



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[®]
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.

"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.

"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.

"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.

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-3000

The RDL-3000 radio platform uses 2 X 2 MIMO and enhanced radio technology to deliver industry-leading throughput and range along with Redline's leading low latency for super high capacity, extreme-range PTP and PMP specialized wireless applications.



Elte-MT

Go further, faster, and more extreme with the robust Elte radio platform. Fully ruggedized and designed for industrial applications, the Elte provides high speed data connectivity between people, places and machines. Entirely OTA manageable and upgradeable, the Elte is ideal for remote or hard-to-reach locations with limited data access.



Enterprise

Purpose built for the Service Provider B2B market, the Enterprise radio platform has the industry's highest throughput and lowest end-to-end latency to provide delivery of delay-sensitive services and prioritized data traffic.



AN-80i

The AN-80i radio platform delivers high capacity, high throughput, long-range performance and low latency for PTP and PMP wireless communication links for a wide range of specialized applications.



RDL-2000

The RDL-2000 radio platform uses 2 X 2 MIMO technology to provide up to 270 Mbps PTP wireless links. Very low power consumption, and small size allow quick deployment.



RDL-5000

The RDL-5000 microwave radio and integrated gigabit Ethernet switch provides the highest PTP packet throughput in its class — up to 800 Mbps.

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

12 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 radios installed in a single network

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	RDL-3000	Elte-MT	Enterprise	AN-80i	RDL-2000	RDL-5000
Technology	OFDM-MIMO PMP / PTP	OFDM-MIMO PMP	OFDM-MIMO PMP	OFDM-SISO PMP / PTP	OFDM-MIMO PTP	Microwave FDD PTP
Function	Sector or Subscriber	Terminal	Subscriber	Sector or Subscriber	Peer/Peer	Peer/Peer
PTP Throughput	120 Mbps (20 MHz)	120 Mbps (20 MHz)	120 Mbps (20 MHz)	108 Mbps (40 MHz)	300 Mbps (40 MHz)	800 Mbps (56 MHz)
PMP Capacity	100 Mbps	100 Mbps	100 Mbps	90 Mbps	270 Mbps	N/A
Latency	1 ms	1 ms	1 ms	1 ms	< 2 ms	< 200 us
Packet Processing (PPS)	220,000 PPS	220,000 PPS	220,000 PPS	176,000 PPS	100,000 PPS	635,000 PPS
MIMO-A (~2X range + NLOS)	Yes	Yes	Yes	No	No	No
MIMO-B (2X speed)	Yes	Yes	Yes	No	Yes	No
Antennas	Dual-Pol External	Dual-Pol Integrated	Dual-Pol Integrated	Single-Pol External	Dual-Pol External	Single-Pol External
Range	120 Km (75 Mi)	30 Km (18 Mi)	30 Km (18 Mi)	80 Km (50 Mi)	50+ Km (30+ Mi)	70+km (43+ Mi)
RF Band	4.9-5.8 GHz (FCC/IC) ¹ 3.3-3.8 GHz (ETSI) ¹	4.9-5.8 GHz (FCC/IC) ¹ 3.3-3.8 GHz (ETSI) ¹	4.940-5.925 GHz (FCC/IC) ¹ 3.300-3.800 GHz (ETSI) ¹	4.9-5.8 GHz (FCC/IC) ¹ 3.3-3.8 GHz (ETSI) ¹	4.9-5.8 GHz (FCC/IC/ETSI) ¹	6/7/8/10/11/13/15/18/23/26/38 GHz
PTP Chan Size	3.5/5/7/10/14/20 MHz	N/A	N/A	3.5/5/7/10/14/20/28/40 MHz	5/10/20/40 MHz	20/28/30/40/50/56 MHz
GPS Synch	3.5/5/7/10/14/20 MHz	3.5/5/7/10/14/20 MHz	3.5/5/7/10/14/20 MHz	3.5/5/7/10/14/20 MHz	N/A	N/A
GPS Synch	Yes	No	No	No	No	N/A
Operating Temperature	-40 °C to 60 °C -40 °F to 140 °F	-40 °C to 70 °C -40 °F to 149 °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	-45 °C to +60 °C -49 °F to +140 °F
Power Consumption	23 W	15 W	15 W	13 W	7 W	60 W
Security	AES-128/256 SNMPv3 Authentication Access Control	AES-128/256 SNMPv3 Authentication Access Control	AES-128	AES-128/256 FIPS 140-2	AES-128	
Software Upgradeable	Yes	Yes	Yes	Yes	Yes	Yes
Software Options	RapidLINK MetroLINK SmartLINK VideoLINK SecureLINK	MetroLINK VideoLINK SecureLINK	MetroLINK VideoLINK	RapidLINK SecureLINK	RapidLINK	RapidLINK
Management	-----ClearView/SNMP/GUI-----					

¹ Availability restricted by regional regulations or product options

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

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