

HaulPass E10g™

10 Gigabit E-Band Wireless Link

PRODUCT BRIEF



10 Gbps E-Band Link Spanning up to 10 km

The HaulPass E10g is an advanced E-Band millimeter wave radio link that delivers high-speed, low-latency, full-duplex wireless data communications. The flexible E10g operates in two modes:

- 2 x 1.25 Gbps Ethernet connectivity incorporating a fully integrated Ethernet switch (2.5 Gbps aggregate throughput)
- 10 Gbps direct fiber-to-radio connectivity for maximum throughput and minimum latency

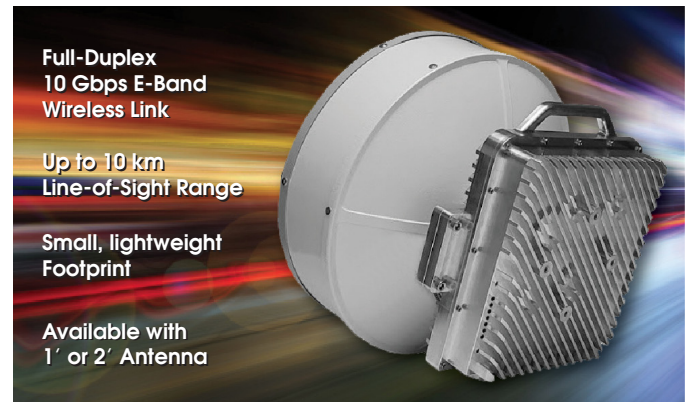
Housed in a small, lightweight enclosure that's easy to deploy, the HaulPass E10g radio link utilizes the lightly licensed E-Band spectrum to cost-effectively meet the ever-expanding needs of today's bandwidth-hungry networks.

Advanced E-Band Wireless Technology

The HaulPass E10g supports line-of-sight, point-to-point wireless spans up to 10 kilometers (6.2 miles). The flexible E10g connectivity solution supports the attachment of an external antenna depending on the range required.

The E10g provides 100 MHz to 2 GHz channel bandwidth, advanced intelligence, and comprehensive Ethernet switching functionality. Integrated low-latency forward error correction (< 10 μs) assures data transmission reliability.

Weighing only 4 kg (8.8 lbs) and designed for extreme weather operation, the HaulPass E10g features a ruggedized outdoor enclosure with a compact diameter of only 26.3 cm (10.4"). The E10g can be powered via PoE++ or via a separate auxiliary 48 VDC input, drawing only 45 watts.



Future-Proof Connectivity Solution

Incorporating Vubiq Networks' patented Modular Integrated Waveguide technology, the HaulPass E10g is a future-proof solution that meets the ultra high-speed wireless needs of today and the future. Immediate ROI is achieved thanks to an economic price point and rapid, pain-free deployment.

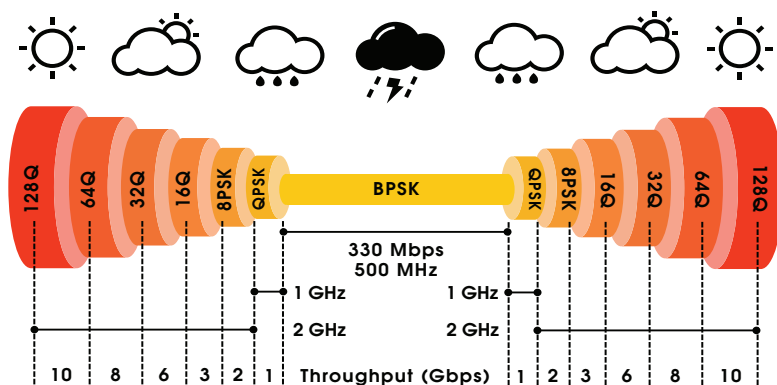
Thanks to our Adaptive Code Modulation and Baud (ACMB) technology, the E10g's code rate, modulation and baud are instantly set in real time, resulting in hitless adjustment to link conditions. This advanced feature maintains critical traffic transport even in the most adverse weather conditions.

