

# FlexWave™ MMW 100

## Millimeter Wave Transmission System



FlexWave MMW 100 is a point-to-point millimeter wave transmission system that operates in the licensed 71GHz to 86GHz spectrum and provides fiber-speed wireless Line of Sight (LOS) communications links within a 1 – 6 km range. The MMW 100 features a 10" lens instead of a 2' antenna making the product suitable to mount on electric poles and any other medium without the restrictions of high pointing stability. The MMW 100 has the largest beam width allowed by the FCC in the 71-86 GHz band (1.2 deg.).

### FlexWave MMW key features

- High Availability (99.999%)
- Best-in-class link performance
- High Capacity (Full, duplex GigE performance)
- Reduced cost per bit due to the inherent cost- and data-efficiency of native Ethernet
- Same cost as microwave with but 10x higher bandwidth
- Simple & quick install

SPEC SHEET



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# FlexWave™ Millimeter Wave 100

12/07 • 105648AE FlexWave® Millimeter Wave 100

FlexWave MMW wireless links address the increasing shortage in metro access capacity by taking advantage of the recently allocated licensed 71-86 GHz spectrum. By using the unique propagation characteristics and the wide bandwidth of the spectrum, FlexWave MMW can support extremely high speed data transmission for short communication links.

FlexWave MMW provides fiber equivalent performance, 99.999% reliability and security, without the high installation costs and delays associated with inter-building fiber installations. FlexWave MMW can be engineered to operate in close proximity to other FlexWave MMW systems so that many links can co-exist in the same vicinity without causing interference to one another. FlexWave MMW is driving Ethernet beyond the office and into the metro enabling the move towards a single, scalable, end-to-end communications technology.

## Applications

FlexWave MMW can be used for various access and backhaul applications.

### Access

- Fiber Extension: Enterprise point-to-point, last mile and first mile connections
- Campus Connectivity
- Remote Storage Access
- Redundant Access / Network Diversity
- Metropolitan Area Networks (MAN)
- Disaster Recovery
- Homeland Security

### Backhaul

- Mobile, WiMAX & Muni-Wi-Fi Backhaul
- Distributed Antenna Systems (DAS) / Remote Radio Head (RRH) Fronthaul

The MMW 100 features an all-data-rate technology, transporting any rate from OC3 to OC-24, GigE (1.25Gbps), 1.42Gbps, (DAS), and 1.536 Gbps. To the network the MMW radios will look and feel just like traditional fiber optic cable. Since the MMW systems are Layer 1 and protocol agnostic, they will interoperate with most commercial off the shelf (COTS) switches, routers and encryption devices.

- MMW 100 radios have Web/Java based monitoring. Accessible data includes: Signal Strength via AGC (Automatic Gain Control), Environmental (Temperature, Power, etc), Fiber Status and Frame Error Counters.
- The MMW 100 uses SNMP v1 to v3 for link management.



# Millimeter Wave 100

## Specifications

### SYSTEM SPECIFICATIONS

<b>Frequency Band:</b>	71 - 76 GHz; 81 - 86 GHz
<b>RF Interface:</b>	FDD
<b>Modulation:</b>	OOK
<b>Latency:</b>	<50 microseconds
<b>Forward Error Correction:</b>	n/a

### PHYSICAL

<b>Weight:</b>	Radio + antenna + bracket: 20 kg (44 lbs)
<b>Dimensions:</b>	Radio + Antenna: 14" diameter x 26" length (35.5 cm x 66 cm)

### TRIBUTARY

<b>Data Rate:</b>	1.25Gbps to 1.536 Gbps full duplex Ethernet
<b>Standards Compliance:</b>	IEEE 802.3z
<b>Interface:</b>	Fiber, 1310nm SM & 850nm MM / LC connector
<b>Optional Ethernet Interface:</b>	1000Base-SX with RJ-45 connector

### ELECTRICAL

<b>Input Voltage:</b>	-48 VDC (-40.5 to -57VDC); 120 VAC 60 Hz (provided by external supply)
<b>Power Consumption:</b>	50 Watt

### ENVIRONMENTAL

<b>Temperature Range:</b>	-22° to +131°F (-30° to +55°C)
<b>Altitude:</b>	15,000 ft (4500 m)
<b>Outdoor Unit:</b>	All Weather

### MANAGEMENT

<b>Web/Java based monitoring</b>	
<b>EMS SNMP:</b>	v1, v2c, v3

### REGULATORY

<b>FCC:</b>	1.1310 RF MPE limits part 101
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### ANTENNA

10" Lens
>43 dBi
<1.2°BW
Fine adjust pole mount fitting 2.5" to 5" OD. (6.4 cm x 12.7 cm)

\*Product manufactured by LOEA Corporation.

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