

RADWIN

2000E Connectorized / Integrated

Data Sheet

RW-2U50-E1MM

RW-2U50-E2MM



Product overview

RADWIN 2000 E is a premium, ultra-capacity Point-to-Point (PtP) solution for backhaul, access and for connecting a wide variety of bandwidth demanding applications.

RADWIN 2000 E Point-to-Point is an outdoor radio that works in the 4.9 to 6GHz band and delivers up to 2.5Gbps. The radio ensures outstanding performance and the highest possible throughput in congested spectrum, using a field-proven air interface. The unit comes with an integrated antenna that assures best interference mitigation via remarkably low side lobe levels.

RADWIN 2000 E exceptionally powerful packet-switching performance facilitates high short packet traffic. It also leverages upon the industry-strong encryption scheme (AES 256), to ensure top level security. RADWIN 2000 E enables radio collocation using a built-in GPS, to save upon hub tower space when deployed in the hub site. IP 67 compliant, RADWIN 2000 E is extremely durable.

Product Highlights

- » Up to 2.5Gbps net aggregated¹
- » 4.9-6.06 GHz
- » Ch. BW 20 / 40 / 80 / 160 MHz¹
- » Integrated antenna - 24dBi, -22dB SLL
- » Up to 4096QAM
- » Latency (avg) < 2.5msec
- » Up to 120 km / 75 miles
- » Adaptive modulation
- » Dynamic CBW selection
- » Configurable UL/DL ratio
- » TDD synchronization for collocation²
- » AES256 over-the-air encryption
- » 8 queues QOS (Diffserv/802.1P)²
- » Built-in GPS
- » Highly durable - IP 67
- » GPS-based regulation identification

¹ May be limited. Subject to regulation

² In roadmap – Future SW upgrade

Product specifications

Configuration	
Architecture	Outdoor unit with integrated panel antenna; Outdoor unit with 2x N-Type connectors / optional kit with dish antenna
Wireless topology	Point to Point unit
Data interfaces	100/1000/2500Mbps Full Duplex RJ45 PoE, 1000Mbps Full Duplex SFP
POE interface	Outdoor CAT-5e; Maximum POE cable length: 75m for 1000 & 2500 BaseT
Radio	
Max capacity	2.5Gbps (Universal), 1.2Gbps (FCC) net aggregate throughput
Range	Up to 120 km / 75 miles
Frequency Range	4.900 GHz – 6.06 GHz ¹
Channel bandwidth	Configurable: 20, 40, 80, 160 MHz ¹
Dynamic Channel BW selection	20/40/80/160 MHz
Modulation	OFDM - BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM
Error correction	FEC (LDPC) R = 1/2, 2/3, 3/4, 5/6
Adaptive modulation and Coding	Supported
Duplex technology	TDD
Antenna modes	MIMO 2x2, adaptive spatial multiplexing/diversity
Max TX power	26 dBm ¹ per chain
Encryption	AES256
TDD intra/inter site sync	built-in GPS ² (Supported constellations: GPS, Galileo, Glonass, Beidou, QZSS)
Uplink/Downlink ratio	Configurable: 50/50, 25/75, 75/25.
Spectrum scan	Supported ²
DFS	Supported ²
RFD (Radio Frame Duration)	2.5msec
Networking	
QoS	Packet classification to 8 priority queues ² according to 802.1P or DiffServ
VLAN support	802.1Q, QinQ ² , VLAN tagging ²
MTU size	1540 bytes. Jumbo frame support ²
ODU management	IPv4/IPv6 ² dual-stack; SNMPv1 ² , SNMPv3 ² ; HTTP/HTTPS ² using web browser; SSH ²
Layer 2 bridge	Supported

