![Wi-LAN logo]

www.wi-lan.com

LIBRA™ mx

The Ultimate WiMAX Platform

WORLDWIDE LIBRA NETWORK DEPLOYMENTS

> "Wi-LAN has established itself as an industry leader in advanced broadband wireless networking technology. Our work with them has resulted in a high-performance, highly integrated, and cost-efficient WiMAX system-on-chip."
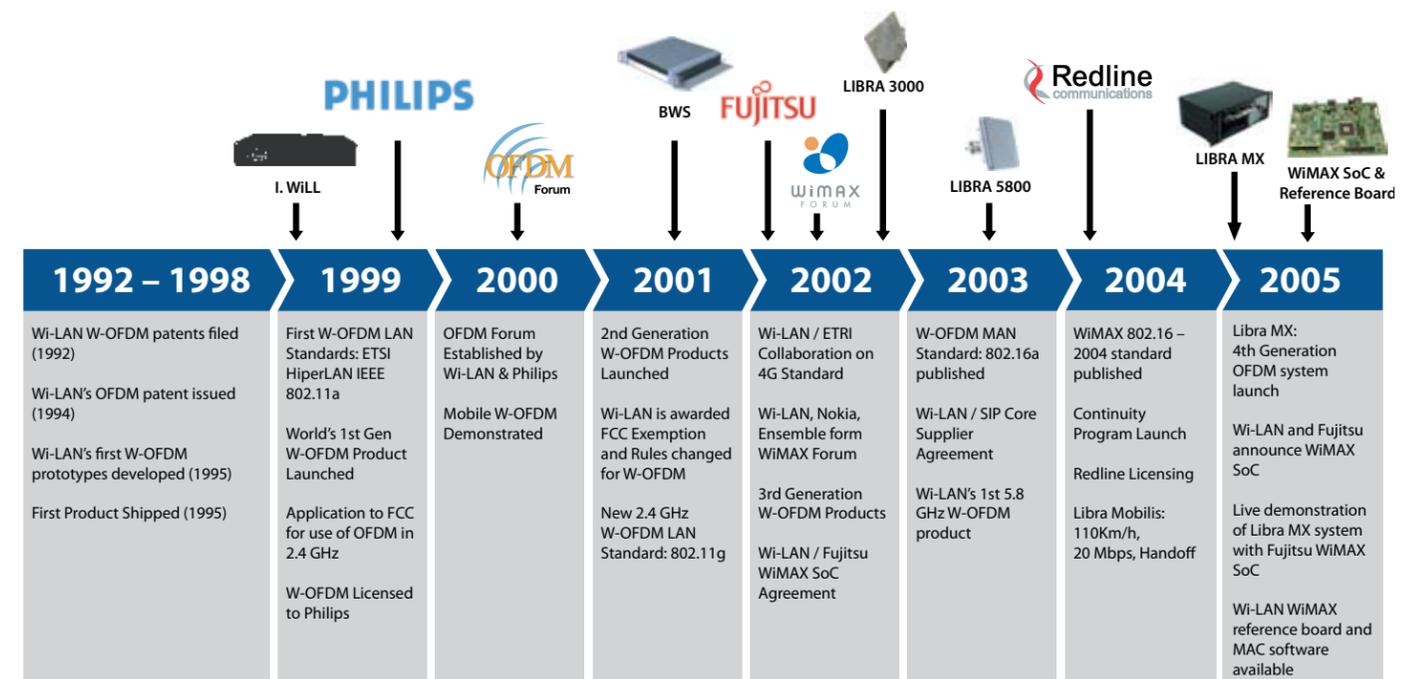>
> **Keith Horn**
> **Senior Vice President**
> **Fujitsu Microelectronics America**

WiMAX is a standards-based broadband wireless technology that provides metropolitan area network (MAN) connectivity. Based on the IEEE 802.16 and ETSI HiperMAN standard, WiMAX has been built from the ground up as a robust, high bandwidth and long range wireless networking technology. Wi-LAN is a founding board member of the WiMAX Forum, a non-profit organization made up of more than 300 key industry players.

