



BreezeACCESS[®] 4900

Broadband Wireless Access at the Frontline of Homeland Security

Immediate and accurate information is a core requirement of any public safety communications system. As a result, the communications system used must be reliable and robust. Alvarion, a company well known for combining robustness and industry leading performance into its products, has integrated these principles into its latest offering for the homeland security market. As the global wireless broadband market leader, Alvarion has been providing rugged and reliable solutions to public safety organizations for over six years.

Building on this foundation, Alvarion introduces a new critical communications tool designed especially for the public safety sector - BreezeACCESS 4900. Providing secure and reliable connectivity in any terrain, environment and climate, the BreezeACCESS 4900 is well suited for voice, video and data applications in combining FIPS-197 government approved (AES-based) encryption, advanced quality of service (QoS) and high throughput speeds.





Secure Broadband Access Beyond the Line-of-Sight

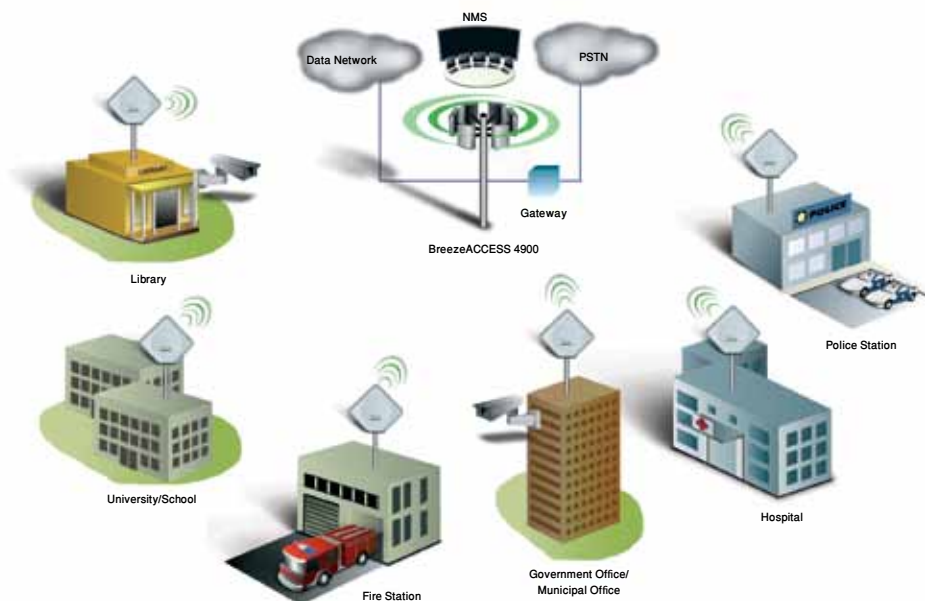
Product Highlights

In designing the BreezeACCESS 4900, we leveraged our more than ten years of experience deploying wireless broadband systems with our long history developing and implementing OFDM technology to overcome NLOS challenges. The results are the utmost in reliable, secure communications in the 4.9 GHz band. Capable of being deployed in both point-to-point and point-to-multipoint configurations, and able to co-exist with other systems in mixed spectrum architectures, the ultra-flexibility of the 4900 enables each network to be tailored in its configuration to efficiently handle a multitude of applications.

BreezeACCESS 4900 is now the solution of choice for public safety, medical emergency, and government security and surveillance applications offering the industry's richest features:

- Spectrally efficient, OFDM technology to support high capacity, non-line-of-sight connectivity
- Always-on adaptive modulation, automatic transmit power control (ATPC), and automatic distance learning for optimal link transmission
- Complies with the high power mask requirements of 4.9 GHz FCC regulation. Meeting the high power mask regulations translates into more than 20 times the range than products that meet the low power mask regulations. In this band, regulations are on unit output power and the antenna gain that can be used with the product

- Highest number of calls in a PTMP system designed for the public safety, up to 150 calls per sector with MOS higher than 4.0
- Wireless link prioritization enabling mission critical applications, such as video and voice with end-to-end quality-of-service, even while sharing the system with low priority applications such as data
- Supports both 5 and 10 MHz channel options for flexible network planning for interference avoidance and increased network capacity
- Mixed spectrum integration options for multi-band layering, including Wi-Fi integration enabling commercially off-the-shelf devices at the network edge
- Available 100% environmental outdoor form factor with ports for integration of other devices, such as video cameras and traffic management systems
- Advanced extensive access suite, including quality of service (QoS), security and extensive management
- Redundancy, CPE automatically synchronized with Best AU available
- 10 LEDs SNR bar display on outdoor unit for fast antenna alignment without the need for external tools or monitors; even easier installation with automatic search of 5 and 10 MHz channels
- Superior management options using SNMP, the user-friendly BreezeCONFIG installation and monitoring utility, and the AlvariSTAR carrier grade NMS platform.





