BreezeACCESS® VL
Reliable Wireless Broadband Solution
BreezeACCESS® VL
Reliable Wireless Broadband Solutions

Alvarion’s BreezeACCESS VL is a flexible and field proven Point-to-Multipoint (PtMP) solution providing broadband wireless outdoor connectivity for a variety of applications in urban and rural deployments. Available in a range of frequencies in the 4.9 / 5 GHz and 900 MHz bands, this widely deployed platform offers a carrier-class outdoor link with enhanced security and capacity as well as QoS for data, voice and video services. Enhanced uplink/downlink configuration offers better support of business applications including public safety and video surveillance.

BreezeACCESS VL supports a wide range of subscriber units, providing an optimized solution for the performance and cost requirements of various markets and customers. It enables operators, municipalities, enterprises and communities around the world to quickly and cost-effectively benefit from an array of top quality broadband services.

Feature Highlights
- Secure connectivity - FIPS-140-2 and HW-based FIPS-197 and AES 128
- TDD OFDM NLOS technology
- Configurable MIR/CIR per SU per direction
- Scalable license-based pay-as-you-grow configurations
- Video Surveillance special features enabled by uplink/downlink configuration with 12 Mbps DL / 8 Mbps UL (SU-V)
- Fast handover between base stations
- Premium 4.9 / 5GHz and 900 MHz PtMP solution
- Wide range of subscriber units supporting various applications
- QoS for data, voice and video applications
- Coverage range of up to 30 km
- Capacity of up to 32 Mbps per sector
- 900 MHz with Non-Line-Of-Sight (NLOS) support, and excellent propagation capabilities

Markets
- Networks
- Education
- Public Safety
- Voice
- Oil & Gas
- Access
- Transportation
- Smart Utilities
<table>
<thead>
<tr>
<th>Unit</th>
<th>Unit Type</th>
<th>Feature Highlights</th>
<th>Deployment Options</th>
<th>Benefits</th>
</tr>
</thead>
</table>
| Access Unit (AU) | Chassis-based base station | • NLOS Capabilities  
• Carrier grade chassis  
• 1 to 6 sectors per chassis  
• Mix and match support for different bands  
• Optional redundant power supply  
• Total net capacity > 192 Mbps (32 x 6 sectors) | Multi-sector: AUS–BS  
• Entry level option  
• Supports up to 25 SUs per sector  
• Upgradable to full AU-BS  
Multi-sector: AU-BS  
• Supports up to 512 SUs per sector | • Pay-as-you-grow support  
• Optimized configuration for vertical applications  
• Supports all SU model in the sector  
• Optimized performance for public safety applications in urban deployments |
|   | Standalone base station | • Single sector AU comprised of an indoor unit (IDU) and outdoor unit (ODU)  
• Optional all-outdoor or DC solution | Single-sector: AUS–SA  
• Entry level option  
• Supports up to 25 SUs per sector  
• Upgradable to full AU-SA | Single-sector: AU-SA  
• Supports up to 512 SUs per sector |
| Subscriber Unit (SU) | SU-3, SU-6, SU-54 | • Net aggregated throughput: SU-3: 3Mbps, SU-6: 4Mbps, SU-54: 12Mbps  
• Quick installation using LEDs for fast alignment  
• Supports 2 different services per SU (2 priority levels)  
• Coverage range of up to 30 km (LOS)  
• Data, voice and video applications  
• Extended range  
• Pay-as-you-grow upgrade options: SU-3→SU6  
SU-3→SU-Video  
SU-3→SU54  
SU-6→SU-Video  
SU-6→SU54  
SU-Video→SU-54 | • Pay-as-you-grow support  
• Optimized configuration for vertical applications  
• Supports SU in sector |
|   | SU-Video | • Fixed asymmetric throughput: 8 Mbps uplink and 12 Mbps downlink  
• Available in 5.4 GHz and 5.8 GHz  
• Quick installation using LEDs for fast alignment  
• Supports 2 different service levels per SU  
• Coverage range of up to 30 km (LOS)  
• Optimized bandwidth support for video applications | | |

**Specifications**

**Radio**

- **Frequency**
  - 902-927 MHz, 4.9-5.1 GHz, 5.15-5.35 GHz, 5.47-5.725 GHz, 5.725-5.875 GHz
- **Radio access method**
  - Time Division Duplex (TDD)
- **Channel**
  - AU/SU: 5 MHz (900 MHz), 10 MHz, 20 MHz
  - [4.9, 5.15-5.875 MHz]
- **Central frequency resolution**
  - 1 MHz (900 MHz), 5 MHz, 10 MHz
- **Max input power (at ant. port)**
  - -48 dBm typical
- **Max output power (at antenna port)**
  - AU: -10 dBm to 21 dBm, 1 dB steps
  - SU: -10 dBm to 21 dBm, automatically adjusted by ATPC
- **Central frequency resolution**
  - 1 MHz (900 MHz), 5 MHz, 10 MHz
- **Max input power (at ant. port)**
  - -48 dBm typical
- **Max output power (at antenna port)**
  - AU: -10 dBm to 21 dBm, 1 dB steps
  - SU: -10 dBm to 21 dBm, automatically adjusted by ATPC
- **Modulation scheme (adaptive)**
  - OFDM: BPSK, QPSK, QAM 16, QAM 64
  - N-Type 50 ohm
- **Subscriber integrated antenna**
  - 60°: 16 dBi, sector 60° vertical
  - 90°: 16 dBi, sector 90° vertical
  - 120°: 15 dBi, sector 120° vertical, 360°: 8 dBi, Omni horizontal

