

BreezeACCESS™ LB

Accelerating Your Access

BreezeACCESS LB is perfect for wireless Internet Service Providers (ISPs), Operators and Enterprise Networks that need to accelerate the bandwidth of their services. Part of the field-proven BreezeACCESS family, the BreezeACCESS LB operates in the 5 GHz license free frequency band as a Point-to-Point system that leverages the excellent multi-path resistance capabilities of OFDM technology. BreezeACCESS LB can enable connectivity in near and non-line-of-sight (NLOS) conditions even at long distances. This advanced capacity, reliability and link availability reduces solution cost and avoids the need for expensive backhaul systems such as leased lines or pure line-of-sight (LOS) wireless systems.





Product Highlights

The BreezeACCESS LB delivers a comprehensive range of product features, ensuring fast, consistent, and reliable data and IP-oriented services, including:

- Orthogonal Frequency Division Multiplexing (OFDM) technology, which ensures high data rates, high spectral efficiency, and immunity to interference and multi-path conflicts.
- Point-to-Point operation.
- Near and non-line-of-site (NLOS) capabilities.
- High data rates, reaching 72 Mbps (over the air).
- Adaptive modulation with automatic multi-rate selection to maximize throughput according to radio performance (BPSK, QPSK, 16QAM, 64QAM).
- IEEE 802.1p traffic prioritization.
- Carrier-grade system performance, sensitivity and features, including a rack mount indoor unit.
- Highly cost-effective infrastructure
- An easy-to-use HTTP-based web interface management system, enabling simple unit configuration and unit upgrading.

Operating in the unlicensed 5.8 GHz frequency band, BreezeACCESS LB leverages Orthogonal Frequency Division Multiplexing technology to deliver high data rates, high spectral efficiency, and immunity to interference and multi-path conflicts. Delivering a rate of 72 Mbps (over the air), the BreezeACCESS LB ensures reliable, high bandwidth connectivity to any Ethernet based services.

BreezeACCESS LB functions as a high data rate wireless bridge using a standard IEEE 802.3 10/100 BaseT (RJ-45) Ethernet interface, providing connectivity up to 30 miles (48 km) in line- of-sight (LOS) conditions. The BreezeACCESS LB provides an instant and independent infrastructure, which is immediately deployable with lower infrastructure construction and operating costs than any other solution on the market.

BreezeACCESS LB System Components

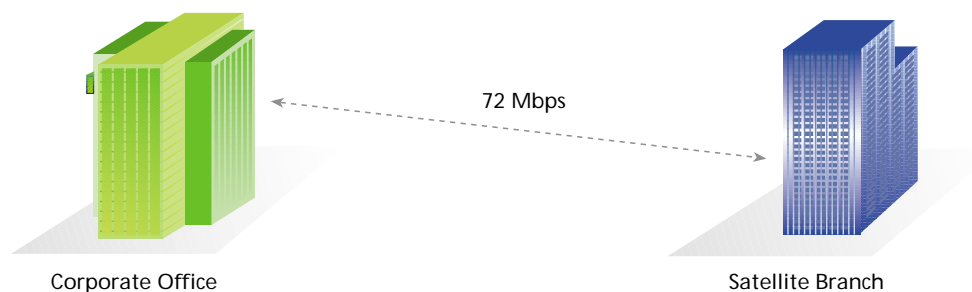
The BreezeACCESS LB product is comprised of an indoor and outdoor unit connected via a 75-ohm coaxial Intermediate Frequency (IF) cable. Data, power, management, and control signals are transmitted between the indoor unit and the outdoor unit via this coaxial cable.

Indoor unit

The indoor unit (LB NI-01) is a 19" 1U box that incorporates an auto-sensing IEEE 802.3 10/100 Mbps RJ-45 Ethernet connector, an F-type connector for the IF cable, a standard 100-240 VAC input and status indicator LEDs.

Outdoor unit

The outdoor unit (LB RE-01) provides the radio transceiver functionality, features an N-type connector for the antenna and an F-type connector for the IF cable. The antenna is supplied with the equipment.



