



TwinWave R2k17

GENERAL DESCRIPTION

The TwinWave is an IP-native full outdoor system, integrating two radios in a small and easy-to-install housing, to provide extremely high speed connections in 17/24 GHz unlicensed frequency bands, and 26 GHz. Supporting high-level modulation schemes up to 1024 QAM (with future upgrades to 2048 and 4096 QAM), combined with ACM and XPIC capabilities, the TwinWave is the best solution available in the market to achieve, in just one compact housing, a reliable and performing GE microwave link.

A "real" GIGABIT ETHERNET RADIO, unmatched for costs/performance benefit, TwinWave features a very useful value-added function: actually it is the only Full Outdoor Unit able to be connected to a remote Split-Mount system in the same link, ideal situation for last mile connections from towers to buildings. The integrated Dual Channel Modem supports two active radios to aggregate or switch the traffic between the links in cross-polarization. Wideband transmissions are supported with CH BW up to 60 MHz @ 17 GHz and up to 80 MHz @ 24 GHz, providing a maximum achievable throughput exceeding 1 Gbps full-duplex.

MAIN FEATURES

- Up to 2 Gbps aggregate capacity @ 17 GHz
- Up to 2.5 Gbps aggregate capacity @ 24 GHz
- Up to 1.8 Gbps aggregate capacity @ 26 GHz
- Available modulation schemes:
QPSK/16/32/64/128/256/512/1024QAM
- Integrated XPIC mechanism.
- Customer network data interface:
 - 2 x RJ Gigabit Ethernet (100/1000Base-T)
 - 2 x SFP (1000BaseSX/LX)
- USB port for safe system recovery.
- "In-Band"/"Out-of-Band" Management.
- Support of RADIUS Server authentication for users remote access.

SYSTEM ADVANTAGES

- Point-to-Point links carrying data, voice and HD video.
- Enterprise and private MW networks: OIL&GAS, WISP, UTILITIES, HEALTHCARE, DISASTER RECOVERY, FIBER EXTENDER.
- High capacity backhaul and last-mile links.
- Stable connections up to 20 Km @ 99,9% availability at highest speed with Integrated antennas.
- Patentend Circular WG Direct-Mount system for antennas from 0.2 to 1 m.
- Remote-Mount system with flex WG connection to any antenna (brand/size independent).
- Full Outdoor to Split Mount compatibility

SYSTEM FEATURES

- FEC – Forward Error Correction with RS Coding.
- Hitless and Errorless Adaptive Coding & Modulation (ACM) with dynamic capacity allocation and priority data transmission (PBPS – Packet Based Priority System).
- On-line Ethernet packet compression with reduced length of frames allowing throughput efficiency increase up to 25%.
- NAT, Proxy ARP support for effective IP management setup.
- Large range of System and Ethernet Counters.
- Adaptive Power Control ATCP.
- Built-in Network Management System (NMS) – http, https, SNMP v1,2,3, TELNET, SSH.
- Built-in Bit Error Rate (BER) Tester + Built-in Spectrum Analyzer.
- Integrated synchronization solution.
- AES-128/256 encryption for data confidentiality.

SPECIFICATIONS

SYSTEM PARAMETERS			
Frequency Band	17 GHz	24 GHz	26 GHz
Operating Frequency (GHz)	17.1-17.3	24.0-24.25	24.5-26.5
Tx Power (dBm)			
QPSK	+23	+23	+23
16, 32, 64 QAM	+20	+20	+20
128 QAM	+18	+18	+18
256 QAM	+16	+16	+16
512 QAM	+15	+15	+15
1024 QAM	+14	+14	+14
Rx Sensitivity (dBm) @10 ⁻⁶ BER	BW 60 MHz	BW 80 MHz	BW 56 MHz
QPSK	-83	-82	-83
16QAM	-77	-75	-77
32 QAM	-74	-72	-74
64QAM	-71	-69	-71
128 QAM	-68	-66	-68
256 QAM	-65	-63	-65
512 QAM	-62	-61	-62
1024 QAM	-57	-56	-57
Antenna Port interface	Proprietary Circular WG		
ATPC Range	20 dB		

THROUGHPUT				
Mod.	BW	User Rate (Mbps) Strong FEC	User Rate (Mbps) Medium FEC	User Rate (Mbps) Lite FEC
QPSK	56	176	188	198
16QAM	56	351	377	396
32QAM	56	439	471	495
64QAM	56	527	565	594
128QAM	56	614	659	693
256QAM	56	702	753	792
512QAM	56	790	848	891
1024QAM	56	878	942	989
QPSK	60	182	196	205
16QAM	60	365	391	411
32QAM	60	456	489	514
64QAM	60	547	587	616
128QAM	60	638	684	719
256QAM	60	729	782	822
512QAM	60	820	880	925
1024QAM	60	911	978	1027
QPSK	80	244	262	275
16QAM	80	488	523	550
32QAM	80	610	654	687
64QAM	80	732	785	825
128QAM	80	854	916	962
256QAM	80	976	1047	1100
512QAM	80	1097	1177	1238
1024QAM	80	1219	1308	1375

MECHANICAL/ENVIRONMENTAL

Dimensions	280 x 300 x 120 mm (W x D x H)
Weight	8.5 Kg
Operating Temp.	-35° to +55°C
Altitude	Up to 4500 meters
Humidity	100% all-weather

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