potential Electrostatic Charging Hazard - See Instructions

CAUTION: Read the User Guide before Installation. ATTENTION: Lisez le Guide de l'utilisateur avant l'Installation

Installation and operating requirements

Environmental requirements

PTP 670 radios comply with the reduced circuit separation requirements of EN/IEC 60079-11:2012 Annex F. The equipment is rated to function at ambient temperatures between -40C to +76C. At all temperatures the equipment is protected by enclosures rated to IP66 dust and water protection.

Dielectric strength

PTP 670 radios do not comply with the dielectric strength test voltages of EN/IEC 60079-11:2012 section 6.3.13. and shall be marked with the symbol 'X'. The PTP 670 internal surge suppression device is designed to shunt abnormal voltage surges to ground. The intrinsically-safe-circuit-to-ground dielectric strength is nominally 100 V dc.

To be earthed via an equipotential bonding system in accordance with EN / IEC 60079-14 Clause 16.2.3, PTP-LPU installed at the PTP 670 end must share the same equipotential bonding system.

General requirements

ATEX regulatory environments

Installation should be in accordance with the requirements of EN/IEC 60079-14 as applicable.

HAZLOC regulatory environments

Installation should be in accordance with the National Electrical Code (NEC) and relevant OSHA standard.

Warnings

Before installing these products, read [Important safety information](#) on page 4.

Transmit power limitations for radio regulations

All of the PTP 670 Series of radio products have to meet local radio regulations, whether or not the products are of the ATEX/HAZLOC-approved variety. Local radio regulations do vary considerably around the world; Cambium provides country specific settings and regulatory bands to meet those requirements. Regulatory rules generally limit the maximum conducted power, conducted power spectral density, effective isotropic radiated power (EIRP) or EIRP density that can be used in various applications. PTP 670 ATEX/HAZLOC radio products operate in the 4.9 GHz, 5.1 GHz, 5.2 GHz, 5.4 GHz and 5.8 GHz frequency bands. Consult local regulators or the Cambium sales team to determine which bands are available for use in the country or territory where the link will be installed.

EIRP limits for hazardous locations

The ATEX and HAZLOC standards limit the EIRP as shown in [Table 2](#).

Table 2 EIRP limits from ATEX and HAZLOC standards

Gas group		Typical gas type	Maximum EIRP (Watt)	Maximum EIRP (dBm)
ATEX	HAZLOC			
IIA	D	Propane	6	37.7
IIB	C	Ethylene	3.5	35.4
IIC	B	Hydrogen	2	33.0
IIC	A	Acetylene	2	33.0

Overall transmit power limit

The ODU applies the more restrictive of the wireless regulatory limit and the ATEX/HAZLOC limit. In some cases, (for example FCC U-NII-2C) the wireless regulation is more restrictive than the HAZLOC limit.

Changing the ATEX/HAZLOC EIRP limit

By default PTP 670 Series ATEX/HAZLOC units are restricted to 2 W EIRP, suitable for ATEX gas group IIC or HAZLOC gas groups A and B. To operate in an environment with a less hazardous gas the professional installer must select the correct Gas Group for the intended installation.



Note

It is not possible to completely remove the ATEX/HAZLOC EIRP limit in an ATEX/HAZLOC unit.

Operation with connectorized antennas

The PTP 670 Connectorized ODUs can only be used with an external or connectorized antenna.

When using a connectorized antenna the user must set the overall antenna gain including any RF cable loss between the ODU and the antenna. These are configured in the **System > Configuration** page of the web-based interface under Antenna Gain and Cable Loss.



Warning

The PTP 670 ODU calculates the maximum transmitted power as a function of the configured external antenna gain. To maintain the EIRP within safe limits for the hazardous environment, ALWAYS configure External Gain and RF cable loss attributes correctly.

Contact us

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