



Future-Proof WiMAX™ with 802.16e-Based Solution

BreezeMAX® 3650

BreezeMAX 3650 is a 802.16e-based WiMAX solution for the US FCC 3.65-3.70 GHz frequency band allocated for wireless broadband, which includes macro and micro base stations. Incorporating Alvarion's field-proven and mature WiMAX technology, which is one of the market's most popular 802.16e-based, WiMAX solutions, BreezeMAX 3650 provides superior coverage and capacity that results in fewer cell sites for reduced CAPEX and OPEX and an improved business case. Furthermore, as an 802.16e-based solution, BreezeMAX 3650 offers a future-proof network with optimized value of investment.



BreezeMAX 3650 Main Features

- Advanced antenna technology, including 2nd and 4th order diversity and MIMO for increased coverage and capacity and improved operator business case
- Range of BreezeMAX base station configurations
- Variety of CPEs, for both outdoor and indoor use
- Self-install CPE with patent-pending technology for stable connections
- Future accessibility of WiMAX 802.16e standard equipment
- Fixed and portable services to residential and business customers located in rural, suburban and urban areas

Advanced, Self-Install Solution

Using high-power Orthogonal Frequency Division Multiplexing Access (OFDMA) technology and six industry-leading, fast-switching antennas, the BreezeMAX Si* CPE supports non-line-of-sight (NLOS) operation and the most stable indoor links for the highest subscriber satisfaction. Improving the operator business case by minimizing truck rolls and installation costs, BreezeMAX Si also offers longer ranges and superior capacities, giving operators a higher ROI. Typical customers include small operators using the upgradeable BTS configuration for deployments in small communities, and large scale IOCs (Independent Operating Companies) using BreezeMAX Si as a way to compete with basic, primary data and voice services in fixed applications.

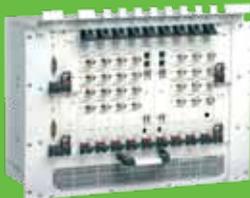
* Pending FCC approval

System Components

Base Station Equipment

High-density, modular chassis configuration scalable for deployments of various sizes.

Modular Base Station



Carrier class 8U high cPCI shelf that fits into a standard 19" or 22" (ETSI) rack and contains a network processor unit, hot-swappable multiple access unit modules (up to 6 in a single chassis), a power supply and power supply modules.

Micro Base Station



Pay as you grow with MMC feature: one micro base station supports up to four sectors and four outdoor radios. The micro base station supports all macro base station features.

Indoor/Outdoor Access Units



Utilizes wireless IEEE 802.16e/HiperMAN MAC and modem to establish wireless network connections and manage bandwidth. Each indoor access unit includes four 3.5 or 5 MHz PHY channels supporting of RF 2nd and 4th order diversity combining functionality and radio link redundancy. Alvarion's unique technology enables each such Access Unit to support up to four different frequencies.

WiMAX architecture based on the WiMAX Forum® standard implementation of the IEEE 802.16e and ETSI HiperMAN industry specifications for wireless access in Metropolitan Area Networks (MAN).

Plug-and-play solution using a self-installable CPE with automatic provisioning traffic management.

Scalable high-density macro and micro base station configurations.

High power, multiple diversity radios using Space Time Coding (STC), Cyclic Delay Diversity (CDD) and Maximum Ratio Combining (MRC).

Range of CPEs for managing tiered services in residential, business, MDU/MTU, hotspot, backhaul, and wireless home networking applications.

Low cost of ownership through simple self-installation and demand-based, pay-as-you-grow build-outs.

High capacity and throughput using efficient and robust 802.16e-based air protocol.

End-to-end QoS essential for high quality data, voice and video services.

Adaptive modulation technology maximizes system bandwidth throughput.

AlvariSTAR management system simplifies network deployment and enables fast customer-based expansion with effective fault management for quick resolution.

Customer Premises Equipment (CPE)

BreezeMAX self-install CPEs are powered by an Intel 802.16e WiMAX chip. Providing operators the flexibility to cost-effectively serve different business and residential customers, the BreezeMAX CPE portfolio allows for both outdoor (professional) and indoor (self-install) deployments.

