Simple and Smart Point-to-Point Wireless Communication Portfolio

BreezeNET B Highlights

- High capacity, point-to-point, robust outdoor wireless solution
- Flexible rate options: B10, B14, B28, B100 and B300 reaching up to 250 Mbps
- Long reach: over 60 km
- Superior OFDM radio technology
- Optimized uplink/downlink configuration to support business applications such as public safety and video surveillance
- Robust performance in Non-Line-Of-Sight (NLOS) environments
- Simple deployment with adaptive modulation and Automatic Transmit Power Control (ATPC), management and maintenance
- Quality-of-Service (QoS) for data, voice and video (wireless link prioritization)
- Secure AES, WEP and FIPS

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BreezeNET® B

BreezeNET B is a comprehensive and highly-proficient portfolio of wireless point-to-point bridging solutions for license-exempt frequency bands. It offers long range and high-capacity support for high bandwidth applications. The BreezeNET B provides efficient, reliable and secure communications for voice and real time applications including building-to-building connectivity and backhaul services between two remote locations.

Cities and businesses such as municipalities, utilities and enterprises can benefit from the enhanced uplink/downlink configuration which offers better support of business applications including public safety and video surveillance.

A flexible solution with pay-as-you-grow support, BreezeNET B is also a powerful and cost-effective wireless link for backhauling point-to-multipoint networks to their Internet points of presence, eliminating the necessity for expensive leased lines over wireline infrastructures.

Conferencing

Voice

Surveillance

Access

Backhauling

Traffic

Networks

The BreezeNET B Product Range

System Components

Base Unit (BU)*

The Base Unit 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 indoor/outdoor RF cables.

Remote Bridge (RB)*

The Remote Bridge is placed at the far end of the PTP link, connecting the end user to the centrally located BU. It is composed of two parts - an identical universal indoor unit (IDU) and an outdoor unit (ODU).
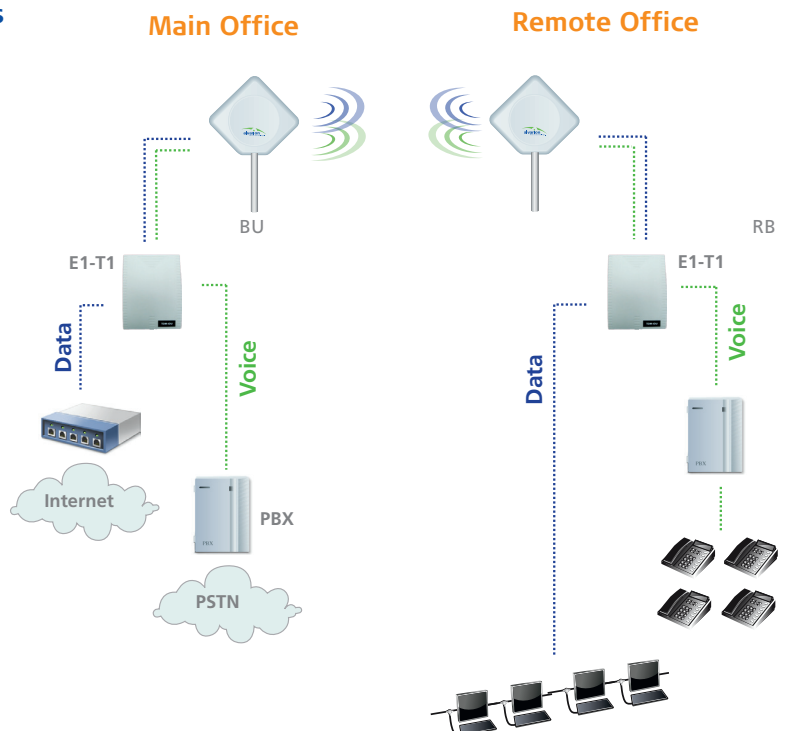
BreezeNET B E1/T1

The BreezeNET B E1/T1 transport unit enables point-to-point tunneling of T1 or E1 traffic across wireless Ethernet devices, thereby providing dramatic cost savings over the cost of conventional leased lines. BreezeNET B E1/T1 supports all BreezeNET B frequencies, is simple to deploy, supports NLOS and contains QoS for voice and video applications. The BreezeNET B E1/T1 unit provides the capability for recovering from data loss (using an optional Forward Error Correction mechanism), without propagating errors to following frames. The pay-as-you- grow option allows BreezeNET B E1/T1 to be upgraded with a software license from one E1/T1 link to support up to a maximum of 4 E1/T1 links.

* Same components with different system configurations

Deployment Scenario for Ethernet Services

Comprehensive Range of Options

BreezeNET B is available in several configurations, ensuring an optimal cost/performance solution for every deployment.

