

Specifications

Radio		Band	3.5e1	3.5b
Frequency		Uplink (GHz)	3.3995-3.4535	3.449-3.500
		Downlink (GHz)	3.4995-3.5535	3.549-3.600
Radio Access Method		TDMA FDD		
Standard Compliance		ETSI EN 301 021		
Channel Spacing		1.75 MHz/3.5 MHz		
Central Frequency Resolution		125 KHz @ Channel Spacing 1.75 MHz		
		250 KHz @ Channel Spacing 3.5 MHz		
Antenna (SU-RA)		16.5dBi, 60° vertical polarization; ETSI CS3 compliant (3.4-3.7 GHz)		
Antenna (AU-RA)		17dBi, 20° vertical and horizontal polarization, compliant with EN 302 085 Class 1S 2		
Antenna Port (SU-RE, AU-RE)		50 ohm		
Output Power (at antenna port)		Max. Nominal Average Power (dBm)	Max. Peak Power (dBm)	Control Range (dB)
		SU 20+/-1	30+/-1	47
		AU 20+/-1	30+/-1	12
		AU-HP 25+/-1	35+/-1	12
Sensitivity, typical (dBm at antenna port, BER 10E-6)		@ 3.5MHz Channel spacing	@ 1.75MHz Channel spacing	
		2 Mbps -94	1 Mbps -97	
		4 Mbps -91	2 Mbps -94	
		8 Mbps -85	4 Mbps -88	
		12 Mbps -79	6 Mbps -82	
Data Rate		@ 3.5MHz Channel spacing	@ 1.75MHz Channel spacing	
		2, 4, 8, 12 Mbps	1, 2, 4, 6 Mbps	
Modulation		OFDM modulation, 64 FFT points, BPSK, QPSK, 16QAM, 64QAM		
OFDM symbol rate		55.5 Ksymbol/sec @ Channel Spacing 3.5MHz		
Error Correction		Convolutional encoder; Viterbi decoder; Coding rate: 3/4		
Data Communication		IEEE 802.3 CSMA/CD		
Standard Compliance		IEEE 802.1Q		
VLAN support		IEEE 802.1p		
Layer-2 Traffic Prioritization		IP ToS and DSCP		
Layer-3 Traffic Prioritization				
Outdoor Unit to Indoor Unit Communication				
IF Frequency		140 MHz		
IF Cable Impedance		50 ohm		
Maximum IF Cable Attenuation		10dB		
Maximum IF Cable DC Resistance		2.7 ohm, 2.0 ohm for AU HP		
Configuration and Management				
Local Management		Via MON port, Monitor program using terminal emulation		
Remote Management		SNMP, Telnet		
Remote Management Access		From the wired LAN or from the wireless link		
SNMP agents		SNMP ver. 1 client, MIB II, Bridge MIB, Private BreezeACCESS OFDM MIB		
Security		RC4 Authentication and filtering		
Software upgrade		TFTP download		
Interfaces				
IF		Outdoor Unit TNC jack, lightning protected		
ANT (AU-RE, SU-RE)		N-type jack, lightning protected		
Ethernet		10/100Base-T (RJ-45) with 2 embedded LEDs		
Monitor		3-pin low profile		
Power		SU-NI: 3-pins DC jack for the SU-PS power supply, KYCON KPI-3S-S BS-PS: D-type 3 Power pin male Amphenol 717TWA3W3PH2V4RRM6		
Electrical, Mechanical and Environmental				
Power		Indoor Unit SU: 38W max SU-NI: 24VDC/2A from SU-PS SU-PS: 100 - 240 VAC, 50-60 Hz BS: -48 VDC, 420W max AU: 35W max. for each AU (indoor + outdoor) 45W max. for each AU-HP (indoor + outdoor)		
Mechanical		SU-RA: 306x306x72 mm, 2.5 kg SU-RE: 306x117x55 mm, 1.7 kg AU-RE: 306x117x55 mm, 1.7 kg AU-RA: 500x117x70 mm, 2.9 kg		
Operating temp.		-40°C to 55°C		
Operating Humidity		5%-95% non condensing		
Humidity		Weather protected		
Standards Compliance, General				
Type		Standard ETS 300 385		
EMC		EN 60950 (CE), IEC 60 950 US/CTUV		
Safety		ETS 300 019 part 1-3 class 3.1 for indoor units, ETS 300 019 part 1-4 class 4.1E for outdoor units		
Environmental		ETS 300 019 part 1-3 class 3.1 for indoor units, ETS 300 019 part 1-4 class 4.1E for outdoor units		
Radio		ETSI EN 301 021 V1.4.1, ETSI EN 301 753 V1.1.1		

