

## Frequently Asked Questions: AN-50e

**Q: What is the AN-50e**

A: Redline's AN-50e is the world's first high performance, low-cost multi-service Wireless Broadband solution that provides both backhaul and subscriber access capabilities. Operating in the 5.4 and 5.8 GHz bands, the AN-50e supports both point-to-point (PTP) and point-to-multipoint (PMP) links and features groundbreaking OFDM technology to provide the most reliable wireless broadband access even in challenging environments. Delivering an industry leading 72 Mbps over the air, at distances of over 50mi/80km in PTP mode, the AN-50e provides a cost effective solution for carriers and service providers to expand their networks and provide customers with fast, reliable broadband services.

**Q: Has the AN-50e won any awards?**

A: Yes, Redline's AN-50e won the prestigious 2002 SUPERQuest Award from the Telecommunication Industry Association (TIA) for the most promising network transport technology introduced at SUPERCMM in 2002.

**Q: Who would benefit from the AN-50e?**

A: The AN-50e meets the needs of customers that require robust, high-capacity, long-range wireless broadband access even in non-line-of-site environments. Our customers currently include carriers, ISPs, WISPs, private networks and institutions in the education, government, healthcare, oil and gas, safety, security and defense markets.

**Q: How are customers using the AN-50?**

A: Redline's AN-50e is ideally suited for a variety of backhaul, access, and private network applications. The following applications are supported:

- Backhaul and/or subscriber access for ILECs, ISPs and cellular/mobility operators
- Extending broadband access to rural, off-shore and other areas not currently serviced by DSL, Cable or fiber
- Providing cost-effective building-to-building connectivity for enterprise applications, including transparent LANs and VoIP
- Providing cost-effective access for MTU (multi tenant units), MBU (multi business units), MDU (multi dwelling units)
- Disaster recovery, Remote Storage and Mirroring
- Video conferencing and video surveillance
- Private networks for military and security applications.

**Q: Why is the AN-50e a superior wireless broadband solution?**

A: Redline's AN-50e features an unmatched combination of capacity, range, reliability and security for backhaul, subscriber access and private network applications. Plus, when you choose the AN-50e, you receive the easiest solution to install and manage, with the best customer support in the industry.

**Q: What is the range of the AN-50e?**

A: Redline's AN-50e provides its customers with superior range to enable remote locations to be connected, and reduce the cost of multiple links. In PTP mode, the AN-50e can provide a range in excess of 50mi/80km. In PMP mode, the AN-50e provides a range of 15mi/25km. Plus, the AN-50e's industry leading OFDM technology provides superior non-line-of-sight operation even in challenging environments.

**Q: Will I be able to control bandwidth individually to each end user?**

A: The AN-50e PMP system features 18 levels of unique CIR (Committed Information Rate) values that allow data rates to be controlled to each subscriber station. Different rates can be defined in steps of 32 Kbps, to each subscriber station.

**Q: How much capacity can the AN-50e deliver?**

A: In a 20 MHz channel, the AN-50e can provide up to 72 Mbps over the air (coded) or approximately 48 Mbps at the Ethernet port. Also, the AN-50e supports 17 distinct channels, which allows multiple systems to be co-located at a given site to substantially increase capacity.

**Q: How robust and reliable is the AN-50e?**

A: The AN-50e delivers high capacity at a bit error rate (BER) performance of  $10^{-9}$  (packet error rate of  $10^{-6}$ ) with a 99.999% link availability. The AN-50e reaches this performance level through the use of a dynamic adaptive modulation algorithm that enables it to deliver eight different modulation speeds dynamically (from BPSK to 64QAM). Plus, the AN-50e's patented ARQ (Automatic Repeat Request) algorithm in conjunction with advanced forward error correction techniques enables the AN-50e system to offer such a high level of link availability.

**Q: How secure is the AN-50e?**

A: The AN-50e features a 64-bit private key encryption scheme to provide enhanced over-the-air security.

**Q: Can the AN-50e support VoIP and other real time applications?**

A: Yes, the AN-50e is essentially a layer 2 device, making it transparent to all higher layer applications, including VoIP. Plus, the AN-50e's low end-to-end latency of less than 5 ms and its ability to maintain QoS, over the wireless link, makes it ideally suited to time-sensitive traffic streams like VoIP, video and interactive applications. This low latency also makes the AN-50e perfect for backhaul and multi-hop backhaul, as well.

**Q: Do you support mobility backhaul, i.e. T1/E1s?**

A: Yes, the AN-50e can be connected to an external TDM device to support up to eight channelized T1/E1 ports.

- Q: What technological innovations are incorporated into the AN-50e?**  
**A:** The AN-50e incorporates Redline's 10 patented enhancements to technologies that are necessary for the development of long-range, high-capacity, robust non-line-of-sight solutions: OFDM (orthogonal frequency division multiplexing), MAC (media access control) and RF (radio frequency)/antenna design. Because of Redline's technological advances, no other company can match the AN-50e's performance in all three parameters in a single product.
- Q: How does OFDM work?**  
**A:** OFDM achieves its high data rate and efficiency by using several overlapping carrier waves instead of just one. By using multiple carriers to transport data, communication is still maintained should one or more carriers be affected by propagation anomalies like multi-path interference.
- Q: How easy is it to install the AN-50e?**  
**A:** Because of its advanced performance and an innovative split design, Redline's AN-50e is easier and less expensive to install, maintain and manage. The AN-50e's split architecture places the transceiver up beside the antenna, eliminating cable losses, and enabling low cost cables and small antennas to be used. Antenna alignment is faster with the AN-50e since it uses smaller antennas, which are easier to align. In addition, an audible receive strength indicator provides rapid feedback on antenna alignment. Finally, because of the AN-50e's robust performance, it can be placed in convenient, inexpensive locations like building rooftops and small towers.
- Q: What management and configurations tools does the AN-50e offer?**  
**A:** The AN-50e can be configured using Redline's SNMP-based RedAccess Network Management System, or through Telnet, console port, CLI SNMP and a Web based Graphical User Interface.
- Q: Where can I buy the AN-50e?**  
**A:** In order to service a global marketplace across a diverse range of broadband wireless applications, Redline Communications sells the AN-50e solely through a global network of distributors, VARS and system integrators. To find a Redline Partner in your area, contact [sales@redlinecommunications.com](mailto:sales@redlinecommunications.com) or call +1 905 479-8344.
- Q: How can I become a Redline Partner?**  
**A:** For information on how to become a Redline Partner, visit [www.redlinecommunications.com](http://www.redlinecommunications.com) or contact Redline at [partners@redlinecommunications.com](mailto:partners@redlinecommunications.com)