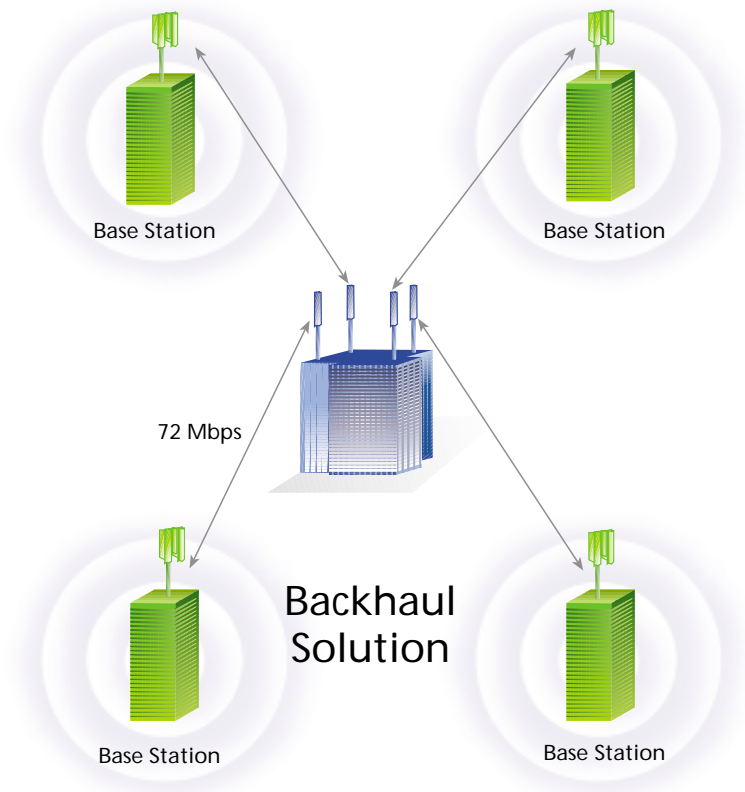
Office-to-branch Bridging



BreezeACCESS LB is available with the following product model options:

Model No.	Product Description	Model No.	Product Description
LB 5810	5.8 GHz, 36 Mbps Max. rate, Point-to-Point. Indoor network interface unit and Outdoor Radio unit with 2' x 2', 4.5 degree, 28 dBi gain antenna and vertical outdoor mount bracket for mast mounting. 10/100 Ethernet Port, and 100 ft (30 m) RG-6U IF Cable, F-type connector. Includes N-type (m) to N-type (m) adapter cable assembly. Power 110-220 VAC.	LB 5830	5.8 GHz, 72 Mbps (Over the Air) Max. rate, Point-to-Point. Indoor network interface unit and Outdoor Radio unit with 2' x 2', 4.5 degree, 28 dBi gain antenna and vertical outdoor mount bracket for mast mounting. 10/100 Ethernet Port, and 100 ft (30 m) RG-6U IF Cable, F-type connector. Includes N-type (m) to N-type (m) adapter cable assembly. Power 110-220 VAC.
LB 5820	5.8 GHz, 36 Mbps Max. rate, Point-to-Point. Indoor network interface unit and Outdoor Radio unit with 1' x 1', 9 degree, 23 dBi gain antenna and vertical outdoor mount bracket for mast mounting. 10/100 Ethernet Port, and 100 ft (30 m) RG-6U IF Cable, F-type connector. Includes N-type (m) to N-type (m) adapter cable assembly. Power 110-220 VAC.	LB 5840	5.8 GHz, 72 Mbps (Over the Air) Max. rate, Point-to-Point. Indoor network interface unit and Outdoor Radio unit with 1' x 1', 9 degree, 23 dBi gain antenna and vertical outdoor mount bracket for mast mounting. 10/100 Ethernet Port, and 100 ft (30 m) RG-6U IF Cable, F-type connector. Includes N-type (m) to N-type (m) adapter cable assembly. Power 110-220 VAC.

The 5810 and 5820 models can be upgraded to 72 Mbps rate (Over the Air) after purchasing the LB UPG-01 software upgrade package.



