



RADWIN 2000 Radio Series

Carrier-Class, High-Capacity Sub-6GHz Backhaul Solutions for IP and TDM Networks

Product Highlights

- 100 Mbps net throughput
- Native TDM (up to 16 E1/T1s) and Ethernet
- Multiple frequency bands over single platform (2.4 and 4.9 – 5.9 GHz)
- Superior spectral efficiency at 20MHz channel
- Advanced OFDM and MIMO technologies
- Long range: up to 120 km/75 miles
- Built-in mechanisms to mitigate interference

The RADWIN 2000 Radio Series delivers high capacity, extended range and carrier-class performance for IP and TDM networks, offering a flexible combination of Ethernet and up to 16 E1/T1 interfaces.

RADWIN 2000 incorporates advanced MIMO and OFDM technologies and provides native TDM and Ethernet over a single wireless link. The flexible multi-band radio supports multiple sub-6GHz bands on a single platform and complies with worldwide regulations including FCC, ETSI, IC Canada, WPC India and MII China.

RADWIN 2000

High-Capacity Sub-6GHz Backhaul Solutions

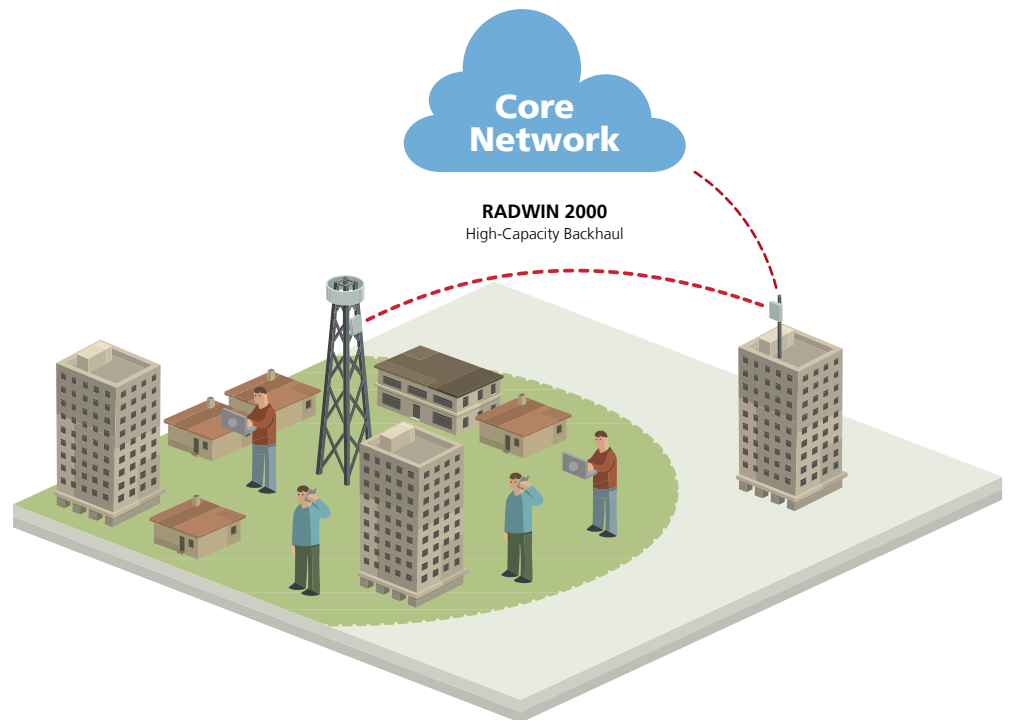
Key Benefits

- Flexible combination of E1/T1 and Ethernet traffic over single wireless link
- Carrier-class radio delivering best performance in sub-6GHz bands
- High capacity and long range to meet today's and tomorrow's backhaul requirements
- Enabling seamless migration from TDM to IP infrastructure
- Easy to install, simple to maintain
- Significant reduction in cost of ownership (reduced CAPEX and OPEX)
- License-exempt solution for quick time-to-market

RADWIN 2000 is the solution of choice for carriers looking for affordable backhaul solutions. With ever increasing demand for broadband services, carriers require high-capacity, cost-effective backhaul solutions. RADWIN 2000 enables carriers to accommodate capacity growth and maintain profitability through unparalleled price and excellent performance. The high-capacity radio system provides 100 Mbps net throughput (50 Mbps full-duplex) with up to 16 E1/T1 interfaces and a range of up to 120 km/75 miles.

With a flexible combination of native TDM and Ethernet, RADWIN 2000 prepares operators for seamless migration from TDM to IP and enables them to offer both voice and data services to their customers. Delivering multiple frequency bands over a single platform, RADWIN 2000 grants utmost field flexibility and simple stock management.

Built on RADWIN's proprietary air interface, coupled with advanced built-in Diversity, MIMO and OFDM technologies, RADWIN 2000 delivers optimal performance and unequaled robustness in sub-6GHz bands.



