Rajant BreadCrumbs®

Powerful Functionality in a Compact Form

Rajant's Kinetic Mesh® network is unlike any other wireless mesh system on the market today, providing fully mobile broadband connectivity that is simple, instantaneous, and fault-tolerant for any application.

The network's power lies in Rajant's wireless BreadCrumbs: the compact, lightweight, industrial-grade nodes that form this agile, adaptable wireless infrastructure.

BreadCrumbs have unique capabilities that enable them to perform flawlessly in even the most hard-to-network environments and make them ideal for deployment across ever-moving operations.

Peer-to-Peer Functionality

Every Rajant BreadCrumb can hold multiple simultaneous connections, over multiple frequencies, with other nodes in the mesh, eliminating the need for a controller node while adding network reliability.

Self-Optimize without Intervention

InstaMesh enables the nodes to adapt in real-time to quickly or constantly moving network elements. No connections have to be broken for new ones to be made, providing for resilient mobility.

Deployable as Fixed or Mobile Nodes

Compact, lightweight BreadCrumbs can be affixed to static equipment or deployed directly on moving assets – so machines and personnel can take connectivity with them wherever they go.

Support Seamlessly Scalability

If new BreadCrumbs are added, they automatically begin meshing with neighboring nodes and further strengthen the network by providing additional paths to send traffic.

Infused with InstaMesh® Intelligence

All BreadCrumbs have Rajant's patented InstaMesh networking software onboard, which dynamically evaluates and directs traffic via the best available path(s) at any given moment.

Perform in Extreme Conditions

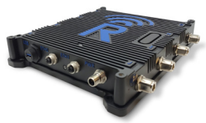
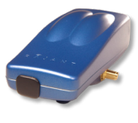
The industrial-strength design of the nodes, coupled with IP67-rated dust-tight and water-tight enclosures for most models, allow them to operate continuously in virtually any environment for years.

BreadCrumbs can easily integrate with and enhance existing network infrastructure, including third-party satellite, wired, point-to-point wireless, point-to-multipoint wireless, or can be deployed ad hoc to bring connectivity where no communications infrastructure yet exists.

Rajant BreadCrumb Portfolio

Find the Right Radio for the Right Function

Use the chart below to compare the features and functionality of our wireless BreadCrumb offerings.