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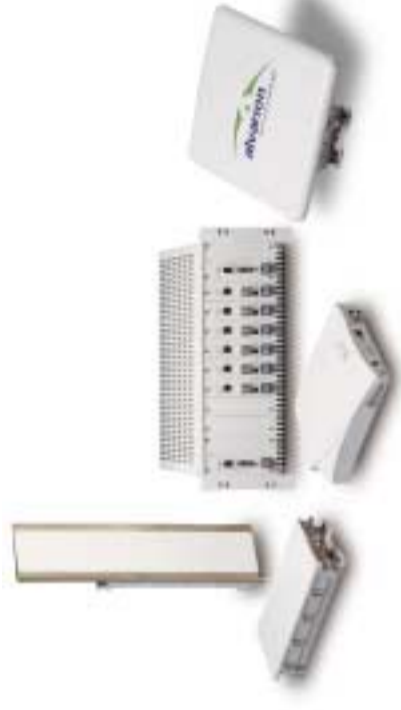
BreezeCOM and Floware unite



BreezeACCESS™ OFDM

Powering provider performance

Featuring the same field-proven and mature rich-feature set as the well-established and highly successful products in the BreezeACCESS portfolio, BreezeACCESS OFDM is the ideal point-to-multipoint broadband wireless access system for Operators offering high-bandwidth IP-based services. Leveraging the excellent multi-path resistance capabilities of OFDM technology, BreezeACCESS OFDM enables operation in near and non-line-of-site (NLOS) conditions, which enable Operators to reach a previously-inaccessible and broader segment of the subscriber population, with fewer Base Stations. These advanced capabilities radically reduce the initial cost of investment, installation costs and time to market while increasing Operator revenue potential.



InnoWave Joins Alvarion

Product Highlights

BreezeACCESS OFDM delivers a comprehensive range of product features, ensuring fast, consistent and reliable data and IP oriented services, including...

- Orthogonal Frequency Multiplexing (OFDM) technology ensures high data rates, high spectral efficiency and immunity to interference and multi-path conflicts.
- Near and non-line-of-sight (NLOS) capabilities.
- Demand-based build-out, easy installation and low cost of ownership enables rapid market penetration, increased subscription and enhanced value-added services.
- High capacity base station for large-scale deployments in dense urban and suburban areas.
- Micro base station for low entry cost, highly cost effective deployments in low-density rural areas.
- Packet switching technology optimized for IP-based applications and "always on" connectivity.
- Independent uplink/downlink transmission settings for CIR/MIR, enabling assured and differentiated SLA.
- Adaptive modulation - maximize throughput according to radio performance:
 - BPSK, QPSK, 16QAM, 64QAM sub-carrier modulation
 - Automatic multi-rate selection
- Advanced filtering capabilities, such as:
 - IP filtering
 - Protocol-based filtering
 - Broadcast filtering
- End to end QoS with 802.1p, IP ToS and DSCP
- VPN support with 802.1Q VLANs
- Carrier grade features including a rack mount chassis base station with redundancy, hot swap capability and UPS facilities.
- Highly cost effective infrastructure and customer premises equipment.
- Easy-to-use SNMP-based remote management system, enabling simple unit configuration and multiple simultaneous unit upgrading.

Base Station Shelf

The 19" 4U Base Station chassis (BS-SH-OF) provides 8 interface slots and two slots designated for power supply modules. The Base Station is powered by



a -48 VDC power source, with a back-up module ensuring complete fail-safe redundancy. Up to eight AU modules can operate simultaneously.

Indoor/Outdoor Access Units

The BreezeACCESS OFDM Access Unit includes an indoor module and outdoor unit.

