CCU3110

900 MHz Unlicensed, PoE
Base Station Transceiver with Integrated Antenna

www.vecimanetworks.com

The WaveRider CCU3110 by Vecima Networks is the central base station radio modem for the LMS4000 which is the world's highest capacity NLOS (non-line-of-sight) broadband wireless system designed specifically for the 900 MHz spectrum.

The CCU3110 base station wireless modem delivers the high speeds, reliability and advanced management features requried to serve both business and residential subscribers. The CCU3110 comes complete with an integrated smart diversity antenna.

Features

Integrated Smart Diversity Antenna
Superior performance in non-line-of-sight environments through the high gain (10 dBi) antenna enables the CCU3110 to generate a maximum permissible +36 dBm transmitted power.

Ease of Installation and Cost Effective
The CCU3110 allows the operator to install the base station modem, with integrated antenna, outdoors utilizing the Power-over-Ethernet feature and the extended operating temperature range. This translates to a cost effective means to increase capacity of existing LMS4000 systems or provide additional coverage.

Non-Line-of-Sight Capabilities
The CCU3110 is the ideal solution for areas with heavy tree coverage or other line-of-sight barriers. Developed specifically for the 900 MHz spectrum, the system delivers non-line-of-sight (NLOS) connections averaging 3 miles using the Wave Wireless indoor antenna and 5 miles with the outdoor modem. Customers have experienced LOS links of up to 25 miles using the outdoor end user modem.

High Capacity
The CCU3110 is fully scalable, supporting up to 300 business or residential subscribers on a single modem. WaveRider's Dynamic Polling MAC, which provides the most efficient channel use in the industry, enables Grade-of-Service controls that permits operators to guarantee access speeds and latencies for their customers.

Advanced Management Features
WaveRider's CCU3110 is fully compatible with RADIUS AAA and specific extended attributes. Combined SNMP monitoring and PPPoE support, operators can easily manage large numbers of subscribers on a single system.

Advantages

- Best in class Dynamic Polling MAC
- Operates in unlicensed 902 to 928 MHz band
- Choice of forwarding modes: routed, switched, thru-only
- QoS supporting VoIP
- Secure Authentication and User Data Encryption
- Industry standard interfaces and management
- Signaling Rate of 2.75 Mbps and access speeds of 2.0 Mbps
- Up to 2 miles Indoor range; 5 miles NLOS range; LOS range up to 25 miles
- Proven capacity with thousands of installations

WaveRider® Last Mile Solution® by Vecima networks

CCU3110 Technical Specifications

Radio Specifications

Radio Type & Wireless Topology	Base Station for STAR Topology
Subscriber/Terminal Unit Compatibility	EUM3000/3/4/5/6, MMT9000
Operating Frequency	902 to 928 MHz
Radio Access	DSSS w/ Dynamic Polling MAC & ARQ
Radio Modulation	Complementary Code Keying (CCK)
Transmit Output Power	+26 to +15 dBm at antenna port (software selectable)
RF Rx Threshold	-89 dBm (BER<10-6) at antenna port
Minimum/Maximum Center Channel Frequency	905/925 MHz
Channel Bandwidth	5.5 MHz
Number of Channels / Center Frequency Spacing Increment	101 / 0.2 MHz
Orthogonal Channels	4 (for co-location, 96 dB isolation is required)
Orthogonal Channel Separation	6.6 MHz
Channel Selection	Supports subscriber unit modes: Nomadic, Auto, RADIUS, Static
LED Indication with MDB1000	Power On, Signal Level, Signal Quality, Ethernet Link, Master (A)
Data Type	IP with QoS for VoIP; Forwarding mode: routed, switched, thru-only PPPoE
User Access Protocols	Telnet w/ Password
Management Protocols	RADIUS, DHCP, SNMP, NTP, ftp, Telnet, IP Port filtering

Radio Performance

Signaling Rate	2.75 Mbps
User Data Rate	Up to 2.0 Mbps (user-definable)
Number of Users	Up to 300, dependant on assigned GoS and data traffic
Over-the-Air Encryption	TKIP with 256 bit keys
Maximum Link Path Distance	Up to 25 miles (40 km) LOS First Fresnel Zone Clearance

Antenna Specification

Antenna Package	Integrated with modem in single outdoor package
Antenna Gain / HPBW / F/B	10 dBi / 45-deg. H & V-pol / 15 dB
Diversity	Automatic Diversity Selection of Horizontal and Vertical Polarization per packet or User Selectable through CLI

Power Specifications

Supply Type	48 VDC 802.3af Mode B compatible Power over Ethernet (PoE)
PoE Power Injector Input	Auto-sensing 100-240 VAC, 47-63 Hz
PoE Power Injector	Output 48 VDC, 350 mA max
PoE Power Consumption (typical)	10 W with AC adapter; 6 W Radio Only

Interface Specifications

Data Interface	10BaseT RJ-45 HDX Ethernet Jack (TIA - T568A)
Power Over Ethernet	48 VDC, 802.3af Mode B compatible, pairs 1 & 4
Max. Ethernet Cable Length	330 feet (100 m)

Dimensions

L x W x H	16.25" x 8.25" x 3.5" (41.5 cm x 21 cm x 9 cm)
Weight	6.4 lb (2.9 kg)
Materials	Aluminum base, Plastic uV Protected Radome

Environmental Specifications

Operating Temperature	-40 °C to 50 °C plus solar loading
Storage Temperature	-40 °C to 70 °C
Operating Humidity	0% to 95% RH (non-condensing @ 50 °C)
Standards	Compliant with ETSI-300-019-1-4, Class 4.1 with extended temp. range
Wind Loading	Better than 110 mph (180 kph) - maintains alignment to better than 56 mph (90 kph)
Ice Loading	Better than 1.25" (32 mm)
Mounting Interface	Mounts to any secure pole from 1" to 3" (2.5 cm to 7.6 cm)
Orientation	Mounts horizontally or vertically.

Approvals

Radio	FCC Class A, CFR 47 Part 15. Industry Canada RSS-102 and RSS-210.
Safety	UL, CSA

Ordering Information

SKU: WR200-3117

Includes: (1) CCU3110 Base Station Wireless Modem with Integrated Antenna; (1) Universal AC/DC adapter with integrated 48 VDC PoE injector; (1) NA AC cord; (1) 5-ft (1.5 m) CAT5 X-over Jumper; Mounting hardware; (1) PoE Surge Arrestor.

Vecima Networks' Continuous Improvement Policy means that specifications are subject to change without notice.

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