



PPC-10G Series

10 Gigabit Ethernet MM-wave Link

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CARRIER GRADE RADIO

PPC-10G is IP radio link, providing true 10 Gbps full-duplex throughput. The link is intended for point-to-point applications such as 5G/4G/LTE+ backhaul, campus and industrial park networks, 4K UHD video streaming and temporary 10GE connections at exhibitions and other high-traffic events.

ELVA-1 PPC-10G is available in lightly licensed 70/80 GHz (E-band) and licensed 40.5-43.5 GHz (Q-band) frequency formats with 1 ft. or 2 ft. antennas. There is high power (HP) version of this link with increased distance range up to 20.0 km (12.4 miles).

RAPID AND LOW COST 10 Gbps DEPLOYMENT

ELVA-1 PPC-10G is a fully-outdoor radio, designed for temperatures from -50°C to +60°C (-58°F to +140°F) and humidity up to 100%. Delivery kit contains tuning panels to indicate received signal level (RSL) for antenna alignment. Installation can be done within a day.

The PPC-10G platform is based on state-of-the-art MMIC chips, which support Quadrature Amplitude Modulation in digital data radio communications. Using QAM 128, PPC-10G requires only 2 GHz bandwidth at 70/80 GHz for 10 Gbps rate. For Q-band, ELVA-1 has pioneered the implementation of QAM 256 technology to achieve the best spectrum efficiency in the industry.

FEATURES

- Frequency bands: 71-76/81-86 GHz or 40.5-43.5 GHz
- Up to **20 km (12.4 miles)** at clear sky
- True 10 Gbps Full Duplex Operation (E-band)
- Encryption AES-128 and PoE optionally
- SNMP v.1; v.2; SNMPv2-MIB; Enterprise-MIB; WEB; Telnet; CLI
- Hitless adaptive bandwidth, coding and modulation
- Tunable central frequency
- Support IEEE 1588v2 (TC)
- Easily installed, zero-footprint



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PPC-10G SPECIFICATIONS

Model	PPC-10G-E				PPC-10G-Q			
Frequency range	71-76/81-86 GHz (E-band)				40.5-43.5 GHz (Q-band)			
Throughput	Up to 10 Gbps Full duplex				Up to 7.2 Gbps Full duplex			
Channel Bandwidths Available	250/ 500/ 750 /1000 /1250 /1500* /2000* MHz (*for E-band only)							
Modulation	QAM-256 to BPSK Adaptive to weather with hitless adaptive bandwidth, coding and modulation							
MTBF	150 000 hours							
Central frequency steps	Tunable into band with step 125MHz (31.25MHz micro step)							
Max Distance at max throughput	up to 20.0 km (12.4 miles) with 2ft antennas at clear sky				up to 10.0/14.0 km (6.2/8.7 miles) with 2ft/3ft antennas at clear sky			
Max output power	17 dBm (50 mW) at QAM 128 / 20 dBm (100 mW) at QPSK/BPSK							
Link budget with 2ft antennas BPSK/QPSK modulation @ 10 ⁻⁹ BER	200 / 197 dB @250 MHz 197 / 194 dB @500 MHz 195 / 192 dB @750 MHz 194 / 191dB @1000 MHz 193 / 190 dB @1250 MHz 192 / 189 dB @1500 MHz 191 / 188 dB @2000 MHz				186 / 183 dB @250 MHz 183 / 180 dB @500 MHz 181 / 178 dB @750 MHz 180 / 177 dB @1000 MHz 179 / 176 dB @1250 MHz			
Max throughput	1330 Mbps @250 MHz	2660 Mbps @500 MHz	3750 Mbps @750 MHz	5200 Mbps @1000 MHz	7200 Mbps @1250 MHz	7630 Mbps @1500 MHz	9980 Mbps @2000 MHz	
Management	SNMP v.1; v.2; MIB-II and proprietary MIB; WEB GUI; Telnet; CLI							
Ethernet Interface	1 x SFP/SFP+ slot (1000Base-X, 10GBase-LR/SR)							
Encryption	AES 128 optionally							
Ethernet	Transparent for Ethernet services, Flow Control 802.3x PTP IEEE 1588v2 (TC) support							
Management Port	100 Base-Tx (RJ – 45)							
Forward Error Correction	LDPC; Reed Solomon							
Polarization	Vertical / Horizontal							

Antenna

Antenna Type	Cassegrain type antenna with radio-transparent radome					
Antenna Gain/Beamwidth	71-76/81-86 GHz (E-band)			40.5-43.5 GHz (Q-band)		
1ft antenna	45 dB/0.7°			38 dB/1.5°		
2ft antenna	51 dB/0.35°			44 dB/0.7°		
3ft antenna	N/A			47 dB/0.4°		

Power / Environment

Power Supply AC	Input 88-132 / 176-264 Volts, 50/60 Hz
Transceiver Power Consumption	45 W (+60 W when heater is switched on) 90W max PoE power by PSE to management port (optionally)
DC Power	36 to 60 Volts DC (optional powering by PoE 90W to RJ-45 management port)
Power Connection	IP67
Operational Temperature	-50°C to +60°C / -58°F to 140°F
Humidity	Up to 100%