RADWIN 2000 offers TDM and IP backhaul over a single wireless link

RADWIN 2000 Specifications

Typical Applications

Whenever you need a product that delivers more – increased capacity, extended range, carrier-class performance and enhanced flexibility - RADWIN 2000 is the right solution for you.

RADWIN 2000 is ideally suited for a range of applications including cellular backhaul, backhaul for IP and WiMAX networks and broadband wireless connectivity for large corporations and private networks demanding high capacity.

Configuration									
Architecture	ODU: Outdoor Unit with Integrated Antenna or Connectorized Unit for External Antenna IDU: Indoor Unit or PoE device								
IDU to ODU Interface	Outdoor CAT-5e cable								
Radio									
Capacity	100 Mbps net throughput (50 Mbps full duplex)								
Range	Up to 120 km/75 miles								
Frequency Bands	Multi-band radio supporting 2.412 to - 2.472 GHz and 4.950 - 5.950 GHz								
Channel Bandwidth	20 MHz								
Tx Power	Max: 25 dBm Dynamic range: 35 dBm, configurable by RADWIN Manager								
Adaptive Modulation & Coding	Supported								
Automatic Channel Selection	Supported								
Duplex Technology	TDD								
Error Correction	FEC k = 1/2, 2/3, 3/4, 5/6								
Encryption	AES 128								
Radio Parameters									
Modulation	2x2 MIMO, OFDM								
	BPSK		QPSK		16QAM		64QAM		
FEC Rate	1/2	1/2	3/4	1/2	3/4	2/3	3/4	5/6	
Maximum Air Rate [Mbps]	13	26	39	52	78	104	117	130	
Sensitivity (dBm) @BER <10e-11 (20MHz)	-88	-86	-83	-81	-80	-72	-70	-67	
TDM Interface									
Number of Ports	Up to 16								
Type	E1/T1 configurable by RADWIN Manger								
Framing	Unframed (transparent)								
Timing	Independent timing per port, Tx and Rx								
Connector	RJ-45								
Standards Compliance	ITU-T G.703, G.826								
Line Code	E1: HDB3 @ 2.048 Mbps, T1: B8ZS/AMI @ 1.544 Mbps								
Latency	Configurable: 5-20 msec (default: 8msec)								
Impedance	E1: 120Ω, balanced T1: 100Ω, balanced								
Jitter & Wander	According to ITU-T G.823, G.824								
Ethernet Interface									
Ethernet ports	2 in IDU; 1 in PoE device 10/100BaseT with Auto-Negotiation (IEEE 802.3u) Framing/Coding IEEE 802.3								
SFP port	Supported in IDU (type FE)								
VLAN Support	VLAN transparent; Separate VLANs for service traffic and Management traffic								
Information Rate	Configurable in steps of 1Kbps								
Connector	RJ-45								
Maximum Frame Size	2048 Bytes								
Latency	3 msec (typical)								
Impedance	100Ω								

RADWIN 2000 Specifications

Management	
Management Application	RADWIN Manager
Protocol	SNMP and Telnet
NMS Application	RNMS (RADWIN NMS)
Mechanical	
Dimensions	ODU with Integrated Antenna: 37.1(w) x 37.1(h) x 10.0(d) cm; 3.5 kg / 7 lbs ODU Connectorized: 19.0(w) x 27.0(h) x 7.0(d) cm; 1.8 kg / 3.6 lbs IDU: 43.6(w) x 4.4(h) x 21(d) cm; 1.5 kg / 3.3 lbs
Power	
Power Feeding	-20 to -60 VDC; Dual connectors feed Optional AC/DC adaptor
Power Consumption	< 35 W (IDU+ODU)
Environmental	
Operating Temperatures	ODU: -35°C to +60°C / -31°F to +140°F IDU: 0°C to +50°C / +32°F to +122°F
Humidity	ODU: IP-67 up to 100% non-condensing IDU: 90% non-condensing
Radio Regulations	
FCC 47CFR	Part 15, Subparts C&E; Part 90, Subpart Y
IC (Canada)	RSS-210. RSS-111
ETSI	EN 300 328; EN 301 893; EN 302 502
WPC (India)	GSR-38
MII (China)	5.8GHz Band Regulation
Safety	
FCC/IC (cTUVus)	UL 60950-1, CAN/CSA 60950-1 C22.2
ETSI	EN/IEC 60950-1; CE
EMC	
FCC	CFR47 Class B, Part15, Subpart B (2007)
ETSI	EN 300 386 (2005), EN 301 489-1 (2003), EN 301 489-4 (2002)
CAN/CSA-CEI/IEC	CISPR 22-04 Class B
AS/NZS	CISPR 22-2004 Class B



RADWIN is a member of the WiMAX Forum.

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