

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

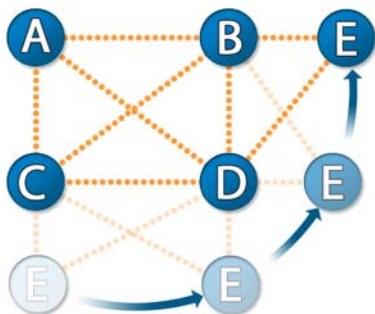
With battery power, rugged enclosures, single-switch operation and robust security, BreadCrumb® devices are perfect for military applications such as Perimeter Security, Sensor Data Collection, Video Surveillance, Convoy Security, RFID Tracking & more. Depending on BreadCrumb® model, security options range from WEP, WPA2, SecNet 11® 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®

Rajant has developed this state-of-the-art Linux based software over the last 6 years for mission critical applications. InstaMesh® resides on each BreadCrumb®, allowing for hundreds of resilient mesh connections to other BreadCrumb® devices, even while they are moving.



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

Rajant BreadCrumb® LX

The Rajant BreadCrumb® LX is a rugged 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. This full featured LX can operate in extreme conditions and has a NEMA 6 / IP67 enclosure.



BreadCrumb® LX Benefits

- Self-healing for resilient connections & high availability
- 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 that the network quickly adapts to moving network elements
- 802.11a provides high bandwidth 54Mbps connection in 5GHz band for backhaul applications
- High bandwidth availability for data, voice & video applications
- Self-configuring operation for fast & easy deployments
- Security encryption to ensure privacy of data

BC Admin® / BC Commander® Management Tool

The included BC Admin® tool is used to configure, manage and monitor your Rajant network.



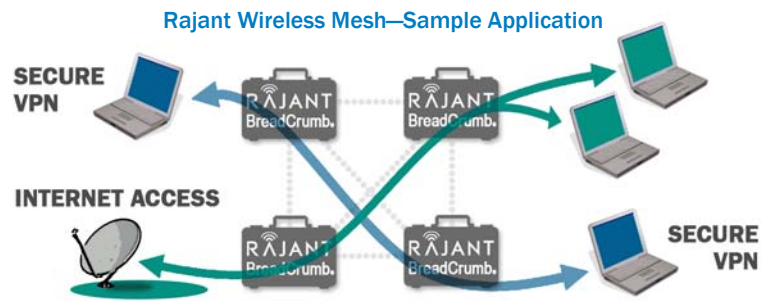
- Topology map shows BreadCrumb® and client device connections
- BreadCrumb®/client device channel, frequency, MAC address, IP address, nickname assignment, signal and noise levels
- BreadCrumb® 'time since last update' & battery levels
- Channel and link speed of connections
- Manual radio, SSID, DHCP, reach-back, gateway & port forwarding settings
- Access control, security, and encryption settings
- Remote zeroization of encryption & more

Rajant BreadCrumb® LX



BreadCrumb® LX

Includes omni-directional antennas for 2.4GHz & 5GHz, pole mounting bracket & power supply



WIRELESS

Radios	(1) IEEE 802.11b/g; (1) IEEE 802.11a
Integrated Antenna (s)	NA (External only)
External Antenna Connector (s)	(2) N-style (f)
Frequency	2.402–2.472 GHz & 5.20–5.825 GHz/U.S. (Varies with country)
Modulation	DSSS: DBPSK @ 1 Mbps, DQPSK @ 2 Mbps, CCK @ 5.5 and 11 Mbps
RF Output Power	802.11b: 28 dBm/Channel ± 1 dB; 802.11g: 28 dBm/Channel ± 1 dB 802.11a: 23 dBm @ 54 Mbps; 24 dBm @ 48 Mbps; 26 dBm @ 36 Mbps; 28 dBm < 36 Mbps
Receive Sensitivity	802.11b: 11 Mbps: -92 dBm; 5 Mbps: -95dBm; 2 Mbps: -96 dBm; 1 Mbps: -97 dBm 802.11g: 54 Mbps: -74 dBm; 36 Mbps: -83dBm; 18 Mbps: -90 dBm; 9 Mbps: -93 dBm 802.11a: 54 Mbps: -74 dBm; 36 Mbps: -83dBm; 18 Mbps: -90 dBm; 9 Mbps: -93 dBm
Range	11.2 km (7 mi) (Range can vary due to antenna type, non-line-of-sight, obstruction and RF noise factors)

NETWORK AND SECURITY

Ethernet / USB	(2) IEEE 802.2, RJ-45 10/100 Mbps / (1) USB port built-in for firmware upgrades
Managed Network Features	Access Point, Bridge, Gateway, DHCP, NAT & Port Forwarding
Security	AES-256 on Backbone; Access Control Lists; Compatible with Layer-2 and Layer-3 client/server & peer-to-peer security solutions; WPA, WPA2, AES-CCM & TKIP Encryption, 802.1x, 64/128/152bit WEP

POWER

Input Voltage	24–48 VDC (power through Ethernet)
Power Consumption	20.0 Watts @ 24V (2 radios at full capacity and internal fan activated)
Status / Zeroize Data	Status LED / Zeroize-defaults button

PHYSICAL

Dimensions	20.0cm x 14.0cm x 4.3cm (7.9" x 5.5" x 1.7")
Weight	1.5 kg (3.4 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, Industry Canada
Warranty	1 Year

► www.rajant.com



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