Transmitter
PTXMP <T01AAA>
Instruction manual
(Indoor use only)

■Overview

This unit is a 920MHz band microwave wireless power supply transmitter. The output frequency is fixed at 918.0MHz at the factory.

Operating frequency:	918MHz
Modulation:	N/A (CW)
ANT Configuration:	Dipole
ANT Gain:	<=6 dBi
Crystal:	TCXO 33.6MHz

■Main body (upper surface)

Appearance

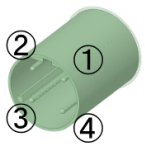
■Main body (lower surface)

Appearance

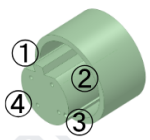
○ Description

There is a power connector (IN) and a daisy-chain connector (OUT) (not in use). The pinouts are as follows:

INコネクタ仕様

ピン番号	内容	M12, 4ピン, プラグ, Aコード
1	24V	
2	NC	
3	0V	
4	NC	

OUTコネクタ仕様

ピン番号	内容	M12, 4ピン, ソケット, Aコード
1	24V	
2	TX(TBD)	
3	0V	
4	RX(TBD)	

■Main unit (front)

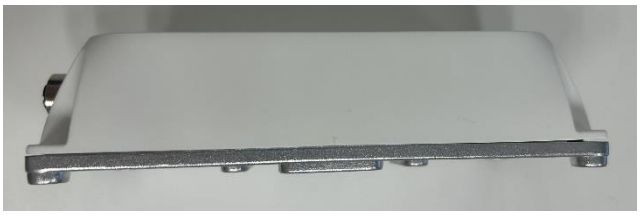
〇Appearance

〇 LED Indicator

LED	Ind.	Status	Content
P1	Power	Off	Powered off
		Green On	Powered on
		Red On	Error in power circuit
D1	Tx Out	Off	Tx Power off
		Red On	Tx Power on
P2	Not in use		
D2	Not in use		

■Main unit (right side)

〇Appearance



■Main body (left side)

〇Appearance

■ Main body (connector side)

〇Appearance

■AC Adapter (example)

○Appearance

○ Description

This is an AC adapter used when operating this unit at AC100V~240V/2A, and supplies DC24Vto this unit. With this AC adapter.

○ Preparation

Connect the M12 connector (Power) to the left-hand side of the connector shown below. One adaptor supplies the power to the one transmitter.

The right-hand side of the connector is not in use.

Connect the AC adaptor to the AC100V power outlet.

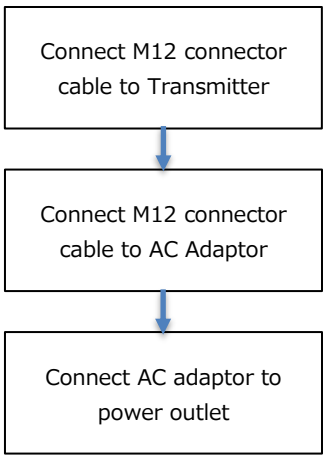
○ Operation (Indoor Use Only)

Once the AC adapter is connected to M12 connector, PTXMP starts running, and Tx power is on.

To turn it off, disconnect the AC adapter.

Note: The PTXMP transmitter shall be installed by professionals on an indoor structure that is not accessible to outsiders.
PTXMP device needs to be installed in a fully enclosed, waterproof room in an indoor structure and cannot be accessed by non-professionals.

TURNING ON



TURNING Off

Disconnect AC adaptor from power outlet

or

Disconnect M12 connector cable from Transmitter

■Others・Precautions and considerations

This device will be a PoC/evaluation device which can be available upon PoC/Evaluation request and agreement with Aeterlink Corp. directly and requires indoor operation only such as office environment.

It does not have such functions as water and dust resistance.

Aeterlink provides the users/customers who will be involved in the PoC/evaluation with further pre-cautions and warnings in terms of the possible radio exposure in person when delivery of DUTs. A sticker saying “Always keep distance from DUT by >2 inches (~50mm)” will be placed on the surface of the DUTs. Since it is a device that emits radio waves, please use it within the scope of the Radio Law as well.

The transmitter can be installed on either wall or pillar with four bolts with washers by professionals. There are four bolt holes at each corner. See photos below.

Recommended bolt: M4 with flat washer

Recommended tightening torque: 1.3±0.2N·m

The actual use distance: 50mm ~ 6,000mm (effective range).

The maximum number of devices that can be charged simultaneously: 300 devices sitting within the effective range mentioned above.

Note: The distance is subject to vary due to the environment and usage conditions but for the typical use case. Refer to Supplemental Information at the end of this document.

The minimum distance from PTXMP to avoid RF exposure for safety: 50mm.

During operation, the temperature of the backside metal part increases. Short-term skin contact will not cause immediate burns, but please be careful when handling during operation or immediately after stopping.

FCC CAUTION

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance

with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This equipment has very low levels of RF energy that is deemed to comply without maximum permissive exposure evaluation (MPE).

FCC Warning

This equipment has been tested and found to comply with Part 18 of the FCC Rules.

·The interference potential of the device or system.

·Maintenance of the system.

·Simple measures that can be taken by the user to correct interference.

·For RF lighting devices, provide an advisory statement, either on the product packaging or with other user documentation, similar to the following:

> *This product may cause interference to radio equipment and should not be installed near maritime safety communications equipment or other critical navigation or communication equipment operating between 0.45-30 MHz.*

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Supplemental Information. Technical discussion of usable distance and the number of serviceable receivers

(1) Serviceable Distance

・The operable range of the receiver is 0.01mW～300mW in power. Refer to the table below for the theoretical distance range.
The operable distance is approximately 50mm～6000mm.
(The minimum required power to activate the receiver is 0.01mW and 300mW is the maximum allowable power to the protection circutry.)

	Freq	λ	Distance	TX power	Tx Antenn	Prop loss	Rx Antenna	Received RF	Rect eff	DC power
unit	MHz	m	mm	dBm	dBi	dB	dBi	dBm	%	mW
	918	0.33	6000	30	6	-47.3	-1	-12.3	17.0	**0.010**
	918	0.33	46.25	30	6	-5.0	-1	30.0	30.0	**300**

(2) Serviceable Receivers

・Taking the 3dB(1/2) beam width (at around 120 degrees) into consideration, the covered area at the max distance from DUT is $42m^2$ (6×√(1/2)=4.24m) as shown below.
The receivers placed on the blue circle plain can be activated because the electromagnetic field strength at 6m scquarely from DUT
and the field strength at the location where the gain is half and the distance is √(1/2) are equivalent.
・Even if placing the receivers 0.327m (the wavelength of 918MHz) apart to avoid unwanted interferences, the required area is 0.327^2×300=~$32m^2$.
$42m^2$ area shown below covers $32m^2$ and more than 300 receivers can be activated simultaneously.