



POWERFUL. VERSATILE. RELIABLE.

## WHEN YOU NEED BROADBAND WIRELESS GO WITH THE LEADER

Outdoor broadband wireless systems enabling the delivery of high-speed communications services and applications to business and government.

Redline understands wireless networking. Powerful, versatile and reliable Redline systems deliver wireless video surveillance and private network solutions; digital oil field and SCADA/Video/Voice/Data network solutions; backhaul and business Internet access solutions.

**redline**<sup>®</sup>  
communications

## LOWEST LIFETIME COST

Redline's software versatility combined with its powerful radio platforms and high reliability deliver the industry's lowest lifetime cost.



## POWERFUL

**Longest range** Redline has installed more than 200 links over 80 km, more than any other supplier worldwide. Long reach means more coverage with fewer radios.

**Best coverage** Redline radios offer the greatest line-of-sight (LOS) and non-line-of-sight (NLOS) ranges, delivering uninterrupted coverage in the most challenging environments.

**Highest throughput** Redline delivers the industry's highest throughput—up to twice the throughput of the competition. Redline's powerful processors don't slow under small-packet, high traffic conditions, so adding new applications won't impact existing applications. Redline supports more applications and more users with fewer radios.

**Lowest latency** Redline's innovative Media Access technology delivers the world's lowest latency—more than 10 times lower than the nearest competitor—ensuring a seamless wireless experience today and tomorrow. Nobody matches Redline's < 1msec latency.

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*"Redline was the clear choice for a radio partner due to its products' coverage, capacity, speed of deployment, and fast return-on-investment. The result is the best service for the 100,000 people of Oxford County who are spread over 2,000 square kilometres."*

**Jonathan E. Scott, CFO & V.P.  
of Operations Execulink Telecom**

## VERSATILE

**Secure** Redline is the only broadband wireless company offering the choice of AES-256, X.509 authentication and FIPS 140-2 certification, the stringent security required by federal government and military customers.

**Future-proof** Redline's products are software upgradeable. Purchase the features and the throughput performance you need today; upgrade tomorrow without replacing hardware.

**Specialized** Redline networks are ideal for point-to-point and point-to-multipoint applications. Software options tune Redline products to work seamlessly in wide range of specialized applications including business Internet access, data acquisition, video surveillance, and high security networks.

**Personalized.** Redline's advanced Quality of Service (QoS) controls let you create tiered services and increase customer satisfaction.

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*"The Marine Corps Wireless Point-to-Point Link (WPPL) program had a long-standing requirement to add a certified FIPS-140-2 transmission encryption capability in order to ensure completely secure wireless communications. Redline's high-security, validated AN-80i broadband wireless radio makes this critical feature a reality."*

**Major William Cornell, USMC**

## RELIABLE

**Highest reliability** Redline's industry-leading 29-year Mean Time Between Failures (MTBF), combined with the industry's lowest documented field failure rate (0.3%), means maximum uptime and hassle-free operation.

**Designed for outdoors** Redline's ruggedized, submersible products provide uninterrupted coverage in harsh weather conditions and in the most challenging urban and industrial environments.

**Quality assured** Redline tests all products with leading camera and other manufacturers to ensure flawless performance of the system, not just the network.

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*"With state-of-the-art video surveillance comes complexity, and Redline has the only broadband radio system capable of supporting our new and demanding server applications for Advanced Video Functions. Redline made it possible for us to implement the best video technology available, and their ability to create multicast groups within our wireless network allows the National Police to share video security resources with security divisions."*

**Han Mutlu, President Global Forte**

## PRODUCT PORTFOLIO

Redline's award-winning products provide high capacity point-to-point communications links to backhaul information between network locations and high speed point-to-multipoint access links between business users and their corporate networks. Telecom service providers, local and state governments, the oil and gas industry and military organizations worldwide choose the Redline wireless experience for seamless operation of complex applications.



### AN-80i

The AN-80i delivers high capacity, high throughput and long range performance along with Redline's industry-leading lowest latency for point-to-point and point-to-multipoint wireless communication links. Software options make it simple to configure for a wide range of specialized applications.



### RDL-3000

The RDL-3000, Redline's next generation radio platform adds 2 X 2 MIMO and enhanced radio technology to deliver industry-leading throughput and range along with Redline's leading low latency. Fully configurable via software options, the RDL-3000 is ideal for super high capacity, extreme range point-to-point and point-to-multipoint specialized wireless applications.

## SOFTWARE

Modular software delivers the ultimate in versatility. Remotely configure specialized applications, update units for more capacity or change from point-to-point to point-to-multipoint for hassle-free operation: one platform, total flexibility, lowest cost of ownership.

