Liberator **E1000e Dual Port**

High capacity dual port 70/80 GHz band radio powers mobile backhaul, HD CCTV, and enterprise connectivity

The Liberator E1000e Dual Port is an easy to deploy, cost-effective, wireless Ethernet point-to-point bridge operating in the 70/80 GHz millimeter wave E band, delivering full duplex capacity of up to 1 Gbit/s. Link distances of up to 4 km are supported. A secondary data port with both GigE copper & SFP sockets, allows flexibility for either Cat5 or fiber connections interchangeably. This allows both copper and fiber tributaries to be aggregated over the radio link, and is particularly useful for daisy-chaining in small cell backhaul applications.

With 30 or 60 cm antennas, the E1000e Dual Port is an all-outdoor, small form factor platform for low profile street or roof deployments. With interference free operation, multiple radios can be co-located, maximizing flexibility and minimizing site acquisition costs. Combining carrier class performance and advanced features such as adaptive modulation, multi-channel operation, low latency, software-activated flexible link throughput and AES 256 bit encryption, the E1000e Dual Port supports many backhaul and connectivity applications.

Ideal for high speed backhaul and short haul connectivity

Anywhere that high capacity, short haul point-to-point connectivity is required, the Liberator E1000e Dual Port shines. Applications include:

- Small cell 3G and LTE backhaul
- Last mile broadband Internet Service Provision
- Backbone / fiber extension and wired network bridging
- Wireless security and video surveillance / CCTV backhaul
- Building to building private links and campus connectivity

Novel & Innovative Technology

A combination of leading-edge technology and superior attention to detail in every element of design and manufacture means that the E1000e Dual Port radio packs huge performance and resilience into a small form factor platform. The use of frequency division duplexing (FDD) means that the full capacity of the radio is available in both directions simultaneously, rather than being shared.

About the E band

The E band is a pair of 5 GHz-wide channels between 71–76 GHz and 81–86 GHz. This 10 GHz of spectrum, which is typically available on a lightly licensed basis, supports much higher throughput than traditional microwave technology, while also enabling link distances of up to 4 km. Multiple channel options in the 70/80 GHz E band allow deployment without interference, ideal for a wide variety of high capacity connectivity and backhaul applications.

Practicality and performance in a dual port, feature-packed, lightweight device.

- Link distances up to 4km range
- Up to 1 Gbit/s full duplex capacity with FDD
- Primary port GigE/PoE, secondary data port GigE copper/SFP
- SyncE and 1588v2 timing
- Interference-free operation in 70/80 GHz millimeter wave E band
- All outdoor unit, small form factor, lightweight antennas
- Robust aluminum housing to withstand weather conditions
- 256 bit AES encryption option available for added security
- Easy alignment with optical scope

Liberator E1000e Dual Port millimeter wave E band radio

Specifications

Frequency bands	71-76/81-86 GHz paired
Modulation	8-PSK/QPSK
Range	Up to 4000 meters
Ethernet throughput	Full duplex: 1 Gbit/s (8-PSK)/700 Mbit/s (QPSK)/500 Mbit/s
Maximum Tx power	+7 dBm
Channel width	500 MHz
Antenna gain	44 dBi/51 dBi
Link adaptation	Adaptive coding and modulation, ATPC
Ultra-fast boot time	10 seconds from power-up to full data transmission
Availability	Up to 99.999% (use Link Availability Calculator)
Mean time between failures (MTBF)	25 years
Wind load	160 km/h (operating) and 200 km/h (survival)
Latency	<250 microseconds
Synchronization	SyncE and IEEE 1588v2
VLAN for management	IEEE 802.IQ
Quality of service (QoS)	802.1p, DiffServ, 8 queues
Network management	SNMP v1, v2c, v3
Graphical user interface (GUI)	HTTP web browser
Alarms	User-defined alarms and thresholds on GUI, Syslog, SNMP
Statistics	1 min, 15 min, 24 hour statistics over 30 days, downloadable
Firmware control	Dual firmware banks with safety rollback feature
Encryption	AES 256-bit with license key upgrade
Data ports	Port 1 GigE copper, Port 2 optional GigE copper or fibre SFP
Alignment	Voltmeter port, professional long-range alignment scope
Outdoor unit (ODU) terminal size	182 x 182 x 100 mm
Weight	2.5 kg (ODU only)
Power supply	Power Over Ethernet ("Ultra-PoE"/PoE++), consumption 40W
Operating temperature	-40°C to +55°C

About Fastback Networks

Fastback Networks was founded with a vision to deliver innovative technology for the mobile infrastructure of the future. Fastback solutions enable network operators to expand and enhance services, and private networks to secure, monitor and manage operations via high capacity data connectivity. With insights derived from the collective team's experience building leading edge radio and data networking solutions, Fastback Networks looks at the challenges of 4G/5GLTE deployment with fresh eyes and better ideas, and develops transformational mobile backhaul solutions that enable the acceleration of the mobile future. Fastback Networks is a privately held company funded by Business Growth Fund, Foundation Capital, Granite Ventures, Harmony Partners, Juniper Networks Junos Innovation Fund, and Matrix Partners. More information is available at **www.fastbacknetworks.com.**

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