HaulPass E10g Features at a Glance

- 2 x 1.25 Gbps Ethernet and 10 Gbps fiber wireless link
- Lightly licensed E-Band millimeter wave operation
- Up to 10 km (6.2 miles) point-to-point range
- Small, lightweight footprint
- Available with 1' or 2' antenna
- Low power requirements via PoE++ or standard 48 VDC
- Hitless adaptive coding, modulation and baud rate
- Intelligent AGC for maximum network throughput
- SNMP v 2.0 with private MIB and radio MIB

Carrier Frequencies	<ul style="list-style-type: none"> Lightly licensed E-Band millimeter wave; 71-76 GHz; 81-86 GHz programmable 31.25 MHz channel step size
Channel Bandwidth	<ul style="list-style-type: none"> 100 MHz to 2 GHz (baud rate, coding, and modulation programmable)
Modulation	<ul style="list-style-type: none"> BPSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM, 128QAM
Throughput	<ul style="list-style-type: none"> 1.4 Gbps to 10 Gbps, adaptive (hitless)
Transmit Power	<ul style="list-style-type: none"> +15 dBm maximum, programmable
Receive Noise Figure	<ul style="list-style-type: none"> 7 dB typical, 10 dB maximum
Antenna Gain	<ul style="list-style-type: none"> 1' parabola 43 dBi; 2' parabola 50 dBi
Antenna Beamwidth	<ul style="list-style-type: none"> 1' parabola 0.9°; 2' parabola 0.5°
FEC	<ul style="list-style-type: none"> LDPC
Overall Latency	<ul style="list-style-type: none"> < 10 μs
Status LEDs	<ul style="list-style-type: none"> 7 RGB bar-graph layout, programmable functions
Network Interfaces	<ul style="list-style-type: none"> Full Duplex: 1000BASE-T RJ45 (2) (2.5 Gbps aggregate), 1000BASE-X SFP, 10000BASE-X SFP+ (10 Gbps) Auto-negotiation, MDI/MDI-X Address learning, aging and lookup Jumbo frame support to 10K
Carrier Ethernet Options*	<ul style="list-style-type: none"> Feature-rich CE networking with quality of service (QoS), VLAN, MPLS-TP, Policers, MEF CE 2.0 compliant TCAM-based QoS classification L2 switching/L2 multicast
Network Topologies*	<ul style="list-style-type: none"> Ring, daisy chain, mesh
Network Management*	<ul style="list-style-type: none"> HTTP web server with GUI client Command line interface (CLI) Simple Network Management Protocol (SNMP) v 2.0 with private MIB and radio MIB
Software Features	<ul style="list-style-type: none"> Enhanced Intelligent Automatic Gain Control (AGC) Mean squared error (MSE) Adaptive coding, modulation, baud rate (ACMB hitless)
Link Range	<ul style="list-style-type: none"> Up to 10 km; throughput dependent and rain fade dependent
Power Requirements	<ul style="list-style-type: none"> 45 watts, PoE++ on RJ45 Port 1, or auxiliary power input at 48 VDC
Weight**	<ul style="list-style-type: none"> 4 kg (8.8 lbs.)
Dimensions**	<ul style="list-style-type: none"> Nominal (without flanges/protrusions): 26.3 cm (10.4") high, 24.6 cm (9.7") wide, 9.87 cm (3.9") deep Maximum (with flanges/protrusions): 29.9 cm (11.8") high, 27.94 cm (11") wide, 9.87 cm (3.9") deep
Water/Dust Ingress	<ul style="list-style-type: none"> IP67
Operating Temperature	<ul style="list-style-type: none"> -40°C to 55°C (-40°F to 130°F)

*Available via gigabit ports only
 **Excluding antenna



E10g Adaptive Code Modulation and Baud (ACMB)



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