

## PPC-10G-HP Series

# 10 Gigabit Ethernet MM-wave Link

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## HIGH-POWER RADIO APPLICATIONS

New PPC-10G-HP 10 Gigabit Ethernet radio with higher output power is intended to cover longer distance, primary at regions with rare rains. This include Arctic and desert areas of Middle East or similar regions. PPC-10G-HP model provides output power of 26.5 dBm and 3 dB noise figure to ensure high availability.

Main point-to-point applications of PPC-10G-HP link are 5G/4G/LTE+ backhaul, industry area networks, car-based TV studios which provide wireless 4K UHD video streaming to TV Center and temporary 10 Gbps connections at exhibitions and other high-traffic events.

## RAPID AND LOW COST 10 Gbps DEPLOYMENT

ELVA-1 PPC-10G-HP 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 for each radio contains tuning panel to indicate received signal level (RSL) for fast antenna alignment.

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-HP 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 **24 km (15 miles)** at clear sky
- True 10 Gbps Full Duplex Operation (E-band)
- High output power: 26.5 dBm
- Noise Figure: 3 dB
- Encryption AES-128 and PoE optionally
- SNMP v.1; v.2; SNMPv2-MIB; Enterprise-MIB; WEB; Telnet; CLI
- Hitless adaptive bandwidth, coding and modulation
- Solid reliability with Fiber-like Performance
- Easily installed, zero-footprint
- EMI interference free

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## PPC-10G-HP SPECIFICATIONS

Model	<b>PPC-10G-E-HP</b>				<b>PPC-10G-Q-HP</b>			
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)							
Central frequency steps	Tunable into band with step 125MHz (31.25MHz micro step)							
Modulation	QAM-256 to BPSK Adaptive to weather with hitless adaptive bandwidth, coding and modulation							
MTBF	150 000 hours							
Max distance at max throughput	up to 24.0 km (15 miles) at clear sky with 2ft antennas				up to 19.0 km (11.8 miles) at clear sky -2ft antennas up to 26.5 km (16.4 miles) at clear sky -3ft antennas			
Max output power	19 dBm at QAM 128 / 26.5 dBm at QPSK							
Link budget with 2ft antennas, BPSK modulation @ 10 <sup>-9</sup> BER	208 dB @250 MHz 205 dB @500 MHz 203 dB @750 MHz 202 dB @1000 MHz 201 dB @1250 MHz 200 dB @1500 MHz 199 dB @2000 MHz				196 dB @250 MHz 193 dB @500 MHz 191 dB @750 MHz 190 dB @1000 MHz 189 dB @1250 MHz			
Max throughput	1330Mbps @250MHz	2660Mbps @500MHz	3750Mbps @750MHz	5200Mbps @1000MHz	7200Mbps @1250MHz	7630Mbps @1500MHz	9980Mbps @2000MHz	
Management	SNMP v.1; v.2; SNMPv2-MIB and proprietary MIB; WEB GUI; Telnet; CLI							
Encryption	AES 128 optionally							
Ethernet Interface	1 × SFP/SFP+ slot (1000Base-X, 10GBase-LR/SR)							
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 1ft or 2ft or 3 ft antenna	45 dB/0.7°    51 dB/0.35°    N/A				38 dB/1.5°    44 dB/0.7°    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 delivered by PSE management port (optionally)							
DC Power	36 to 60 Volts DC (optional powering by 90W PoE to RJ-45 management port)							
Power Connection	IP67							
Operational Temperature	-50°C to +60°C / -58°F to 140°F							
Humidity	Up to 100%							