Physical dimensions

Outdoor unit size w/o antenna	246 x 246 x 110 mm
Weight (ODU w/o antenna)	4 kg max
Complete set	2 radios with antennas + 2 indoor power supplies



PPC-10G Part Numbering

PPC - 10G - E - X ft

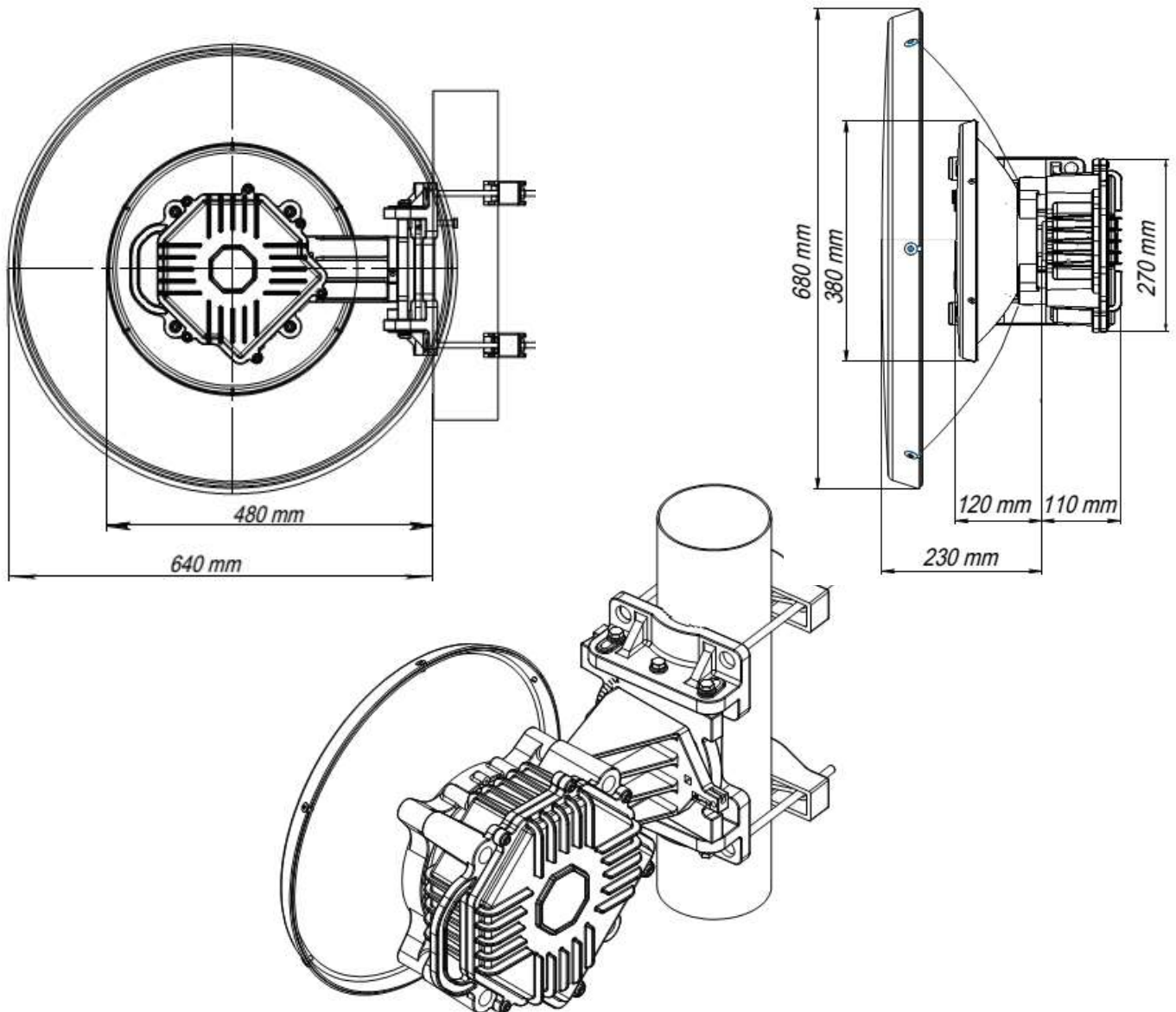
Q - 40.5 - 43.5 GHz
E - 71-76/81-86 GHz

1 or 2 or 3

To choose the right model by its product code, please use the following encoding schema:

For example, PPC-10G link with 2ft antennas, 71-76/81-86 GHz frequency band has -product code PPC-10G-E-2ft.

PPC-10G DIMENSIONS WITH 1 ft OR 2 ft ANTENNA





ITU RAIN RATE ZONES TO DETERMINE LINK AVAILABILITY

USE [HTTP://LINKBUDGETCALC.ELVA-1.COM](http://LINKBUDGETCALC.ELVA-1.COM) FOR PPC-10G RADIOS

