



(FP)

Flat Panel Enclosure



(EX)

Ruggedized Enclosure

Description

TeraMax™ is Terabeam's flagship broadband wireless networking solution series, offering an optimal combination of throughput, range, suitability for outdoor environments, network scalability and value. A powerful feature set – including orthogonal frequency division multiplexing (OFDM), adaptive dynamic polling, packet aggregation, bandwidth management at the client, and enhanced security including AES – provides TeraMax with much of the functionality of WiMAX today. OFDM: enables communication even without total line of sight. Polling: by actively providing equal time to all clients in the network, the system prevents interference among nodes, and thus maximizes network scalability. Packet aggregation and bandwidth management: ensure optimal distribution of bandwidth throughout the network.

TeraMax point-to-multipoint systems are ideally suited for wireless Internet service providers seeking to enhance network performance; cable and DSL operators seeking to extend service into remote areas; municipalities requiring innovative ways to support city services such as utility monitoring or surveillance; and enterprises building metropolitan or regional private data networks. A 4.9 GHz version specifically enables public safety communications in the frequency band dedicated by the FCC for that use in the United States. These systems can be combined with TeraMax point-to-point systems (see separate specification sheet) or products throughout Terabeam's extensive portfolio to comprehensively address your network requirements.

TeraMax point-to-multipoint systems comprise base stations and clients; are available in either 5.8 GHz or 4.9 GHz versions; include mounting equipment, Power over Ethernet and management software; and can be ordered with various external antennas and lengths of cable to complete the turnkey solutions. 5.8 GHz clients are provided with flat-panel antennas, either affixed to a ruggedized, carrier-grade enclosure, or integrated into a flat-panel outdoor-rated enclosure.

Specifications subject to change without notice

Network Features

Network device type	Ethernet bridge, IP router
Media Access Control	TurboCell Polling Protocol
Engineered for multipoint networks	Yes
Eliminates 802.11 hidden node	Yes
Adaptive Dynamic polling algorithm	Yes
SuperPacket Aggregation	Yes
Optimized for Internet traffic	Yes
RADIUS Authentication	Yes
IP Routing	RIP II
Bridging	Yes, 100% transparent (protocol independent)
Bridge Filters	MAC address, Protocol ID
Spanning Tree	Yes
Automatic channel searching CPEs	Yes
Encryption (Note: Encryption option lowers throughput since it is done in software)	DES (56-bit) Blowfish (128 bit) AES (128 Bit)
Watchdog Reboot Timer	Yes
DHCP Client & Server	Yes
Static and Dynamic IP address	Yes
NAT	Yes
Roaming in the subnet	Yes
Bandwidth Management:	Yes
Configurable for each remote location	Yes
Configurable for each interface	Yes
SNMP Management	Yes, GUI Management utility included
SNMP Support	MIB II and Private MIB
Extensive Online Help	Yes

Physical & Environmental Features

Ethernet Interface (at PoE injector)	RJ-45, 10/100 Base-T
Ethernet Cable Length	300 ft maximum
RF Interface (external antenna models)	N-Female
Operating Temperature Range	-30°C to 60°C (-22°F to 140°F)
Storage Temperature	-40°C to 75°C (-40°F to 167°F)
Operating Humidity	0% to 100% (non-immersion rain)
Altitude	10,000 ft (3,000 meters)
Power Scheme	Power over Ethernet (POE) Cat 5 DC Injector
Power Supply	110/220 VAC, 50-60 Hz
Power Consumption / Current Draw	16 W Max / 0.5 A Max
Input Voltage Required at Radio	48 VDC (supplied via POE)
Dimensions (H x W x D)	FP Enclosure: 15.3 x 15.3 x 1.13 in EX Enclosure: 12 x 14 x 3.25 in
Weight	FP Enclosure: 2.90 lbs (1.32 Kg) EX Enclosure: 9.65 lbs (4.38 Kg)
Enclosure (both FP and EX)	Outdoor, all-weather
LED status indicators	Power, Wireless Link, and Ethernet Link
Min - Max Diameter of Mounting Pole	For FP Enclosure: 0.75 - 1.5 in For EX Enclosure: 1.0 - 3.0 in

RF Features

	5.8 GHz Frequency Specs	4.9 GHz Frequency Specs
Operational Frequency Band	5725 – 5850 MHz	4940 – 4990 MHz
Channels (user selectable)	5 non-overlapping channels with a bandwidth of 20 MHz: 5745 MHz - Channel 149 5765 MHz - Channel 153 5785 MHz - Channel 157 5805 MHz - Channel 161 5825 MHz - Channel 165	Single channel: 4965 MHz with a bandwidth of 20 MHz
Over-The-Air Data Rate	User selectable up to 36 Mbps	User selectable up to 36 Mbps
Throughput¹	16 Mbps ²	16 Mbps for single channel operation
Modulation Scheme	OFDM-QPSK	OFDM-QPSK
Radio Operation	Time Division Duplex (TDD)	Time Division Duplex (TDD)
FCC Certified	Yes	Yes
Transmit Output Power	+14 dBm for standard version +23 dBm for amplified version	+10 dBm for standard version +23 dBm for amplified version
Receiver Sensitivity³	-72 dBm @ 36 Mbps -76 dBm @ 24 Mbps -80 dBm @ 18 Mbps -82 dBm @ 12 Mbps -83 dBm @ 9 Mbps -84 dBm @ 6 Mbps	-72 dBm @ 36 Mbps -77 dBm @ 24 Mbps -81 dBm @ 18 Mbps -83 dBm @ 12 Mbps -84 dBm @ 9 Mbps -85 dBm @ 6 Mbps
Maximum Receive Level	-30 dBm	-30 dBm

1. This is a typical figure. Actual throughput varies according to the specifications of the antenna used and the conditions of the terrain.

2. The throughput of a Flat Panel client is 12 Mbps.

3. Actual receiver sensitivity for individual products may vary based on manufacturing process and environmental variations.

Ordering Information

P-MP Component	Model	Terabeam P/N
Base	MBS49HEXN	690-900092-010
	MBS58HEXN	690-900073-010
Client	MCL49HEXN	690-900093-020
	MCL49HVM8M	690-900001-010
	MCL58HEXN	690-900073-020
	MCL58HEX23A	690-900074-010
	MCL58HFP23I	690-900077-109

TeraMax™ P-MP System Includes:

- Outdoor radio with mounting hardware
- Surge protected Cat 5 DC Power Injector
- 110/240 VAC to 48 VDC power supply
- CD-ROM with Windows-based Terabeam Configurator software
- User's Manual

A Terabeam outdoor Ethernet cable must be ordered separately per unit. Available lengths are 50, 100, 200, or 300 feet. Models with external antennas include one 6 ft LMA-600 coax cable per radio.

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