



## PPC-10G 2+0

# 20 Gigabit Ethernet MM-wave Link

# PPC-10G Series 20 Gigabit Ethernet MM-wave Link

## 20 Gbps CARRIER GRADE RADIO

ELVA-1 PPC-10G 10 Gbps links can be configured into 2+0 20 Gbps dual-radio link using Dual Polarized Adaptors (DPA). This brings more compact solution for carriers and ISPs desiring a “future proof” wireless backbone. Either of 10 Gbps radios in 2+0 configuration works independently, therefore overall channel availability is greatly increased.

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 2x10GE connections at exhibitions and other high-traffic events.

Available in 70/80 GHz E-band or 40.5-43.5 GHz Q-band with 1 ft, 2 ft or 3 ft antennas. Any 2+0 radio could be featured with high-power transmitter or built-in L2 switch.

## RAPID AND LOW COST 10 Gbps DEPLOYMENT

ELVA-1 PPC-10G 2+0 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. 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 10 Gbps rate.

## 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 2x 10 Gbps (E-band) or 2x 7.2 Gbps (Q-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
- PoE optionally
- Easily installed, zero-footprint
- EMI interference free

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# PPC-10G Series

## 2+0 20 Gbps

### PPC-10G 2+0 SPECIFICATIONS

| Model   | PPC-10G-E / 2+0   |                    |                    |                     | PPC-10G-Q / 2+0   |                     |                     |  |
|---|---|--------------------|--------------------|---------------------|---|---------------------|---------------------|--|
| Frequency range   | 71-76/81-86 GHz (E-band)  |                    |                    |                     | 40.5-43.5 GHz (Q-band)  |                     |                     |  |
| Throughput  | 2x 10 Gbps Full duplex  |                    |                    |                     | 2x 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   | Tunable within band with step 125MHz (31.25MHz micro step)  |                    |                    |                     |   |                     |                     |  |
| Max Distance @10Gbps at clear sky   | 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 <sup>-9</sup> BER | 200 dB @250 MHz<br>197 dB @500 MHz<br>195 dB @750 MHz<br>194 dB @1000 MHz<br>193 dB @1250 MHz<br>192 dB @1500 MHz<br>191 dB @2000 MHz |                    |                    |                     | 186 / 183 dB @250 MHz<br>183 / 180 dB @500 MHz<br>181 / 178 dB @750 MHz<br>180 / 177 dB @1000 MHz<br>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; SNMPv2-MIB and proprietary MIB; WEB GUI; Telnet; CLI   |                    |                    |                     |   |                     |                     |  |
| Encryption  | AES 128 optionally  |                    |                    |                     |   |                     |                     |  |
| Ethernet Interface  | 2x (1x SFP/SFP+ 1x 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° |  |

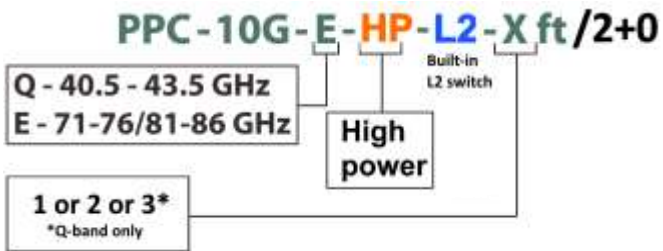
#### Power / Environment

|                               |  |
|-------------------------------|--|
| Power Supply AC               | Input 88-132 / 176-264 Volts, 50/60 Hz   |
| Transceiver Power Consumption | 90 W (+120 W when heater is switched on)<br>90W max PoE power delivered by PSE to 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)      | 8 kg   |
| Complete set                  | 4 radios with 2 antennas + 2 indoor power supplies |

### PPC-10G 2+0 Part Numbering



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

For example, PPC-10G 2+0 link with 2 ft antennas, 71-76/81-86 GHz frequency band has product code PPC-10G-E-2ft/2+0.

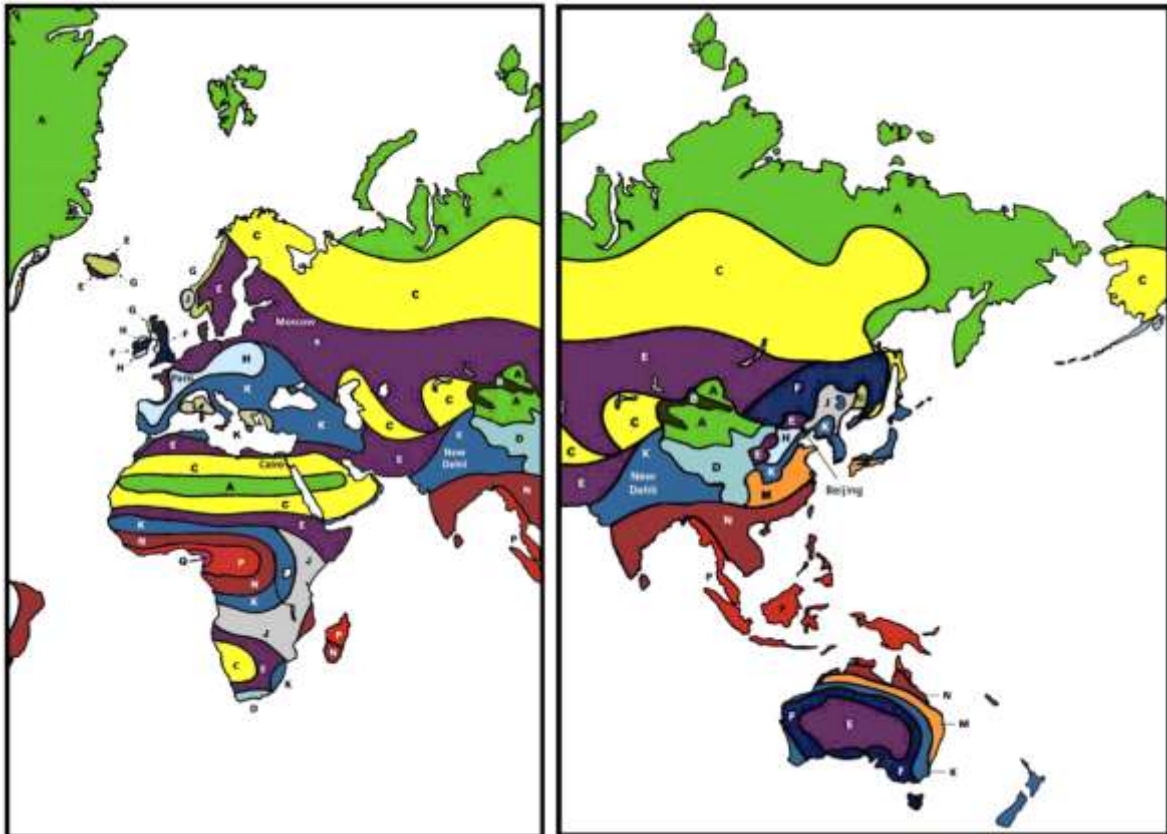
### PPC-10G-E-2FT/2+0 PHOTOS WITH 2 FT ANTENNA





≡ 2+0 20 Gbps ≡

ITU RAIN RATE ZONES TO DETERMINE LINK AVAILABILITY  
 USE [HTTP://LINKBUDGETCALC.ELVA-1.COM](http://LINKBUDGETCALC.ELVA-1.COM) FOR PPC-10G RADIOS



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