



PPC-350 Series

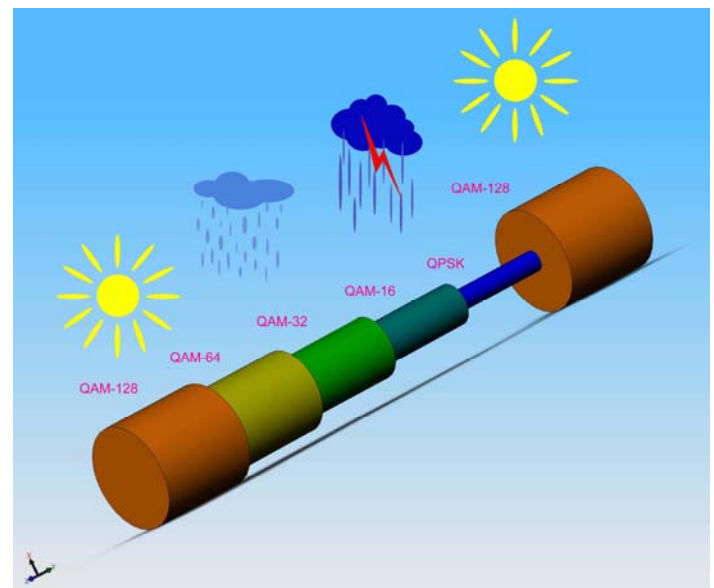
ELVA-1 Millimeter Wave Division announces new full-duplex 350Mbps Series of 40.5-43.5 GHz and 71-76/81-86 GHz mm-wave bands Radio Links. PPC-350 was specifically designed according to European ECC and US FCC performance requirements.

Main feature of PPC-350 consists in possibility to adapt its data transmission speed to the current weather conditions.

PPC-350 supports Adaptive Code and Modulation (ACM) in which changes of coding rate and modulation are set in real time, based on the link conditions. This feature enables to increase radio link availability.

When the link's SNR (Signal to Noise Ratio) is high (during good weather conditions), operation at full capacity is enabled, reaching the maximum speed of 350Mbps. In case that the link's SNR drops significantly (during heavy rain), the channel capacity is reduced up to 80Mbps.

The figure shows radio bridge capacity varies due to changes in SNR level.



PPC-350 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
- Secure communication due inability to intercept the laser-like beam transmission at free air
- Solid reliability with Fiber-like Performance
- Distance ranges of up to 5.7 mile (9.2 km) at 350Mbps and 8 mile (13.1 km) at 80Mbps at 10mm/h rain for 40.5-43.5 GHz frequency band with 90 cm antenna
- Distance ranges of up to 4.5 mile (7.2 km) at 350Mbps and 5.6 mile (9 km) at 80Mbps at 10mm/h rain for 71-76/81-86 GHz frequency band with 90 cm antenna
- Easily installed, Zero maintenance
- Compact Cassegrain type antennas
- Quasi-optical (laser-like) propagation of millimeter wave emission
- EMI interference free