In 2002, Wi-LAN started working with WiMAX Forum members Nokia and Ensemble to define the next generation of broadband wireless standard. Wi-LAN was instrumental in the creation of both 802.16 and the WiMAX standard.

In fact, Wi-LAN's patented W-OFDM technology lies at the core of the WiMAX standard. Wi-LAN was the first company to build commercial equipment based on 256-FFT OFDM, which is the version of OFDM chosen by the WiMAX Forum for certification of vendor equipment. Wi-LAN has had significant input into the creation and development of the WiMAX standard right from the start.

In addition to being a board member of the WiMAX Forum, Wi-LAN is the chair of WiMAX Forum's technical committee. Wi-LAN is active in ongoing IEEE 802.16 and ETSI HiperMAN development and our efforts are helping to ensure that the WiMAX standard is the best broadband wireless technology now and in the future.

- Founding board member and first broadband wireless vendor to join WiMAX Forum
- Field-proven - More OFDM MAN systems deployed than any other vendor
- First product shipped in 1995
- 4th generation OFDM systems
- Leaders in IEEE 802.16 and ETSI HiperMAN standards development
- Patent leadership in W-OFDM, 802.16 MAC ,MC-DSSS, and VINE
- Partnership with Fujitsu for WiMAX System-on-Chip
- Clear path to mobility
- Wireless networks deployed in over 100 countries worldwide

1992 – 1998	1999	2000	2001	2002	2003	2004	2005
Wi-LAN W-OFDM patents filed (1992) Wi-LAN's OFDM patent issued (1994) Wi-LAN's first W-OFDM prototypes developed (1995) First Product Shipped (1995)	First W-OFDM LAN Standards: ETSI HiperLAN IEEE 802.11a World's 1st Gen W-OFDM Product Launched Application to FCC for use of OFDM in 2.4 GHz W-OFDM Licensed to Philips	OFDM Forum Established by Wi-LAN & Philips Mobile W-OFDM Demonstrated	2nd Generation W-OFDM Products Launched Wi-LAN is awarded FCC Exemption and Rules changed for W-OFDM New 2.4 GHz W-OFDM LAN Standard: 802.11g	Wi-LAN / ETRI Collaboration on 4G Standard Wi-LAN, Nokia, Ensemble form WiMAX Forum 3rd Generation W-OFDM Products Wi-LAN / Fujitsu WiMAX SoC Agreement	W-OFDM MAN Standard: 802.16a published Wi-LAN / SIP Core Supplier Agreement Wi-LAN's 1st 5.8 GHz W-OFDM product	WiMAX 802.16 – 2004 standard published Continuity Program Launch Redline Licensing Libra Mobilis: 110Km/h, 20 Mbps, Handoff	Libra MX: 4th Generation OFDM system launch Wi-LAN and Fujitsu announce WiMAX SoC Live demonstration of Libra MX system with Fujitsu WiMAX SoC Wi-LAN WiMAX reference board and MAC software available

I. WiLL · PHILIPS · OFDM Forum · BWS · FUJITSU · WiMAX FORUM · LIBRA 3000 · LIBRA 5800 · Redline communications · LIBRA MX · WiMAX SoC & Reference Board

FUJITSU PARTNERSHIP

In 2002, Wi-LAN and Fujitsu announced that they had started working on a WiMAX/802.16 System-on-Chip (SoC). Wi-LAN has combined its system expertise and Orthogonal Frequency Division Multiplexing (OFDM) technology with Fujitsu's chip design capabilities in a development program that created a new WiMAX SoC from Fujitsu.

