AN-50

...solving the first mile challenge

- Broadband fixed wireless system
- Over-the-air rates up to 72Mbps
- Ranges beyond 80km / 50 miles
- Non line-of-sight capabilities
- 5.8 GHz unlicensed band

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APPLICATIONS

Wireless technology has existed for many years, proving itself to be a reliable communication medium, primarily for long-haul point-to-point applications supporting critical links for telephony and broadcast services. With the surge in broadband two-way Ethernet/internet use, fixed wireless systems are playing an even more important role in supporting network infrastructures.

The AN-50 is a leading-edge system for addressing:

- Building-to-building connectivity for enterprise
- Backhaul for ISPs and Wireless ISPs
- Backhaul for cellular/mobility operators
- High-capacity surveillance and telemetry
- Facilities-based service providers
- Campus networking
- Disaster recovery
- Large enterprise VPN
- TLS (transparent LAN services)
- MTU (multi tenant units)
- MBU (multi business units)
- MDU (multi dwelling units)
- WPN (wireless private network) applications
- Extensions/alternatives to fiber optic networks

For more information on AN-50 technology, applications and features visit our web site at www.redlinecommunications.com

Redline is an innovative company providing broadband fixed wireless access (BFWA) solutions to solve the first mile connectivity challenges of businesses and residential users. The company was founded to address a worldwide market need for cost-effective high-performance network solutions based on ground-breaking second-generation technology that has the robustness to perform in non-line-of-sight deployment conditions.

THE AWARD-WINNING AN-50

Redline's AN-50 system is a high-speed wireless Ethernet bridge configured for point-to-point (PTP) operation, upgradable to point-to-multipoint (PMP) operation. Accommodating both backhaul and access functions, the AN-50 system is the industry's first true high-performance, high-capacity, multi-services OFDM platform available in a cost-effective package. Its intuitive remote management-through-web interface adds to a system that's remarkably easy to use and install.

The AN-50 system delivers an over-the-air rate of up to 72 Mbps, equivalent to 45 Mbps at the Ethernet level. With a robust non-line-of-sight (NLOS) capability, long IF cable support for tower and high-rise installations, audible antenna alignment and diagnostic capabilities for Ethernet and wireless, the AN-50 addresses the most challenging of deployment scenarios and makes installation and support hassle free. Unlike other systems, the AN-50 boasts nine channels that can be assigned during deployment on a best-performance basis.

The AN-50 system operates in the license-exempt band of 5.8 GHz and includes advanced technologies to address potential inter-cell interference issues. Maximizing spectral efficiency is a critical factor that directly impacts the bottom line. The AN-50 rises to this challenge with a unique patented bi-directional adaptive modulation technique, automatically selecting any of eight modulation schemes (from BPSK to 64 QAM) in order to adjust to link quality degradation while providing the highest throughput for a given deployment scenario.

The AN-50 employs several techniques to address propagation anomalies associated with fixed wireless deployments, the most critical of which is multipath. The system utilizes OFDM to increase robustness in NLOS and near-LOS links, ARQ to efficiently correct bit errors at the RF level, and adaptive coding to optimize performance on a burst-to-burst basis.

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AN-50 System Specifications

System Capability:	Non-line-of-sight operations, PTP mode and PMP mode *
RF Band:	5.725 - 5.825 GHz (license-exempt band)
Channel Frequencies:	Channel: 1 1A 2 2A 3 3A 4 4A 5 Freq (GHz) 5.735 5.745 5.755 5.765 5.775 5.785 5.795 5.805 5.815
Channel Size:	20 MHz
RF Dynamic Range:	> 50dB
Over The Air Rate:	Up to 72 Mbps per channel
Maximum TX Power:	-20 to + 20dBm (channel dependent and region specific)
Rx Sensitivity:	-86dBm to 6 Mbps
IF Cable:	• Maximum length up to 250 ft (76m) using RG5U • Maximum length up to 500 ft (152m) using high-grade RG11U • Greater than 500 ft (152m) using LMR cabling • Maximum allowable losses at 2.5 GHz: RG6: 10dB/30m (100 ft) at 25C RG11: 5dB/30m (100 ft) at 25C
Network Attributes:	• Multiplexed IF, DC power, control (Tx/Rx, AGC, APC) • Transparent bridge • DHCP pass-through • VLAN pass-through • 802.3x Ethernet flow control • 802.1p network traffic prioritization
Modulation/Coding:	Dynamic Adaptive Modulation (bi-directional burst to burst) auto selects: • 1/2 BPSK • 3/4 BPSK • 3/4 QPSK • 3/4 QPSK • 1/2 16QAM • 3/4 16QAM • 2/3 64QAM • 3/4 64QAM
Over The Air Encryption:	Proprietary 64-bit encryption
Coding Rates:	1/2, 2/3 and 3/4, adaptive coding (burst to burst)
PMP MAC:	• Polling-based scheduler *
Error Correction:	• Automatic repeat request (ARQ)
Bandwidth Efficiency:	• Concatenation / Fragmentation *
Range:	• Over 10 km / 6 miles non-line-of-sight with high-gain PTP antennas • Over 80 km / 50 miles line-of-sight with high-gain PTP antennas
Network Services:	Transparent to 802.3 services and applications
Duplex Technique:	Dynamic TDD (time division duplex)
Wireless Transmission:	OFDM (orthogonal frequency division multiplexing)
Backhaul Connection:	10/100 Ethernet (RJ45)
System Configuration:	• Web interface and SNMP • CLI via Telnet and Local Console
Power Requirements:	110/220/240 VAC (auto-sensing), 50/60Hz, 39W maximum
Temperature Range:	• AN-50 Terminal: 32F to 131F / 0C to +55C • T-58: -40F to +140F / -40C to +60C
Wind Loading:	Exceeding 137 mph / 220 km/hr (antenna specific)
Physical Configuration:	AN-50 Terminal, AN-50 Radio (transceiver + antenna)
AN-50 Dimensions:	17” x 12” x 1.75” / 432mm x 305mm x 45mm

Specifications subject to change without notice
* Upcoming release

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