PPC-350 Series

Specifications PPC-350

Specifications

Frequency Band	E-band		Q-band	
Bandwidth	71-76/81-86 GHz (74-76/84-86 GHz for Czech Republic)		40.5-43.5 GHz	
Capacity	up to 350 Mbps Full duplex			
Allocated Bandwidth	56 MHz +56 MHz, 112 MHz in total			
Modulation Type	from QPSK to QAM-256			
Rx Sensitivity at BER 10 ⁻⁶	-67dBm at 350Mbps	-77dBm at 80 Mbps	-69dBm at 350Mbps	-79dBm at 80 Mbps
Output Power	13dBm (20mW) at 350Mbps	20dBm (100mW) at 80Mbps	13dBm (20mW) at 350Mbps	20dBm (100mW) at 80Mbps
Max Distance with 60 / 90 cm antenna in clear sky	>20 km (12 mile) at 350Mbps	>20 km (12 mile) at 80Mbps	>20 km (12 mile) at 350Mbps	>20 km (12 mile) at 80Mbps
Max Distance with 60 / 90 cm antenna at 10 mm/h rain	5.5 / 7.2 km (3.4 / 4.5 mile) at 350Mbps	7.5 / 9 km (4.6 / 5.6 mile) at 80Mbps	7.9 / 9.2 km (5 / 5.7 mile) at 350Mbps	10.9 / 13.1 km (6.8 / 8 mile) at 80Mbps
Link budget 300 / 450 / 600 / 900 mm	170 / 178 / 182 / 188 dB at 350Mbps	187 / 195 / 199 / 205 dB at 80Mbps	158 / 166 / 170 / 178 dB at 350Mbps	175 / 183 / 187 / 195 dB at 80Mbps
Network Management	SNMP v.1; v.2; v.3; MIB-II and DOK Enterprise MIB; WEB			
Ethernet Interface	1000 Base-SX / 1000 Base-LX			
Connector Type	Harting hybrid 2x fiber + 4x power (optional: hermetical cord installed)			
Diagnostics Port	100 Base-Tx (RJ - 45)			
Forward Error Correction	LDPC; Reed Solomon			
Latency	200 μs			
Polarization	Vertical / horizontal - optional			

Antenna

Antenna Type	Cassegrain type antenna with radome	
Antenna Gain/Beamwidth		
30 cm	45 dB/0.7°	38 dB/1.5°
45 cm	49 dB/0.5°	42 dB/1°
60 cm	51 dB/0.35°	44 dB/0.7°
90 cm	54 dB/0.25°	48 dB/0.5°

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	-40°C to 50°C / -40°F to 122°F
Humidity	Any Rate

Physical Dimensions

Outdoor unit size w/o antenna	340 x 230 x 120 mm
Weight (ODU w/o antenna)	6 kg max
Complete set	2 ODU + 2 antennas

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

PPC - 350 - QXX / YY

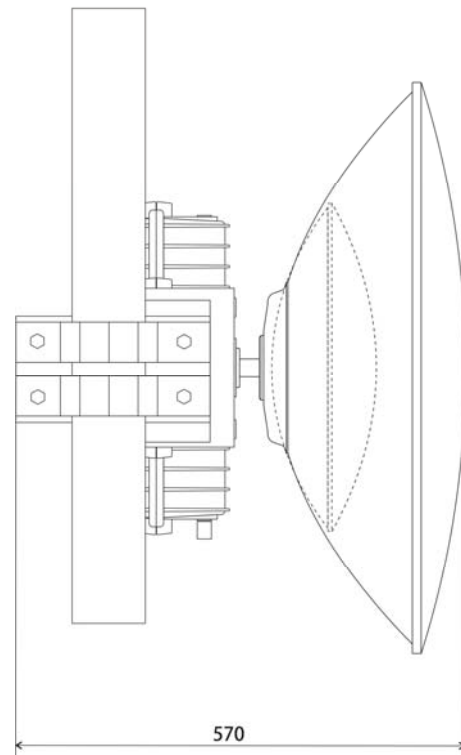
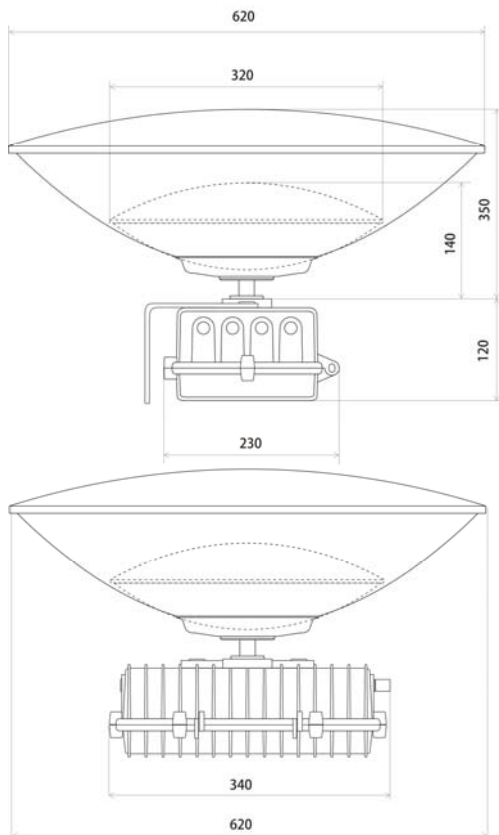
Q - 40.5 - 43.5 GHz
E - 71-76/81-86 GHz