The highly integrated, high-performance solution incorporates embedded processors and mixed signal technology in a device that enables systems developers like Wi-LAN to provide cost-effective WiMAX Forum Certified™ equipment.
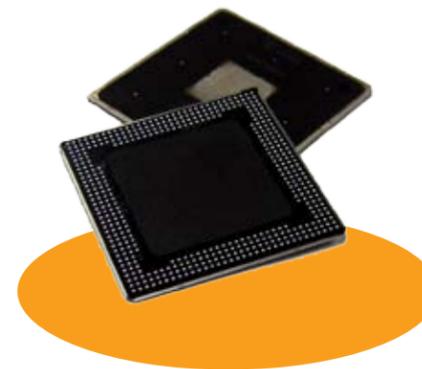
LIBRA MX — WIMAX AND MORE

The Libra MX platform marks the convergence of two powerful industry-transforming technologies that revolutionize broadband wireless access. No other platform fuses field proven Turbo W-OFDM technology with industry standard WiMAX in a modular architecture that enables you to build robust and high performance wireless networks.

- **WiMAX performance today**
  With a full feature set, Libra MX offers WiMAX performance that enables triple play services: voice, video and data.
- **Proven OFDM Technology**
  Currently in its 4th generation, Wi-LAN's OFDM technology has been deployed in more networks worldwide than any other vendor.
- **Dual-Mode Operation**
  The only broadband wireless platform to support both WiMAX and Turbo W-OFDM operation in the same network, sector and channel enabling the Libra MX to be deployed for both open public WiMAX networks and high performance and secure Turbo W-OFDM networks.
- **Future-Proof Platform**
  Support for current and future sector blades through industry standard cPCI architecture ensures that Libra MX is the only base station you will ever need.
- **Highest Throughput Available**
  Libra MX features channel sizes of 3.5 MHz, 7 MHz and 14 MHz in a single blade which cuts deployment costs in half compared to other solutions which require multiple line cards. In addition, full duplex backhaul enables unrivaled backhaul performance.

- **Exceptional Point-to-Multipoint Performance**
  No one has better point-to-multipoint performance especially as more subscriber stations are added. In addition, a single chassis can support simultaneous point-to-point and point-to-multipoint modes.
- **Flexible Blade Architecture**
  Common system architecture allows the same blade technology to be deployed enabling a common feature set accros the entire product line. Spares holdings are also minimized since all chassis support the same blade technology.
- **Intelligent Link Management**
  Maintains the best possible connection between the base station and subscriber station using adaptive modulation and auto-adjusting power output.
- **Quality of Service (QoS) Features**
  Ability to prioritize voice and data services using CIR, IPTOS, VLAN and IP and MAC Filtering.
- **Auto-Provisioning**
  Enables ease of installation and support for plug and play nomadic subscriber stations.

OPTIMIZED FOR YOUR NETWORK

Libra MX is Wi-LAN's WiMAX platform. Built on patented Turbo W-OFDM and industry standard WiMAX technology, Libra MX addresses the broadband wireless requirements of carriers and service providers today and in the future. As demand for robust broadband wireless services grows, opportunities to increase revenue and profits are there for innovative service providers—and Libra MX is the key.

With unprecedented performance and coverage, Libra MX allows carriers and service providers to increase their competitive edge by offering more value-added services to their subscriber base. In addition to data, Libra MX offers the opportunity to provide E1/T1, voice-over-IP, virtual private networks, and video services to business and residential markets. This not only translates to increased revenue, but also to increased profits—no additional infrastructure investments are required to begin offering these services.

Libra MX offers WiMAX-level throughput, allowing service providers to serve more customers than ever. This facilitates entry into new markets, competitive pricing, faster customer adoption, and profitability sooner than previously thought possible. The business model for the provision of wireless broadband services to a large population of business and residential subscribers has become extremely compelling with Libra MX.

> "We selected Wi-LAN's Libra MX system after a careful and detailed study of all available broadband wireless product offerings available today. Libra MX's technical specifications, with a guaranteed and seamless migration path to WiMAX compliant systems, were important factors in our decision. As well, we have been very impressed with Wi-LAN's high level of commitment to technical support."
>
> **Nasser Al Harbi**
> **Chairman, Bayanat**

INVESTMENT PROTECTION AND CONTINUITY - TAKING YOUR NETWORK INTO THE FUTURE

The Libra MX platform ensures seamless continuity for your network from todays standards into the future. As new WiMAX profiles are released, additional sector blades can be added to the existing base station ensuring that your network investment is protected. Additionaly, Libra MX enables you to deploy Turbo W-OFDM and WiMAX in the same network, cell and even sector.

