



HORIZON QUANTUM

HIGH CAPACITY PACKET MICROWAVE

THE HORIZON QUANTUM ALLOWS SERVICE PROVIDERS AND ENTERPRISES TO SATISFY RAPIDLY INCREASING CAPACITY NEEDS IN A SIMPLE, COST EFFECTIVE AND TIMELY FASHION.

Delivering from 2 to 4 Gbps per link, Horizon Quantum represents the next generation in packet microwave technology and sets a new benchmark for performance. With dual-channel capability, this split-mount system is a step change in spectral efficiency, capacity, nodal intelligence, and operational simplicity; all while occupying only half a rack unit and consuming the lowest power per bit of any solution today. In addition, the Horizon Quantum's integrated switching means that it can provide aggregation and restoration in a single unit.

With this level of performance – in a packet microwave system that is remarkably simple to install and operate – operators can now avoid the high cost and long delays associated with fiber deployments, yet achieve the capacity and reliability they require for all of their future applications and services.

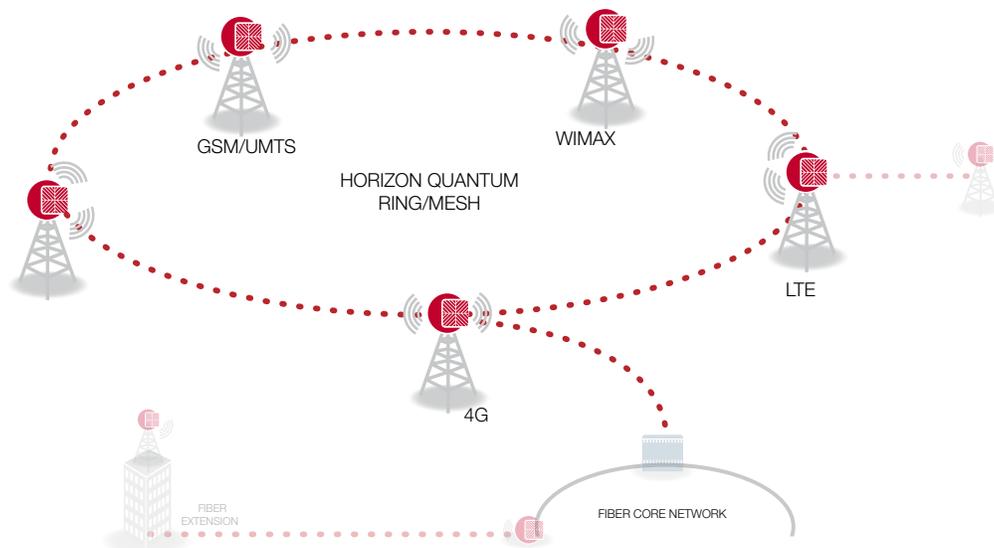
This Horizon Quantum, carrier-grade packet microwave system operates in licensed spectrum from 6 to 38 GHz.

SOLUTION HIGHLIGHTS

- 2 to 4 Gbps capacity with DragonWave's Bandwidth Accelerator
- 8 GbE ports with intelligent nodal ring and mesh switching for carrier-grade reliability
- Highest spectral efficiency
- Advanced radio features including service aware Hitless Automatic Adaptive Modulation (HAAM) and XPIC
- SyncE support and optimized transport of 1588v2
- Pay-as-you-grow with automatic remote scalability
- Advanced security with integrated 256-bit AES encryption
- Comprehensive Ethernet OAM support (802.3ah, 802.1ag, Y.1731)
- Advanced QoS support with 8 levels of prioritization
- Comprehensive management and provisioning with DragonView NMS
- Lowest total cost of ownership solution

KEY APPLICATIONS

- Mobile Backhaul
- Leased Line Replacement
- Last Mile Fiber Extension
- Private and Enterprise Networks



