

BreadCrumb® LX

Portable Wireless Mesh Network Node

APPLICATIONS

► MINING

For open pit and underground mines, BreadCrumb devices form a resilient network for mine monitoring and control. Typical applications include Miner Tracking, Emergency Rescue, Voice communications (VoIP), Dispatch, Routing, Health Monitoring and Video.

► MILITARY

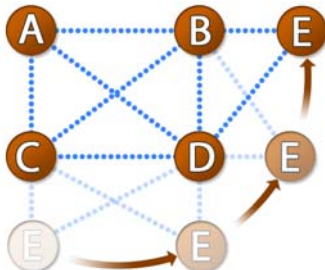
With battery power, rugged enclosures, single-switch operation and robust security, BreadCrumb devices are perfect for military applications such as Perimeter Security, Sensor Data Collection, Video Surveillance, Convoy Security, RFID Tracking & more. Depending on BreadCrumb model, security options range from WEP, WPA2, SecNet 54® to FIPS 140-2.

► FIRST RESPONDERS

BreadCrumb devices form an instant secure network for emergency response, disaster relief, RFID tagging, voice communications (VoIP), PDAs, laptops, video and sensor applications. The included Ethernet port can provide Internet access through satellite or microwave links.

InstaMesh™

InstaMesh is an advanced protocol developed by Rajant that allows for continuous & instantaneous routing of wireless and wired connections. It enables complete network mobility, robust fault tolerance, high throughput and low latency, with zero maintenance and administration. The BreadCrumbs combine InstaMesh with support for standards in wireless access, security, network monitoring, QoS and much more.



In this diagram, the Rajant mesh network adapts to the changes caused by the movement of Node E. New links are established in real-time keeping the network available, intact and secure.

Because Rajant uses primarily Layer-2 and does not use a root node or LAN Controller, mobility and bandwidth are maximized. Multiple gateways and secure mesh-to-mesh authentication are also supported.

Rajant BreadCrumb® LX

The Rajant BreadCrumb LX is a rugged multi-radio wireless transmitter-receiver that forms a mesh network (using InstaMesh™) when used in conjunction with other BreadCrumb devices.



This portable wireless mesh network node contains two radios and supports open-standard IEEE 802.11 a/b/g protocols to enable data, voice and video applications. Available radio configurations are 2.4GHz/900MHz, 2.4GHz/2.4GHz, 2.4GHz/4.9GHz and 2.4GHz/5.8GHz. This full featured LX can operate in extreme conditions and has several mounting options.

BreadCrumb LX Benefits

- Multiple radio configurations support comprehensive applications and deployment environments—900MHz, 2.4GHz, 4.9GHz and 5.8GHz (LoS & NLoS)
- Unique ability to scale to 100's of mobile high-bandwidth nodes
- Rugged & portable for applications in extreme situations
- Open system IEEE 802.11 a/b/g standards for compatibility with millions of commercial off-the-shelf (COTS) client devices such as laptops, PDAs, IP cameras, sensors, VoIP phones & other IP devices
- Runs InstaMesh™ so the network quickly adapts to moving network elements
- High bandwidth availability for data, voice & video applications
- Self-configuring operation for fast & easy deployments
- Security encryption to ensure privacy of data
- Multiple gateway connections supported through Automatic Protocol Tunneling (APT) eliminating loops & packet storms
- Mesh-to-mesh authentication provides secure networking

BC | Commander™ Management Tool

The included BC | Commander software tool is used to configure, manage and monitor your Rajant network.

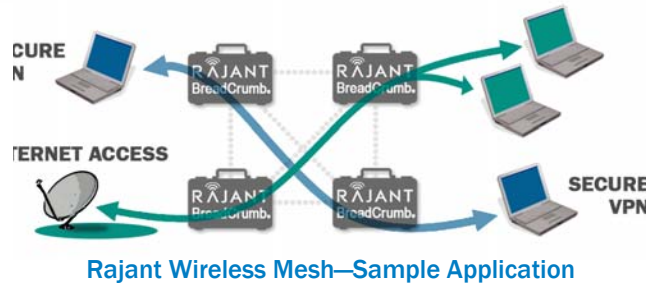


- Topology maps show BreadCrumb and client device connections and parameters
- BreadCrumb/client device channel, frequency, MAC address, IP address, nickname assignment, signal and noise levels and time-since-last-update
- Channel and link speed of connections
- Manual radio, SSID, DHCP, reach-back, gateway & port forwarding, access control, security, and encryption settings

Rajant BreadCrumb LX

MODELS

- LX-2409**
(1) 2.4GHz & (1) 900MHz
- LX-2424**
(2) 2.4GHz
- LX-2449**
(1) 2.4GHz & (1) 4.9GHz
- LX-2450**
(1) 2.4GHz & (1) 5.8GHz



BreadCrumb LX
Includes omni-directional antennas, pole mounting bracket & power supply.

