

Product Highlights

- Native TDM and Ethernet over a single wireless link
- Up to 22 Mbps fullduplex 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

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.



Carrier-Class Sub-6 GHz Radio System

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 costeffective 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

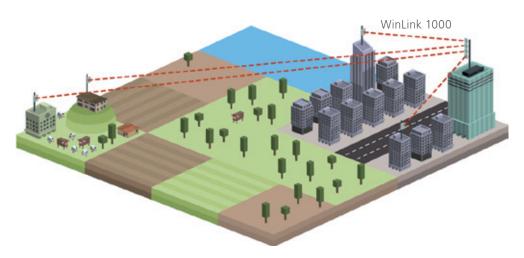
RADWIN WinLink 1000 radios can be deployed in a Multiple Point-to-Point topology, where as many as 16 units can be installed in a single site.

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.

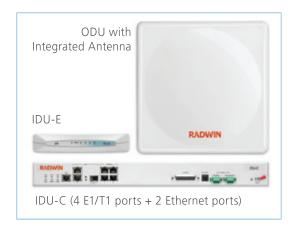
Service Protection

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



Architecture ODU: Outdoor Unit with Integrated Antenna or Connectorized Unit for External Antenna IDU: Indoor Unit or P6 device IDU to ODU Interface Outdoor CAT-5e cable; Maximum cable length: 100m Radio Range Up 108 0 Km/50 miles Prequency Bands Multi-band radios available Capacity Up 10 22 Mbps full-duplex net throughput Channel Bandwidth 5/10/20 MHz² Maximum Tx Power Up 10 27 dBm² Adaptive Modulation & Coding Automatic Channel Selection Supported Automatic Channel Selection Supported Automatic Channel Selection FEC; k=17, 2/3, 3/4 Encryption AES 128 TDD Synchronization Intersite synchronization in Intersite synchronization wia GSU unit Modulation CPDM - BPSK/OPSK/16QAM/54QAM Received Dynamic Range >60 dB Ethernet Interface Number of Ports 2 in IDU-C and IDU-E; 1 in P0E device 10/100Basser with Auto-Negotiation (IEEE 802.3 u) Framing/Coding IEEE 802.3 s SFP Port Supported in IDU-C (type E) Bridging Self-learning up to 2047 MAC addresses Hub/Bridge mode configurable VLAN 802.10, @10 Tagging (supported in IDU-C and IDU-E RW-71XX) Maximum Information Rate Configurable in steps of 1Kbps Connector R-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 R-4 Standards Compliance ITU-T G.703. G.826 Line Code E1: HDB3 @2.0 48 Mbps Time Code E1: HDB3 @2.0				
Architecture Connectorized Unit for External Antenna IDU: Indoor Unit or PoE device IDU to ODU Interface Outdoor CAT-5e cable; Maximum cable length: 100m 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 Mbms full-duplex net throughput Channel Bandwidth 5/10/20 MHz* Maximum Tx Power Up to 27 dBm* Adaptive Modulation & Coding Supported Adaptive Modulation & Coding Adaptive Modulation & Coding FEC; ker.1/2, 2/3, 3/4 Encryption TDD TDD TDD TDD TDD TDD TOD TOD	Configuration			
DU to ODU Interface Outdoor CAT-5e cable; Maximum cable length: 100m	Architecture	Connectorized Unit for External Antenna		
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Hub/Bridge mode configurable	SFP Port	Supported in IDU-C (type FE)		
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 T1: B8ZS/AMI @ 1.544 Mbps Latency Configurable: 5-20 msec (default: 8 msec) Impedance E1: 120Ω, balanced Jitter & Wander According to ITU-T G.823, G.824 Service Protection Monitored Hot Standby (MHS) 1+1 in IDU-C Management RADWIN Manager Protocol SNMP and Telnet NMS Application RNMS (RADWIN NMS) Mechanical IDU-C 43.6cm(w) x 4.4cm(h) x 21cm(d) Weight: 1.5kg / 3.3l	Bridging	5 1		
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: 18D3 @ 2.048 Mbps T1: BBZS/AMI @ 1.544 Mbps Latency Configurable: 5-20 msec (default: 8 msec) Impedance E1: 120Ω, balanced T1: 100Ω, 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 NMS (RADWIN Manager Protocol SNMP and Telnet NMS Application RADWIN GRADWIN NMS) Mechanical With 1ft integrated antenna: 30.5cm(w) x 30.5cm(h) x 5.8cm(d) Weight: 1.5kg / 3.3lbs UDU-C 43.6cm(w) x 4.4cm(h) x 17cm(d) Weight: 1.5kg / 3.3lbs </th <th>VLAN</th> <th colspan="2">802.1Q, QinQ Tagging (supported in IDU-C and IDU-E RW-71XX)</th>	VLAN	802.1Q, QinQ Tagging (supported in IDU-C and IDU-E RW-71XX)		
Maximum Frame Size 2048 Bytes* Latency 3 msec (typical) Service Protection 1+1 and Ring topology TDM Interface 4 E1s/T1s in IDU-C; Up to 2 E1s/T1s in IDU-E 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: B8Z5/AMI @ 1.544 Mbps Latency Configurable: 5-20 msec (default: 8 msec) Impedance E1: 120Ω, balanced T1: 100Ω, balanced T1: 100Ω, balanced T1: 100Ω, balanced Monitored Hot Standby (MHS) 1+1 in IDU-C Management RADWIN Manager Frotocol SNMP and Telnet NMS Application RADWIN Manager Protocol SNMP and Telnet NMS (RADWIN NMS) Weight: 1.5kg / 3.3lbs With 1ft integrated antenna: 30.5cm(w) x 30.5cm(h) x 5.8cm(d) Weight: 1.5kg / 3.3lbs With 1 1.0kg / 2.2lbs Vieight: 1.5kg / 3.3lbs IDU-C 43.6cm(w) x 4.4cm(h) x 17cm(d) IDU-C 22cm(w) x 4.4cm(h) x 17cm(d)	Maximum Information Rate	Configurable in steps of 1Kbps		
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 Protocol SNMP and Telnet NMS Application RNMS (RADWIN NMS) Mechanical 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 17cm(d)	Connector	RJ-45		
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Weight: 1.5kg / 3.3lbs 22cm(w) x 4.4cm(h) x 17cm(d)		Weight: 1.0kg / 2.2lbs		
	IDU-C	Weight: 1.5kg / 3.3lbs		
	IDU-E			

^{*} 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				

RADWIN