BreezeMAX PRO-S



BreezeMAX PRO-S consists of an indoor unit (IDU) and an outdoor unit (ODU) that contains the modem, radio, data processing and management components, as well as an integral high-gain flat antenna with either vertical or horizontal polarization. An ODU with a connector to an external antenna is also available.

BreezeMAX Si*



* pending FCC approval

BreezeMAX Si is a self-installable, WiMAX subscriber unit providing broadband data services in a compact design. Ideal for residential and SOHO users, it is a complete indoor solution (without the need for an outdoor unit) supplied with installation software and/or a smart card for simple self-installation and automatic service operation. The smart card option permits operators to ship this CPE to end users and then separately enable the type of service purchased by online smart card configuration, making installation easier than ever.

BreezeMAX Voice Gateway



BreezeMAX Voice Gateway is a single box solution providing integrated voice and data services. Available with one or two RJ-11 POTS ports, it features advanced voice and data functions such as VLAN tagging, traffic prioritization by IP DiffServ, SIP protocols, Class 5 voice services (third party conference call waiting, call hold), and integrated management.

Networking Gateway



Networking Gateway is the optimal networking solution for both home and small business customers. Featuring an advanced, integrated broadband router with comprehensive IP-sharing and security capabilities, it offers four 10/100 BaseT ports and an 802.11g wireless access point.

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Specifications

Radio and Modem

Frequency 3.650-3.675 GHz (hardware ready for 3.650-3.700)	Channel bandwidth 3.5 MHz, 5 MHz, 7 MHz*, 10 MHz* (SW selectable)	Outdoor CPE 17 dBi at 3.65-3.7 GHz
Radio access method TDMA TDD	Central frequency resolution 125 KHz	Indoor Si CPE Six integrated antennas with 9 dBi, plus external port for window patch and support of OFDMA to allow full EIRP
Modulation OFDM 256 FFT with adaptive sub-carrier modulation: BPSK, QPSK, 16QAM, 64QAM and upstream OFDMA	Antenna for CPE Integrated vertical and horizontal antenna	Sensitivity typical values -80 dBm for highest modulation (QAM64) @ 5 MHz -98 dBm for lowest modulation (BPSK) @ 5 MHz

Data Communications

Data IEEE 802.3 CSMA/CD	VLAN support IEEE 802.1Q	Traffic classification Layer 2/3 IEEE 802.1p, IP DiffServ Code Points DSCP
Air Interface IEEE 802.16-2004 / IEEE 802.16-2005		

Voice Gateways

Primary voice 1.5 hours, battery backup	Data and voice services Integrated in single box	Services Class 5
Managed voice For QoS management and admission control	Interfaces One of two RJ11 connectors for analog phones	VoIP protocol SIP
		Speech codecs 6.711, 6.729ab, AMR

Environmental

Parameter	Indoor Unit	Outdoor Unit
Operating Temperature	0°C to 40°C (32°F to 104°F)	-40°C to 55°C (-40°F to 131°F)
Operating Humidity	5-95% non-condensing	5-95% non condensing, weather protected

Standard Compliance

EMC ETSI EN 301 489-1	Environmental ETS 300 019 (part 2-1 T 1.2 & part 2-2 T 2.3 for indoor & outdoor)	Radio FCC part 27, ETSI EN 301 021 V1.4.1, ETSI EN 301 753 V1.1.1
Safety EN 60950 (CE), CB, IEC 60 950 US/C (TUV)	(part 2-3 T 3.2 for indoor, part 2-4 T 4.1E for outdoor)	

* Future channel bandwidth options

About Alvarion

Alvarion (NASDAQ:ALVR) is a global 4G communications leader with the industry's most extensive customer base, including hundreds of commercial 4G deployments. Alvarion's industry leading network solutions for broadband wireless technologies WiMAX, TD-LTE and WiFi, enable broadband applications for service providers and enterprises covering a variety of industries such as mobile broadband, residential and business broadband, utilities, municipalities and public safety agencies. Through an open network strategy, superior IP and OFDMA know-how, and ability to deploy large scale end-to-end turnkey networks, Alvarion is delivering the true 4G broadband experience today (www.alvarion.com)