¹ May be limited. Subject to regulation

² In roadmap – Future SW upgrade

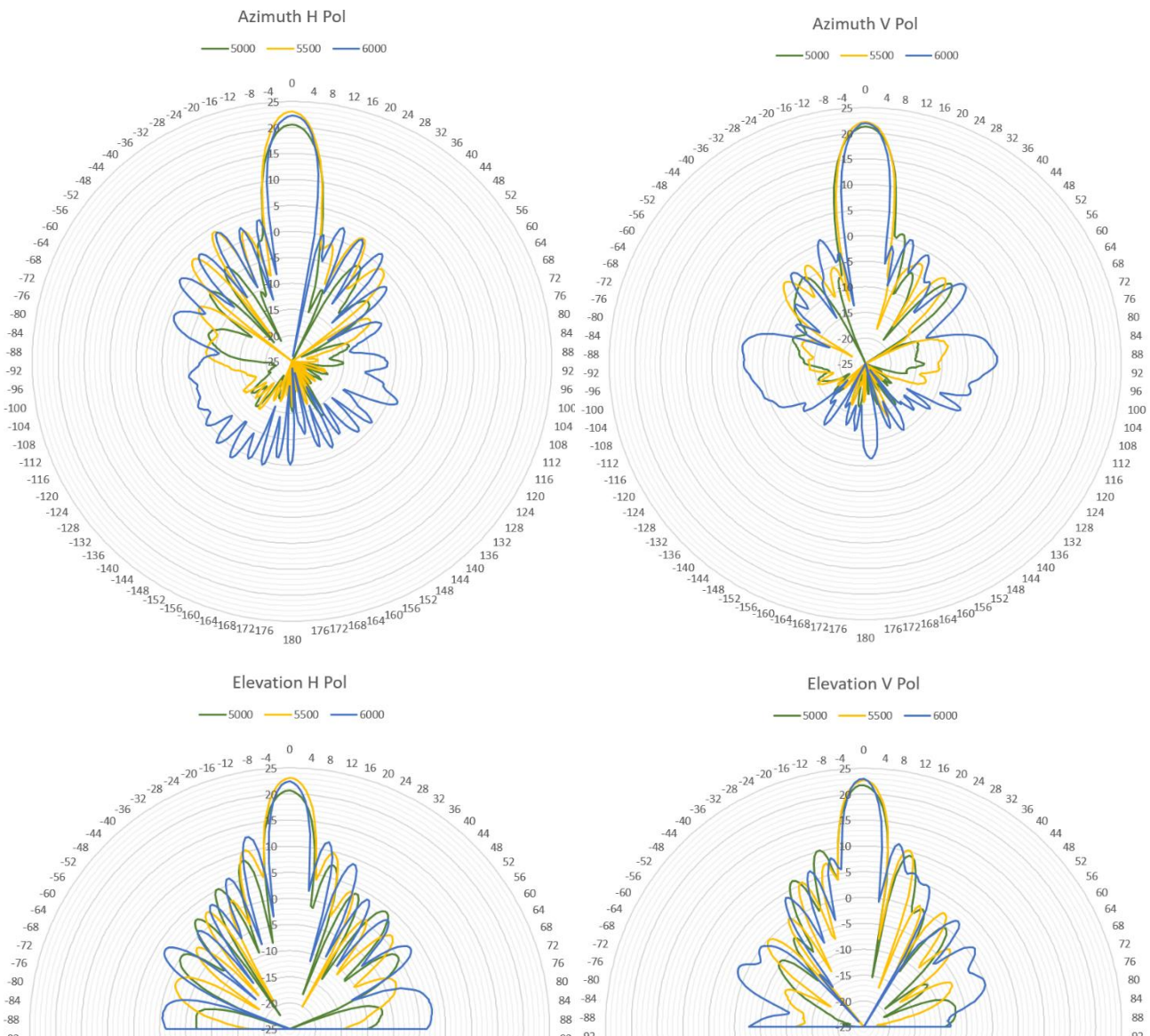
Supported frequency bands

Supported bands *					
Band	CBW 20MHz [GHz]	CBW 40MHz [GHz]	CBW 80MHz [GHz]	CBW 160MHz [GHz]	Radio Compliance
4.9 - 6 GHz Universal	4.900-6.060	4.900-6.060	4.900-6.060	4.900-6.060	Universal
5.1 GHz FCC	5.170-5.250	5.170-5.250	5.170-5.250	-	FCC 47CFR Part 15.407
5.730-5.845 GHz FCC / ISSED	5.730-5.845	5.730-5.845	5.730-5.845	-	FCC 47CFR Part 15.407 ISSED RSS-247
5.730-5.845 GHz MII	5.725-5.850	5.725-5.850	5.725-5.850	-	CMIIT RTA