> "The Libra MX with its modular chassis-based carrier-class architecture and its WiMAX-ready features and capabilities has proven to be highly reliable and has provided us with significant competitive advantage for several major large scale data, voice and video surveillance wireless deployments."
>
> **Dr. Aref Nayed**
> **Managing Director of Agathon Systems**

Fixed Wireless Access | Nomadic | Portable | Mobile
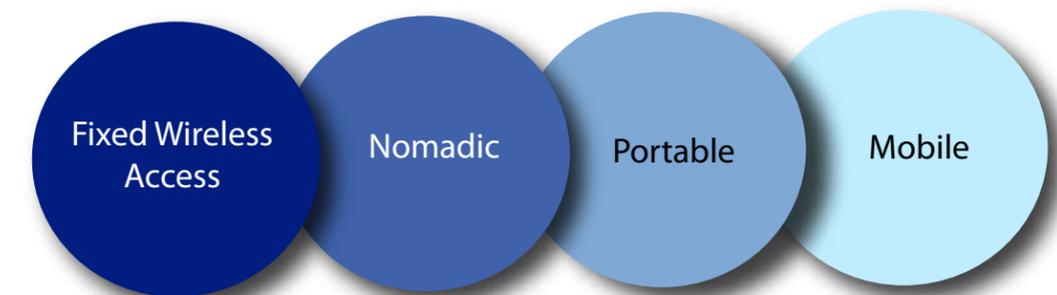
Operating in the 3.5 GHz spectrum, the carrier class Libra MX base station is available in three form factors. All three base stations share the same compactPCI architecture and feature a modular blade-based architecture which allows service providers to customize their base station to fit their unique network requirements.

Each base station consists of a chassis, sector blades, power supplies and a ruggedized outdoor radio. All blades are hot-swappable and high availability is achieved through multiple redundancy schemes. In addition to individual sector blades, Libra MX supports a variety of industry-standard cPCI blades to enable exciting applications like Voice over IP and T1/E1 backhaul.

Turbo W-OFDM Sector Blade
The Turbo W-OFDM Sector Blade utilizes Wi-LAN's Turbo W-OFDM technology to deliver exceptional point-to-multipoint performance at an affordable price. With advanced features like built in QoS, Intelligent Link Management, 3.5/7 MHz channel sizes, FDD and full duplex operation, the Turbo W-OFDM Sector Blade is the ideal solution for service providers looking to deliver highly secure and high-performance wireless network.

Turbo W-OFDM Backhaul Blade
The Turbo W-OFDM Backhaul Blade features a turbo mode which is optimized for point-to-point backhaul applications. Featuring up to 14 MHz channel size and full duplex send/receive on both ends, each Turbo W-OFDM Backhaul Blade can achieve stunning throughput of 96 Mbps, making it the optimal solution for service providers needing a robust and high performance backhaul solution.

WiMAX Sector Blade
The WiMAX Sector Blade implements IEEE 802.16 technology to deliver industry standard WiMAX. With its robust point-to-multipoint capabilities, the WiMAX Sector Blade enables service providers to tap into the lucrative residential, SOHO and mobility access subscriber markets. The WiMAX Sector Blade allows you to deploy industry standard WiMAX subscriber units in the same network, cell and even sector as existing MX subscriber units.

Libra MX/2 Base Station
The MX/2 base station is an ideal solution for service providers who require a cost effective and high performance base station. The MX/2 base station shares a common feature set with the MX/8 and MX/16 base stations which means you don't sacrifice features and performance when deploying this entry level base station.

