RAJANT

SPEC SHEET

LTE Enhance

Kinetic Mesh Mobile Network Module:

The Rajant LTE Enhance Module is Rajant's new industrial grade LTE stand alone integration device. This module supports Cat 12/13 on the downlink / uplink with data rates up to 600 / 150 Mbps respectively. It offers MIMO antenna configurations and is compatible with most private LTE networks.

Key Features

- Enables private LTE towers to act as added-capacity backhaul node for the Rajant Mesh network. Off loads data traffic from the mesh, reducing congestion and increasing overall network capacity.
- Proprietary InstaMesh® protocol selects the most efficient path to destination, considering both LTE and mesh networks. Ensures data flow is optimized for performance, reliability, and cost efficiency.
- Dynamically distributes traffic between the LTE and mesh components. Optimizes LTE bandwidth usage, ensuring efficient operation and preventing resource bottlenecks.
- Offers speeds up to 150 mbps of physical layer data rate and low-latency connectivity. Ideal for real-time applications like video surveillance, autonomous vehicles, and IoT.
- Manages both LTE and mesh networks from a single software tool. Simplifies configuration, monitoring, and troubleshooting, reducing administrative overhead.
- Rugged design suitable for harsh environments like mining, energy, and transportation. Deployable on vehicles, equipment, or fixed infrastructure.
- Seamlessly switches between LTE and mesh networks during outages. Maintains continuous connectivity, reducing downtime and ensuring reliability.
- Supports Cat 12/13 on the downlink / uplink with data rates up to 600 / 150 Mbps respectively.
- Offers MIMO antenna configurations. Compatible with most private LTE networks.

Utilize the LTE Enhance Module to Your Advantage

Rajant Corporation's Kinetic Mesh® technology, combined with the Rajant LTE Enhance device, creates a powerful and seamlessly integrated networking solution. This addition allows for communication between private LTE and Rajant Mesh networks, ensuring robust and adaptable connectivity for various industries. The result is a network that excels in reliability, flexibility, and scalability, tailored to meet the diverse needs of modern enterprises.

One of the key advantages of this seamlessly integrated network is enhancing the existing mesh network with additional backhaul links through private LTE infrastructure. InstaMesh® considers the LTE tower connection as an additional route to offload traffic from the mesh network, increasing bandwidth and reducing congestion. This improvement allows organizations to achieve higher throughput and better performance for mission-critical applications.

Additionally, the integrated network setup improves LTE capacity by dynamically adjusting traffic between the LTE and mesh networks as LTE bandwidth is available. This ensures that LTE resources are optimized, preventing bottlenecks and enabling more efficient use of available bandwidth. The result is a network capable of handling higher data loads while maintaining low latency and reliable performance.

With the Rajant LTE Enhance device, all these advantages can be managed through Rajant's BC|Commander software. This unified approach eliminates the complexity of using multiple tools, saving time and effort for network administrators while reducing operational costs.

InstaMesh®

InstaMesh is the advanced, patented[1] protocol developed by Rajant that directs the continuous and instantaneous forwarding of packets from wireless and wired connections. It enables complete network mobility, high throughput, and low latency with very low maintenance and administrative requirements. Operating at Layer 2 and not requiring a root node or LAN Controller, InstaMesh provides robust fault tolerance even if there is a connection or node outage. No matter how you configure your network, InstaMesh networking software always determines the most efficient pathway between any two points, even when those points are in motion.

Model	Description
LE1	Industrial grade LTE modem to connect to BreadCrumbs. Supports Cat 12/13 on the downlink / uplink data rates up to 600 / 150 Mbps. 2X2 MIMO antennas. Compatible with most private LTE networks. 24-56V POE power. Includes USB cable. Antennas, cables, power required.

Wireless	Specs
Antenna Connector	(2) Type N (female)
Frequency [2]	Supported RF Bands: 1-5 7-9, 12, 13, 18-20, 26, 28-30, 32, 41-43, 46, 48, 66
Modulation	OFDM with up to 256-QAM
Max. Physical Layer Data Rate	Downlink: Cat 12 with 3CA, 256-QAM = 600 Mbps Up Link: Cat 13 with 2CA contiguous, 64-QAM = 150 Mbps
Max. RF Transmit Power [3, 4]	23 dBm
Receive Sensitivity [5, 6]	-103 dBm (full RB on downlink; 10 MHz channel bandwidth)

Power	Specs
PoE	24 — 56 VDC Passive PoE
Power Consumption [7]	0.75 W (idle); 5 W (peak) @ 48 V

1: U.S. Patent 9,001,645
2: Channel, frequency and bandwidth options vary based upon regional and local regulations and certifications.
3: RF transmit power is governed by local regulations and varies by frequency.
4: Transmit power tolerance is ± 2 dB
5: Receive sensitivity tolerance is ± 2 dB
6: Receive sensitivity criteria is less than 10% packet error rate (PER)

Network & Security

- Supports LTE security with shared secret key and A5/3 with 128-bit encryption
- In addition the LTE security, this device works with a Rajant Breadcrumb to offer Layered Security on top of the LTE security. These Layered Security options include:
- Multiple cryptographic options, including NSA Suite B algorithms (implementation not certified). For information on models with full Suite B certification, contact Rajant or your authorized Rajant partner.
- Separately configurable data and MAC address encryption via AES256-GCM, AES192-GCM, AES128GCM, AES256-CTR, AES192-CTR, AES128-CTR, XSalsa20, XSalsa20/12, and XSalsa20/8.
- Configurable per-hop, per-packet authentication between BreadCrumbs via AES256-GMAC, AES192GMAC, AES128-GMAC, HMAC-SHA512, HMAC-SHA384, HMAC-SHA256, HMAC-SHA224, HMAC-SHA1, and Poly-1305-AES.

Input/Output

Ethernet	(2) M12 X-Code female connector
USB	(1) USB 2.0, 4 Pin, M12 A Code
LED	(1) Status LED
SIM	(1) User-accessible SIM

Physical

Dimensions	160.8 mm x 118.2 mm x 51.1 mm (6.331 in x 4.653 in x 2.012 in)
Weight	725g (1.6 Lbs)
Temperature	Ambient (operating): -40 °C to +70 °C (-40 °F to 158 °F) Storage: -40 °C to +80 °C (-40 °F to 176 °F)
Enclosure	Designed for IP67 (6: Dust-tight, 7: Waterproof)
Certification	FCC, IC

20+ Years OF GAME-CHANGING WIRELESS

RAJANT
MAKING THE COMPLICATED **SIMPLE**
Continuous **Connectivity** Anywhere