* Actual supported bands are determined automatically according to the regulation allowed in the country in which the device is located and detected by the built-in GPS

Antenna (Integrated)

Integrated Antenna	
Type	Panel
Gain	24 dBi (typical)
VSWR	2
3 dB Azimuth beamwidth	9 deg
3 dB Elevation Beamwidth	8 deg
Polarization	Dual Linear (Vertical and Horizontal)
Sidelobes level	-22 dB(typical)
Cross polarization	20 dB
F/B Ratio	27 dB
Port To Port isolation	30 dB



Radio unit Physical Specification

Mechanical	
Dimension Connectorized	258 x 125 x 107 mm / 10.1 x 4.9 x 4.2 Inch
Dimension Integrated	373 x 370 x 98 mm / 14.7 x 14.6 x 3.9 Inch
Weight	Conn: 1.2 Kg / 2.7 lbs INT: 2.6 Kg / 5.7 lbs
Power	
Power consumption	Up to 30W
Power feeding	Power feeding over CAT5E PoE cable
POE input range	42.5–57.0 V. standard 802.3AT
Environmental	
Operating temperature	-40°C to 60°C / -40°F to 140°F
Humidity	100% condensing
Enclosure protection	IP 67 per EN/IEC 60529, NEMA Type 4/4X Enclosure
MTBF	>1,200,000 hours (Telcordia SR332 @25°C)
Lightning protection	DC Grounded enclosure
Wind resistance	180kmh / 112 mph
Maritime	IEC-60068-2-11 Test Ka: Salt mist.

Regulatory compliance

Radio*	
Universal	
USA	FCC 47CFR Part 15.407
Canada	ISED RSS-247
China	CMIIT RTA
EU ²	ETSI EN 301 893, ETSI EN 302 502
Safety	
EU	EN/IEC 62368-1, EN/IEC 60950-22
USA/Canada (cTUVus)	UL/CSA-C22.2 62368-1, UL/CSA-C22.2 60950-22
EMC	
USA	FCC 47CFR Part 15 Subpart B, Class B
EU ²	ETSI EN 301 489-1, ETSI EN 301 489-4, ETSI EN 301 489-17 ² , ETSI EN 301 489-19
Canada	ICES-003, CISPR 32 Class B
AS/NZS	CISPR 32 Class B

* The applicable regulation is automatically detected world-wide based on the built-in GPS