- **Affordable**
  Supports up to two sectors in a compact 1U chassis — ideal for a fully redundant point-to-point system or for service in low density point-to-multipoint areas
- **Flexible Blade Architecture**
  Same blade technology as MX/8 and MX/16 base station enables redeployment of blades as your network grows
- **Carrier-class Design**
  Hot-swappable and chassis based
- **Stunning Wireless Performance**
  A single MX/2 chassis supports up to 96 Mbps throughput
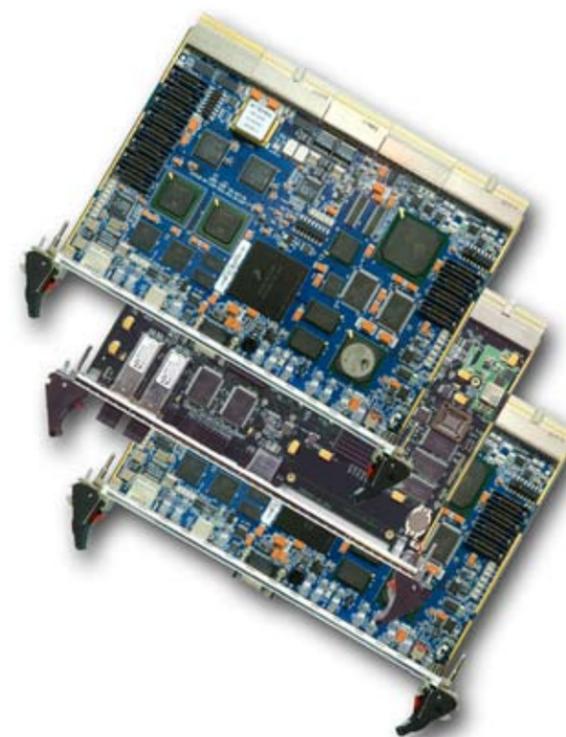
Libra MX/8 Base Station
The MX/8 base station is a carrier grade solution that offers service providers the performance and capacity required when deploying robust commercial networks. The MX/8 base station is idea for multi-sector point-to-multipoint environments.

- **Scaleable**
  Supports up to six sectors in a 4U chassis — ideal mid-sized solution delivering excellent price performance and flexibility
- **Flexible Blade Architecture**
  Same blade technology as MX/2 and MX/16 base station enables redeployment of blades as your network evolves
- **Carrier-class Design**
  Hot-swappable, system controller blade, alarm card, and redundant power supplies
- **Stunning Wireless Performance**
  A single MX/8 chassis supports up to 288 Mbps throughput

Libra MX/16 Base Station
The MX/16 base station is the ultimate in capacity, flexibility and reliability. Support for six fully redundant sectors and integrated backhaul makes this the perfect solution for commercial networks. Due to its expansion room, the MX/16 base station is ideal for offering triple play services including voice, video and data.

- **Extreme Scaleablity**
  Supports up to 6 fully redundant sectors in an 8U chassis — the ultimate in capacity and power
- **Flexible Blade Architecture**
  Same blade technology as MX/2 and MX/8 base station enables redeployment of blades as your network evolves
- **Carrier-class Design**
  Hot-swappable, system controller blade, alarm card, and redundant power supplies
- **Stunning Wireless Performance**
  A single MX/16 chassis supports up to 576 Mbps throughput

Ethernet Switch Blade
The Ethernet Switch Blade allows you to aggregrate all the traffic from the sector blades using the high-speed internal I/O subsystem of the Libra MX, saving you the cost and rack space of an external ethernet switch. The Ethernet Switch Blade connects to your network using an advanced Gigabit Ethernet connection to ensure the highest possible data throughput.

System Controller Blade
The System Controller Blade provides a central point for base station management and administration. It simplifies configuration and monitoring of individual sectors in a multi-sector environment.

VoIP Gateway Blade
The Voice-over-IP Gateway Blade enables service providers to offer low-cost, high quality phone services over their existing Libra MX network. Supporting H.323 or SIP, intelligent call routing, and QoS in a single solution, each VoIP Gateway blade supports up to 4 T1/E1/PRI Spans and up to 240 VoIP channels.

