

VELOX LE™ 10

DIGITAL RADIO LINK

- > Velox LE 2410 SR
- > Velox LE 2410 SRi

- > Velox LE 5810 SR
- > Velox LE 5810 SRi

Up to 4 x T1 or E1 solution
2.4 and 5.8 GHz License-exempt Digital Radio Links



The convenient, license-exempt wireless solution.



Minimize time and ease to market without compromising on quality of service with the license-exempt Velox LE 10, a carrier-class, 1 to 4 x T1/E1 system providing performance and reliability comparable with licensed band radios but without the regulatory time and cost penalties.

With its rapid deployment, the Velox LE 10 can be operational in one day, earning a Return On Investment (ROI) before other products make it off the drawing board.

Certified and field proven to US, Canadian and international standards, this unique system incorporates advanced proprietary technologies such as software-driven configuration and capacity scalability (voice and data), an onboard spectrum analyzer and an advanced Network Configuration Tool (NCT).

So, if you're looking to minimize capital and operating expenditure while maximizing market reach and revenue, choose the Velox LE 10—and find out for yourself why leading Mobile and Access networks in more than 25 countries worldwide are tuned into our license-exempt wireless solutions.

Feature Overview

The Velox LE 10 offers full duplex, point-to-point T1/E1 and 10Base-T Ethernet wireless connectivity in either the license-exempt 2.4 or 5.8 GHz bands. Software-driven scalability allows capacity (voice/data) to be configured as 1, 2 or 4 x T1/E1 with no physical intervention or new hardware. An SNMP-compliant Network Management Tool (NCT) with an easy to operate Graphical User Interface (GUI) is standard. The split configuration option affords greater transmission range and significant installation cost savings. An all-indoor option is also available for easier and safer maintenance.

Core Benefits

- > Unique, on-demand capacity scalability (field upgradeable) with no hardware or physical intervention required
- > Independent band plans enable co-location of multiple radios
- > Tx and Rx frequency selectable in 1 MHz steps
- > Easy, efficient, accessible Network Configuration (SNMP and GUI)
- > Effective interference clearing and frequency planning using onboard spectrum analyzer
- > No license-related costs and delays
- > Swift network rollout capability, immediate usage and revenue generation
- > Rapid ROI versus fixed line or licensed solutions
- > Near zero downtime, outstanding availability (99.999%)
- > One platform, multiple uses

Key Applications

- > Cellular/PCS backhaul
- > Wireline replacement
- > High speed LAN/WAN/Internet connection
- > Corporate, civil utilities/services and campus networks
- > Service provider network extension
- > Rural telecom infrastructure
- > Redundant link and disaster recovery



> All-indoor option

Velox LE 10	2410	5810
General Characteristics		
Frequency Range	2400 to 2483.5 MHz	5724 to 5850 MHz
Data Capacity	Scalable between 10Base-T Ethernet, 9.5 Mbps aggregate and up to 4 T1/E1 tributaries	
RF Channel Bandwidth	18 MHz	
Modulation Method	CCK	
Processing	Direct Sequence Spread Spectrum	
Frequency Plan A	2410 & 2458 MHz	5735 & 5840 MHz
Frequency Plan B	2426 & 2474 MHz	5753 & 5822 MHz
Frequency Plan C	Independently adjustable	5771 & 5804 MHz
Frequency Plan D	n/a	Independently adjustable
Transmission Delay	0.3 ms per terminal	
Compliance	FCC Part 15.247 Canada: IC RSS 139 ISS 1	
Transceiver Characteristics		
Power Output	Software adjustable +24 dBm maximum (+20 dBm ETSI regulated areas)	
Receiver Sensitivity	88 for BER = 1×10^{-6}	
Maximum Receive Level	-30 dBm	
Antenna Connector	N-Type Female	
Data Interfaces		
nT1/nE1:	1 to 4 x T1 or E1 Software-selectable	
• Data Rate	ITU-T G.703, CEPT-1, DSX-1	
• Digital Interface	25-way D (Balanced) or BNCs (Unbalanced)	
• Connectors	B8ZS (T1), HDB3 (E1) or AMI (nE1, nT1) selectable	
• Line Code		
10Base-T Interface:	IEEE 802.3	
• Compliance	RJ-45	
• Connector		
Digital Unit Control Panel		
Front Panel LEDs	System, Payload and RF Link summary LED's	
Auxiliary User I/O	2 In (Contact closure), 2 Out (Relays)	
Wayside Service Channel	RS-232; 115.2 Kbps maximum	
Element Manager	RS-232; 115.2 Kbps fixed	
Power Supply and Environment		
Power:	21 to 58 VDC	
• DC Power	35 W maximum	
• Power Consumption	110V-240V (External PSU)	
• AC Power Supply		
Temperature:	Operation: -33°C to +60°C	
• Outdoor RF Unit	Operation: -5°C to +50°C	
• Indoor RF Unit	Operation: -5°C to +50°C	
• Digital Unit		
Size:	335mm x 232mm x 125mm, 6.0 kg	
• Outdoor RF Unit	1U 19" housing, table top or rack mounting, 3.5 kg	
• Indoor RF Unit		
Lightning Protection:	RF and Digital Unit	
• Integral Protection		
Standards Compliance		
EMC	EN 301 489	
Operation: Outdoor RF Unit	EN 300 019, class 4.1	
Operation: Digital Unit	EN 300 019, class 3.2	
Storage: Digital & RF Unit	EN 300 019, class 1.2	
Transportation: Digital & RF Unit	EN 300 019, class 2.3	
Radio Frequency	EN 300 328	n/a
Water Ingress	IEC 60529 (IPX5)	

Velox LE 10 Features

- > Fully scalable between voice and data
- > Direct Sequence Spread Spectrum technology
- > Scalable between 10Base-T Ethernet, 9.5 Mbps aggregate and up to 4 T1 or E1 tributaries
- > Individually selectable E1 or T1 line codes
- > Transparent Ethernet bridging (learning - "store and forward")
- > Available with 1 to 4 x T1 and 1 to 4 x E1 data interfaces
- > G.826 compliant-based error reporting for RF link and line-interface data
- > All-indoor mounting option using only 2U rack space
- > Multiple software-selectable frequency channel plans
- > Network Configuration Tool (NCT) allows full remote and local control/management
- > SNMP support for open Network Configuration (Enterprise and MIB-II)
- > Onboard spectrum analyzer
- > All electrical connections located on front panel for easy installation and access