Product ordering

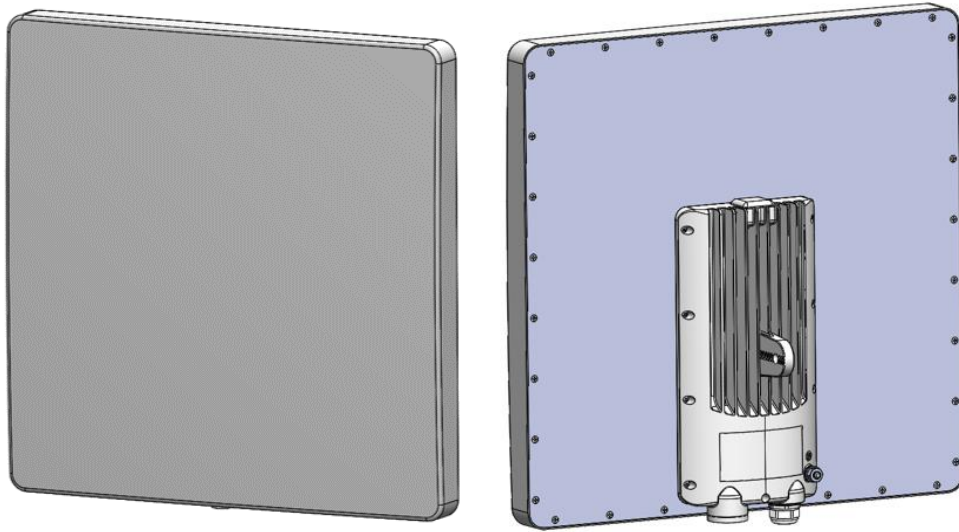
Radio units		
Part number	Product name	Part description
RW-2U50-E2MM	RW2000/ODU/E/F50/WW/EXT	Connectorized Radio unit 4.9-6GHz, for all regulations
RW-2U50-E1MM	RW2000/ODU/E/F50/WW/INT	Integrated Radio unit 4.9-6GHz, for all regulations
External Antenna with bracket (optional)		
Part number	Product name	Part description
RW-9732-4965	RW-ANT/4965/DISH/DP/25	Dish antenna 25dBi, with bracket to connect radio unit
Supplementary equipment		
Part number	Product name	Part description
RW-9921-400X series	POE/AC/2.5/GBE/	POE AC indoor, 56V. Dedicated PN for each country
RW-9921-2069	POE/DC/2.5/GBE/ET/10-60	POE DC indoor 2.5G 35W
RW-7400-8008	POE switch – IDU-SI ²	POE switch industrial grade
RW-7401-6006	IDU-S/HP	POE switch high power
RW-9924-0106/8	LPU	Outdoor LPU 2.5Gbe
RW-9922-0011	Mounting/Kit/ODU/M	Maritime pole / wall mounting Kit
RW-9923-0021	SFP/Fiber/MM/1G/850NM	SFP Transceiver 1Gbps Multi-Mode 850nm
RW-9923-0022	SFP/Fiber/SM/1G/1310NM	SFP Transceiver 1Gbps Single-Mode 1310nm
RW-9923-0025	SFP/Copper/1000Base-T	SFP Transceiver 1000 BASE-T

Package contents

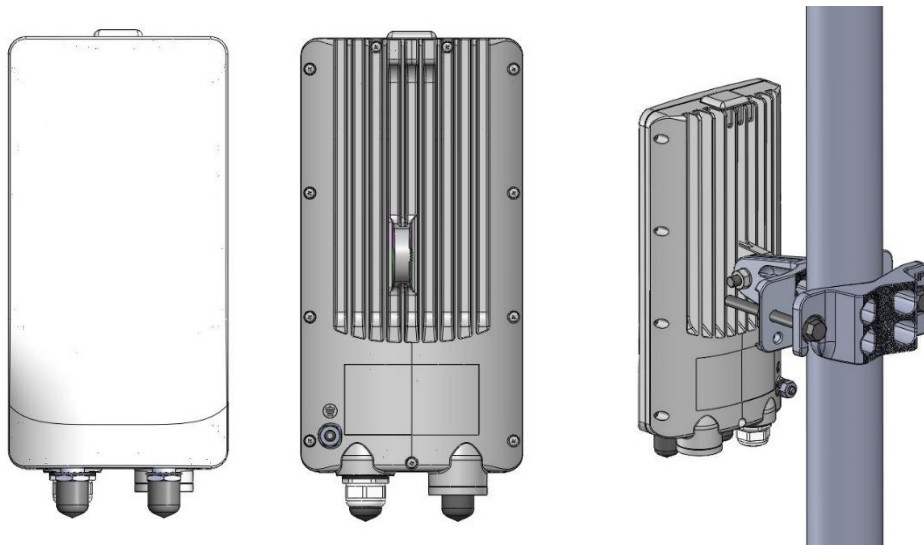
P/N	Main content	Accessories
RW-2U50-E2MM	Radio unit connectorized	Pole / wall Mounting Kit IP67 Cable gland
RW-2U50-E1MM	Radio unit integrated	Pole / wall Mounting Kit IP67 Cable gland
RW-9732-4965	Dish antenna 25dBi	Mounting bracket for antenna-radio unit integration 2 RF Cables

Devices diagrams

2000E integrated



2000E connectorized radio



2000E connectorized with optional dish antenna (RF cables not shown in the diagram)

