Motorola CPE*i* 885

Convenient, Reliable Wireless Broadband Access with Integrated WiFi in the Sleekest Design Yet

The Motorola CPE*i* 885 Customer Premises Equipment (CPE) for 802.16e WiMAX networks is an all-in-one device that provides high-performing, orientation-free wireless broadband access to meet your end users' total home networking needs including data, voice & WiFi. The CPE*i* 885 helps operators to derive maximum profit from their WiMAX network investment.

High End Design

With a balanced blend of power, performance, reliability and "wow" simplicity, the CPE*i* 885 WiMAX CPE includes a built-in WiFi router in addition to ATA ports for Voice over IP (VoIP). Following on Motorola's history of exceptional design, the CPE*i* 885 includes all this technology in a unique ultra-thin form factor. Extensive market research went into the design of the CPE*i* 885 to assure that this is a CPE that would enhance any home and allow service providers to differentiate and profit from their infrastructure investments.

Reliable and Efficient

This 802.16e WiMAX CPE has substance and elegance. Network operators can count on the performance as well as reliability of this device. It has multiple data and voice access ports, a firewall for security, and an integrated WiFi router, providing an effective all-in-one solution to home networking needs. Factors such as integrated design, no moving parts and efficient ventilation further improve the operational life span of this device. Easy-to-read signal strength indicators and WiMAX network, data and WiFi status indicators in the front of the device make it intuitive for users to check the status of the device.

A highly sensitive receiver in the CPE*i* 885 exceeds the RCT specified receive sensitivity requirements. This effectively increases the area within the cell that can support higher throughputs, and may allow reduction in the base station infrastructure requirements for a service provider. Higher throughput could also provide improved subscriber experience and the ability for operators to offer more services that require specific QoS levels, such as voice and video.

State of the Art Antenna Technology

Device's antenna design and implementation factors impact not only the performance of the device and resultant subscriber satisfaction, but also the overall network capacity. Factors such as orientation losses can affect the uplink performance of the device and subscriber may have to orient the device for optimal performance. In addition, integration of WiFi components and antennas may also affect the overall performance of the device as well as affect the sensitivity of the WiMAX receiver.

Motorola's CPE*i* 885 employs orthogonally polarized high gain antennas with switched transmit diversity for hassle free installation and optimal performance. Also, additional interference protection mechanisms employed in CPE*i* 885 for co-existence of WiMAX and WiFi, including 2 x 2 WiFi 'n', ensure virtually no performance degradation.

Dual adaptively switching WiMAX antennas to support diversity techniques such as switched transmit antenna diversity on the uplink, as well as MRC Maximum Ratio Combining (MRC), and MIMO Matrix A and B on the downlink. Combined with multi-antenna operations at the access points such as open and closed-loop adaptive antenna techniques, the combined solution of Motorola's access points and CPE provides operators with best-in-class range and indoor penetration to service providers, reducing the overall CAPEX requirements.

Convenience

The CPE*i* 885 is user-friendly, reducing expensive support costs and making a strong positive impact on a WiMAX operator's bottom line. All access ports in the plug and play CPE*i* 885 are integrated and all the necessary device drivers are pre-loaded. Pre-loaded device drivers mean no CDs are required for end-user installation. It operates with Windows, MAC and LINUX operating systems without any user intervention. Subscribers just connect the device to their computer and voice handsets and the device is ready to offer a unique all-in-one WAN/LAN/VoIP residential communications network. The network will automatically detect the device and perform the necessary authentication processes. Finally, zero-install design and over the air (OTA) software upgrades eliminate the need for costly truck rolls or operator intervention.

The LEDs on the CPE*i* 885 have also been designed for user convenience, and to make it easier and less costly for service providers to support the device. The LEDs offer a clear sign of what the device is doing. In addition, the LEDs support fault reporting modes. If a user's CPE stops working, a specific combination of LEDs will be lit that correspond to a fault code.

Performance

Motorola continues to leverage a rich heritage in RF performance in the CPE*i* 885. With over 80 years in RF experience and as a leader in wireless broadband, Motorola can consistently offer devices with best-in-class performance characteristics. The performance of the CPE*i* 885 sets new standards in transmit power and receive sensitivity, enhancing the experience for users, and decreasing infrastructure costs for a lower total cost of ownership for service providers.

CPE device performance factors considered in the CPE*i* 885 include antenna gain, receiver sensitivity, orientation, diversity techniques and effective transmitter power. The radiated performance of WiMAX CPE devices can differ dramatically. In a typical environment, 3 to 6dB low-end performance by CPEs on the network can translate to the need for over two times as many access points in order to provide the same level of service. This factor needs special attention particularly during the initial commercial launch of the network. A service provider's most important customers are often the first customers to use the network.

Control

The Motorola CPE*i* 885 supports remote management capability allowing management and health monitoring of the devices from a centralized network management system. Motorola CPEs support a wide range of statistics for the operator to look at the network performance from the device perspective. In addition, advanced security and authentication protocols protect the end-user and the operator from external threats.

MOTOROLA CPE*i* 885 SERIES SPECIFICATIONS	
Frequency Band	CPEi 23885 (2300 - 2400 MHz) CPEi 25885 (2496 - 2690 MHz) CPEi 35885 (3400 - 3600 MHz)
Connectivity	2 data (RJ45) ports
	2 ATA (RJ11) ports
	802.11 g/b/n (WLAN)
Radio Performance	Peak EIRP 32dBm
	Switched Transmit Antenna Diversity
	5dB better receive sensitivity on an average than RCT specifications
	Two branch Maximum Ratio Combining Diversity (MRC)
	Convolution Turbo Coding (CTC)
	Hybrid Automatic Repeat request (HARQ)
	WiFi b/g and 2 x 2 802.11n
Channel Support	5MHz, 7MHz and 10MHz channel support
Throughput	>5 Mbps downlink and >2 Mbps uplink **
Modulation Schemes	QPSK, 16QAM, 64QAM
Quality of Service Classes	BE (Best Effort)
	UGS (Unsolicited Grant Service)
	RTPS (Real Time Polling Service)
	NRTPS (Non Real Time Polling Service)
	ERTPS (Extended Real Time Polling Service)
Security	Device authentication based on X.509 digital certificates
	Authentication methods according to IEEE 802.16e, EAP-TLS and also EAP-TTLS
	AES (128-bit CCM) data encryption and authentication
	Wi-Fi Protected Setup (WPS)
	WEP, WPA, WPA2
	Residential firewall
Remote Configuration and Software Upgrade	OTA (Over The Air) field upgradeable
	TR-069 agent
	OMA agent
OS Compatibility	Windows
	Mac
	LINUX

** Cell site range and data throughputs are dependent on network planning and RF conditions.

MOTOROLA CPE*i* 885 SERIES SPECIFICATIONS (Continued)	
Mechanical and Electrical	External power: 100-240 volts AC input
	Operating temp: 0°C to 40°C
	Operating humidity: 5% to 95%, non-condensing
	Country specific plug support
Environmental and Regulatory	Europe
	Asia
	Latin America

Motorola and WiMAX

The Motorola WiMAX CPE*i* 885 is part of the Motorola WiMAX comprehensive portfolio of solutions and services needed to plan, launch and manage a WiMAX network. Designed to complement and complete operator networks, Motorola solutions address a broad range of applications across operator segments. Our WiMAX CPEs and devices demonstrate exceptional ability to overcome the harsh conditions of the radio propagation environment. So they'll not only deliver excellent performance for your subscribers, but also lower costs and higher returns to you.

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