Configuration	Frequency Range	Bandwidth	Net Throughput (FTP)	Upgrade Options	Antenna	Additional Information
BreezeNET B10	5.4 and 5.8 GHz	10 and 20 MHz channels	Up to 10 Mbps aggregated	None	Integrated antenna from 16/20 dBi	Complete link in a box (base unit and remote bridge)
BreezeNET B14	2.4 and 5x GHz	10 and 20 MHz channels	Up to 14 Mbps (up to 7 Mbps uplink and up to 7 Mbps downlink)	B28 and B100	Integrated antenna from 16/20 dBi or external antenna up to 24/28 dBi	Up to 2 E1/T1 links (optional)
BreezeNET B28	5x GHz	10, 20 and 40 MHz channels	Up to 35 Mbps (up to 20 Mbps uplink and up to 20 Mbps downlink)	B100		Up to 2 E1/T1 links (optional)
BreezeNET B100	2.4 and 5x GHz	10, 20 and 40 MHz channels	Up to 73 Mbps (up to 70 Mbps uplink and up to 70 Mbps downlink)	None		Up to 4 E1/T1 links (optional)
BreezeNET B300	4.9 - 5.9 GHz	5, 10, 20 and 40 MHz channels	Up to 250 Mbps*			

* Subject to local regulations

Specifications

Radio

Frequency

B10
5.47-5.725 GHz
5.725-5.875 GHz
B14
5.150–5.350 GHz
5.250–5.350 GHz
5.470–5.725 GHz
5.725–5.875 GHz
(universal country code with HW Rev C)
2.400-2.484 GHz

B28
5.150–5.350 GHz
5.250–5.350 GHz
5.470–5.725 GHz
5.725 - 5.875 GHz
(universal country code with HW Rev C)
5.725-5.850 GHz (all other country codes)

B100
2.400-2.484 GHz
5.150–5.350 GHz
5.250–5.350 GHz
5.470–5.725 GHz
5.725 - 5.875 GHz
(universal country code with HW Rev C)
5.725-5.850 GHz (all other country codes)
B130/B300
4.9 GHz-5.9 GHz

Modulation
OFDM modulation, BPSK, QPSK, QAM16, QAM64
Radio Type
OFDM TDD
Channel BW
B10
10/20 MHz
B14+B28+B100
10/20/40 MHz
B130/B300
5/10/20/40 MHz

Maximal Net Throughput
B10: 10 Mbps
B14: 14 Mbps
B28: 28 Mbps
B100: 73 Mbps
B130/300: 250 Mbps
Output Power (at antenna port)
B10-B100
Up to 21 dBm (dependant upon regulation) wall/pole mounting with tilting option
B130/B300
Up to 18 dBm (dependant upon regulation) wall/pole mounting with tilting option

Antenna

B10
RB/BU 5 GHz Integrated Antenna
14° h/v 20 dBi EN 302 085, Class TS 1,2,3,4,5 compliant
B14
RB/BU 2.4 GHz External Antenna
24 dBi, 6° horizontal x 10° vertical flat
RB/BU 2.4 GHz Integrated Antenna
16 dBi 20° horizontal x 20° vertical flat
EN 301 525 v1.1.1 TS 2 (2000-06) compliant

B14-B100
RB/BU 5 GHz External Antenna
23 dBi, 9° flat; 28 dBi, 4.5° flat
RB/BU 5 GHz Integrated Antenna
21 dBi, 10.5° horizontal x 10.5° vertical, flat EN 302 085, Class TS 1,2,3,4,5 compliant

B130/B300
RB/BU 5 GHz External Antenna
ANT,T.S, 4.9-6 GHz,9° Dual polarized,23 dBi,
ANT,T.S, 4.9-6 GHz,6° Dual polarized,28 dBi
RB/BU 5 GHz Integrated Antenna
ANT,T.S, 4.9-6 GHz,9° Dual polarized,23 dBi

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Data Communication

Standard and Network Compliance
B10-B100
IEEE 802.3 CSMA/CD 1x 10/100BaseT
B130/B300
IEEE 802.3 CSMA CD, ARP filter/proxy
MAC/IP filtering Layer 2 switch 1x or
1x Ethernet 10/100/1000BaseT

VLAN Support
B10-B100
Based on 802.1q
B130/B300
802.1q transparent or frame tagging
and re-tagging

QoS
B10-B100
Wireless Link Prioritization (WLP)

802.1p
DRAP
IP TOS/DSCP
Fast Packet Processing
B130/B300
QoS enforcer
Classification and traffic limiting based
on:
IP ToS/DSCP/802.1p tags
VLAN/IP/MAC address and protocol/