When There is No Room for Error

Key Benefits

- Superior performance and distance using high power requirements of the FCC
- VPN services based on VLAN (Access, Trunk, Hybrid)
- Enhanced quality of service (QoS) featuring CIR/MIR and prioritization based on Q-in-Q (802.3ad), DiffServ and port based to support data, VoIP and video combined in a single network
- Advanced security mechanisms including WEP128, AES 128 encryption (without impact on throughput) and FIPS 197 compliance
- Out-of-the-box simple and fast installation
- "Pay as you grow" expansion philosophy through modular and scalable network components
- Seamless integration with other BreezeACCESS products and bands to preserve existing investments
- Mobility by integration with Alvarion's BreezeACCESS Complete Spectrum™ Solution

Wireless Broadband that Breaks Barriers

BreezeACCESS 4900 offers an unmatched combination of wide coverage, high capacity and value-added features to provide citywide and countywide secure, wireless connectivity that works in NLOS conditions. Leveraging the 4.9 GHz licensed spectrum allocated for public safety, the BreezeACCESS 4900 is the ideal solution for regional backhaul of mobile public safety infrastructure, connecting buildings, traffic lights and video security/traffic cameras, supporting SCADA applications and providing a regional VoIP network.

Complete Spectrum Solution

Alvarion's Complete Spectrum Solution enables the BreezeACCESS 4900 to integrate seamlessly into existing BreezeACCESS networks, thereby protecting existing network investments. Supporting both fixed and mobile platforms at multiple frequencies, the Complete Spectrum enables the deployment of highly customized networks with subscriber speeds up to 54 Mbps. Using the full range of products, the Complete Spectrum Solution can support simultaneous deployments of systems at 900 MHz, 2.4 GHz, 3.5 GHz, 4.9 GHz and the entire 5 GHz band.

Alvarion's mobile broadband platform, the BreezeACCESS 900, is currently on patrol nationwide providing real-time, high-speed connectivity to law enforcement vehicles and other agencies. Combining the BreezeACCESS 900 with the BreezeACCESS 4900 means that municipalities and public safety organizations can have an integrated network solution to meet both their fixed and mobile broadband communications needs.

System Components

The BreezeACCESS 4900 consists of a base station access unit (AU) and two models of customer premises equipment (CPE) to support various deployment scenarios.

The Access Unit (AU)

Installed at the base station site, the AU communicates with the CPEs. For backbone connections, each AU connects to the network through a standard IEEE 802.3 Ethernet 10/100BaseT (RJ-45) interface and towards the CPE using standard CAT-5 cable to connect to the outdoor unit.

For a modular base station, the access unit can be installed in the universal BreezeACCESS 19" 3U chassis. Each chassis can hold up to six AU modules of any frequency band, providing reliable access to a maximum number of subscribers. Two power supply modules, either AC or DC, can be employed in the chassis for power supply redundancy.

The Customer Premises Equipment (CPEs)

Installed at locations that require service, either backhaul or access connectivity, the CPE enables data connections to support single or multiple end user subscribers. CPEs provide an efficient platform for always-on, high-speed internet and intranet services. Each CPE connects to the network through a standard IEEE 802.3 Ethernet 10/100BaseT (RJ-45) interface and connects to the outdoor unit via CAT-5 cable. Each CPE includes a small indoor unit, CAT-5 indoor-outdoor cable, pole-mounted outdoor unit and integrated antenna. Two CPE models are available:

- The SU-A-4900-BD (with integrated antenna)
- The SU-E-4900-BD (without antenna)

Headquarters

International Corporate HQ
corporate-sales@alvarion.com

North America HQ
n.america-sales@alvarion.com

Sales Contacts

Australia:
anz-sales@alvarion.com

Asia Pacific:
ap-sales@alvarion.com

Brazil:
brazil-sales@alvarion.com

Canada:
canada-sales@alvarion.com

Caribbean:
caribbean-sales@alvarion.com

China:
cn-sales@alvarion.com

Czech Republic:
czech-sales@alvarion.com

France:
france-sales@alvarion.com

Germany:
germany-sales@alvarion.com

Italy:
italy-sales@alvarion.com

Ireland:
uk-sales@alvarion.com

Japan:
jp-sales@alvarion.com

Latin America:
lasales@alvarion.com

Mexico:
mexico-sales@alvarion.com

Nigeria:
nigeria-sales@alvarion.com

Philippines:
ph-sales@alvarion.com

Poland:
poland-sales@alvarion.com

Portugal:
sales-portugal@alvarion.com

Romania:
romania-sales@alvarion.com

Russia:
info@alvarion.ru

Singapore:
asean-sales@alvarion.com

South Africa:
africa-sales@alvarion.com

Spain:
spain-sales@alvarion.com

U.K.:
uk-sales@alvarion.com

Uruguay:
uruguay-sales@alvarion.com

For the latest contact information
in your area, please visit:
[http://www.alvarion.com/index.php/en/
company/worldwide-offices](http://www.alvarion.com/index.php/en/company/worldwide-offices)



© Copyright 2010 Alvarion Ltd. All rights reserved.
Alvarion® its logo and all names, product and service
names referenced herein are either registered trademarks,
trademarks, tradenames or service marks of Alvarion Ltd. in
certain jurisdictions.
All other names are or may be the trademarks of their
respective owners. The content herein is subject to change
without further notice.
*WIMAX Forum™ is a registered trademark of the WIMAX
Forum. *WIMAX™ the WIMAX Forum logo, *WIMAX
Forum Certified™ and the WIMAX Forum Certified logo are
trademarks of the WIMAX Forum.

