LTE Enhance
Features / Benefits / Value

LTE Enhance is Rajant's new industrial grade LTE stand alone integration device that seamlessly integrates existing Rajant mesh and LTE private networks into a single edge-compute enabled network that delivers enhanced performance for mission critical operations.
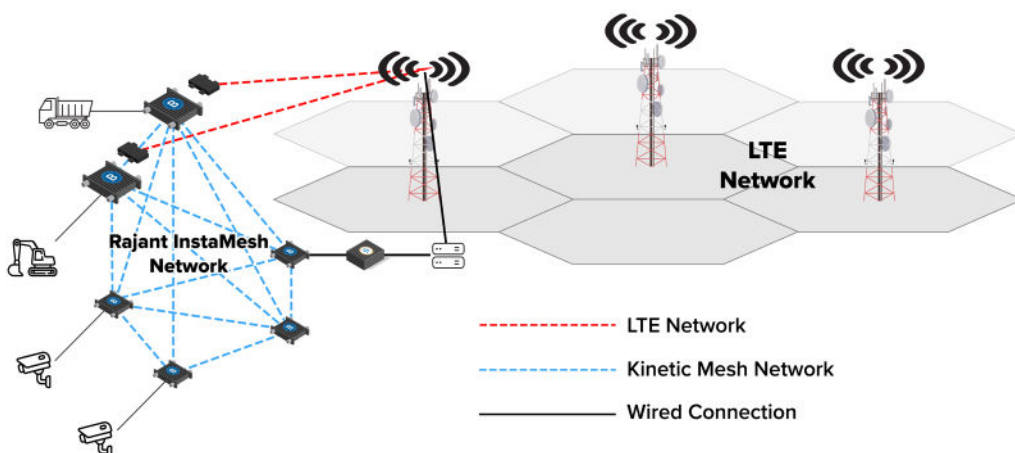
Description

Rajant Corporation's Kinetic Mesh® technology, combined with the Rajant **LTE Enhance**, creates a powerful and seamlessly-integrated networking solution. This integration allows for seamless 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 seamlessly-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, 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.

Integrated Rajant LTE Diagram

LTE Network
Kinetic Mesh Network
Wired Connection

Rajant's seamlessly-integrated private LTE andmesh solution, powered by the Rajant LTE Enhance, is the ultimate answer to modern connectivity challenges.

By enhancing existing mesh networks with LTE backhaul and optimizing LTE capacity, this solution delivers unmatched reliability, flexibility, and performance. Whether improving operational efficiency or reducing costs, Rajant technology ensures your operations thrive in any environment. Embrace the future of networking with Rajant today.

Features

1. Enhanced Backhaul Through LTE Integration
- Enables private LTE towers to act as added-capacity backhaul nodes for the Rajant Mesh network.
- Offloads data traffic from the mesh, reducing congestion and increasing overall network capacity.

2. Dynamic Path Optimization with InstaMesh®
- 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.

3. Improved LTE Resource Utilization
- Dynamically distributes traffic between the LTE and mesh components.
- Optimizes LTE bandwidth usage, ensuring efficient operation and preventing resource bottlenecks.

4. High Throughput and Low Latency
- 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.

5. Centralized Management with BC Commander
- Manages both LTE and mesh networks from a single software tool.
- Simplifies configuration, monitoring, and troubleshooting, reducing administrative overhead.

6. Versatile Deployment Options
- Rugged design suitable for harsh environments like mining, energy, and transportation.
- Deployable on vehicles, equipment, or fixed infrastructure.

7. Resilient Failover
- Seamlessly switches between LTE and mesh networks during outages.
- Maintains continuous connectivity, reducing downtime and ensuring reliability.

8. Supports Cat Downlink + Uplink
- Supports Cat 12/13 on the downlink
- Uplink with data rates up to 600 / 150 Mbps respectively.

9. MIMO Antenna Configurations
- Offers MIMO antenna configurations.
- Compatible with most private LTE networks.

10. Supported RF bands include:
- 1-5, 7-9, 12, 13, 18-20, 26, 28-30, 32, 41-43, 46, 48, 66

Benefits

1. Enhancing Rajant Network Performance
- Leveraging LTE towers as backhaul nodes reduces congestion on the mesh network.
- **Value:** Results in higher throughput and faster response times for critical operations, saving time and increasing productivity.

2. Optimizing Existing LTE Network
- Dynamic traffic distribution ensures efficient use of LTE bandwidth
  - Before: just an LTE Core and CPE equipment. Each CPE has a cap of upload throughput
  - After: Combined LTE and Rajant Mesh network:
    - Upload throughput can be distributed across several CPE (modem / router).
      - Throughput is also routed by the mesh to the LAN
- **Value:** Maximizes the value of LTE infrastructure investments, reducing operational costs and increasing ROI.

3. Improve LTE for Flexible Deployment Scenarios
- Adding the mesh capability to LTE allows the network to adapt to changing physical shape of the network area (network geography expands, or topology changes)
  - Before: with just LTE, there is extensive engineering work to move or add LTE towers.
  - After: LTE with Mesh will allow network to adapt to changes such as geography expands (new area needs coverage), or topology changes (mountain is removed, container stack is created, wall is installed)
- Adapts to changing operational needs, reducing setup time and enabling rapid deployment.
- **Value:** Ideal for temporary or regularly changing installations across industries, saving costs and increasing scalability.

4. Improved Reliability of LTE Network
- Dual-network (LTE + Mesh are in parallel) connectivity provides redundancy, reducing downtime and ensuring nonstop operations.
- **Value:** Saves time by maintaining operational efficiency and preventing revenue losses from communication failures.

5. Simplified Network Management
- Managing LTE and mesh networks through BC Commander saves time and reduces training costs. This is instead of having an off-the-shelf LTE modem that is managed separately.
- **Value:** Streamlined operations improve staff efficiency and free up resources for other priorities.

6. Enhance the functionality of a wide variety of Rajant BreadCrumbs
- LTE functionality can be added to new or existing BreadCrumbs, including Hawk, Sparrow, ES1, ME4, and LX5
- **Value:** networks can get a great upgrade in functionality without designing a full upgrade of all the BreadCrumbs.

Get the edge over other fault-tolerant networking options.

Discover how Rajant can help you stay connected—no matter how your team operates. Our technology means Reliability, Redundancy, and Resiliency. Learn more about Rajant's one-of-a-kind technology at www.rajant.com

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20+ YEARS OF GAME-CHANGING WIRELESS

RAJANT
Intelligent Edge - Enabling Industrial AI