



HARMONY ENHANCED

HIGH POWER HIGH CAPACITY PACKET MICROWAVE

SERVICE PROVIDERS CAN NOW DO MORE WITH THE ZERO-FOOTPRINT HARMONY ENHANCED

This high-capacity packet microwave system delivers big performance in small package. Since the radio and modem are integrated into a single highly compact outdoor unit, Harmony Enhanced is a zero-footprint solution - eliminating rack congestion and minimizing collocation space. Equipped with DragonWave's Bandwidth Accelerator+ technology, the Harmony Enhanced achieves the highest degree of spectral efficiency (through 2048 QAM and wide channels) delivering more capacity per channel with a longer reach than most other out-door microwave systems. Harmony Enhanced delivers industry-leading capacities up to 500 Mbps with in a single link and 1Gbps in a single antenna with XPIC.

With unmatched capacity and system gain, single installation and operation in addition to sophisticated remote management capability, the Harmony Enhanced delivers significant lifecycle cost savings for service providers and enterprises.

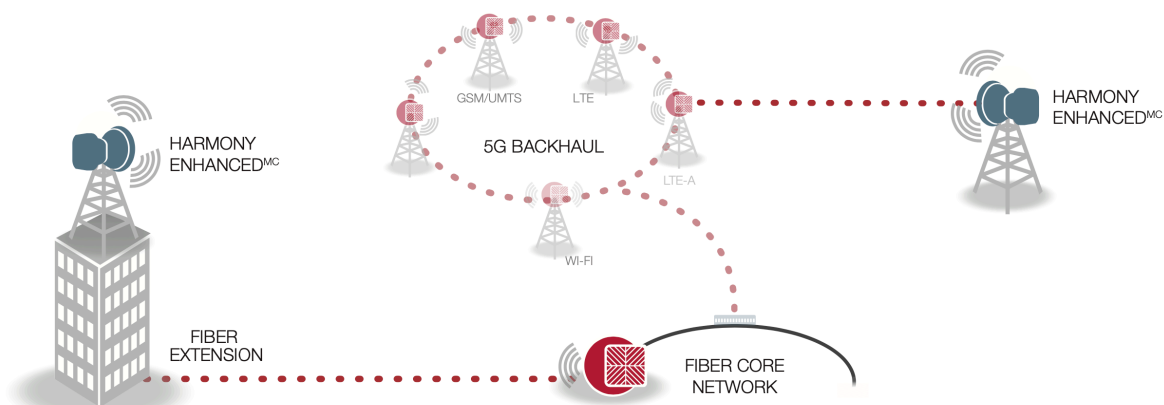
The innovative, carrier-grade packet microwave solution operates in licensed or unlicensed spectrum from 6 to 38 gigahertz (GHz).

SOLUTION HIGHLIGHTS

- Zero footprint, fully integrated all-outdoor unit
- Ultra High Power radio option with up to 34 dBm of transmit power
- Single Radio XPIC configuration
- Wide channel support up to 56 MHz
- Up to 2048QAM modulation support
- Service aware Hitless Automatic Adaptive Modulation (HAAM)
- Support for SyncE
- Pay-as-you-grow with automatic remote scalability
- Multi-port capability including an integrated 10Gb Ethernet port
- Advanced QoS support with 8 levels of prioritization
- Comprehensive management and provisioning with NetViewer NMS
- Intuitive EMS with LinkView
- 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
7/8 GHz	ETSI/ITU/
11 GHz	FCC/ETSI/ITU/IC
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
26 GHz	ETSI
28 GHz	FCC/ETSI
38 GHz	FCC/ETSI/AUS/NZ/MX

FEATURES

Base Capacity	Variable from 10 Mbps to 1 Gbps full duplex with DPRM on a single antenna*
Capacity w/Accelerator	Bandwidth Accelerator+ delivering up to 2x increase in base throughput
Latency GigE	<100µs @ 2048QAM, 56 MHz
Modulations	QPSK to 2048QAM
Channel Bandwidth	3.5 MHz to 56MHz
Maximum Tx Power	Up to 29dBm and up to 34dBm in the High Power Variant
Modulation Shifting	Yes, Hitless
Loopback	Yes, Radio loopback and Ethernet
Synchronization	Synchronous Ethernet (with ESMC)

MECHANICAL

Interface	2 x 10/100/1000bT + 2 x Optical SFP
Input	40.5 VDC to -57.5 VDC or +40.5 VDC to +57.5 VDC
Radio/Modem (without antenna)	21.6 cm x 25.4 cm x 12.8cm; 4.1kg 8.5" x 10" x 5.05"; 9lbs
Antenna Wind Loading	112 kph (70 mph) operational 200 kph (125 mph) survival
Antenna Mount Adjustment	+/- 45° Azimuth; +/- 22° Elevation

* Assumes 56MHz bandwidth
** Assumes minimum moving air speed of 10 km/h

ELEMENT MANAGEMENT

Alarm Management	SNMP Traps, Enterprise MIBs
NMS Support	DragonWave's NetViewer or any SNMP based network manager
EMS Support	LinkView
SNMP Support	V1, V2c, V3
Management Access	Web based management, SMNP Telenet
Ethernet OAM Fault Management	802.1ag
Authentication, Authorization & Accounting	RADIUS
Management Interface	In band and out of band
Addressing	IPv4 / IPv6

ENVIRONMENTAL

Operating Temp	-40°C to+ 55°C (-40°F to+131° F)**
Humidity	100 % Condensing
Altitude	5000 m (16,404 ft)
Water Tightness	IP66 (directed hose test)
Operational Shock	ETSI 300-019-1-4; 5g 11ms
Operational Vibration	ETSI 300-019-1-4 Class 4m5
Earthquake	NEBS GR-63

ETHERNET

Packet Size	Up to 9600B
Flow Control	Color Aware congestion avoidance (WRED)
Prioritization	8 levels served by 8 hardware queues, based on 802.1p/q, MPLS, DSCP

