

PPC-10G Series

10 Gigabit Ethernet MM-wave Link

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In response to market demand for ultra-wide broadband communication equipment, ELVA-1 offers new PPC-10G series of 10 Gigabit Ethernet radio.

The PPC-10G is an all-outdoor, IP, mm-wave radio with up to 10Gbps full duplex data rate. The link is intended for use in point-to-point applications such as 4G/LTE Backhaul, Corporate Campus Networks, IPTV, and Wireless ISP backbone. ELVA-1's PPC-10G is available in either licensed 40.5-43.5 GHz (Q-band) or lightly licensed 70/80 GHz (E-band) frequency formats with 1 ft. or 2 ft. antennas.

The PPC-10G platform is based on state-of-the-art MMIC chips, which support QAM 256 (Quadrature Amplitude Modulation) in digital data radio communications. ELVA-1 has pioneered the implementation of QAM 256 technology for E-band

to achieve the best spectrum efficiency in the industry. Using QAM 256, PPC-10G requires only 2 GHz of bandwidth for its 10Gbps data rate.

PPC-10G Series Features:

- Frequency band: 40.5-43.5 GHz, 71-76/81-86 GHz
- SNMP v.1; v.2; v.3; MIB-II and DOK Enterprise MIB; WEB
- True Full Duplex Operation
- Hitless adaptive bandwidth, coding and modulation
- IEEE 1588v2, SyncE
- Secure communication due inability to intercept the laser-like beam transmission at free air
- Solid reliability with Fiber-like Performance
- Easily installed, zero-footprint
- Compact Cassegrain type antennas
- Quasi-optical (laser-like) propagation of millimeter wave emission
- EMI interference free

Application:

- 4G/LTE/WiMAX backhaul for access and aggregation
- "Last Mile" fiber extension for enterprises
- Temporary high capacity links for disaster recovery
- LAN/WAN extensions for private/enterprise networks



PPC-10G Series



PPC-10G Specification

Specification

Frequency range	71-76/81-86 GHz (E-band)				40.5-43.5 GHz (Q-band)			
Throughput	Up to 10Gbps Full duplex, license keys upgradeable							
Channel Bandwidths Available	250/ 500/ 750 / 1000 / 1250 / 1500/ 2000 MHz							
Modulation	from QPSK to QAM-256							
Adaptive rate	Hitless adaptive bandwidth, coding and modulation							
Max Distance with 2ft antennas in clear sky	Up to 20km (12 mile)							
Link budget with 2ft antennas QPSK modulation	197dB @250MHz 194dB @500MHz 192dB @750MHz 191dB @1000MHz 190dB @1250MHz 189dB @1500MHz 188dB @2000MHz				183dB @250MHz 180dB @500MHz 178dB @750MHz 177dB @1000MHz 176dB @1250MHz			
Max throughput (E&Q band)	1750Mbps @250MHz	3540Mbps @500MHz	5290Mbps @750MHz	7045Mbps @1000MHz	7430Mbps @1250MHz	8940Mbps @1500MHz	10Gbps @2000MHz	
Management	SNMP v.1; v.2; v.3; MIB-II and DOK Enterprise MIB; WEB GUI							
Ethernet Interface	1 × SFP/SFP+ slot (1000Base-X, 10GBase-LR/ER)							
Ethernet	Transparent for Ethernet services, Flow Control 802.3x Optionally: L2 switch built-in with IEEE1588v2 and SyncE, CPRI up to 9.8Gbps							
Management Port	100 Base-Tx (RJ – 45)							
Forward Error Correction	LDPC; Reed Solomon							
Polarization	Vertical / Horizontal							

Antenna

Antenna Type	Cassegrain type antenna with radome	
Antenna Gain/Beamwidth		
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	35 W (+60 W when heater is switched on)
DC Power	36 to 60 Volts DC
Power Connection Ethernet / Power connector	IP-65 [optional IP-68]
Operational Temperature	-50°C to +60°C / -58°F to 140°F
Humidity	Any Rate

