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For the latest contact information in your area, please visit:
www.alvarion.com/company/locations

Specifications

Radio

Frequency	2.400-2.4835 GHz, 5.15-5.35 GHz, 5.47-5.725 GHz, 5.725-5.850 GHz*
Radio type	OFDM, TDD
Channel bandwidth	20 MHz (40 MHz in turbo mode)
Center frequency resolution	10 MHz space (B14 and B28), 5 MHz (B100)
Output power (at antenna port)	Up to 21 dBm (dependent upon regulation)
Modulation	BPSK, QPSK, 16QAM, 64QAM

Sensitivity, typical (dBm at antenna port)	Modulation	1	2	3	4	5	6	7	8
	Level (20 MHz)	-89	-88	-86	-84	-81	-77	-73	-71

- Modulation Level combines modulation scheme and coding gain.
- When using 40 MHz (turbo mode) sensitivity is reduced by 3 dB

Antenna		
	BU and RB 2.4 GHz Integrated antenna	16dBi 20° horizontal x 20° vertical flat EN 301 525 v1.1.1 TS 2(2000-06) compliant
	BU and RB 5 GHz Integrated antenna	21dBi, 10.5° horizontal x 10.5° vertical, flat. EN 302 085, Class TS 1,2,3,4,5 compliant
	BU and RB 2.4 GHz Detached antenna	24 dBi, 6° horizontal x 10° vertical flat
	BU and RB 5 GHz Detached antenna	23 dBi, 9° flat 28 dBi, 4.5° flat
Antenna port (detached model)	N Type, 50 Ohm	

Data Communication

Standard compliance	IEEE 802.3 CSMA/CD
VLAN support	Based on 802.1q, Q-in-Q support (802.3ad)
Security	a. Association protocol - ESSID
	b. WEP 128, AES 128 (FIPS -197- licensed upgrade on BreezeNET B100 only)
	c. IP level filtering for user addresses or protocols
	d. Access direction and IP address filtering for management

Configuration and Management

Management options	Via Telnet
	SNMP based configuration utility
	Configuration upload/download
Remote management access	From wired LAN, wireless link
Management access protection	a. Multi-level password
	b. Configuration of remote access direction (from Ethernet only, from wireless link only or from both sides)
	c. Configuration of IP addresses of authorized stations
Allocation of IP parameters	Configurable or automatic (DHCP client)
Software upgrade and configuration up/download	FTP/TFTP download
SNMP agent	SNMP V1 Client, MIB II, Bridge MIB, Private BreezeNET B MIB

Electrical Characteristics - RB and BU

Power consumption	25W	
Input power	AC, 100-240 VAC, 50-60 Hz (DC 10.5-32UDC with OPS-DC add-on module)	
Indoor - outdoor cable	CAT-5 shielded, 90m max	
Indicators	Indoor unit	Power, Link and Ethernet LEDs
	Outdoor unit	Status, Ethernet and W-Link LEDs SNR 10 LEDs bar indicator (RB only)
Connectors	Data	RJ-45
	AC Power	3 pin AC power plug (indoor unit only)

Physical and Environmental

Dimensions - RB and BU	Indoor unit	16 x 9 x 6 cm (0.55 Kg)
	Outdoor unit with integrated antenna in 2.4 GHz	43.2 x 30.2 x 5.9 cm (2.9 Kg)
	Outdoor unit with integrated antenna in 5 GHz	30.5 x 30.5 x 6.2 cm(3.3kg)
	Outdoor unit detached (w/o antenna)	30.6 x 12 x 4.7 cm (1.85 Kg)
Operating temperature	Outdoor unit	-40°C to 55°C
	Indoor unit	0°C to 40°C
Operating humidity	Outdoor unit	5%-95% non condensing, weather protected
	Indoor unit	5%-95% non condensing

Standards and Regulations

Radio	FCC part 15.247, ETSI: EN 301 753, EN 301 893 (1.3.1) , EN 300 440-1/2, EN 300 328	
EMC	FCC part 15 class B, ETSI: EN 301 489-1	
Safety	UL 60950-1, EN 60950-1	
Lightning protection	EN 61000-4-5, Class 3 (2kV)	
Environmental	Operation	ETS 300 019 part 2-3 class 3.2E for indoor unit
		ETS 300 019 part 2-4 class 4.1E for outdoor unit
	Transportation	ETS 300 019-2-2 class 2.3
	Storage	ETS 300 019-2-1 class 1.2E

Note: Not all options are available in all regions. Please contact your local representative for further information.
* 5.15-5.35 GHz is only available for the B14 and for the B28 (not for the B100)

BreezeNET® B

Making Point to Point Connections Fast and Easy

- High capacity, point-to-point wireless link

- Breakthrough speeds up to 108 Mbps

- Ethernet bridging & backhauling in 2.4 GHz and 5 GHz bands

- OFDM technology

- Outdoor radio with extra long range

- Robust performance in non-line-of-sight (NLOS) environments

- Operates in unlicensed frequency bands

- Simple installation and maintenance

Product Highlights

Enterprises

○ High performance, feature-rich bridging

○ Cost-effective alternative to leased lines with fast ROI

○ Quality-of-service to support data, voice and video

○ Built-in remote diagnostics - minimize maintenance costs and downtime

Municipalities/Public Safety

○ Triple play services; data, voice and video surveillance

○ Robust outdoor architecture - ensures unprecedented range and reliability

○ Superior OFDM radio - enables non-line-of-sight (NLOS) capabilities in dense urban environments