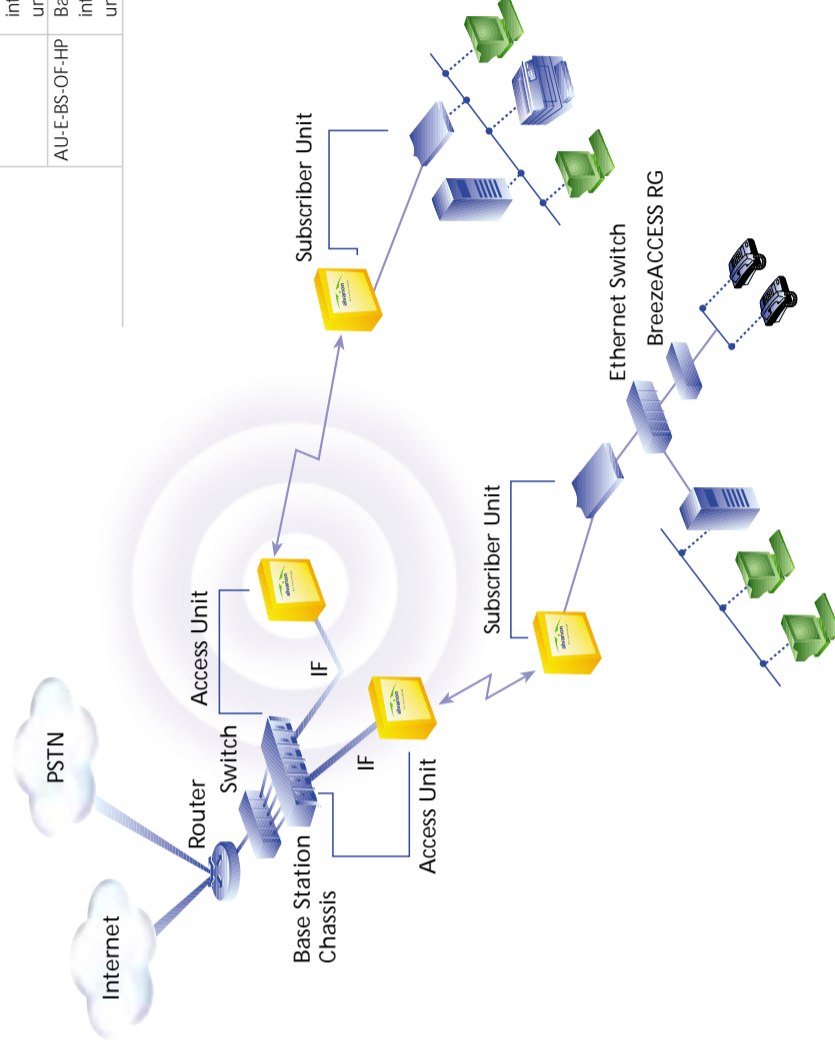


The AU-NI-BS-OF indoor unit is a network interface module that fits in the base station chassis, containing the processor, modem, Ethernet interface and IF radio module. The AUs connect to the network backbone via a standard IEEE 802.3 Ethernet 10/100-BaseT (RJ 45) interface.

The indoor and outdoor units are connected via a 50-ohm coaxial Intermediate Frequency (IF), relaying 140 MHz IF signals between the units. Data, power, management and control signals are transmitted between the indoor unit and the outdoor unit via this coaxial cable.

BreezeACCESS OFDM

Advanced access in a world without wires.



Operating in the licensed 3.5 GHz frequency band, BreezeACCESS OFDM leverages Orthogonal Frequency Division

Multiplexing technology to deliver high data rates, high spectral efficiency and immunity to interference and multi-path conflicts. Delivering data burst rates of up to 12 Mbps, BreezeACCESS OFDM ensures always-on connectivity to a full range of IP-based services, including fast Internet, VPNs and VoIP.

BreezeACCESS OFDM 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 OFDM System Components

BreezeACCESS OFDM CPEs - Building bridges to BWA
The BreezeACCESS OFDM Subscriber Units provide a bridge between the wireless and wireline media, supporting up to 512 MAC addresses. The SUs connect to the subscriber's data equipment via a standard IEEE 802.3 Ethernet 10/100-BaseT (RJ 45) interface.

Indoor/Outdoor Units

The BreezeACCESS OFDM

indoor/outdoor Subscriber Units include an indoor desktop or wall-mountable unit, containing the processor, modem, Ethernet interface and the IF radio component. The indoor unit is powered by a desktop Power Supply Unit, supplying 24 Volts.



The outdoor unit comprises a radio module with either an integrated flat panel antenna or a connector for an external antenna.

The indoor and outdoor units are connected via a 50-ohm coaxial Intermediate Frequency (IF), relaying 140 MHz IF signals between the units. Data, power, management and control signals are transmitted between the indoor unit and the outdoor unit via this coaxial cable.

BreezeACCESS OFDM Subscriber Unit

Product Name	Product Description
SU-A-4D-OF	Integrated vertical antenna - 4 data users
SU-A-BD-OF	Integrated vertical antenna - full bridge
SU-AH-4D-OF	Integrated horizontal antenna - 4 data users
SU-AH-BD-OF	Integrated horizontal antenna - full bridge
SU-E-4D-OF	Detached antenna - 4 data users
SU-E-BD-OF	Detached antenna - full bridge

BreezeACCESS OFDM Base Station Equipment -

Reliability, Flexibility, Performance

Delivering superior flexibility in architecture and network deployment, BreezeACCESS ensures demand-based scalability combined with flexible modularity.

The Access Unit is available in standard or high power versions, which provide extended coverage. The outdoor radio unit features two antenna configuration options: with integrated antenna or with RF connector for an external antenna.

Micro Base Station

The micro base station is the ideal solution for providing cost effective broadband services in low-density rural zones. It is comprised of a stand-alone module that connects to the same outdoor radio unit described in the Indoor/Outdoor Access Units configuration.

The indoor unit is designed for desktop or wall mount installation and is powered from the Mains. Data, power, management and control signals are transmitted from the indoor to the outdoor unit via coaxial cable.



BreezeACCESS OFDM Base station equipment

Product Type	Product Name	Description
Micro Base Station	AU-E-SA-OF	Single sector base station comprised of indoor unit and outdoor radio unit with connectors for external antenna
Base Station Shelf Power Supply Access Units	BS-SH-OF	Base station chassis with one DC power supply
	BS-PS-OF	Base station access unit comprised of indoor interface module and outdoor radio unit with integrated antenna
	AU-A-BS-OF	Base station access unit comprised of indoor interface module and outdoor radio unit with connector for external antenna
Access Units	AU-E-BS-OF	Base station access unit comprised of indoor interface module and high power outdoor radio unit with integrated antenna
	AU-A-BS-OF-HP	Base station access unit comprised of indoor interface module and high power outdoor radio unit with integrated antenna
	AU-E-BS-OF-HP	Base station access unit comprised of indoor interface module and high power outdoor radio unit with connectors for external antenna