- **RapidLINK** for fast and simple setup on point-to-point links
- **MetroLINK** for premium access services in private and access networks
- **SmartLINK** for machine-to-machine communication, including Smart Grid and Smart Field
- **VideoLINK** for high capacity, high quality video surveillance
- **SecureLINK** for secure operation and stringent FIPS 140-2 compliance

## REDLINE MANAGEMENT SOFTWARE (RMS)

The award-winning Redline Management Software (RMS) lets IT professionals easily deploy, control, monitor and upgrade Redline components through a sophisticated, intuitive, user-friendly interface.



### RDL-2000

The RDL-2000 uses 2 X 2 MIMO technology to provide up to 200 Mbps point-to-point wireless links. RapidLINK software, very low power consumption, and a compact solution allow quick deployment.



### RedMAX WiMAX Family

Redline's AN-100U/X base stations and range of Subscriber Units are WiMAX Forum Certified wireless access systems for fixed and nomadic broadband applications.

## EASILY DEPLOYED

Redline's solutions approach ensures easy and seamless deployment for SCADA /AMI data acquisition systems, backhaul, video, private networks and access systems. Industry-leading low latency and high throughput allow multiple applications to work without expensive, time-consuming configuration changes.

## QUICK FACTS

**11** Number of years Redline has been making award-winning broadband wireless products

**First** radio in its class to be awarded FIPS 140-2 certification, demonstrating its high security capability

**No. 1** The most deployed commercial off-the-shelf (COTS) broadband radio in U.S. Department of Defense history

**<1 ms** The latency of AN-80i and RDL-3000 radios, lowest in the industry ensuring applications continue working as in wireline

**130** Number of countries where Redline products are installed

**40** Number of municipalities in Mexico currently using Redline radios for video surveillance and for connecting schools

**40,000** Number of Redline Fixed WiMAX radios installed in a single network, largest such network in the WiMAX Forum database

**200** Number of wireless links exceeding 80 km, surpassing other broadband wireless suppliers

**\$9 million** The size of Redline's biggest network this year

## UNMATCHED SUPPORT

Redline offers warranty and maintenance plans, professional services, training programs, and more to protect your investment and ensure service continuity.

## TECHNICAL SPECIFICATIONS

Product	RedMAX	AN-80i	RDL-3000	RDL-2000
<b>Technology</b>	Fixed WiMAX	OFDM	OFDM-MIMO	OFDM-MIMO
<b>PTP Throughput</b>	N/A	90 Mbps	100 Mbps	200 Mbps
<b>PMP Capacity</b>	18 Mbps	48 Mbps	100 Mbps	N/A
<b>Latency</b>	20 ms	< 1 ms	< 1 ms	< 2 ms
<b>Packet Processing (PPS)</b>	37,000 PPS	176,000 PPS	220,000 PPS	50,000 PPS
<b>MIMO-A (~2X range)</b>	No	No	Yes	No
<b>MIMO-B (2X speed)</b>	No	No	Yes	Yes
<b>Range</b>	72 Km (45 Mi)	80 Km (50 Mi)	120 Km (75 Mi)	50+ Km (30+ Mi)
<b>RF Band</b>	3.65 GHz (FCC/IC) 3.3-3.8 GHz (Intl.)	4.9-5.8 GHz 3.65 GHz (FCC/IC) 3.3-3.8 GHz (Intl.)	4.9-5.8 GHz 3.65 GHz (FCC/IC) 3.3-3.8 GHz (Intl.)	4.9-5.8 GHz
<b>PTP Chan Size</b>		3.5/5/7/10/14/20/ 28/40 MHz	5/10/20 MHz	5/10/20/40 MHz
<b>PMP Chan Size</b>	3.5/7 MHz	3.5/5/7/10/14/ 20 MHz	5/10/20 MHz	
<b>GPS Synch</b>	Yes	No	Yes	No
<b>Operating Temperature</b>	-40 °C to 60 °C -40 °F to 140 °F	-40 °C to 60 °C -40 °F to 140 °F	-40 °C to 60 °C -40 °F to 140 °F	-35 °C to 60 °C -31 °F to 140 °F
<b>Security</b>	3DES	AES-128/256 FIPS 140-2	AES-128/256 FIPS 140-2	AES-128
<b>Software Upgradeable</b>	Yes	Yes	Yes	No
<b>Software Options</b>		RapidLINK MetroLINK SmartLINK VideoLINK SecureLINK	RapidLINK MetroLINK SmartLINK VideoLINK SecureLINK	RapidLINK
<b>Management</b>	RMS/SNMP	RMS/SNMP	RMS/SNMP	RMS/SNMP

Redline products are marketed and supported locally through a network of certified value added resellers in the Americas, the Middle East and Africa. To learn more, please contact us or visit [www.rdlcom.com](http://www.rdlcom.com)

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