

International Corporate Headquarters  
Tel: +972 3 645 6262  
Fax: +972 3 645 6222  
Email: corporate-sales@alvarion.com

North America Headquarters  
Tel: (760) 517 3100  
Fax: (760) 517 3200  
Email: n.america-sales@alvarion.com

Alvarion Worldwide Offices:

Latin America & Caribbean  
Tel: +1 954 746 7420  
Fax: +1 954 746 9332  
Email: lasales@alvarion.com

Asia Pacific  
Tel: +852 2786 9996  
Fax: +852 2310 0062  
Email: far.east-sales@alvarion.com

China  
Tel: +86 10 6510 2800  
Fax: +86 10 6510 2803  
Email: china-sales@alvarion.com

Japan  
Tel: +81 3 5562 3115  
Fax: +81 3 5562 3155  
Email: alvarion-japan@alvarion.com

France  
Tel: +33 1 34 38 54 30  
Fax: +33 1 34 38 54 39  
Email: france-sales@alvarion.com

Germany  
Tel: +49 89 90405 923  
Fax: +49 89 90405 922  
Email: germany-sales@alvarion.com

U.K. & Ireland  
Tel: +44 845 450 1414  
Fax: +44 845 450 1455  
Email: uk-sales@alvarion.com

Czech Republic  
Tel: +420 222 191 233  
Fax: +420 222 191 200  
Email: czech-sales@alvarion.com

Brazil  
Tel: +55 11 3815 6225  
Fax: +55 11 3813 0467  
Email: brazil-sales@alvarion.com

Uruguay  
Tel: +598 2 606 2651  
Fax: +598 2 606 2652  
Email: lasales@alvarion.com

  
We're on your wavelength.  
[www.alvarion.com](http://www.alvarion.com)

## Specifications

### Radio and Modem

Modulation	GFSK modulation, with 2,4,8 modulation states (1,2,3 bits / symbol).	
Symbol Rate	1 M symbol/sec	
Gross bit rate	1,2,3 Mbps	
Operation Mode	Time Division Duplex	
Radio Access Method	FH-CDMA	
Frequency	5.725-5.875 GHz	5.15-5.35GHz
Standard Compliance	FCC Part 15.247, ETS 300 328	
Channel Bandwidth	1 MHz	2 MHz
Output Power (at antenna port)	26 dBm typical	25 dbm max
Antenna	SU-RA	20dBi, 14° horizontal x 11° vertical EN 302 085, Class TS 2 compliant
	SU-RE, AU-RE	N-Type connector, 50 ohm EN 302 085, Class TS 2 compliant
Receive nominal sensitivity (at antenna port BER 10E-6)	1 Mbps	-85 dBm
	2 Mbps	-78 dBm
	3 Mbps	-70 dBm

### Outdoor Unit to Indoor Unit Communication

IF Frequency	440 MHz
IF cable Impedance	50 ohm
Maximum IF cable Attenuation	15 dB
Maximum IF cable DC Resistance	1.5 ohm

### Voice Communication (DV series)

Standard compliance	ITU-T H.323 Ver. 2 VoIP standard
Compression	G.711 (A-Law and $\mu$ -Law) - 64 kbps (transparent) G.723.1 - 6.3 kbps G.729 - 8 kbps (G.729, G.729 with Annex A and/or Annex B)
Echo cancellation	ITU-T G.168 and G.131

### Configuration and Management

Management options	a. Via the MON port, using terminal emulation with the built-in Monitor program
Remote Management	b. Telnet, using the Monitor program c. TFTP, using the Configuration upload/download utility d. SNMP
Remote Management Access	From wired LAN or from Wireless link
SNMP Agents	MIB II, Bridge MIB, Private BreezeACCESS MIB
Accounting	Radius compatible client in subscriber unit
Security	Authentication, filtering, VLAN
Software upgrade	TFTP download

### Interfaces

RF (antenna)	N-Type jack, 50 ohm, lightning protected
IF	SU-NI, AU-NI, BS-AU indoor units: TNC jack, 50 ohm, lightning protected SU-RA/E, AU-RE outdoor units: TNC jack, 50 ohm, lightning protected
Ethernet	10Base-T Ethernet (RJ-45) with 2 embedded LEDs. Cable connection to a PC: straight (for all models)
Telephone (DV series)	RJ 11 jack (POTS)
Monitor	RS 232, 3-pin low profile jack
Power	SU-RA/E, AU-RE outdoor units: 12VDC via IF cable SU-NI, AU-NI, BS-AU indoor units: DC power plug to external power supply BS-PS (power supply module of BS-SH): 4-pin DC power plug to - 48VDC power source

### Electrical

SU-A/E, AU-E	12VDC/2.5A from external power supply
BS-SH (modular base station)	-48VDC or 110/220 VAC, 200w for a fully equipped shelf 25W per AU (ODU plus IDU modules)

### Mechanical

Unit	Structure	Dimensions	Weight
SU-RA	Metal box plus an integrated antenna in plastic enclosure, poll or wall mountable	30.6 x 30.6 x 7.2 cm (30.6 x 12 x 4.7 cm + 30.6 x 30.6 x 2.5 cm)	2.5 kg
AU-RE, SU-RE	Metal box, poll or wall mountable	30.6 x 12 x 4.7 cm	1.58 kg
SU-NI, AU-NI	Metal box, desktop or wall mountable	15 x 8.7 x 3.7 cm	0.34 kg
BS-SH	19" rack (3U) or desktop installation	13 x 48.2 x 25.6 cm	4.76 kg