E1/T1 IDU Interfaces
B14-B300
Three 10/100base T. Complies with
IEEE 802.3 LAN, WAN, and local
standards, Four T1/E1: RJ-45. Complies

with ANSI T1.403, ITU-T G.703; AT&T
TR-62411

Security
B10-B100
a. Association protocol - ESSID
b. WEP 128, AES 128, FIPS 197
c. IP level filtering for user addresses or
protocols
d. Access direction and IP address
filtering for management
B130/B300
Mutual key-based authentication
Storm/flood protection
Password protection
Protocol messages encryption
Over-the-air payload encryption
IP Firewall

Configuration Management

Management Options
B10-B100
Monitor via Telnet, SNMP and
configuration upload/download
B130/B300
Configure/monitor SNMP traps, web
interface, CLI

Remote Management Access
From wired LAN, wireless link

Allocation of IP Address
B10-B100
Configurable or automatic (DHCP
client)
B130/B300
DHCP client/server/relay

SW Upgrade
B14-B300
Via TFTP and FTP

**Configuration Upload /
Download**
Via TFTP and FTP

SNMP Agents
B10-B100
SNMP v1 client, MIB II, Bridge MIB,
Private BreezeACCESS® VL MIB
B130/B300
SNMP V1/SNMP V3 MIB II, private
MIB

Electrical Characteristics - RB/BU and E1/T1 IDU

Power consumption
B10-B100: 25W
B130/B300: Up to 20W

Input Power
RB and BU: AC, 100-240 VAC, 50-60
Hz
(DC 10.5-32UDC with OPS-DC add-on
module) E1/T1 IDU: 00 to 260 VAC, 47
to 63 Hz, 24 Watts

Indoor-outdoor Cable
CAT-5 shielded, 90m max

Indicators
B10-B100
Indoor unit: Power, Link and Ethernet
LEDs, Outdoor unit: Status, Ethernet
and W-Link LEDs, SNR 10 LEDs bar
indicator (RB only)
E1/T1 IDU: Front Panel: STATUS
(Serves as front panel providing
overall unit operating conditions),

Back Panel: Local, LAN and WAN
Connection / Link Activity, E1/T1
(DS1 1, 2, 3, 4) Signal Present /
Activity

AC Power
Indoor unit: 3 pin AC power plug
E1/T1 IDU: In-line "brick" power
supply provides 56 VDC to unit
Connectors RJ-45

Physical and Environmental

Dimensions RB/BU
B10-B100
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 (3.3 kg)
Outdoor unit detached (w/o antenna):
30.6 x 12 x 4.7 cm (1.85 kg)
B130/B300
SU: 5 x 4 x 2 cm (0.14 kg)
ODU with integrated antenna:
30 x 30 x 8 cm (3.7 kg)

ODU with external antenna
24 x 24 x 5 cm (2.1 kg)

Dimensions E1/T1 IDU
B14-B300
4 cm x 18 cm x 5.9 cm (0.36 kg)

Operating Temperature
B10-B100
Outdoor unit: -40°C to 55°C
Indoor unit: 0°C to 40°C
B130/B300
Outdoor units: -40°C to 60°C
Indoor unit: 0°C to 40°C

Operating Humidity
B10-B100
Outdoor unit: 5%-95% non
condensing, weather protected,
Indoor unit: 5%-95% non condensing
B130/B300
Outdoor units: 100% humidity,
condensing
(exceeds IP65 rating)
Indoor unit: 95% humidity, non-
condensing

Standards and Regulations

Radio
B10-B100
FCC part 15.247, FCC P15.407,
ETSI: EN 302 502, EN 301 893 (1.5.1),
EN 300 440-1/2, EN 300 328
B130/B300
Pending:
FCC part 15.247, FCC P15.407
ETSI: EN 302 502,
EN 301 893 (1.4.1),
EN 300 440-1/2, EN 300 329

EMC
B10-B100
FCC part 15 class B
ETSI: EN 301489-1

Safety
B10-B100
UL 60950-1, EN 60950-1

Lightening Protection
B10-B100
EN 61000-4-5, class 3 (2kV)

Storage
B10-B100
ETS 300 019-2-1 class 1.2E

Transportation
B10-B100
ETS 300 019-2-2 class 2.3T

Environmental
B10-B100
Operation: ETS 300 019 part 2-3
class 3.2E for indoor unit
E1/T1 IDU ETS 300 019 part 2-4 class
4.1E for outdoor unit

About Alvarion

Alvarion (NASDAQ:ALVR) is a global 4G communications leader with the industry's most extensive customer base,
including hundreds of commercial 4G deployments. Alvarion's industry leading network solutions for broadband
wireless technologies WiMAX, TD-LTE and WiFi, enable broadband applications for service providers and enterprises
covering a variety of industries such as mobile broadband, residential and business broadband, utilities, municipalities
and public safety agencies. Through an open network strategy, superior IP and OFDMA know-how, and ability to
deploy large scale end-to-end turnkey networks, Alvarion is delivering the true 4G broadband experience today
(www.alvarion.com).