# World's First 10-Gigabit Point-to-Point Millimeter Wave Radio Link

# Announced by ELVA-1

**ELVA-1 Outdoor Millimeter Wave Radio Link offers 10 Gbps Full-Duplex Ethernet Capacity in 1+0 Radio**

ELVA-1 has launched production of the world's first commercially available ultra-high throughput millimeter wave link with its new PPC-10G family of radios. This link is currently available for shipment as a capital equipment purchase or lease to customers worldwide.

The PPC-10G provides full-duplex data rates of up to 10 Gbps in a single, zero-footprint, all-outdoor solution. Its maximum operating distance is up to **20 km** (12 miles) for links equipped with 60 cm antennas.
The link is intended for use in point-to-point applications such as 4G/LTE Backhaul, Corporate Campus Networks, IPTV, and Wireless ISP backbone.

The PPC-10G 10-Gig millimeter wave platform is based on state-of-the-art MMIC chips, which support **QAM 256** (Quadrature Amplitude Modulation) in digital data radio communications. QAM 256 modulation uses 8 bits per symbol. Drawing upon its lengthy experience in the design of precision low noise mm-wave scientific instruments, 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 10 Gpbs data rate.

One of the key features of PPC-10G is Adaptive Code and Modulation (ACM) support. In rainy conditions, the PPC-10G's built-in ACM retains connectivity by decreasing link throughput. It adapts the modulation scheme to obtain the highest data rate for the given conditions. By reverting to lower-order modulation schemes of 128 QAM, 64 QAM, 32 QAM, 16 QAM or 8 QAM, the link can support a reliable connection, even in heavy rainfall. As the weather clears, throughput automatically increases to maximum.

One advantage of millimeter wave technology is that up to four PPC-10G parallel links may be installed at the same point-to-point locations, and aggregated into one 40 Gbps channel with no mutual interference.

With unparalleled capacity in the wireless link market, 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) frequencies formats with 30 cm or 60 cm antennas. PPC-10G utilizes Ethernet protocol, which is the evolving standard for switches and routers available from a variety of telecommunication equipment manufacturers.

The ELVA-1 PPC-10G is a fully outdoor radio link, designed for temperature variations between -50°C to +65°C and humidity up to 100%.

Optionally, PPC-10G links can be equipped with built-in high-grade, high-performance Ethernet level 2 switches with advanced configuration options, including support for SyncE and IEEE1588v2 (TC, BC), as well as CPRI (Common Public Radio Interface) for up 9.8 Gpbs connectivity.

For more PPC-10G information, please visit http://elva-1.com/products/a40106.

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