# PXG2-AIR Series

Dual Core Multi-Gigabit FDD All-Outdoor Point to Point Microwave Ethernet Transmission System

- Capacity of 2.5 Gbps (ETSI 112) and 1.8 Gbps (FCC 80) per unit
- Modulations up to 16384 QAM (16K QAM)
- Patent Pending Modular design simplifies sparing and reduces Capex
- Transmit Predistortion increases power for high modulations
- 6-24 GHz Worldwide Licensed/Unlicensed bands
- Onboard GPS and sensors

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Link Lock   2X SFP+ 1G/10G   SFP 1G/2.5G   GigE Copper and PoE   DC Input Power
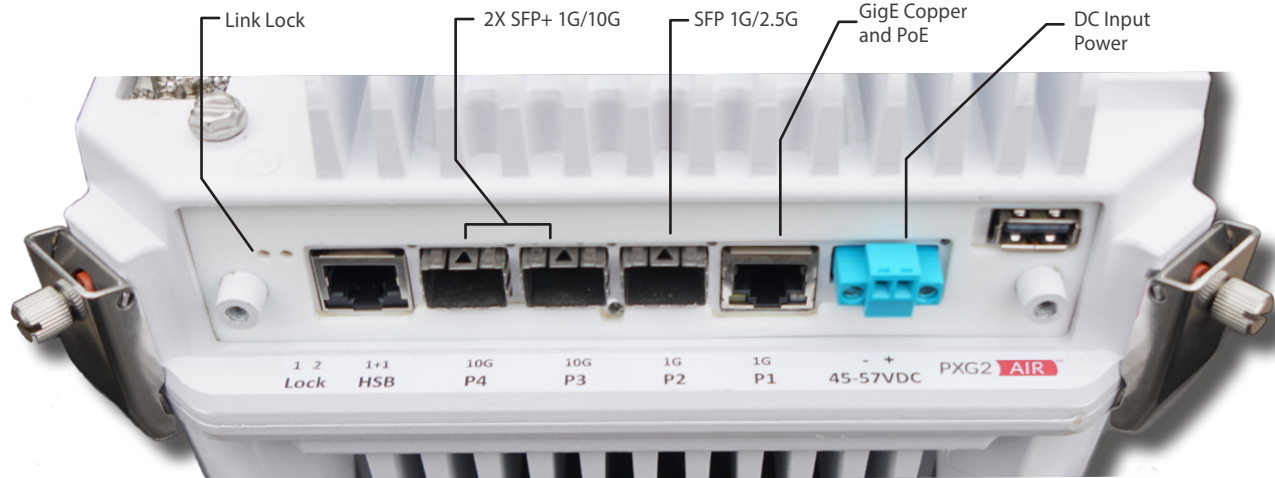
Overview

The PXG2-AIR is a dual-core full duplex All-Outdoor point-to-point licensed microwave Ethernet transmission system. A single radio mounted directly on an antenna can carry up to 2.5 Gbps (5 Gbps aggregate) using two 112 MHz ETSI channels. The system supports up to 16384 QAM (16K QAM) and layer 1 RF channel bonding. The system can be set up in 1+0, 2+0, XPIC, and 4x4 MIMO system configurations.

The system utilizes a patent pending modular design that greatly simplifies the sparing costs associated with large network deployments. A common dual-core base unit can be spared for all radios in the network, and by simply latching in the required RF module and diplexer/OMC, all frequencies and bandwidths can be supported. The system can electronically sense the diplexer model and orientation, as well as the antenna polarization.

