WinLink™ 1000

Carrier-Class Sub-6 GHz Radio Systems
Price & Performance Leadership in Wireless Broadband

RADWIN's WinLink 1000 wireless broadband solutions deliver carrier-class performance at the most competitive price in the market.

Packing native TDM and Ethernet in one platform over the 2.3-2.9 GHz and 4.9-6.0 GHz spectrum bands, the WinLink 1000 solutions provide high capacity connectivity of up to 22 Mbps and long range of up to 80 Km/50 miles.

The solutions comply with worldwide regulations and standards and are deployed globally by leading carriers, service providers and public and private networks requiring high-capacity connectivity.

Product Highlights

- Native TDM and Ethernet over a single wireless link
- Up to 22 Mbps full-duplex net throughput
- Operational range of up to 80 Km/ 50 miles
- Extremely simple to install and maintain
- Supporting a variety of frequencies: 2.3 - 2.9 GHz and 4.9 - 6.0 GHz
- Available in PtP and Multiple Point-to-Point architectures
- Local and remote network management
- Monitored Hot Standby 1+1 support

RADWIN

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Key Benefits

- Extend network reach rapidly and affordably
- Multi-band feature supports multiple frequencies in one radio
- Eliminate recurring leased line charges
- Robust solutions operate in extreme temperatures and challenging topographies
- OFDM technology enables operation in non line-of-sight
- High service availability through built-in 1+1 and Ring topology

Typical Applications

Cellular & IP Backhaul

WinLink 1000 solutions present a cost-effective alternative for backhauling voice and data traffic, significantly reducing operators' backhaul expenses. Providing a flexible combination of native TDM and Ethernet over a single wireless link, the WinLink 1000 solutions enable the seamless migration from TDM to all-IP networks.

Broadband Access

WinLink 1000 systems enable operators to deliver high-capacity, dedicated bandwidth to end-users. The carrier-class solutions meet high performance and quality standards set out in SLAs.

Private Network Connectivity

Public and private networks such as enterprises, municipalities, utility companies and universities can quickly and cost-effectively connect multiple sites and own and control their network connectivity.

Video Surveillance Transmission

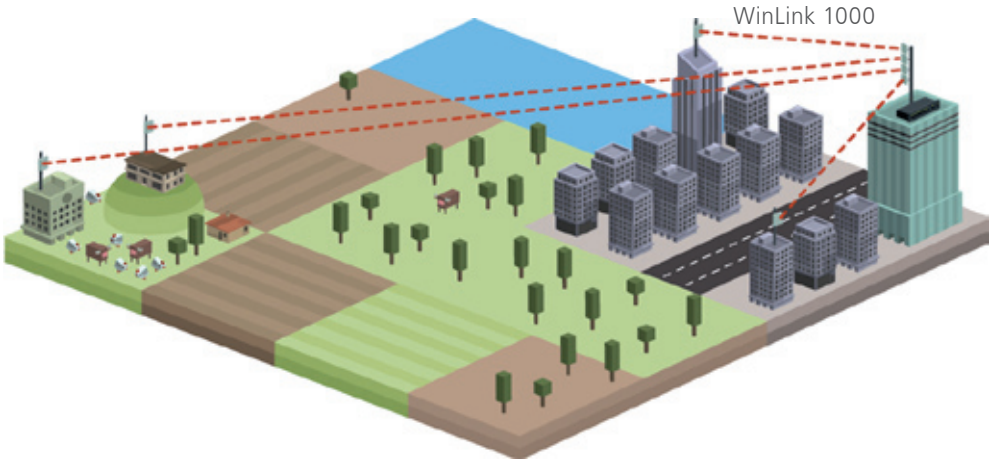
WinLink 1000 systems transmit high quality video from megapixel video cameras in real-time from any point.

Multiple Point-to-Point

RADWIN WinLink 1000 radios can be deployed in a Multiple Point-to-Point topology, where as many as 16 units can be installed in a single site.
RADWIN's Hub Site Synchronization (HSS) feature eliminates interference common to collocation installation. Additionally, RADWIN's GPS-based Synchronization Unit (GSU) can eliminate interference between sites in dense deployments.

Service Protection

WinLink 1000 offers TDM service protection via Monitored Hot Standby support, and built-in Ethernet service protection via 1+1 or Ring topology, which ensures maximum service availability in case of equipment failure or link drop.