FREQUENCIES

| | |
|-------------|---------------------------|
| 6 GHz | FCC/IC/ETSI/ITU |
| 7 GHz | ETSI/ITU/MX |
| 8 GHz | ETSI/ITU |
| 11 GHz | FCC/IC/ETSI/ITU |
| 13 GHz | ETSI/AUS/NZ/ITU |
| 15 GHz | IC/ETSI/AUS/NZ/MX/ITU |
| 18 GHz | FCC/IC /ETSI/AUS/NZ/ITU |
| 23 GHz | FCC/IC/ETSI/AUS/NZ/ITU/MX |
| 24 GHz UL | FCC/IC/ETSI |
| 24 GHz DEMS | FCC/IC |
| 26 GHz | ETSI |
| 28 GHz | FCC/ETSI |
| 38 GHz | FCC/ETSI/AUS/NZ/MX |

FEATURES

| | |
|------------------------|---|
| Capacity w/Accelerator | Variable from 10 to 2000 Mbps full duplex CIR 2x capacity up to 4 Gbps with Dual Pole Radio Mount (DPRM) |
| Base Capacity | Variable from 10 to 800 Mbps full duplex CIR 2x capacity up to 1.6 Gbps with DPRM |
| Interface | 6X 10/100/1000bT + 2 SFP Ports |
| Packet Size | 64 to 9600 Bytes |
| Flow Control | Yes |
| Prioritization | 8 levels served by 4 queues, based on 802.1p/q, MPLS, DSCP ToS Bits |
| Modulations | QPSK to 1024QAM |
| Modulation Shifting | Yes: Hitless |
| Loopback | Yes: IF, Modem, Microwave loopback |
| XPIC | Yes, enables Co-Channel Cross Polarization |
| Synchronization | SynchE support and optimized transport of 1588v2 |
| Encryption | Integrated 256-bit AES encryption |

POWER

| | |
|------------------------------|---|
| Input | -36 VDC to -60 VDC or +36 VDC to +60 VDC |
| Optional Adapter | 110/240 VAC |
| Typical Consumption: | |
| Single Channel, Single Radio | 91 Watts |
| Dual Channel, Single Radio | 105 Watts |
| Dual Channel, Dual Radio | 146 Watts |
| * Based on 23 GHz | |

MECHANICAL

| | |
|--------------------------|---|
| Modem (IDU) | 4.3 cm x 32 cm x 22 cm; 2.4 kg 1.7" x 12.75" x 8.6"; 5.3 lbs |
| Radio (without antenna) | 20 cm x 20 cm x 9 cm; 3.2 kg 7.8" x 7.8" x 3.6"; 7 lbs |
| Antenna Wind Loading | 110 kph (70 mph) Operational 200 kph (125 mph) Survival |
| Antenna Mount Adjustment | +/- 45° Azimuth; +/- 22° Elevation |

CONNECTIONS

| | |
|----------|-----------------------------|
| Power | Dual Feed 48V |
| Data | 6XRJ45 (100/1000bT) + 2XSFP |
| IF Cable | N-Type female connector |
| CTL Port | RJ45 (RS232) |

NETWORK MANAGEMENT (NMS)

| | |
|----------------------|---|
| Management Access | In or out of band |
| Alarm Management | SNMP Traps, Enterprise MIB |
| NMS Compatibility | DragonView NMS; any SNMP based network manager; SNMP v1, v2c and v3 |
| Security | 3 Level Authentication, Radius, SSL, SSH |
| EMS | Web based management system |
| Ethernet OAM Support | 802.3ah, 802.1ag, Y.1731 |
| Logging | Syslog, alarms logging, bandwidth logging and performance logging |

ENVIRONMENTAL

| | |
|------------------------------|-----------------------------------|
| Radio Operating Temp. | |
| Std Power & Solar Shield | -40°C to +60°C (-40°F to +140° F) |
| IDU Operating Temp. | 0°C to +50°C (32°F to +122° F) |
| Extended IDU Operating Temp. | -40°C to +60°C (-40°F to +140° F) |
| ODU Humidity | 100 % Condensing |
| IDU Humidity | 95% Non-Condensing |
| Altitude | 4500 m (14,760 ft) |
| NEB-3 Compliant | Yes |