

# WaveBolt™ Product Family

Cirronet™ Inc. develops, markets and globally supports commercially proven wireless networking solutions that are uniquely designed to minimize price and installation deployment barriers for telecom and industrial markets.

Founded in 1987, and profitable since 1996, with a strong track record in industrial wireless data products, Cirronet develops high performance wireless data equipment using proprietary frequency hopping spread spectrum (FHSS) technology. Cirronet initially developed its products for numerous critical industrial applications such as real-time patient monitoring solutions for healthcare enterprises and monitoring radiation levels in nuclear power plants. Cirronet's industry-leading WIT 2410 OEM module, a third-generation technology, has been deployed in industrial networks for over two years.

Cirronet's WaveBolt product family enables cost-effective and quickly deployable wireless broadband connections to residential and small business markets worldwide. The WaveBolt unit is low-cost, compact, end-user installed through a PC port and is approved to operate globally in the license-free 2.4 GHz band. Service providers can deploy a typical system for around \$400 per subscriber, (including amortized access point equipment costs). WaveBolt transmits data at more than 1 Mbps. Each WaveBolt radio can support up to 60 simultaneous users. More than 1000 subscribers can be supported from a single point of presence (PoP).

#### WaveBolt FEATURES:

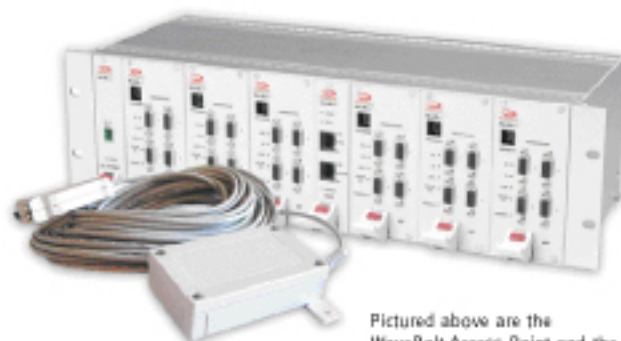
- Low Cost
- License-Free Frequency Hopping Spread Spectrum Technology
- Modular Design
- User Installable Subscriber Unit
- 3 to 8 Kilometers Typical Range
- Over 1 Mbps Data Rate

#### WaveBolt BENEFITS:

- Fast Return on Investment
- Immune to Jamming and Multi-Path
- Scales to Meet Needs
- Quick and Easy Deployment
- Long Range
- High Speed

#### WaveBolt Subscriber Unit

The WaveBolt Subscriber Unit (SU) is the end user component of the WaveBolt system from Cirronet. Distinguished by its high speed, low cost and simple installation, the WaveBolt SU provides Internet access to end users at over 1Mbps. The WaveBolt SU is based on Cirronet's proven license-free, interference and jamming resistant, frequency-hopping spread spectrum technology. Used with the WaveBolt access point, the WaveBolt SU completes the high speed, license-free WaveBolt wireless Internet access system.



Pictured above are the WaveBolt Access Point and the WaveBolt Subscriber Unit

#### WaveBolt Access Point

The WaveBolt Access Point is the ISP end of the WaveBolt Wireless Internet access system from Cirronet. Used with the WaveBolt Subscriber Unit (SU), the WaveBolt Access Point completes the high speed, license-free WaveBolt wireless Internet access system. The WaveBolt Access Point provides the link from the ISP equipment to the end user WaveBolt SU. The WaveBolt system dynamically allocates bandwidth and provides Internet access at rates of over 1Mbps. The WaveBolt Access Point is a scalable, co-locatable building block for ISP wireless PoPs. The WaveBolt access point allows the ISP to tailor the system to provide a range of performance levels as well as support different numbers of users in different locations.



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## ACCESS POINT CONTROLLER

Mechanical	19 inch rack-mount card cage 3U high
Voltage	34-75 VDC
Power Consumption	100 Watts max
Access Point Card Slots	5
Indicators	DC Power Hub Power Ethernet Link Ethernet Alert Ethernet collision Ethernet Transmit Data Ethernet Receive Data Transceiver OK
Connectors	Power – 2 position terminal block Network – 10/100 BaseT RJ-45 Diagnostic – 10/100 BaseT RJ-45 Radio – DB-15
Processors	Power PC
Memory	32 Mb SDRAM per AP Card
Radios Supported	4 per AP Card
Simultaneous PPP sessions	240 per AP Card



## SUBSCRIBER UNIT

Model	Series 2	Series 9
RF Frequency	2400 to 2483 MHz	
Radio Certification	FCC 15.247 and ETSI 300.328 rules, license free	
Typical Range	3 to 8 kilometers (2 to 5 miles), line of site	
Radio Network Topology	Star Network	
Radio Network Protocol	Dynamically assigned TDMA with ARQ	
I/O Interface	Serial/USB	USB/Ethernet
I/O Data rate	Up to 230 Kbps	Over 1 Mbps
# of frequency channels	75	43
RF bandwidth	750 KHz	1.7 MHz
Antenna	Built in 6 dB patch	
Transmit Power Output	+16 dBm or +26 dBm EIRP, software selectable	
Receiver Sensitivity	-99 dBm	-94 dBm
Supply Voltage	100/240VAC 50/60 Hz	
Power Consumption	12 Watts	
Size	130 mm x 82 mm x 36 mm	
Weight	1.4 kg (including 31 meters (50 ft) cable)	
Case Material	UV stabilized Polycarbonate, IP 66, NEMA 4X rated	
Operating Temperature	-30° C to +70° C	-40° C to +70° C
Humidity	20% to 90% non-condensing	
Connectors	Power – 2 Pin DIN Data – Serial/USB	Power – 2 Pin DIN Data – USB/RJ-45 Ethernet
Indicators	Power, Carrier Detect	



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