

BreezeCOM and Floware unite



BreezeACCESS™ II

Affordable freedom

BreezeACCESS II is the ideal broadband wireless access system for service providers operating in the unlicensed 2.4 GHz ISM band.

As a wireless alternative to wired access networks, BreezeACCESS II leverages Frequency Hopping Spread Spectrum technology in Time Division Duplex (TDD) mode to deliver reliable broadband data services, reaching remote locations and bypassing unusable copper.

BreezeACCESS II provides an instant and independent infrastructure, which is immediately deployable with lower infrastructure construction and operating costs than any other solution on the market.



Product Highlights

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

- Demand-based build-out, easy installation and low cost of ownership enables rapid market penetration, increased subscription and enhanced value-added services.
- Packet switching technology optimized for IP-based applications and "always on" connectivity.
- Frequency Hopping Spread Spectrum (FHSS) radio technology provides unlimited cell overlay capacity and seamless integration between cells, eliminating capacity planning or performance degradation when adding new subscribers. In addition, FHSS is not susceptible to interference from other technologies operating in the same 2.4GHz ISM band
- Adaptive Circuit Switched Emulation (ACSE) air protocol maintains the efficiency of IP transmission, while reserving specific time slots for active voice call traffic.
- Fast packet-based data transmission and toll quality for delay and jitter sensitive telephony.
- Highly cost effective infrastructure and customer premises equipment.
- Toll quality voice with integrated RJ-11 voice ports in subscriber units.
- Advanced telephony features when used in conjunction with a V5.1 gateway.
- 802.1P enables delay sensitive traffic to be prioritized in the network.
- 802.1Q VLANs separate traffic into virtual private networks.
- Independent uplink/downlink transmission settings for CIR/MIR, enabling assured and differentiated QoS.
- 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 II System Components

BreezeACCESS II CPEs - Equipped to perform

The BreezeACCESS II series of Customer Premises Equipment (CPE) features both data plus voice and data-only capabilities.

The BreezeACCESS II family of CPEs comprises two types of subscriber unit configuration options, which enable service providers to optimize their network architecture for greater subscriber reach and satisfaction.

Both indoor and indoor/outdoor configuration 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.

Miniature Indoor Units

Optimized for indoor installations, the miniature indoor units are designed to fit conveniently on a desktop or mount easily on the wall.

BreezeACCESS provides several antenna options, depending on the service provider's specific needs, as follows:

- **SU-I units:** Comprise two 2dBi integrated omni antennas.
- **SU-ID units:** Feature two RF connectors for detached diversity antennas.



Product Type	Product Name	Product Description
Miniature Indoor Subscriber Units	SU-I-1D-2.4	Integrated antenna - 1 data user
	SU-I-D-1D-2.4	Detached antenna - 1 data user
	SU-I-8D-2.4	Integrated antenna - 8 data users
	SU-I-8D-1D-2.4	Detached antenna - 8 data users
	SU-I-BD-2.4	Integral antenna - full bridge
Subscriber Units with an Outdoor Antenna and Radio Unit	SU-I-D-BD-2.4	Detached antenna - full bridge
	SU-A-1D-2.4	Integrated antenna - 1 data user
	SU-E-1D-2.4	Detached antenna - 1 data user
	SU-A-8D-2.4	Integral antenna - 8 data users
	SU-E-8D-2.4	Detached antenna - 8 data users
	SU-A-BD-2.4	Integral antenna - full bridge
	SU-E-BD-2.4	Detached antenna - full bridge

All subscriber units available with single telephone line support

Indoor/Outdoor Units

The BreezeACCESS II indoor/outdoor option includes an indoor desktop or wall-mountable unit and an outdoor antenna and radio unit.

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 units:** Comprise a radio module and integrated flat panel antenna.
- **SU-E units:** Include a radio module and RF connector for a separate external antenna.

Both types of outdoor units are available with either 26dBm (HP-High Power) or 2dBm (LP-Low Power) output power at the antenna port.