WIRELESS	900MHz	2.4GHz	4.9GHz	5.8GHz
Ant. Connectors	Type N (f)	Type N (f)	Type N (f)	Type N (f)
Frequency	912–917MHz	2.412–2.462GHz	4.942–4.987GHz	5.745–5.825GHz
Modulation	DSSS, CCK, OFDM	DSSS, CCK, OFDM	OFDM	OFDM
RF Output Power	23dBm	25dBm	26dBm	28dBm
Receive Sensitivity	1Mbps: -95 dBm +/-1dB	1Mbps: -97 dBm +/-1dB		
	2Mbps: -93 dBm +/-1dB	2Mbps: -96 dBm +/-1dB		
	5.5Mbps: -91 dBm +/-1dB	5.5Mbps: -95 dBm +/-1dB		
	11Mbps: -90 dBm +/-1dB	11Mbps: -92 dBm +/-1dB		
	6Mbps: -92 dBm +/-1dB	6Mbps: -94 dBm +/-1dB	6 Mbps: -94 dBm, +/-1.5dB	6Mbps: -94 dBm +/-1.5dB
	9Mbps: -91 dBm +/-1dB	9Mbps: -93 dBm +/-1dB	9Mbps: -93 dBm +/-1.5dB	9Mbps: -93 dBm +/-1.5dB
	12Mbps: -91 dBm +/-1dB	12Mbps: -91 dBm +/-1dB	12Mbps: -91 dBm +/-1.5dB	12Mbps: -91 dBm +/-1.5dB
	18Mbps: -88 dBm +/-1dB	18Mbps: -90 dBm +/-1dB	18Mbps: -90 dBm +/-1.5dB	18Mbps: -90 dBm +/-1.5dB
	24Mbps: -84 dBm +/-1dB	24Mbps: -86 dBm +/-1dB	24Mbps: -86 dBm +/-1.5dB	24Mbps: -86 dBm +/-1.5dB
	36Mbps: -81 dBm +/-1dB	36Mbps: -83 dBm +/-1dB	36Mbps: -83 dBm +/-1.5dB	36Mbps: -83 dBm +/-1.5dB
	48Mbps: -75 dBm +/-1dB	48Mbps: -77 dBm +/-1dB	48Mbps: -77 dBm +/-1.5dB	48Mbps: -77 dBm +/-1.5dB
	54Mbps: -72 dBm +/-1dB	54Mbps: -74 dBm +/-1dB	54Mbps: -74 dBm +/-1.5dB	54Mbps: -74 dBm +/-1.5dB

Ethernet / USB	(2) IEEE 802.3, RJ-45 10/100 Mbps / (1) USB port built-in for firmware upgrades only
Network	VLAN and QoS Support. Access Point, Bridge, Gateway, DHCP, NAT & Port Forwarding. Automatic Protocol Tunneling (APT) that enables multiple gateway support
Security	Full support for IEEE 802.11i. AES-256 on Backbone; Access Control Lists; Compatible with Layer-2 and Layer-3 client/server & peer-to-peer security solutions; WPA, WPA2, AES-CCMP & TKIP Encryption, 802.1x, 64/128 bit WEP. Mesh-to-Mesh Authentication and compatible with SecNet 54 encryption

POWER	
Input Voltage	24–48 VDC (passive power over Ethernet)
Power	15.0 Watts @ 24V (peak)

INPUT / OUTPUT	
LED	Status LED
Button	Zeroize-defaults button

PHYSICAL	
Dimensions	21.3cm x 18.2cm x 5.7cm (8.4" x 7.2" x 2.2")
Weight	1.5 kg (3.3 lbs)
Temperature	Storage: -40° C to 80° C (-40° F to 176° F) Operating: -40° C to 80° C (-40° F to 176° F)
Humidity	95% (non-condensing)
Certification	FCC Class A, IC RS210
Warranty	1 Year

► www.rajant.com



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