Specifications

Radio										
Frequency	5.725 -5.825 GHz (UNII Band)									
Wireless Transmission	OFDM (Orthogonal Frequency Division Multiplexing)									
Radio Access Method	TDD (Time Division Duplex)									
Channel Spacing	20 MHz									
Channel Center Frequency	Channel	1	1A	2	2A	3	3A	4	4A	5
	Freq GHz	5.735	5.745	5.755	5.765	5.775	5.785	5.795	5.805	5.815
Antennas**	23 dBi, 9°, vertical / horizontal polarization, Flat panel 28 dBi, 4.5°, vertical / horizontal polarization, Flat Panel									
Range	Up to 30 miles /50 km line-of-sight (LOS)									
Antenna Port (LB RE-01)	50 ohm									
Output Power (antenna port)*	-20 to +20 dBm (region specific)									
Max RF input at receiver:	-15 dBm									
Over the Air Rate	72 Mbps									
Modulated Burst Data Rate	6, 9, 12, 18, 24, 36, 48, 54 Mbps									
Sensitivity, typical (dBm at antenna port, BER 1E10-6)	Mbps	6	12	18	24	36	48	54		
	Modulation	BPSK	QPSK	QPSK	16 QAM	16 QAM	64 QAM	64 QAM		
Modulation	BPSK, QPSK, 16 QAM, 64 QAM									
Coding Rate	1/2, 3/4 and 2/3									
OFDM symbol rate	4 us (microseconds) including guard interval.									
MAC	Point- to- point									
	Automatic Repeat Request (ARQ) error correction Concatenation/Fragmentation									
Data Communication										
Standard Compliance	IEEE 802.3 CSMA/CD, 802.3 x Ethernet Flow Control									
VLAN support	Transparent to IEEE 802.1q									
Layer-2 Traffic Prioritization	IEEE 802.1p Network traffic prioritization									
Layer-3 Traffic Prioritization	Transparent to IP ToS according to RFC791									
Outdoor Unit to Indoor Unit Communication										
IF Frequency	815 MHz									
IF cable Impedance	75 ohm									
Max. IF cable Attenuation	cannot exceed 25 dB @ 2.5 GHz									
Cable Length*	Maximum length up to 225 ft (65 m) using RG6U Maximum length up to 500 ft (152 m) using RG11U* (IF cables must be rated for up to 2.5 GHz operation)									
Configuration and Management										
Local & Remote Management	HTTP, Command Line Interface (CLI) via Telnet and Local Console Port, SNMP									
Remote Management Access	From Wired LAN, Wireless Link									
Security	Over the Air, Proprietary 64-bit encryption (Data)									
Software upgrade	Via TFTP									
Interfaces										
Interface	Outdoor Unit				Indoor Unit					
IF	F-Type connector (f)				F-type connector (f)					
Antenna	N-Type connector (f)									
Ethernet					Auto-sensing 10/100Base-T (RJ-45), 4 LED					
Power	24 VDC from indoor unit via the IF cable				AC jack					
Electrical, Mechanical and Environmental										
	Outdoor Unit				Indoor Unit					
Power	24 VDC, 1.4A via the IF cable				110/220 VAC, 50/60 Hz, 39 W max.					
Mechanical	12 x 4.6 x 4 in 304.8 mm x 116.8 mm x 101.6 mm				17 x 12 x 1.75 in 431.8 mm x 304.8 mm x 44.45 mm					
Wind Loading	137 mph / 220 km/hr									
Operating Temperature	-40°F to +140°F / -40°C to +60°C						32°F to 131°F / 0°C to +55°C			
Operating Humidity	5%-95% non condensing, weather protected						5%-95% non condensing			
Standards Compliance, General										
Type	Standard									
EMC	CISPR 22 Class B under ETSI 300 386									
Safety	EN 60950									
Environmental	IC RSS210									
Radio	FCC Part 15 subpart E									

* If Cables must be rated for up to 2.5 GHz operation. Contact for recommended IF cable manufacturers.

** Contact for additional list of certified 5.8 GHz directional, parabolic antennas.