



PPC-10G Series

10 Gigabit Ethernet MM-wave Link

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CARRIER GRADE RADIO

PPC-10G is IP radio link, providing true 10Gbps 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 24.0 km (15 miles).

RAPID AND LOW COST 10 GBPS DEPLOYMENT

ELVA-1 PPC-10G is a fully-outdoor radio, designed for temperatures -50°C (-58°F) to $+60^{\circ}\text{C}$ (140°F), and humidity up to 100%. Delivery kit for each radio contains tuning panel to indicate RSL level for fast antenna alignment. Link 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 10Gbps 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 10Gbps Full Duplex Operation (E-band)
- Encryption AES-128 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 SPECIFICATION

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 / @E-band 1500 / 2000 MHz						
Modulation	QAM-256 to BPSK Adaptive to weather with hitless adaptive bandwidth, coding and modulation						
MTBF	150 000 hours						
Central frequency	Tunable 71-76GHz for Hi ODU, 81-86GHz for Low ODU at 125 MHz /31.25 MHz steps						
Max Distance at max throughput	up to 20.0 km (12.4 miles) with 2ft antennas at clear sky				up to 20.0 km (12.4 miles) with 2ft 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 / 197dB @250MHz 197 / 194dB @500MHz 195 / 192dB @750MHz 194 / 191dB @1000MHz 193 / 190dB @1250MHz 192 / 189dB @1500MHz 191 / 188dB @2000MHz				186 / 183dB @250MHz 183 / 180dB @500MHz 181 / 178dB @750MHz 180 / 177dB @1000MHz 179 / 176dB @1250MHz		
Max throughput	1330Mbps @250MHz	2660Mbps @500MHz	3750Mbps @750MHz	5200Mbps @1000MHz	7200Mbps @1250MHz	7630Mbps @1500MHz	9980Mbps @2000MHz
Management	SNMP v.1; v.2; MIB-II and proprietary MIB; WEB GUI; Telnet; CLI						
Ethernet Interface	1 × 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°

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)
DC Power	36 to 60 Volts DC
Power Connection	IP-67
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 110mm
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

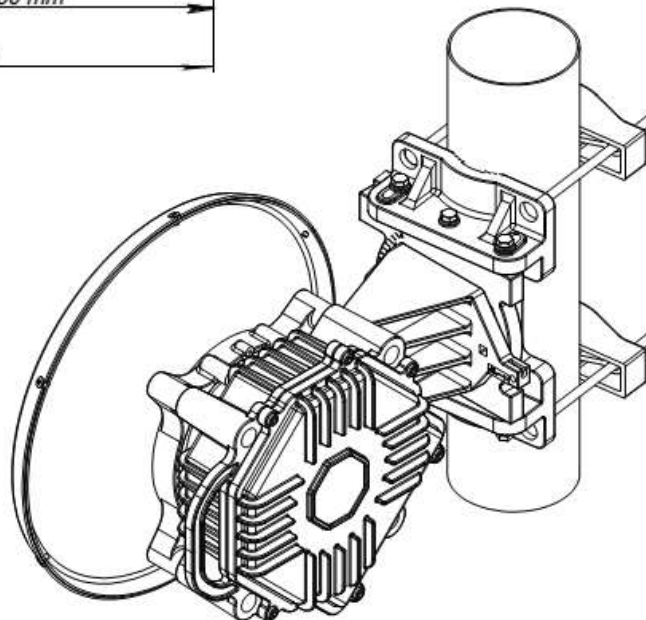
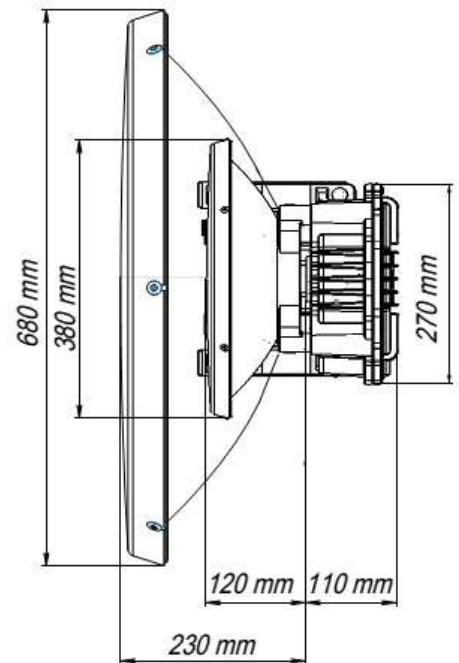
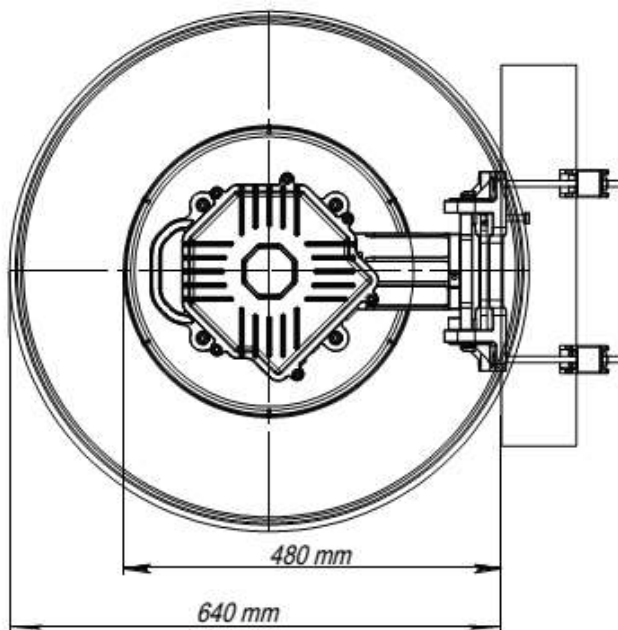
Q - 40.5 - 43.5 GHz
E - 71-76/81-86 GHz

1 or 2

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