○ Non-compromising security - AES 128 bit or WEP 128 bit key encryption (selectable) and optional FIPS 197 with the B100

○ AlvariSTAR™ - carrier-class NMS

Operator Backhaul

○ High throughput – up to 108 Mbps

○ Cost effective backhauling

○ Turbo mode for improved performance

○ Easy to install and adjust - full LED diagnostics, 10-LED bar display for antenna alignment, user-friendly management tool application

○ Simple to upgrade - update software and reconfigure settings over the air

○ Supports adaptive modulation and automatic transmit power control (ATPC) for simple installation and always on best performances

○ Automatic clear channel selection (ACCS) - Built-in spectrum analyzer that detects noise characteristics per channel with an option for automatic clearest channel selection

○ AlvariSTAR™ - carrier-class NMS

BreezeNET B: The Optimal Point-to-Point Solution

The BreezeNET B is a family of wireless point-to-point bridging solutions that operate in unlicensed bands and provide an efficient and highly secure solution for building-to-building connectivity and backhauling. It is an ideal alternative to expensive leased lines, providing a near-instant link for connecting remote local offices to headquarters, isolated buildings on campuses and industrial zones.

Moreover, ISPs can leverage BreezeNET B as a powerful and cost-effective wireless link to backhaul their point-to-multipoint networks to their Internet point of presence, avoiding the need for expensive leased lines over wire line infrastructures.

Operating Beyond the Line of Sight

Alvarion developed the BreezeNET B in recognition of the need to provide a viable and cost-effective solution for dense urban and industrial environments where a clear line of sight for point-to-point applications is not always available. To that end, the BreezeNET B leverages both robust outdoor technologies and Orthogonal Frequency Division Multiplexing (OFDM) modulation in the same product. With features such as Forward Error Correction (FEC) used to combat multi-path and noisy environments, the product operates seamlessly and efficiently in non-line-of-sight (NLOS) environments with good throughput. The system also features adaptive modulation for automatic modulation selection to maximize the data rate and improve spectral efficiency. These inherent advantages of the BreezeNET B enable service providers to connect an effective PTP solution to a significantly higher percentage of their subscriber base that would otherwise be inaccessible due to line-of-sight (LOS) restrictions.

Crossing the Digital Divide for a Wide Range of Point-to-Point Environments

Business enterprises, municipalities, university campuses, law enforcement agencies and other private and public institutions typically have multiple facilities or buildings that are spread over a wide urban or rural area. BreezeNET B point-to-point solutions can achieve a near-instantaneous building-to-building link. Organizations that rely upon Ethernet/LAN connections no longer need to worry about their remote buildings/branches being left out of the network loop; BreezeNET B provides a seamless, efficient and secure wireless bridge with high-bandwidth transmissions, covering large distances in harsh and adverse environments and weather conditions.

Highly Secure Air Interface

BreezeNET B also supports security sensitive applications through the optional use of authentication and data encryption utilizing AES and WEP algorithm options with 128 bit keys. BreezeNET B100 offers another layer of security - AES-based encryption through optional FIPS 197, available with a licensed upgrade. The system also supports VLAN at connections based on IEEE 802.1Q, facilitating secure operation and virtual private networking (VPN) services and enabling remote employees or offices to conveniently access their enterprise networks.

Product Variations

BreezeNET B is available in three main variations, BreezeNET B14, BreezeNET B28 and BreezeNET B100, with throughput as the primary variant among the three products. Each is available with a 21 dBi integrated antenna or with a standard RF connector supporting detached external antennas (in which case it can be used with either a 23 or 28 dBi flat panel antenna). With a choice of three BreezeNET B products, users can achieve an optimal cost/performance solution in every deployment.

Built to Last

All BreezeNET B products consist of robust outdoor units that are built to perform in even the most difficult climates and withstand the harshest weather conditions. Outdoor units typically maintain a significantly higher link budget than their indoor counterparts and therefore achieve higher performance and availability. Unlike point-to-point indoor units, which employ RF cables to run signals to rooftop antennas, outdoor units utilize a simple CAT-5 connection, which enables a significant reduction in the loss of power/DB levels. CAT-5 cables are also far easier to install and cost considerably less.

BreezeNET B System Components

Base Unit (BU)

The BU is installed at one end of the PTP link and connects to a central server or to the Internet. The BU is composed of two parts, a universal indoor unit (IDU) and an outdoor unit (ODU). By combining the radio and the modem in the outdoor unit, BreezeNET B offers a true outdoor device with no power loss associated with expensive and lossy indoor/outdoor cable.

The outdoor unit is available with an integrated antenna or without (in which case an external antenna can be used).

Remote Bridge (RB)

The RB is placed at the far end of the PTP link, connecting the end user to the centrally located BU. It is also composed of two parts, an identical universal indoor unit, like the one used in the BU, and an outdoor unit that is also available with or without the integrated antenna. For logistical efficiency, each unit is shipped as a BU and is changeable by software to be an RB.

BU-B14, BU-B28 or BU-B100 Base Unit	Connects directly to the 10/100 Base-T Ethernet backbone and links it to the central network point
RB-B14, RB-B28 or RB-B100 Remote Bridge	Connects directly to the 10/100 Base-T Ethernet LAN and links the remote Ethernet LAN to the central point via the Base Unit, servicing up to 1024 stations

* Each unit is shipped as a BU that can be changed to an RB via the software management system

Building to Building Connectivity

Video Surveillance

Point-to-Point Backhauling