**Data Communications**

- **VLAN and GoS support**
  - QinQ 802.1ad, 802.1Q, WLP over the air traffic prioritization, MRP/CR per SU per direction (UL/DL)
  - Concatenation, burst mode, small packet optimization to support voice
  - Advanced Automatic Transmit Power Control (ATPC)
- **Traffic prioritization**
  - Layer 2: Based on IEEE 802.1p
  - Layer 3: IP ToS according to RFC791 and DSCP according to RFC2474, Layer 4: UDP/TCP port range
- **Security**
  - WEP 128-bit authentication, AES 128, WEP 128, certified built-in encryption FIPS-197 mode and FIPS-140-2
Configuration and Management
Local and remote management
Monitor via Telnet, SNMP and Configuration
Upload/download
Managed by AlvariStar Management System
Remote management access
From wired LAN, wireless link
Software upgrade and Configuration
Via TFTP and FTP

Management access protection
Multilevel password Configuration of remote
direction (from Ethernet only, wireless only, or
both sides), Configuration of IP addresses of
authorized stations
SNMP agents
SNMP v1 client, MIB II, Bridge MIB, Private
BreezeACCESS VL MIB

Electrical Characteristics
Power consumption
SU/AU-SA: 25W
AU-BS: 30W (module plus outdoor unit)
BS-PS-AC-VL (AC power supply): 240W, full chassis (1PS, 6 AU)
BS-PS-DC-VL (DC power supply): 240W, full chassis (1PS, 6 AU)
Input power
SU/AU-SA: AC input 100-240 VAC, 50-60 Hz
AU-BS: AC input 100-240 VAC, 50-60 Hz, DC output 55 VDC, 1A MAX
PS (IDU): 54 VDC from indoor to outdoor, 3.3 VDC, 54V from power supply in backplane
BS-PS-AC-VL (AC power supply): AC input 85-265 VAC, 47-65 Hz, DC output 54V, 3.3V
BS-PS-DC-VL (DC power supply): DC input -48 VDC nominal (-34 to -72), 10 A max., DC output 54V, 3.3V
Connectors
ODU
SU/AU-SA: Ethernet: 10/100BaseT RJ-45,
Radio: 10/100BaseT Ethernet RJ-45
AU-BS: Ethernet: 10/100BaseT Ethernet RJ-45
IDU
SU/AU-SA: Indoor: 3-pin AC power plug 10/100Base RJ-45 (waterproof)
AU-BS: BS-PS-AC-VL (AC power supply): AC IN: 3-pin power plug
BS-PS-DC-VL (DC power supply): -48 VDC: 3-pin DC D-Type 3 power pin plug Amphenol

Physical and Environmental
Dimensions
SU ODU with integrated antenna: 30.5 x 30.5 x 6.2 cm (0.55 kg) / 12 x 12 x 2.4 in (1.21 lb)
AU/SU ODU without integrated antenna: 30.5 x 11.7 x 5.7 cm (1.8 kg) / 12 x 4.7 x 2.2 in (3.9 lb)
SU with integrated antenna: 22 x 22 x 7 cm (1.3 kg) / 8.6 x 8.6 x 2.7 in (2.8 lb)
Operating temperature
SU/AU outdoor units: -40°C to 55°C
SU/AU indoor units: 0°C to 40°C
Operating humidity
SU/AU outdoor units: 5%-95% non condensing, weather protected
SU/AU indoor units: 5%-95% non condensing

Standard Compliance
EMC
FCC Part 15 class B, EN55022 class B, EN 301 489-1/4
Safety
EN 60950-1, EN 60950-22
Storage
EN 300 019-2-1 class 1.2E, Hazardous substances, RoHS compliant

Environmental
EN 300 019 part 2-3 class 3.2E for indoor units
EN 300 019 part 2-4 class 4.1E for outdoor units IP-67, SU integral antenna IP-67
Transportation
EN 300 019-2-2 class 2.3
Lightning protection
EN 61000-4-5, class 3 (2kV)
Radio
EN 301 893 (V 1.6.1), IC RSS-210 (Canada)

Note: Not all options are available in all regions and some features require a software licensing key.
Please contact your local representative for further information.

About Alvarion Technologies
Alvarion provides tailored solutions based on our optimized wireless broadband addressing the challenges
of smart cities. Our innovative solutions use multiple technologies covering the various smart city aspects like
security, transportation, first-responders, education, utilities and other community services.