T1/E1 Blade
The T1/E1 blade can be used in place of traditional wired T1/E1 lines to provide robust, reliable, and cost effective connectivity solutions. The T1/E1 blade supports up to 4 T1/E1 over a single link and can operate in both a point-to-point and point-to-multipoint environments.

The Libra MX platform features a variety of subscriber units designed to meet customer needs and network requirements. Available in both indoor and robust outdoor designs, the subscriber units provides connectivity to the wireless network. Libra MX subscriber units feature advanced OFDM technology, NLOS capability and high-bandwidth data rates.

MX Outdoor Subscriber Station

The MX Outdoor Subscriber Station features Wi-LAN's Turbo W-OFDM technology and delivers best in class throughput and security. Available with either an integrated or non-integrated antenna, the MX Outdoor Subscriber Station is optimized for high packet per second performance with no degradation in performance when both voice and data are enabled.
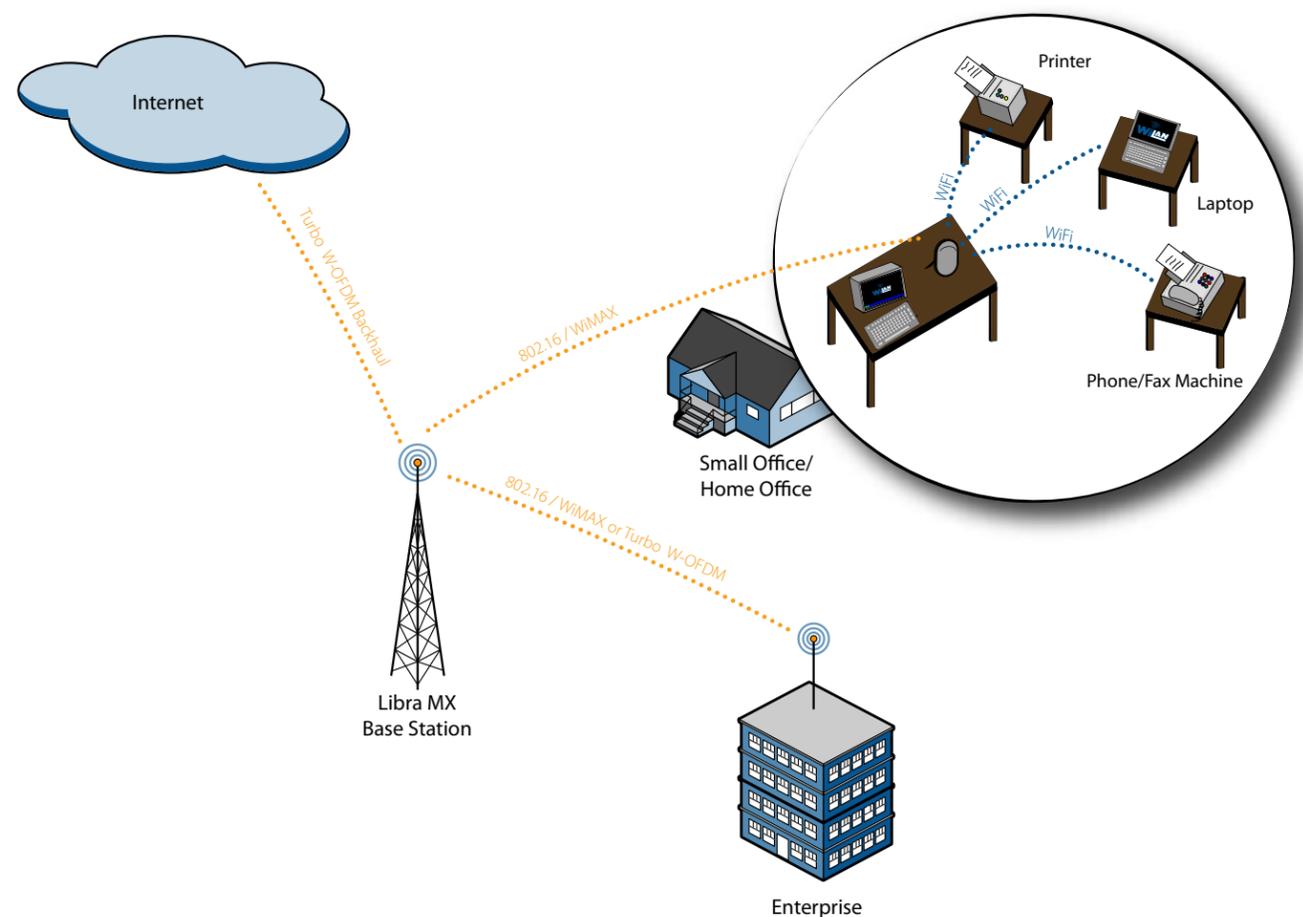
MAX Outdoor Subscriber Station