Multiple Point-to-Point Deployment

WinLink 1000 Specifications

ODU with Integrated Antenna

IDU-E

IDU-C (4 E1/T1 ports + 2 Ethernet ports)

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; Maximum cable length: 100m
Radio	
Range	Up to 80 Km/50 miles
Frequency Bands	2.302 - 2.900 GHz and 4.940 - 6.030 GHz Multi-band radios available
Capacity	Up to 22 Mbps full-duplex net throughput
Channel Bandwidth	5/10/20 MHz*
Maximum Tx Power	Up to 27 dBm*
Adaptive Modulation & Coding	Supported
Automatic Channel Selection	Supported
Duplex Technology	TDD
Error Correction	FEC; k=1/2, 2/3, 3/4
Encryption	AES 128
TDD Synchronization	In-site synchronization Inter-site synchronization via GSU unit
Modulation	OFDM – BPSK/QPSK/16QAM/64QAM
Received Dynamic Range	>60 dB
Ethernet Interface	
Number of Ports	2 in IDU-C and IDU-E; 1 in PoE device 10/100BaseT with Auto-Negotiation (IEEE 802.3u) Framing/Coding IEEE 802.3
SFP Port	Supported in IDU-C (type FE)
Bridging	Self-learning up to 2047 MAC addresses Hub/Bridge mode configurable
VLAN	802.1Q, QinQ Tagging (supported in IDU-C and IDU-E RW-71XX)
Maximum Information Rate	Configurable in steps of 1Kbps
Connector	RJ-45
Maximum Frame Size	2048 Bytes*
Latency	3 msec (typical)
Service Protection	1+1 and Ring topology
TDM Interface	
Number of Ports	4 E1s/T1s in IDU-C; Up to 2 E1s/T1s in IDU-E
Type	E1/T1 configurable by RADWIN Manager
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: 8 msec)
Impedance	E1: 120Ω , balanced T1: 100Ω , balanced
Jitter & Wander	According to ITU-T G.823, G.824
Service Protection	Monitored Hot Standby (MHS) 1+1 in IDU-C
Management	
Link Management Application	RADWIN Manager
Protocol	SNMP and Telnet
NMS Application	RNMS (RADWIN NMS)
Mechanical	
ODU	With 1ft integrated antenna: 30.5cm(w) x 30.5cm(h) x 5.8cm(d) Weight: 1.5kg / 3.3lbs Without antenna: 13.5cm(w) x 24.5cm(h) x 4.0cm(d) Weight: 1.0kg / 2.2lbs
IDU-C	43.6cm(w) x 4.4cm(h) x 21cm(d) Weight: 1.5kg / 3.3lbs
IDU-E	22cm(w) x 4.4cm(h) x 17cm(d) Weight: 0.5kg / 1.1lbs

* May differ in specific products

WinLink 1000 Specifications

Power	
Power Feeding	-20 to -60 VDC (dual feed in IDU-C) 100-240 VAC, 50/60 Hz
Power Consumption	< 20W (ODU+IDU) < 10W (ODU+PoE device)
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: 100% condensing, IP67 (totally protected against dust and against immersion up to 1m) IDU: 90% non-condensing
Shock and Vibration	EN 300 019-2-4 IEC 60068-2 Class4M5
Radio Regulations	
FCC	47CFR, Part 15 Subparts C&E, Parts 27 and 90
IC (Canada)	RSS-210, RSS-111
ETSI	EN 301 893, EN 302 502
UK	VNS 2107
Australia	AS/NZS 4771
WPC (India)	GSR-38
MII (China)	5.8 GHz Band Regulation
Safety	
FCC/IC (cTUVus)	UL 60950-1, UL 60950-22, CAN/CSA C22.2 60950-1, CAN/CSA C22.2 60950-22
ETSI	EN/IEC 60950-1, EN/IEC 60950-22
EMC	
FCC	47CFR Class B, Part15, Subpart B
ETSI	EN 300 386, EN 301 489-4
CAN/CSA	CISPR 22-04 Class B
AS/NZS	CISPR 22:2006 Class B

Antennas			
	Gain	Beam Width	Form Factor
Inegrated or External Antenna 1ft	Up to 22dBi	20° or 9°	Flat panel
External Antenna 2ft	Up to 29dBi	4.5°	Dish/Grid/Flat panel
External Antenna 3ft	Up to 32dBi	4.5°	Dish
Additional antennas available in RADWIN catalogue			

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