

LMS8000

900 MHz Non-Line-of-Sight OFDM Broadband Wireless System

Distributed By: Mega Hertz



CCU8000
Base Station



CCU8010
Base Station with
Integrated Antenna



NCL8000
Point-to-Point Outdoor
Wireless Bridge



EUM8000
Integrated Outdoor
Subscriber Modem



EUM8012
Integrated Outdoor
Subscriber Modem



EUM8005
Plug & Play
Indoor Modem

Features

OFDM Modulation

The high capacity base station uses OFDM modulation schemes to support more subscribers and higher data rates than its successful predecessor, the CCU3100.

Adaptive Modulation

The LMS8000 features a new key enhancement: adaptive modulation. This allows each individual radio modem to dynamically adapt to transmit the highest sustainable rate for its link to the base station.

Non-Line-of-Sight Capabilities

The LMS8000 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 5 miles with the outdoor modem. Customers have established LOS links of up to 25 miles.

High Capacity

The fully scalable LMS8000 supports up to 3 times the subscriber capacity of the legacy LMS4000 system. WaveRider's Dynamic Polling MAC, which provides the most efficient channel use in the industry, enables grade-of-service (GoS) controls that permit operators to provision desired access speeds for their customers.

Advanced Management Features

The LMS8000 supports RADIUS AAA. It also offers SNMP monitoring and PPPoE support, enabling operators to easily manage large numbers of subscribers on a single system.

LMS8000 Advantages

- True 'plug and play' end-user equipment
- Supports VoIP
- Over-the-air data rates up to 13.5 Mbps and access speeds up to 8 Mbps
- Automatic adaptive modulation to maximize system capacity
- LOS range up to 25 miles; NLOS range up to 5 miles
- Dynamic Polling MAC
- Built-in spectrum analyzer
- Supports RADIUS AAA and SNMP
- CCU8000/CCU8010 are backward compatible with EUM3005/3006 and MMT9000 subscriber stations
- PPPoE support
- Web-based Graphical User Interface

CCU8000 Part Number	WR200-8200
CCU8010 Part Number	WR200-8210
NCL8000 Part Number	WR150-8902
EUM8000 Part Number	WR200-8000
EUM8012 Part Number	WR200-8012
EUM8005 Part Number	WR200-8005

The following technical specifications are for the CCU8000 base station and EUM8000 integrated outdoor subscriber station. (for technical specifications on the CCU8010 base station with integrated antenna, NCL8000 point-to-point outdoor wireless bridge, EUM8012 integrated outdoor subscriber modem, or the EUM8005 indoor modem, please see the CCU8010, NCL8000, EUM8012 and EUM8005 brochures)

Radio Specifications

Operating Frequency Band	902 to 928 MHz
Radio Access	Dynamic Polling MAC & ARQ
Radio Modulation	Orthogonal Frequency Division Multiplexing (OFDM) with 8 different levels of quadrature amplitude modulation (QAM) and forward error correction (FEC) plus Direct Sequence Spread Spectrum (DSSS) with Complementary Code Keying (CCK) modulation
Maximum Output Power	High setting: +26 dBm; Low setting: +15 dBm (software selectable)

Type	Modulation	FEC Rate	Signalling Rate [Mbps]	RF Rx threshold (internal antenna port, not including antenna gain) [dBm]
OFDM	BPSK	1/2	1.5	-88
OFDM	BPSK	3/4	2.25	-87
OFDM	QPSK	1/2	3	-86
OFDM	QPSK	3/4	4.5	-84
OFDM	16QAM	1/2	6	-81
OFDM	16QAM	3/4	9	-77
OFDM	64QAM	3/4	12	-73
OFDM	64QAM	3/4	13.5	-72
DSSS	CCK		2.75	-87

Minimum/Maximum Center Channel Frequency	905.2/924.8 MHz
Channel Bandwidth	5.5 MHz
Center Frequency Spacing Increment	0.2 MHz
Orthogonal Channels	4 (recommend external bandpass filter for each)
4 Orthogonal Channel Set Center Frequencies	905.2 MHz, 911.8 MHz, 918.4 MHz, 924.8 MHz
Alternate Channel Isolation Requirement	82 dB (w/ recommended cavity filters 37 dB)
Antenna Connector	CCU8000: N-type female EUM8000: Integrated antenna

Radio Performance

Maximum Over-the-Air Raw Data Rate	Up to 13.5 Mbps at 64 QAM
User Data Rate	Up to 8 Mbps
Maximum Link Path Distance	Up to 25 miles (40 km)

Power Specifications

PoE Power Injector Input	Auto sensing 100-240 VAC, 47-63 Hz
PoE Power Injector Output	48 VDC, 350 mA max, 802.3af Mode B compatible power-over-ethernet
Power Consumption (typical)	10 W

Interface Specifications

Ethernet Data Interface	10/100BaseT RJ-45 HDX ethernet jack (TIA-T568A)
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Environmental Specifications

Operating / Storage Temperature	(-40° C to 50° C) / (-40° C to 70° C)
Operating Humidity	0% to 95% RH (non-condensing)
Enclosure Rating	CCU8000: NEMA/UL/CSA Type 12, IP66 EUM8000: ETSI-300-019-1-4, Class 4.1

Approvals

Radio Transmitter	FCC Part 15, Subpart C, 15.247 Industry Canada RSS-102 and RSS-210.
Safety	UL, CSA

For detailed specifications, please see the respective product brochures



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