30 - 30 cm
45 - 45 cm
60 - 60 cm
90 - 90 cm

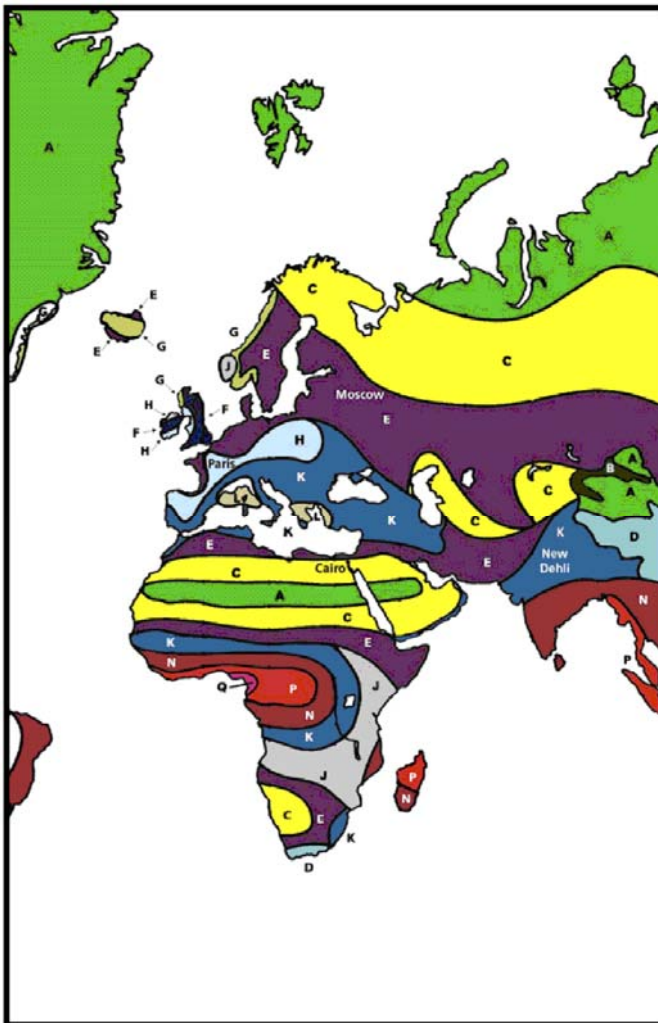
SM - singlemode fiber
MM - multimode fiber
TP - twisted pair

For example, PPC-350 link with 60 cm antenna diameter and single mode fiber optic cable for 40.5 – 43.5 GHz frequency band has product code PPC-350-Q60/SM.

