

## Liberator-V1000

The future of wireless backhaul

### Liberator-V1000

#### Applications

Gigabit Small Cell Backhaul

Campus Connectivity

Fiber Extension

#### Highlights

1 Gigabit Full-Duplex in 60 GHz band

All-Outdoor invisible footprint

Smallest Form Factor

Optimized for street level deployment

Robust Aluminium Housing

SyncE & 1588 Compliant

Optional 256 bit AES encryption

#### About 60 GHz

The 60GHz band is license-free or license-exempt in most countries. Due to Oxygen Absorption it is possible to operate without interference issues, even when deploying links in close proximity to each other. Large networks can be deployed and operate at extremely high densities with tens of links deployed on a single roof top or street. Sub10's combination of narrow beam width and high quality construction, gives the Liberator series outstanding performance and excellent frequency reuse.



### Gigabit Full-Duplex & All-Outdoor Wireless Backhaul for dense network deployments

The Liberator V1000 is an extremely versatile and cost-effective all-outdoor wireless ethernet link operating in the 60 GHz Band delivering a Full-Duplex data rate of 1000 Mbps for distances up to 800 metres. Optimized for invisible street level deployments, the V1000 provides an ideal solution for challenging high-density applications with exceptionally high throughput requirements such as Small Cell Backhaul, Fiber Extensions, Campus Connectivity, Wireless Video Surveillance and Data Center Backhaul.

The combination of a high gain antenna with particularly low sidelobes and the option to use multiple channels ensures excellent interference immunity and allows multiple co-located units on a single pole to overcome pole sway, twist and/or tilt. The patent-pending "Snapback" SyncE allows rapid synchronization in just a few seconds, and the future-proof programmable platform allows new features to be added as Carrier & Enterprise requirements change in the future. The Liberator V1000 is an easy-to-deploy and flexible wireless backhaul solution designed to meet the highest throughput and reliability requirements.

For more information please contact us!

[www.sub10systems.com](http://www.sub10systems.com)

## Technical specifications for Liberator-V1000

Frequency Bands	57 - 64 GHz Band
Modulation	8-PSK / QPSK / BPSK
Range	up to 800 metres
Ethernet throughput	1Gbps (full-duplex 8-PSK)
Max Tx Power	+6 dBm
Max EIRP	44 dBm
RX Sensitivity	-60 dBm
Channel width	250 / 500 MHz
Antenna gain	38 dBi
Link adaptation	Adaptive coding & modulation, ATPC
Interference immunity	Channel switch capability
Availability	Up to 99.999% (use Sub10 Link Availability Calculator)
MTBF	25 years
Wind load	160 km/h (operating) and 200 km/h (survival)
Ethernet frame size	64 bytes up to 9,600 bytes
Latency	< 200 microseconds
Synchronisation	SyncE, IEEE 1588v2, patent pending snapback technology
VLAN for management	IEEE 802.1Q
QoS	Flow control, 802.1p, DiffServ, 8 queues
Network management	SNMP v1, v2c, v3
GUI	HTTP web-browser
Encryption	AES 256 bit as an option available
Connector	RJ-45 (outdoor gigabit Ethernet seal kit included)
Voltage alignment port	Waterproofed QMA socket
ODU Terminal size	182 x 182 x 68mm
Weight	2,5 kg
Power supply	Power Over Ethernet ("Ultra-PoE" / PoE++), consumption 30W
Operating temperature	-40°C to +55°C

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