Physical dimensions

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



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

PPC - 10G - E - X ft

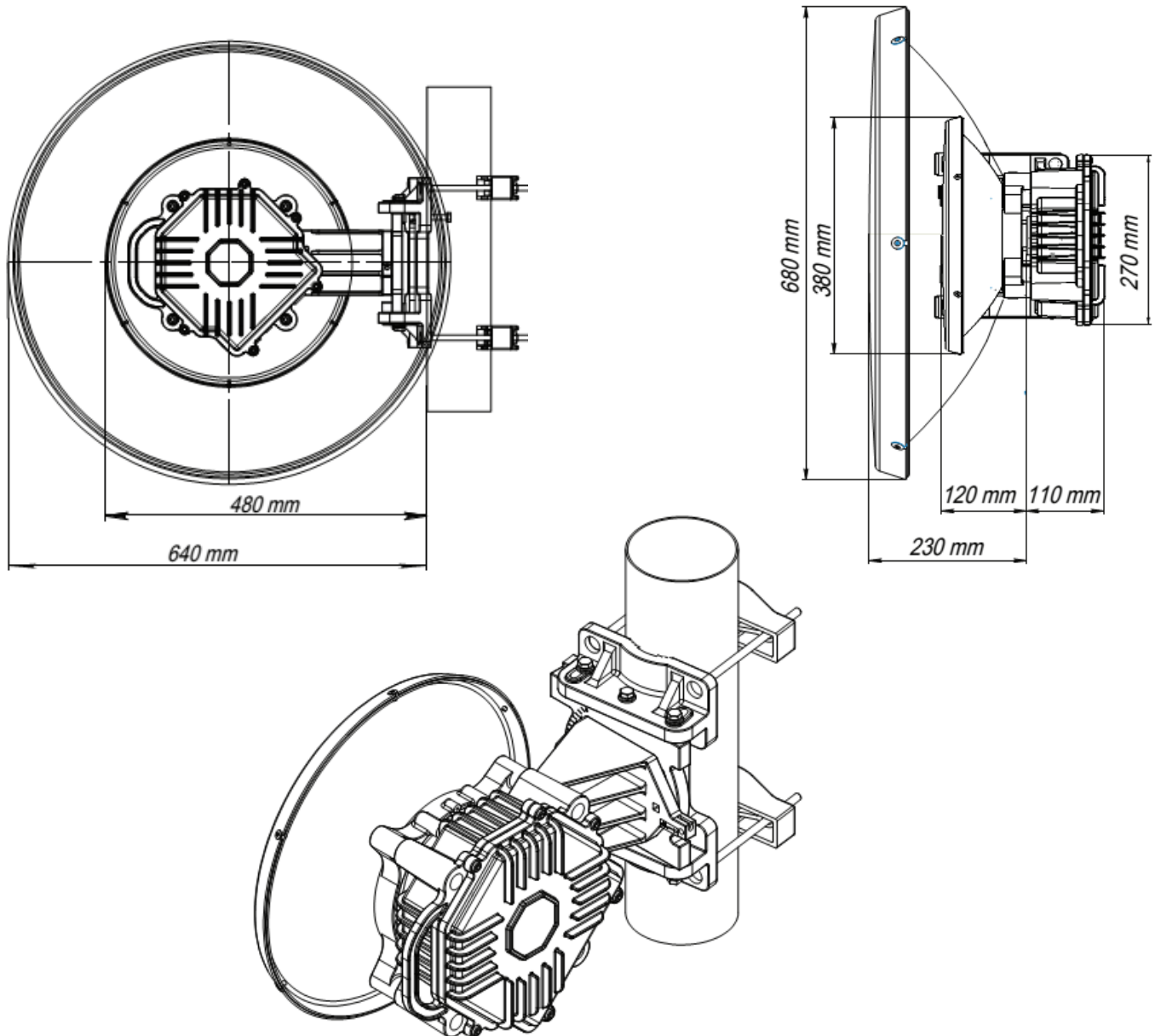
Q - 40.5 - 43.5 GHz
E - 71-76/81-86 GHz

1 or 2

For example, PPC-10G link with 2ft antennas, 40.5 – 43.5 GHz frequency band has product code PPC-10G-Q-2ft.

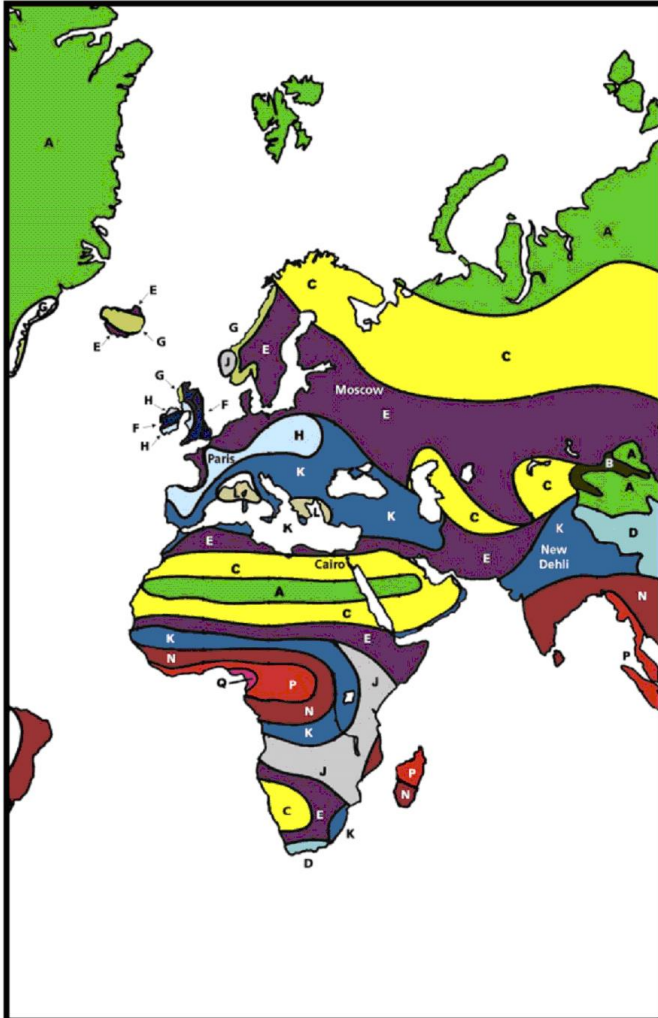
Your Local Elva-1 Representatives:

PPC -10G dimensions with antenna

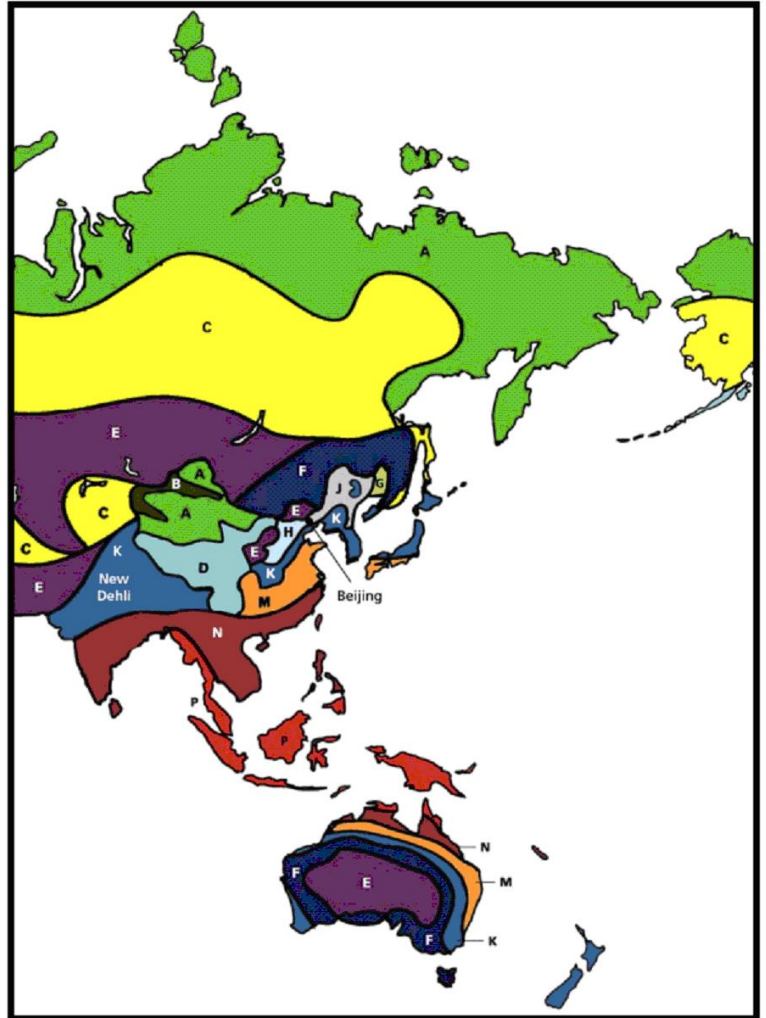




Distancies in depends on rain zone and availability



Europe/Africa Rain Regions



Asia-Pacific Rain Regions



Americans Rain Regions

Region	Distance PPC-10G Q-Band with 2ft antenna (km) @250MHz/QPSK		Distance PPC-10G E-Band with 2ft antenna (km) @250MHz/QPSK	
	99.9%	99.99%	99.9%	99.99%
A	>20	14,5	>20	10,9
B	>20	10,3	15,9	7,8
C	17,5	8,9	13,1	6,9
D	14,6	6,5	10,9	5,6
E	16,8	6,1	12,5	5,1
F	14,6	4,9	10,9	4,4
G	10,3	4,7	7,8	4,2
H	11,8	4,3	9,1	3,8
J	6,3	4,2	5,2	3,7
K	10,3	3,5	7,8	3,2
L	8,9	2,9	6,9	2,7
M	6,1	2,9	5,1	2,7
N	4,2	2,2	3,7	1,9
P	2,8	1,6	2,6	1,4
Q	2,8	1,9	2,5	1,6