albentia Systems

ARBA-135: WiMAX Base Station Series

3.5 GHz licensed band

Product Overview

ARBA-135 is the new family of WiMAX TDD Base Stations operating in the 3.5 GHz ETSI band

These Base Stations comply with the IEEE 802.16-2009 standard and are interoperable with many low-cost CPE terminals manufactured by multiple vendors, enabling CAPEX optimization based on the customer's particular needs.

The highest net throughput in the industry is provided thanks to the high data-rate OFDM physical layer and the outstanding efficiency of the MAC layer.

ARBA-135 stations are able to provide up to 24Mbps net aggregated throughput in Point-to-Multipoint networks. Advanced QoS and provisioning mechanisms are available to the operator to guarantee best-in-class performance.

The highly scalable architecture of these Base Stations has been optimized to maximize the functionality, offering extensive QoS control on multiple differentiated services and users, total control on the network parameters, ARQ, data encryption and advanced management interfaces.

ARBA-135 supports all QoS types defined in the IEEE 802.16-2009 standard, from best-effort services to true UGS QoS for highly critical applications. ARBA-135 easily supports VoIP applications thanks to the use of differentiated and totally independent service flows that enable VoIP communication and data transmission through separated logical channels.

Quality of Service mechanisms are implemented at layer-2 as specified in the IEEE 802.16-2009 standard, leveraging the superior performance of deterministic contention-free framed transmission. The Base Station scheduler implements independent data queues for each service within each user, allowing for true UGS quality of service for highly critical applications.

The ARBA-135 Base Stations are equipped with powerful and comprehensive networking functionality, supporting multiple independent bridges, routing mode, VLAN, Q-in-Q and advanced double-NAT networking.

These stations share the same management interface with the ALB-100/200 families of Point-to-Point and Point-to-Multipoint transport and backhauling systems, allowing easy deployment and management of combined transport and access networks.

The built-in web server allows for easy configuration, monitoring and provisioning of the WiMAX network. Remote management is supported thanks to the built-in SNMP agent for integration with standard network management systems, and the advanced XML-RPC protocol for integration with Albentia Systems' centralized Network Management System.

ARBA-135 is an easy to install and low power consumption solution perfectly suited for rural WiMAX deployments, supporting solar-based power supply.

PRODUCT HIGHLIGHTS

Interoperable WiMAX Base Station in the 3.5 GHz band

IEEE802.16-2009 (WiMAX) standard compliance

Best-in-class net spectral efficiency of 3.5bps/Hz

Especially suited for Data+VoIP applications

Full QoS support: BE, RTPS, nRTPS, eRTPS and UGS

ARQ (Automatic Repeat Request)

TDD duplexing

Advanced networking functionality: Briging, routing, VLAN, NAT

SNMP, web, CLI and XML management

Outdoor easy installation

Low power consumption

Radio parameters

Frequency Band		3400-3600 MHz	
Modulation		OFDM IEEE 802.16-2009 - 256 subcarriers, cyclic prefix 1/4,. 1/8, 1/16 or 1/32	
Supported channel bandwidth		1.75, 3.5, and 7 MHz	
Adaptive modulation		BPSK, QPSK, 16QAM and 64QAM	
FEC code rate		1/2, 2/3 and 3/4 concatenated Reed-Solomon and Viterbi	
Maximum output power		+20 dBm	
Transmit power control		> 40 dB	
Duplexing method		TDD (Time Division Duplexing)	
Uplink/Downlink allocation		Programmable from 4:1 to 1:4	
Antenna connector		N-type, 50 ohms	

RF parameters	Modulation	Sensitivity (3.5 MHz)	Sensitivity (7 MHz)
	BPSK-1/2	-95 dBm	-92 dBm
	QPSK-1/2	-93 dBm	-90 dBm
	QPSK-3/4	-89.5 dBm	-86.5 dBm
	16QAM-1/2	-86.5 dBm	-83.5 dBm
	16QAM-3/4	-83 dBm	-80 dBm
	64QAM-2/3	-79 dBm	-76 dBm
	64QAM-3/4	-77 dBm	-74 dBm

Data traffic and Throughput

Maximum over-the-air data rate		26.2 Mbps (64QAM-3/4, CP=1/4, BW=7 MHz)
Ethernet aggregated throughput	Basic	24.2 Mbps
ARQ support		Yes, per IEEE 802.16-2009 standard - Selectable per service flow
Simultaneous registered users	Basic	30
	Advanced	Unlimited
	Lite	8
Encryption		AES and 3DES

Quality of Service (QoS)

Supported QoS types		UGS, RTPS, nRTPS, eRTPS and BE (IEEE 802.16-2009 standard)
Service differentiation	Layer-2	MAC source/destination address, EtherType, VLAN tag
	Layer-3	DSCP ToS, IP source/destination address and subnet, Protocol type
	Layer-4	TCP, UDP source/destination port range
Differentiated service flows		Unlimited differentiated services per user

Management and Provisioning

Management local interfaces	Web, Command-Line Interface
Management remote interfaces	SNMP, XML-RPC
User and services local provisioning	XML local database
User and services centralized provisioning	AAA Radius, LDAP, XML-RPC

Network functionality

Layer-2 Network functionality	Bridging (IEEE 802.1), VLAN (IEEE 802.1q)
Layer-3 Network functionality	Static/Dynamic routing, NAT, DHCP server/client
Supported CS	Ethernet, IPv4oEthernet, VLAN, IPv4oVLAN
Networking modes	Bridge mode, IP routing
Data interface	10/100 Base-T Ethernet RJ45

Physical, Mechanical and Electrical

Size		395 x 265 x 95 mm
Outdoor Unit Weight		3.2 kg
Power Supply	Basic	48V or 220VAC (802.3af PoE standard)
Power Consumption		<18 Watts (full traffic conditions)

Standards Compliance

WiMAX	IEEE 802.16-2009
Environmental	ETSI EN 300 019-1-4 C4.1E (ODU), ETSI EN 300 019-1-3 C3.2 (IDU)

ORDERING INFORMATION

ARBA-135	Base Station 3400-3600 MHz
ARBA-135-L	Base Station Lite 3400-3600 MHz
ARBA-135-USR	Unlimited users for ARBA-135 Base Station
ARBA-135-UPG	30 users upgrade for ARBA-135-L