	 Peregrine	 Hawk	 Sparrow	 Cardinal	 ES1	 ES1-IS	 JR3	 DX2
Typical Radio Configuration	Quad 2x2 MIMO transceivers	Dual 2x2 MIMO transceivers	Dual 2x2 MIMO transceivers	Dual 2x2 MIMO transceivers	Dual 2x2 MIMO transceivers	Single 2x2 MIMO & Single 1X1 SISO transceivers	Single 1x1 SISO transceiver	Single 2x2 MIMO transceiver
Number of Radios	4	2	2	2	2	2	1	1
Max Antenna Ports	8	4	4	4	4	3	1	2
900MHz Supported	No	No	No	No	No	No	No	No
2.4 GHz Supported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4.9 GHz Supported	No	Yes	Yes	Yes	Yes	No	No	No
5 GHz Supported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10/100/1000 Ethernet	2	2	1	1	1	1	0	1
10/100 Ethernet	0	0	0	0	0	0	1	0
# of USB Ports	1	1	1	1	1	0	0	1
Enclosure	Aluminum IP67	Aluminum IP67	Aluminum IP67	Requires an Enclosure	Plastic IP67	Aluminum-IP68 or Stainless Steel – IP68	Plastic, Weather Resistant	Magnesium, Unsealed
Input Voltage	20 to 60 VDC	20 to 60 VDC	9 to 30 VDC	10 to 58 VDC	9 to 30 VDC	9 to 30 VDC	9 to 30 VDC	8 to 60 VDC
Power Consumption (Idle/Peak)	10W / 34W	10W / 24W	2.8 / 15W	4.2W / 14.4W	2.8W / 15W	2.8W / 15W	1.8W / 6W	2.8W / 7.5W
Operating Temperature (With Heater if Available)	-40° to 80°C	-40° to 80°C	-40° to 70°C	-40° to 60°C	-40° to 60°C	-40° to 60°C	-30° to 70°C	-40° to 60°C
Ideal Applications	High performance and high throughput. Enhanced security. Military, Mining, Rail, Shipping Ports, Heavy Construction	High performance and high throughput. Enhanced security. Military, Mining, Rail, Shipping Ports, Heavy Construction, Public Safety	Heavy-duty Machinery and Light-duty Vehicles	Smallest and lightest module. Drones and Robots	Mid-tier, less ruggedized. Energy, Plants, Warehouses, Agriculture, Manufacturing, Commercial, Light Vehicles, Public Safety, Industrial Security	Intrinsically Safe C1D1	Edge Device. Agriculture	Drones, Small Robots, Drone Swarming. Public Safety, Industrial Security
Max Modulation	256-QAM	256-QAM	256-QAM	256-QAM	64-QAM	64-QAM	64-QAM	64-QAM
Max Channel Size	80 MHz	80 MHz	40 MHz	80 MHz	40 MHz	40 MHz	40 MHz	40 MHz
Maximum Transceivers	4	2	2	2	2	2	1	1
MIMO	2x2	2x2	2x2	2x2	2x2	2x2	1x1	2x2
Combined Data Rate	2.3 Gbps	1.7 Gbps	600 Mbps	1.73 Gbps	600 Mbps	450 Mbps	150 Mbps	300 Mbps
User Throughput	Up to 600 Mbps	Up to 600 Mbps	Up to 70 Mbps	Up to 150 Mbps	Up to 70 Mbps	Up to 150 Mbps	Up to 45 Mbps	Up to 140 Mbps
Interface Connectors	M12, USB Type A	M12, USB Type A	RJ45, M8	RJ45, USB	RJ45, M8	RJ45	Squid	RJ-45, USB Micro B
Encryption Processing	Hardware Accelerator	Hardware Accelerator	Software	Software	Software	Software	Software	Software
Radio Type	Up to 802.11ac	Up to 802.11ac	Up to 802.11n	Up to 802.11ac Wave 2	Up to 802.11n	Up to 802.11n	Up to 802.11n	Up to 802.11n
Dimensions	264.9 x 253.7 x 46.2 mm (10.43 x 9.99 x 1.82 in)	264.9 x 253.7 x 46.2 mm (10.43 x 9.99 x 1.82 in)	174 x 184 x 47 mm (6.85 x 7.25 x 1.85 in)	17.8 x 98.0 x 50.0 mm (0.70 x 3.86 x 1.97 in)	138.735 x 143.154 x 57.15 mm (5.462 x 5.636 x 2.25 in)	320 x 240 x 100 mm (12.60 x 9.45 x 3.94 in)	177 x 44 x 44 mm (6.97 x 1.73 x 1.73 in)	108 x 43 x 40 mm (4.252 x 1.693 x 1.575 in)
Weight	2946 g (6 lbs 7.9 oz)	2600g (5 lbs 13 oz)	1312 g (2 lbs 14.3 oz)	105 g	1074 g +/- 100 g (2.37 lb +/- 0.22 lb) (weight depends on transceiver configuration)	3.54 kg	193 g (6.8 oz)	123 g ± 10 g (4.4 oz ± 0.4 oz)

BreadCrumb Benefits:
Network Infrastructure for Today's Interconnected, Mobile World

Rajant BreadCrumb nodes are purpose-built to reliably enable voice, video, and data communications instantly and without fail almost anywhere. They readily form a fully redundant web of meshed connections to deliver more reliability, mobility, and resiliency using less infrastructure than other wireless networking options like Wi-Fi or LTE.

Rajant BreadCrumbs have been proven in the field for two decades to deliver on the promises of:

- **Robust fault tolerance:** no single point of failure & ability to work around interference
- **High bandwidth and low latency:** nodes have hundreds of potential paths to direct traffic
- **Total, 'never-break' mobility:** enables M2M communications, autonomy, and more
- **Cost-effective network scalability:** requires minimal technical resources to manage and expand
- **Military-grade network security:** every node has multiple cryptographic options

Not sure what BreadCrumb is best for your application?

We're ready to help you further assess your network requirements and will recommend the appropriate solution for your needs.

Get in touch today:

+1 484.595.0233 | info@rajant.com | rajant.com/contact-us

Tel: 484.595.0233 | www.rajant.com

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