Specifications

Radio

Frequency	2.4GHz ISM band		
Radio Access Method	FHSS CSMA/CA		
Operation Mode	Time Division Duplex		
Standards	ETSI ETS 300 328, FCC Part 15		
Channel Bandwidth	1MHz		
Output Power (at antenna port)	SU-I/ID, AU-I/ID: 17dBm (FCC) or 10dBm, 17dBm (ETSI) SU-A/E, AU-A/E: 26dBm (HP) or 2dBm (LP), Control Range 20dB typical.		
Antenna	SU-I, AU-I: omni 2dBi SU-A: 15dB, 20' AU-A: 16.5dBi, 60'		
Sensitivity (dBm at antenna port, BER 1E10-6)	Data Rate	SU-I/ID, AU-I/ID	SU-A/E, AU-A/E
	1 Mbps	-81	-87
	2 Mbps	-74	-81
	3 Mbps	-66	-73
Data Rate	3 Mbps max.		
Modulation	Multilevel GFSK		

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Outdoor Unit to Indoor Unit Communication

Intermediate Frequency (IF)	440MHz
IF Cable Impedance	50 ohm
Maximum IF cable Attenuation	15dB
Maximum IF cable DC Resistance	1.5 ohm

Voice Communication (DV series)

Protocol	H.323 Voice over IP compliant
Compression	G.723 6.3Kbps compression, G.729 8Kbps compression, G.711 64Kbps transparent
Echo Cancellation	G.168, G.131

Configuration and Management

Local Management	Via MON port, Monitor program using terminal emulation
Remote Management	SNMP, Telnet, TFTP
Remote Management Access	From the wired LAN or from the wireless link
SNMP agents	MIB II, Bridge MIB, BreezeACCESS Private MIBs
Accounting	Radius compatible client in subscriber units
Security	Authentication, Filtering and Virtual LAN
Software upgrade	TFTP download

Interfaces

RF (antenna)	AU-ID, SU-ID: 2 x SMA jacks AU-RE, SU-RE: N-Type jack, lightning protected
IF	AU-RA/RE, SU-RA/RE outdoor units: TNC jack, lightning protected SU-NI, AU-NI, BS-AU indoor units: TNC jack, lightning protected
Ethernet	Indoor units: 10BaseT,(RJ 45) with 2 embedded LEDs
Telephone (DV series)	RJ 11 (POTS)
Monitor	Indoor units: 3-pin low profile
Power	AU-RA/RE, SU-RA/RE outdoor units: 12VDC via the IF cable SU-NI, AU-NI indoor units, SU-I/ID, AU-I/ID: DC power plug to the external power supply BS-PS (Power Supply module of BS-SH): 4-pin DC power plug to a -48VDC power source

Electrical

SU-I/ID-xD (data only), AU-I/ID	5VDC / 1.5A from the external power supply (supplied with the unit), 100-250 VAC, 47-63 Hz
SU-A/E, AU-A/E-NI, SU-I/ID-xD1V (data and voice)	12VDC / 2.5A from the external power supply (supplied with the unit), 100-240 VAC, 47-63 Hz
BS-SH (modular base station shelf)	-48VDC or 110/220 VAC, 200W for a fully equipped shelf. 25W each AU (outdoor unit plus indoor module)

Mechanical

SU-I/ID, AU-I/ID (without antenna)	13cm x 8.6cm x 3cm, 0.5 kg.
SU-RA	30cm x 30 cm x 7.2 cm, 3 kg.
AU-RE, SU-RE	30cm x 12 cm x 5 cm, 2.2 kg.
SU-NI, AU-NI	13cm x 8.6cm x 3cm, 0.5kg.
BS-SH	19", 3U, depth 26cm, 6 kg. fully loaded

Environmental

Operating Temperature	Indoor units and modules: 0°C to 40°C Outdoor units: -40°C to 60°C
Operating Humidity	5% to 95% non-condensing. Outdoor units are weather protected.

Standards Compliance, General

EMC	EN 300-385, FCC Part 15
Safety	EN 60950, UL 1950
Environmental	ETS 300 019

