



G I G A B E A M

GigaBeam.com

● Gi-Linx 4.9 Series Point to Multi-Point

4.940 - 4.990GHz Wireless System



Short and Medium Range Subscriber Unit



Long Range Subscriber Unit

Professional Series Base Station



Technology Summary

Operating in the 4.940 – 4.990 GHz frequency band, the GigaBeam 4.9 Series allows US public safety agencies to build a secure, interference-free wireless communications infrastructure with best-in-class features and performance.

A GigaBeam 4.9 network can be quickly built and brought on-line for a variety public safety applications including short and long distance point-to-point and fixed multi-point configurations. Whether the end-use is file transfer, internet access, voice, or video transport, the GigaBeam 4.9 Series has been designed to work seamlessly in your network.

The GigaBeam 4.9 is also available in foreign countries where the 4.9 GHz spectrum is available for licensed operation.

Features

Orthogonal Frequency Division Multiplexing (OFDM) – High spectral efficiency supports class leading data rates. OFDM is also capable of robust operation in near or non-line-of-sight (NLOS) link conditions, relaxing the stringent installation requirements associated with more traditional fixed wireless systems.

Power and Throughput – Delivering up to 400mW of RF power, GigaBeam 4.9’s sophisticated radio allows long distance networks at data rates to 54 Mbps. Such capability allows end-users to download large data files, high resolution images and video clips within a matter of seconds. Streaming video and multiple VoIP connections can now be delivered or backhauled seamlessly.

Quality of Service (QoS) – features within the GigaBeam 4.9 architecture allow tagged voice and video traffic to take priority over general data packet transfer, providing reliable, real-time capability even under congested link conditions. Priority privileges for marked frames are maintained from port to port: Ethernet through RF.

Security – The GigaBeam 4.9 delivers 128 bit AES encryption / decryption at full line speed. The AES algorithm was selected to be the standard encryption method of the US Government by the National Institute of Standards and Technology (NIST).

Ease of Installation – The GigaBeam 4.9 Series is fully integrated. The network engine, digital baseband, radio and antenna are all combined into a single, weatherized outdoor chassis (-30C to 60C operation), complete with Power over Ethernet (PoE) support. To further assist installation, an integrated spectrum analyzer and audible antenna alignment function are provided as standard features.

Antenna Options: 9dBi Omni
15dBi 90 x 10 deg. Sector

Applications (PtMP)

- | | |
|---|-----------------------------------|
| Efficient multicasting of video | Video monitoring and surveillance |
| Large bandwidth file and video transfer | Inter-agency communication |
| Temporary emergency link for voice and data | Backhaul of monitoring data |
| Any application using Ethernet data transport | |





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GigaBeam Corporation
Commercial Park West
4915 Prospectus Drive, Suite H
Durham, NC 27713
Tel: 919-206-4426
Fax: 919-206-4420
sales@gigabeam.com

● Gi-Linx 4.9 Series Point to Multi-Point

Performance:

Link Distance ¹	49MSRI	49MMRI	49MLRI	49MLRC
Using Sectoral Base	1.2 Miles	3 Miles	6 Miles	Antenna Dependent
Using Omni Base	0.6 Mile	1.6 Miles	3 Miles	Antenna Dependent
Radio Power ¹	50 mW	400 mW	400 mW	400 mW

Radio:

Frequency Range:	4.940-4.990 GHz, US public safety
Channel Bandwidth:	5, 10, 20, or 40 MHz ³
Channel Centers (US):	5MHz: 4945, 4950, 4055, 4960, 4065, 4970, 4975, 4980, 4985 10 MHz: 4945, 4950, 4955, 4960, 4965, 4970, 4975, 4980, 4985 20 MHz: 4950, 4955, 4960, 4970, 4975, 4980 40 MHz: 4960, 4965, 4970
Modulation:	OFDM-BPSK, QPSK, 16QAM, 64QAM
Data Rates ² :	1.5-108 Mbps depending on Channel Bandwidth and Modulation selection
Media Access:	Prioritized CSMA/CA
DC Power:	+48Vdc/0.8A, via Power-over-Ethernet, indoor DC injector (included)

Networking:

Ethernet:	10/100Base-T, Auto-negotiating, Full/Half duplex, up to 100m separation between radio and network closet
QoS:	Line speed packet inspection of 802.1p, IP ToS, IP, DiffServ tags
Frame Aggregation:	Dynamic, User enable/disable
Protocol Support:	Transparent MAC layer bridging, IP Static Routing, RIP v1/v2 Transparent VLAN (802.1g)
Management:	HTTP Web Server, FTP, VLAN, SNMP v1/v2 with trap support and custom MIB, custom Event LogSecurity:
Encryption:	Hardware accelerated, line speed 128-bit AES & 64, 128, 152-bit WEP
Authentication:	MAC address-based access control
Channel Plan:	Non- Standard

Mechanical:

	49MSRI	49MMRI	49MLRI	49MLRC
Configuration:	Outdoor, Integrated Unit	Outdoor, Integrated Unit	Outdoor, Integrated Unit	Outdoor, Type-N Connector
Size:	13"x13"x2.5"	13"x13"x 2.5"	18"x18"x3.5"	10.25"x10"x3"
Weight:	7.5 lbs	8.0 lbs	14 lbs	4.5 lbs
Pole Mount Adapter:	2-Axis Adjustment, Accommodates 1-3" pole diameter			

Mechanical:

	Base Station
Configuration:	Outdoor, Type-N Connector
Size:	10.25"x10"x3"
Weight:	4.5 lbs
Pole Mount Adapter:	2-Axis Adjustment, Accommodates 1-3" pole diameter

Environmental:

Temperature:	-40° to +60° C
Humidity:	0-100% condensing
Water/Dust protection:	Meets IP67 requirements
Lightning Suppression:	Integrated, IEC 61000-4-5 Class 5 compliant
Wind:	125 MPH survivability, 110 MPH operation
Wind Load @ 125 MPH:	83 lbs 83 lbs. 128lbs 83lbs

Base Station Antennas:

Omni directional antenna

Regulatory:

Radio Compliance FCC Part 90

1. Link Distances are for 36 Mbps data rate setting and channel bandwidth of 20 MHz. Other combinations of bandwidth and data rate will yield different link distance results. Throughput and link distances may be lower under NLOS conditions
2. Other frequency ranges are available for deployment in countries allowing radio operation between 4.90 and 5.325 GHz. Installers are urged to check with their country's regulations authority prior to equipment purchase and deployment. Radio Power and data rate settings are subject to changes according to the country of installation
3. For US operation, 40 MHz bandwidth is allowable only for installation which have been granted an "experimental" license by the FCC