



# WinLink 1000

## High Capacity Carrier-Class Radio Relay



WinLink 1000 is a carrier-class, high capacity, point-to-point broadband wireless transmission system offered at the lowest market prices. It is designed for service providers and enterprises that require immediate deployment in license exempt frequencies.

WinLink 1000 packs legacy TDM and Ethernet services over 5.725-5.850 GHz unlicensed bands, effectively connecting voice and data over a single link. Implementation costs are further decreased by the direct connection of WinLink 1000 to existing legacy equipment, which eliminates the need for mediation equipment.



### Benefits

- **Carrier-class quality**
  - High reliability and robust air interface
  - Telecom grade of E1/T1 services
    - Low latency
    - Excellent clock and jitter performance
- **Fast Return on Investment**
  - Faster payback than alternative solutions
  - No frequency coordination and license fees
  - Immediate revenue generation
  - Savings on recurrent expenses
- **Short time to service**
  - License exempt frequencies eliminate regulatory delays
  - Wireless connectivity instead of leased lines
  - Compact and integrated solution - Easy installation and operation

### Highlights

- High capacity of up to 48 Mbps
- Integrated nxE1/T1 and Ethernet interfaces
- Operational range of up to 50 miles (80 km)
- Operational frequency at 5.725 – 5.850 GHz
- Excellent performance and reliability
- Carrier-class grade
- Complete, SNMP based, local and remote management

### Typical Applications

- **Multi-Site Connectivity** Transparent connection of enterprise LAN and PBX systems across various campuses that saves in communication costs, operating expenses and maintenance requirements.
- **Backhaul**
  - **Cellular access** to base stations - complete carrier-class solution for traffic, based on E1/T1 interface, and control management, based on the Ethernet interface.
  - **Hotspot backhauling** - Last mile connection between Wi-Fi Access Point and data network in a fraction of the cost of leasing T1 lines.
  - **Wireless ISP (WISP) backhauling** - Longer range and higher capacity connectivity of point-of-presence (POP) to network operation center.
- **Broadband Access** Bundled voice and broadband data services to corporate markets at low CAPEX and minimal OPEX, as well as alternative back-up connection for the purposes of business continuity.

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### Technical Specifications

#### Configuration

Architecture	Indoor Unit (IDU) and Outdoor Unit (ODU)
IDU to ODU Interface	Outdoor CAT-5 cable; maximum length of 100m

#### Radio

Frequency	5.725- 5.850 GHz
Data Rate	Configurable up to 48Mbps
Range	50 miles (80 km)
Channel BW	20 MHz
Duplex Technique	TDD
Modulation	OFDM BPSK, QPSK, 16QAM, 64QAM
Transit Power	18 dBm (max)
RF Dynamic Range	> 50 dB

#### Integrated Antenna

Gain	23 dBi
Type	Flat panel
Polarization	Linear, V or H
Beam Width	9°

#### Optional External Antenna

Gain	28 dBi
Type	Flat panel
Polarization	Linear, V or H
Beam Width	4.5°

#### LAN Interface

Type	10/100 Base T, auto-negotiation
Framing/coding	IEEE 802.3/U
Bridging	Self-learning up to 2000 MAC addresses
Traffic handling	MAC layer bridging, self-learning
Latency	<3 msec (typical)
Line impedance	100Ω
VLAN Support	Transparent
Connector	RJ-45

#### T1 Interface

Framing	SF, ESF
Connector	RJ-45
Timing	Plesynchronous (independent Tx and Rx timing)
Latency	8 msec
Line impedance	100 Ohm, balanced
Number of ports	1, 2, 4 (next release)
Jitter and wander	G.823, G.824

#### Management

Protocol	SNMP based
Network management	Support
Management interface	Ethernet 10/100 BT, RS-232
Upgrade capabilities	Local and over the air remote software download
Diagnostic	Local and remote loopback testing

#### General

Power feeding	110/220 VAC, 50/60 Hz, 48 VDC
Power consumption	20W max
Mounting	Pole or wall

#### Mechanics

ODU dimensions	Height: 12 inches (with integrated antenna)	IDU dimensions	Height: 1.7 inches
	Width: 12 inches (with integrated antenna)		Width: 9.3 inches
	Depth: 2.3 inches		Depth: 6.5 inches
	Weight: 3.3 lb. (with integrated antenna)		Weight: 1.1 lb.

#### Environmental

Outdoor unit enclosure	All-weather cases
ODU Operating temperature	-35 - 60°C (-31 - 140°F)
IDU Operating temperature	-5 - 45°C (23 - 113°F)
Humidity	Up to 90%, non-condensing

#### Standards

Radio	FCC 47CFR Part §15,15.247 and subpart CRSS-210
Safety	TUV 60950, according to UL 60950, CAN-CSA C22.2 No. 60950
EMC	FCC 47CFR Part 15, §15.247 and subpart B
Environmental	IEC 60721-3-4 Class 4M5 IP 67