Key Features

- **Industry Leading Capacity**
  - **2.5 Gbps FDD** in 112 MHz (ETSI channel. Up to 5 Gbps using 4x4 MIMO.
  - **1.8 Gbps FDD** in 80 MHz (FCC) channel. Up to 3.6 Gbps using 4x4 MIMO.
- **RF Packet Retransmission** to improve sensitivity and resilience to channel conditions
- **6-24 GHz Worldwide Licensed and Unlicensed Band Support** using Trango modular RF Modules.
- **Patent Pending Modular Design** automatically detects the diplexer model and position, and antenna polarization to ensure compatibility. RF Modules/Diplexers and antenna transitions can quickly be changed out in the field.
- **Ultra-High Transmit Power:** Up to 31 dBm QPSK and 25 dBm at 4096 QAM due to adaptive predistortion in the RF Module increases transmission range.
- **Carrier Ethernet Switch** with 1, 2.5, and 2x 10 Gigabit ports to support LACP/LAG
- **SyncE and 1588** Support
- **Onboard GPS** for optional clock reference and location mapping.
- **Management** via Web, SSH, Serial, and SNMP with historical graphing
- **Onboard sensors** for current, voltage, humidity, downtilt, temperature, position.
- **Digital RSSI display** simplifies antenna alignment.

Specifications

Wireless	
Frequency Range	6-24 GHz, All major TR Spacings supported
Channel Sizes Supported (MHz)	3.5, 5, 7, 8, 10, 12.5, 14, 20, 25, 27.5/28, 30, 40, 50, 55/56, 60, 80 ,112
Modulation Levels	QPSK to 16384 QAM (16K QAM) Hitless ACM
Transmit RF power output	Up to +31 dBm QPSK, +25 dBm 4096 QAM with Adaptive Predistortion
System Configurations	1+0, 2+0 SR, 2+0 DR, 2+0 XPIC, 4x4 MIMO

Physical	
Construction/Mounting	Cast Aluminum Alloy with removable port access plate and 1" NPT Strain Relief. Available Multiport Port Cover Tool free latching assembly of RFM/Diplexer/Transition and Cover/OMT to allow easy field replacement.
Size	**PXG2-AIR-S:** 8.5 x 9.5 x 4.95 in (Single RFM with adjustable transition) **PXG2-AIR-D:** 8.5 x 9.5 x 5.35 in (Dual RFM with OMT)
Weight	**PXG2-AIR-S:** < 12.5 lbs **PXG2-AIR-D:** < 17.5 lbs
Mounting	Slip Fit over antenna with 4 spring loaded clips – Mounts to –T2/-S2 antennas with circular waveguide. (6 GHz Rectangular)

Environmental	
Operating Temperature Range	-40 deg C to +55 deg C
Humidity	100% Condensing

Standards Compliance	
Safety	IEC/EN 60950-1
EMC	EN 301 489-1 V1.8 (2008-04) EN 301 489-4 V1.4.1 (2009-02)
FCC RF Compliance	CFR47 Part 101 – Licensed Microwave
FCC Conducted Emissions	FCC 15.107 (a) Class "B"
FCC Radiated Emissions	FCC 15.109 (a) Class "A"
EU	EN 302 217-2

Power	
Input Voltage	Direct -40 to -57 VDC (positive ground) and via PoE (Port 1)
Power Consumption	**PXG2-AIR-S:** < 48 W **PXG2-AIR-D:** < 70 W

User Interfaces	
Ethernet Traffic/Management Ports	**P1**: RJ45 - 10/100/1000BaseT with PoE **P2:** SFP – 2500/1000Base-X SFP modules supported **P3, P4:** SFP+ – 10G/1000/100Base-X SFP+ modules supported:
1+1 HSB	RJ45 – Special Cat5 cable required between units
Cross Connect Xin and Xout	SMA-Female
USB	OBM Ethernet or WIFI connectivity for management
Antenna	Compatible with ADxx-XX-S2, -R2, -T2 antennas
Antenna Alignment	BNC-F, 2 Digit Blue LED Display in dBm on Radio unit

Management	
Local	Command Line Interface via USB or Serial port
Remote	Web, SSH, Telnet, SNMPv2/3, software upgrade via web or FTP.
Event monitoring	In Band (IBM) or Out of Band (OBM) supported on all Eth Ports

Integrated sensors	
Humidity	Measure humidity inside the Radio
Temperature	Measure internal temperature of the Radio
Downtilt	Measure Downtilt angle of the Radio
Vibration	Measure Vibration of the Radio
GPS	Record position and 1PPS clock source
Voltage	Measures all input and internal voltages and current consumption