

## AN - 30 Wireless System

Next Generation E1/T1 Ethernet Backhaul

Businesses are focused more than ever on reducing capital expenditure and controlling operational spending and for many the cost of leased line circuits represents a significant portion of OPEX dollars. The AN-30 system is a cost effective alternative to landline E1/T1 carrier leased circuits.

The AN-30 system offers connectivity for one to four E1/T1 links and supports simultaneous transport of mixed data and E1/T1 traffic streams. Combined with high performance and low latency, the AN-30 is the ideal platform for those planning a migration to VoIP.

Redline's AN-30 system is distinguished by its unparalleled partial or optical-line-of-sight (OLOS) performance. With backhaul applications, OLOS operation translates into a significant benefit for operators, allowing challenging links from more cost effective rooftop locations, lower towers, and the need for less repeaters.



**AN-30 System**

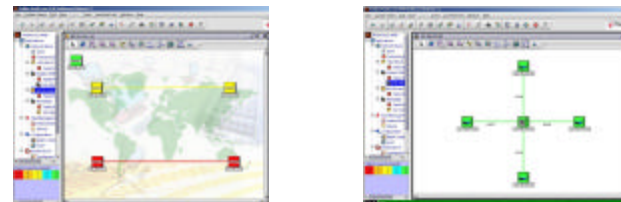
Typical applications include:

- Wireless mobility backhaul
- Business continuity / disaster recovery
- WISP access point backhaul
- High speed access for multi tenant buildings
- Enterprise WAN connectivity (voice and data)
- Private networks for schools, utilities and municipalities

## RedAccess Network Management System

Maintain Minimal Operating Cost

Advanced network products require an advanced network management system (NMS). Maintain minimal operating costs while maximizing revenues with RedAccess, a fully featured NMS designed to maximize and manage Redline's AN-30 and AN-50 systems. RedAccess provides a high level of functionality for carrier-class operations at a fraction of the cost, compared with conventional NMS systems.



**RedAccess Network Management System**

## AN-50 Wireless System

Greater Distances, Higher Performance, Greater Profitability

Redline's AN-50 wireless system is a high-speed wireless Ethernet bridge configured for point-to-point (PTP) operation, upgradeable to multipoint backhaul operation. Accommodating backhaul and high capacity access functions, the AN-50 system is a high performance, OFDM platform available in a cost-effective package. An intuitive remote web interface adds to a system that's remarkably easy-to-use and install.



**AN-50 System**

The AN-50 delivers:

- Over-the-air rate of up to 72 Mbps
- A robust non-line-of-sight (NLOS) capability
- Audible antenna alignment and diagnostic capabilities
- Addresses the most challenging of deployment scenarios
- Makes installation and support hassle free

The AN-50 system operates in the license-exempt 5.8 GHz band and includes advanced technologies to address potential inter-cell interference issues. The AN-50 maximizes spectral efficiency with a unique patented bi-directional adaptive modulation technique, automatically selecting any of eight modulation schemes providing a solid connection even in challenging link conditions.

## AN-50 System Specifications

<b>System Capability</b>	OFDM, non-line-of-sight (NLOS) operations, PTP and PMP mode
<b>RF Bands</b>	5.725 - 5.825 GHz 5.470 - 5.725 GHz*
<b>Channels</b>	9 software selectable frequencies
<b>Channel Size</b>	20 MHz
<b>RF Dynamic Range</b>	> 50dB
<b>Data Rate</b>	Up to 72 Mbps per channel (48 Mbps at the Ethernet port)
<b>Max TX Power</b>	-20 to +20 dBm (region specific)
<b>Rx Sensitivity</b>	-86 dBm at 6 Mbps (based on BER of 1x10 <sup>-3</sup> )
<b>IF Cable</b>	Max length up to 250 ft (76m) using RG6U Max 500 ft (152m) using RG11U > 800 ft (240m) using LMR cabling DC power via IF cable
<b>Dynamic Channel Control</b>	DFS*, ATPC*
<b>Network Attributes</b>	Transparent bridge, DHCP pass through, VLAN pass through, 802.3x Ethernet flow control, 802.1q* & 802.1p network traffic prioritization
<b>Modulation Options</b>	Bi-Directional; BPSK, QPSK, 16 QAM, 64 QAM
<b>Over The Air Encryption</b>	64-bit private key encryption
<b>Coding Rates</b>	1/2, 2/3, and 3/4 adaptive coding (burst to burst)
<b>MAC</b>	• Concatenation/fragmentation <sup>2</sup> • Automatic repeat request (ARQ) error correction
<b>Max Range</b>	• Over 10 km / 6 miles non-line-of sight • Over 80 km / 50 miles line-of sight
<b>Max Range EU Countries</b>	• Over 5 km non-line-of sight • Over 30 km line-of sight
<b>Duplex Technique</b>	Dynamic TDD (time division duplexing)
<b>Backhaul Connection</b>	10/100 Ethernet (RJ45)
<b>System Configuration</b>	Web Interface and SNMP, CLI via telnet or local console port
<b>Redundant Power</b>	110-240 VAC or 48 VDC, optional dual power supplies for redundancy

\*Contact sales for details • <sup>1</sup>point-to-point mode only • <sup>2</sup>point-to-multipoint mode only.  
Specifications subject to change without notice.