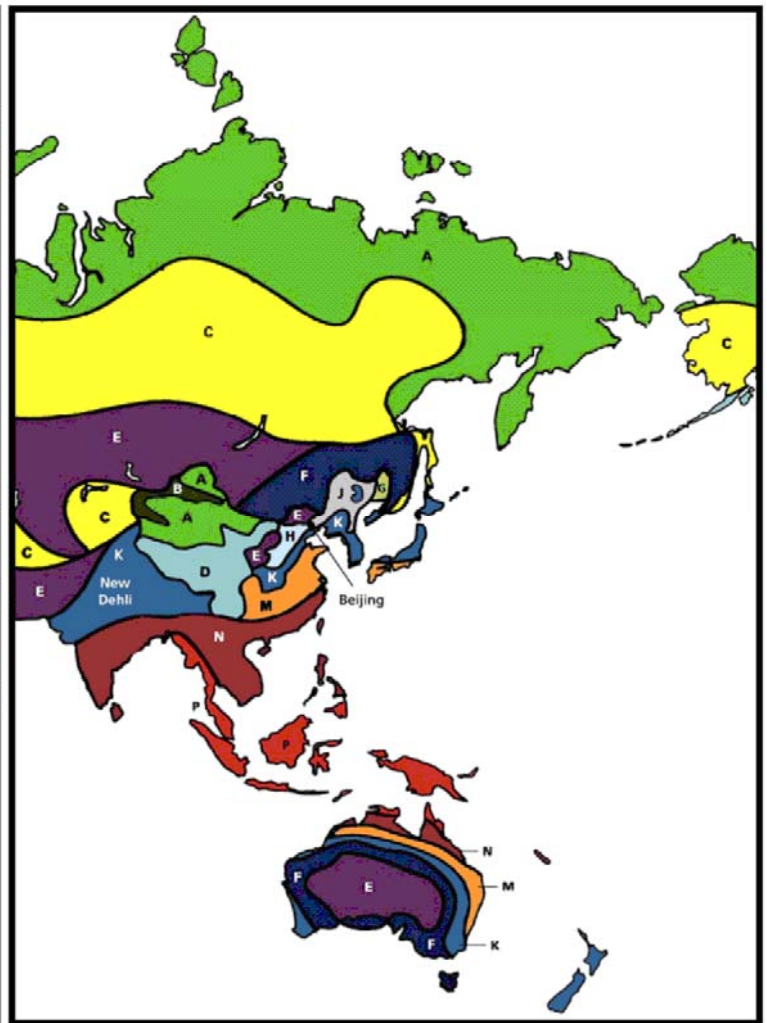
PPC -350 unit size with antenna



Rain zone versus availability dimensions



Europe/Africa Rain Regions



Asia-Pacific Rain Regions



Americans Rain Regions

Region	Distance PPC-350 Q-Band with 600 / 900 mm antenna QPSK modulation (km)		Distance PPC-350 E-Band with 600 / 900 mm antenna QPSK modulation (km)	
	99.9%	99.99%	99.9%	99.99%
A	>20 / >20	16,2 / >20	17,8 / 19,5	13,5 / 14,8
B	>20 / >20	12,8 / 14,4	15,4 / 17,6	8,5 / 9,5
C	18 / >20	10,5 / 12,1	14,8 / 16,0	7,3 / 7,9
D	16,7 / 18,4	9,0 / 10,1	12,9 / 14,3	6,0 / 6,7
E	15,2 / 16,7	7,4 / 8,3	12,0 / 12,9	5,1 / 5,5
F	14,5 / 16,5	7,3 / 8,2	11,2 / 12,2	4,7 / 5,1
G	13,2 / 15,4	6,8 / 7,9	11,0 / 11,6	4,5 / 5,0
H	12,3 / 14,4	6,3 / 7,5	9,5 / 10,4	4,2 / 4,7
J	12,3 / 14,4	6,0 / 6,9	8,3 / 9,0	4,2 / 4,7
K	10,4 / 11,8	5,3 / 6,1	6,9 / 7,3	3,9 / 4,3
L	9,0 / 10,1	5,0 / 5,6	6,0 / 6,5	3,8 / 4,2
M	7,5 / 8,3	4,8 / 5,2	4,9 / 5,2	3,6 / 4,0
N	6,0 / 6,7	4,2 / 4,8	4,4 / 5,1	3,2 / 3,4
P	5,2 / 5,9	3,8 / 4,1	3,8 / 4,2	2,5 / 2,8
Q	4,3 / 5,2	3,0 / 3,5	3,5 / 4,0	2,0 / 2,3