Specifications

Radio

| | | | | | | | | | |
|--|---|-----|-----|-----|-----|-----|-----|-----|-----|
| Frequency | 4940 - 4990 MHz | | | | | | | | |
| Radio Access Method | Time Division Duplex (TDD) | | | | | | | | |
| Channel Bandwidth | 5 MHz, 10 MHz | | | | | | | | |
| Central Frequency Resolution | 5 MHz | | | | | | | | |
| Max Output Power (at antenna port) | AU: -10 dBm to 20 dBm, 1 dB steps* SU: -10 dBm to 20 dBm, automatically adjusted by ATPC | | | | | | | | |
| Max Input Power (at ant. port) | -45 dBm typical | | | | | | | | |
| Sensitivity, typical (dBm at antenna port, @10-6) | Modulation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | Level* (5 MHz) | -94 | -93 | -91 | -89 | -86 | -82 | -78 | -76 |
| | Level* (10 MHz) | -92 | -91 | -89 | -87 | -84 | -80 | -76 | -74 |
| | * Modulation Level combines modulation scheme and coding gain. | | | | | | | | |
| Modulation Scheme (Adaptive) | OFDM: BPSK, QPSK, QAM 16, QAM 64 | | | | | | | | |
| Antenna Port (AU-RE) | N-Type 50 ohm | | | | | | | | |
| Subscriber Integrated Antenna | 19 dBi, 10.5° H/V, Integrated flat panel | | | | | | | | |
| AU Antenna | 15 dBi, Sector 120° horizontal 9 dBi, Omni antenna | | | | | | | | |

Data Communication

| | |
|--------------------------------|-----------------------------|
| VLAN support | 802.1q and Q-in-Q (802.3ad) |
| Layer-2 Traffic Prioritization | Based on IEEE 802.1p |
| Layer-3 Traffic Prioritization | IP ToS according to RFC791, |
| Layer-4 Traffic Prioritization | UDP/TCP port range |
| Security | WEP 128-bit, FIPS-197 |

Configuration and Management

| | |
|------------------------------|--|
| Local & Remote Management | Monitor via Telnet, SNMP and Configuration Upload/Download |
| Remote Management Access | From Wired LAN, Wireless Link |
| Management Access Protection | Multilevel Password Configuration of remote direction (From Ethernet only, Wireless only, or both sides) Configuration of IP addresses of authorized stations |
| Software upgrade | Via TFTP and FTP |
| Configuration Up/Download | Via TFTP and FTP |
| SNMP Agents | SNMP v1 client, MIB II, Bridge MIB, Private BreezeACCESS 4900 MIB |

Physical and Electrical

| Type | Connectors | | Electrical |
|-------------------------------|------------|--|---|
| SU-NI | Ethernet | 10/100BaseT RJ-45, 2 embedded | Power consumption 25W AC input: 100-240VAC, 50/60Hz |
| | Radio | LEDs | |
| | AC IN | 10/100BaseT Ethernet RJ-45 | |
| SU-RA, AU-RE | Indoor | 3-pin AC power plug | 54 VDC from indoor to outdoor |
| | | 10/100Base RJ-45 with waterproof | |
| AU-BS | Ethernet | sealing assembly | Power consumption 30W (module plus outdoor unit) AC input: 100-240VAC, 50/60Hz 3.3VDC, 54V from power supply in backplane |
| | Radio | 10/100BaseT RJ-45, 2 embedded LEDs | |
| | | 10/100BaseT Ethernet RJ-45 | |
| BS-PS-AC (AC power supply) | AC-IN | 3-pin power plug | Power consumption: 240W, full chassis (1 PS, 6 AU) AC input: 85-265VAC, 47-65Hz DC output: 54V, 3.3V |
| BS-PS-DC (DC power supply) | -48 VDC | 3-pin DC D-Type 3 power pin plug Amphenol | Power consumption: 240W, full chassis (1 PS, 6 AU) DC input: -48 VDC nominal (-34 to -72), 10 A max. DC output: 54V, 3.3V |

Standards Compliance

| | | |
|---------------|----------------------|---|
| Type | Standard | |
| EMC | FCC Part 15 class B | |
| Safety | UL 60950, EN 60950 | |
| Environmental | Operation | ETS 300 019 part 2-3 class 3.2E for indoor units ETS 300 019 part 2-4 class 4.1E for outdoor units |
| | Storage | ETS 300 019-2-1 class 1.2E |
| | Transportation | ETS 300 019-2-2 class 2.3 |
| | Lightning Protection | EN 61000-4-5, class 3 (2kV) |
| Radio | FCC Part 90 | |

Note: Environmental evaluation and exposure limit according to FCC CFR 47part 1, 1.1307, 1.1310

* not in all modulations (software dependent)