## AN-30 System Specifications

<b>System Capability</b>	OFDM, optical-line-of-sight (OLOS) operations, PTP mode
<b>RF Bands</b>	5.725 - 5.825 GHz 5.470 - 5.725 GHz*
<b>Channels</b>	9 software selectable frequencies
<b>Channel Size</b>	20 MHz
<b>RF Dynamic Range</b>	> 50dB
<b>Data Rate</b>	Up to 72 Mbps per channel (43 Mbps at the Ethernet port)
<b>Max TX Power</b>	-20 to +20 dBm (region specific)
<b>Rx Sensitivity</b>	-86 dBm at 6 Mbps (based on BER of 1x10 <sup>-4</sup> )
<b>IF Cable</b>	Max length up to 250 ft (76m) using RG6U Max 500 ft (152m) using RG11U > 800 ft (240m) using LMR cabling DC power via IF cable
<b>Dynamic Channel Control</b>	DFS*, ATPC*
<b>Network Attributes</b>	Transparent bridge, DHCP pass through, VLAN pass through, 802.3x Ethernet flow control, 802.1q* & 802.1p network traffic prioritization
<b>Modulation Options</b>	Bi-Directional: BPSK, QPSK, 16 QAM, 64 QAM
<b>Over The Air Encryption</b>	64-bit private key encryption
<b>Coding Rates</b>	1/2, 2/3, and 3/4 coding (bi-directional)
<b>MAC</b>	<ul style="list-style-type: none"> <li>Concatenation</li> <li>Automatic repeat request (ARQ) error correction</li> </ul>
<b>Max Range</b>	<ul style="list-style-type: none"> <li>Over 10 km / 6 miles non-line-of sight</li> <li>Over 80 km / 50 miles line-of sight</li> </ul>
<b>Max Range EU Countries</b>	<ul style="list-style-type: none"> <li>Over 5 km non-line-of sight</li> <li>Over 30 km line-of sight</li> </ul>
<b>Duplex Technique</b>	Dynamic TDD (time division duplexing)
<b>Interface Ports</b>	1 to 4 T1/E1 TDM ports, RJ-48 or BNC connectors, supports fractional nx64 services One 10/100 Ethernet (RJ45)
<b>System Configuration</b>	SNMP, CLI via telnet or local console port
<b>Redundant Power</b>	110-240 VAC or 48 VDC, optional dual power supplies for redundancy

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## About Redline Communications Inc.

Redline Communications is an innovative provider of second generation broadband fixed wireless systems. Redline's products are based on an advanced form of orthogonal frequency division multiplexing (OFDM), combined with several novel technologies, to support robust operations in complete non-line-of-sight deployment conditions. This enables significant competitive advantages in both licensed and license-exempt bands.

Redline currently offers products in the unlicensed band of 5.8 GHz, providing cost-effective high-performance solutions to Wireless Internet Service Providers (WISPs), enterprises, incumbent carriers, municipalities, utilities, schools and to wireless equipment manufacturers. The versatility and robustness of the Redline solution helps operators maximize revenues while maintaining ease of support in operations.

Redline Communications boasts extensive experience in developing novel OFDM technologies for the broadband market and has assembled a world-class R&D team to introduce a compelling non-line-of-sight solution set. Our products offer significantly faster data rates, greater cell capacity, and higher spectral efficiency over competing systems.



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## The AN-30 & AN-50 Systems

- **Broadband fixed wireless systems**
- **Over-the-air rates up to 72 Mbps**
- **Ranges beyond 80 km / 50 miles**
- **Non line-of-sight capabilities**
- **99.999% availability**



### Achieving value, quickly, easily. Is the greatest challenge facing business today.

The demand for broadband connections is growing at a rapid pace. High capacity backhaul and access connections are required to support the increasing number of data, video, and voice intensive applications in the telco and enterprise markets.

Existing wireline technologies are often not cost effective, are simply not available or lack the necessary performance or reliability. Operators have been turning to broadband fixed wireless (BFW) technology to provide a cost effective solution that can be deployed quickly and easily.

### Solving your broadband needs.