The MAX Outdoor Subscriber Station employs IEEE 802.16-2004 technology and features the Fujitsu WiMAX SoC. The MAX Outdoor Subscriber Station is a cost-effective and high-performance solution for business and residential customers requiring the longer range and throughput of an outdoor unit.

MAX Indoor Subscriber Station

Designed for residential and SOHO users, the self-install MAX Indoor Subscriber Station is a compact device which has all the features todays users demand. The MAX Indoor Subscriber Station features the Fujitsu WiMAX SoC and an integrated WiFi chipset. Offering WiFi, phone, fax and data connectivity, the MAX Indoor Subscriber Station is the ideal subscriber station for customers requiring self-install and cost-effectiveness.

Internet

Turbo W-OFDM Backhaul

802.16 / WiMAX

802.16 / WiMAX or Turbo W-OFDM

Libra MX
Base Station

Printer

WiFi

WiFi

WiFi

Laptop

Phone/Fax Machine

Small Office/
Home Office

Enterprise

Enterprise MDU/MTU

Providing broadband services to multiple dwelling or multiple tenant units (MDU/MTU) represents a significant business opportunity for services providers. Now, more than ever, the business case for providing a wide range of wireless broadband services is extremely compelling.

Making use of Libra MX, now service providers can offer more services to more subscribers, without increasing their infrastructure costs. This can have a profound positive effect on the bottom line.

The MDU/MTU market is somewhat homogenous: MDUs represent residential users with common voice, data, and video requirements; MTUs represent businesses with similar networking needs. Combine this dynamic with the WiMAX level performance delivered by Libra MX, and you get service providers who are optimally leveraging their infrastructure investments, and maximizing revenues. In fact, by replacing traditional wireline infrastructure, service providers can extend their physical reach—adding more MDU/MTU organizations—as well as reduce costs, and increase their overall subscriber base.

Urban Hotzones

A hotzone covers a large area of outdoor city geography, providing Internet access to users located anywhere in the vicinity— whether sitting on a park bench, on a job site, in a café, or in the lobby of an office tower. The result is increased productivity for the typical casual or business user seeking high-speed Internet access from a laptop or personal digital assistant (PDA). Because of the proliferation of WiFi devices, hotzones offer service providers the opportunity to increase customer spending on existing products and services, and to generate new sources of revenue.

Wi-LAN's hotzone solution raises the bar for reliability, speed, and coverage. Using the global wireless standard IEEE 802.11, or WiFi, along with WiMAX backhaul products, Wi-LAN-based hotzones enable your customers to simultaneously connect to the Internet or their corporate data networks at speeds of up to 11 Megabits per second (Mbps) in virtually any public place, without the constraints of wires or cables. Wi-LAN's field-proven fixed wireless products provide a cost-effective backhaul by eliminating the need for expensive fiber.

Cellular Backhaul

Many service providers overlook a vital part of their network: backhaul. Once customer traffic reaches the cell site, this data needs to be reliably transported back to switches and Internet gateways. Wireless backhaul is a low-cost way to connect cell towers to mobile telephone switching offices (MTSOs).