### Environmental

Operating Temperature	Outdoor Units	-40°C to 55° (GU-RA: -40°C to 85°C)
	Indoor equipment	0°C to 40°C
Operating Humidity	Outdoor Units	5%-95% non condensing, Weather protected

### Standards Compliance, General

EMC	EN 300 826
Safety	UL 1950, EN 60950
Environmental	ETS 300 019

© Copyright 2001 Alvarion, Ltd. All rights reserved.  
Alvarion, BreezeCOM, Floware, WALKair, WALKnet, BreezeNET, BreezeMANAGE, BreezeNET PRO, BreezeNET DS, BreezeACCESS, BreezeLINK, BreezeVIEW and/or other products and/or services referenced herein are either registered trademarks, trademarks or service marks of Alvarion, Ltd. or Alvarion, Inc.. All other names are or may be the trademarks of their respective owners. The content herein is subject to change without further notice.

BreezeCOM and Floware unite



# BreezeACCESS™ V

## Affordable freedom

The BreezeACCESS family of products provides a comprehensive solution for broadband wireless access in the unlicensed ISM bands-2.4 GHz as well as 5 GHz. BreezeACCESS products offer data and voice services to various customer profiles, unsurpassed service offerings and best frequency combination.

BreezeACCESS V operates in the 5.725-5.850 GHz and 5.15-5.35 GHz unlicensed bands and is best suited for service providers. Incorporating the same mature, feature-rich and well-established BreezeACCESS II components, BreezeACCESS V is the ideal network expansion for broadband wireless access operators offering voice and IP-based services.



InnoWave Joins Alvarion



## Key Advantages

- Ideal network expansion as well as backhauling for congested 2.4 GHz locations
- Best service offering including data and voice services, security, QoS and VPN
- Quick, demand-based deployment using established and reliable BreezeACCESS technology, incorporating:
  - Conventional Infrastructure
  - Familiar installation and configuration (Co-location for existing BreezeACCESS II users)
  - Time-honored system architecture, features and management
- Winning combination of 2.4 GHz & 5 GHz co-located to maximize revenues with existing investment
- Optimal solution for the lower UNII/HIPERLAN bands (5.15-5.35 GHz)

## Product Highlights

BreezeACCESS V delivers a comprehensive range of product features, ensuring fast, consistent and dependable data and voice service, including...

- Robust frequency hopping Spread Spectrum technology with Time Division Duplex (TDD) mode.
- Easy installation and low cost of ownership enable rapid market penetration, increased subscription and enhanced value-added services.
- Fast packet-based data transmission.
- Toll-quality voice with integrated RJ-11 voice ports in subscriber units, combined with V5.1 gateway delivers advanced telephony features.
- Adaptive Circuit Switched Emulation (ACSE) air protocol that maintains the efficiency of IP transmission, while reserving specific time slots for active voice call traffic.
- Highly cost-effective infrastructure and customer premises equipment.
- Enhance Quality of Service (QoS) features: 802.1Q based VPN, 802.1P based prioritization, CIR/MIR setting.
- Carrier-grade features including a rack mount chassis base station with redundancy, hot swap capability and UPS facilities.
- Easy-to-use SNMP-based remote management system, enabling simple unit configuration and multiple simultaneous unit upgrading.

## BreezeACCESS V System Components

### Base Station

The BreezeACCESS V indoor/outdoor Access Unit configuration includes an indoor module and outdoor unit that contains the radio and antenna units. Data, power, management and control signals are transmitted from the indoor unit to the outdoor unit via a coaxial cable.

All Access Units are connected to the subscriber's data equipment via a standard IEEE 802.3 Ethernet 10BaseT (RJ 45) interface. BreezeACCESS V provides two types of Base Station configurations, delivering superior flexibility in architecture and network deployment.

### Base Station Shelf

The 19" Base Station shelf (BS-SH) can hold up to seven BS-AU modules 2.4 GHz (II) or 5 GHz (V), providing reliable access to maximum numbers of subscribers and full-scale redundancy. The BS-AU modules can be synchronized to ensure optimal utilization of the available frequency spectrum.



### AU-E-BS unit

Features an indoor module and outdoor unit, which contains a radio unit and an RF connector for a separate external antenna



### Stand-Alone "Micro Cell" Base Units

The Micro Cell Access Units are stand-alone base-station modules that connect to an Indoor/Outdoor Access Unit configuration.



### AU-E-NI units

Features an indoor module and outdoor unit, which contains a radio unit and an RF connector for a separate external antenna.

## CPE

The BreezeACCESS V series of Customer Premises Equipment (CPE) features data-only or data and voice capabilities. Single user (1D), or bridge (BD) data port options are available.

All CPE options connect to the subscriber's data equipment via a standard IEEE 802.3 Ethernet 10-BaseT (RJ 45) interface. Telephony services are supported using a standard POTS (RJ 11) interface connected directly to the subscriber's telephone. Data, power, management and control signals are transmitted from the indoor unit to the outdoor unit via a coaxial cable.

The outdoor units feature two antenna options, delivering enhanced network flexibility, as follows:

**SU-A unit:** Features a radio module and integrated flat panel antenna.

**SU-E unit:** Features a radio module and RF connector for a separate external antenna.



## BreezeACCESS V

Unrestricted access, unlimited choice.