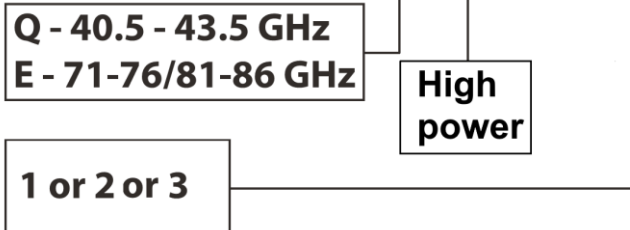
### Physical dimensions

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



## PPC-10G-HP Part Numbering

### PPC-10G-E-HP-L2-X ft

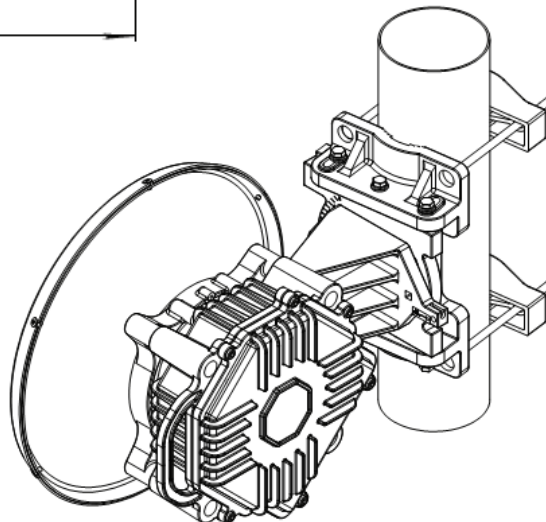
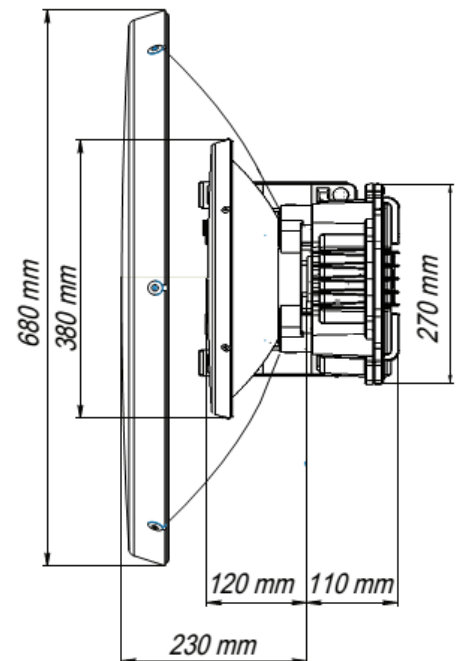
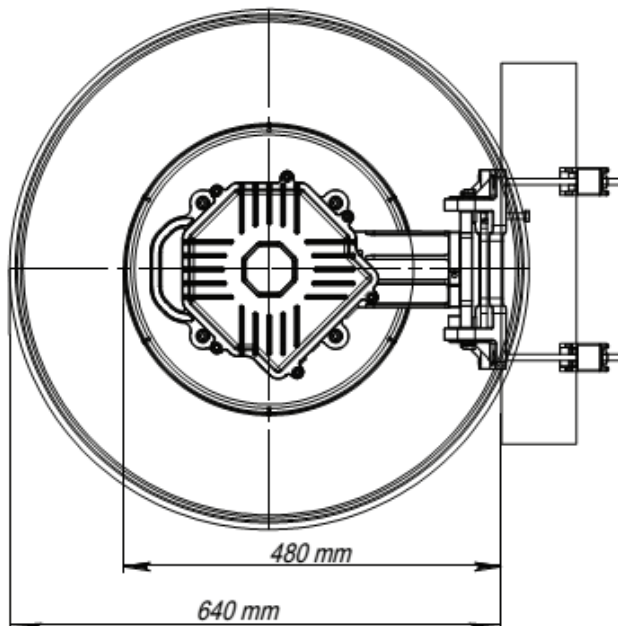


To choose the right model by its product code, please use the following encoding schema:

For example, PPC-10G-HP link with 2 ft antennas, 71-76/81-86 GHz band has code PPC-10G-HP-E-2ft. To have L2+ switch option please add "L2" to code.

**Attention:** radio central frequency is fabric preset (not tunable by user), please advise its value at order time.

## PPC-10G-HP 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