Libra MX delivers the most robust and cost-effective backhaul on the market. With WiMAX performance, Libra MX provides throughput at several times that which can be delivered by conventional hard-wired networks—making Libra MX an extremely cost-effective backhaul alternative.

E1/T1 Replacement

Replacing a leased E1 or T1 line provides a return on investment in less than a year for many systems, and under 18 months for most systems. Even when factoring in the antenna, tower, and installation costs, a broadband wireless network is far more economical than paying monthly E1/T1 lease costs.

With Libra MX, the argument for E1/T1 replacement becomes very compelling. Cost savings alone translate to a more economical network. Add dramatically increased throughput and QoS, and the result is a much more scalable network, and greater user productivity. Libra MX is built for growth: as network requirements expand, simply add capacity and services to your Libra MX system.

VoIP

Voice-over-IP (VoIP) is a revolutionary technology that is reinventing voice communications. Wi-LAN's wireless VoIP solutions allow the transmission of voice communications over Wi-LAN's broadband wireless access systems with carrier-class Quality of Service (QoS). With Libra MX, Wi-LAN offers an extremely economical alternative to traditional wired service for voice traffic. It's also an excellent solution to allow competitive local exchange carriers to avoid leased line charges to incumbent carriers. In fact, Libra MX supports four times as many voice calls as its predecessors.

Libra MX/2 Base Station

Capacity	2 blade slots
Maximum Sectors	2
Power Consumption	Max 160W
Input Voltage	36-60 V DC / 110-220 VAC
Dimensions	
Height	44 mm (1.75") - 1U
Width	482 mm (19")
Depth	216 mm (15")
Mounting	19" rack
Weight	Up to 5 kg (11 lbs)
Operating Temperature	0° - 40°C (IDU) -45° - 45°C (ODU)
Relative Humidity	5-90%

Libra MX/8 Base Station

Capacity	8 blade slots
Maximum Sectors	6
Power Consumption	Max 480W
Input Voltage	36-60 V DC / 110-220 VAC
Dimensions	
Height	176 mm (7") - 4U
Width	482 mm (19")
Depth	216 mm (15")
Mounting	19" rack
Weight	Up to 13 kg (28 lbs)
Operating Temperature	0° - 40°C (IDU) -45° - 45°C (ODU)
Relative Humidity	5-90%

Libra MX/16 Base Station

Capacity	16 blade slots
Maximum Sectors	6
Power Consumption	Max 960W
Input Voltage	36-60 V DC / 110-220 VAC
Dimensions	
Height	352 mm (14") - 8U
Width	482 mm (19")
Depth	216 mm (15")
Mounting	19" rack
Weight	Up to 20 kg (44 lbs)
Operating Temperature	0° - 40°C (IDU) -45° - 45°C (ODU)
Relative Humidity	5-90%

Common Base Station Specifications

Radio Specifications	
Output Power (Antenna Port)	BPSK, QPSK: 26dBm; QAM16: 26dBm, QAM64: 23dBm
Frequency Bands	3.4 - 3.6 Ghz initially, future WiMAX bands
PHY Technology	Turbo W-OFDM Sector - Turbo W-OFDM WiMAX Sector - WiMAX/802.16-2004 256 FFT
Coverage	NLOS, NrLOS, LOS
Range	Up to 30 km PtMP; Up to 75 km PtP
Modulation Rates	BPSK, QPSK, QAM16, QAM64
Duplexing Format	FDD/TDD, HDX/FDX option
Throughput (Raw/Effective)	Turbo W-OFDM & WiMAX Sectors - 47 / 35 Mbps (QAM64, 7MHz, FDX) Turbo W-OFDM Backhaul - 96 / 72 Mbps (QAM64, 14MHz, FDX)
Channel Size	Turbo W-OFDM Sector - 3.5 / 7 MHz Turbo W-OFDM Backhaul - 3.5 / 7 / 14 MHz WiMAX Sector - 3.5 / 7 MHz
IF Frequency	465 MHz
IF Cable Loss	9 dB
Antenna	Non-integrated Sectoral - 60°, 90°, 120°, 360° (omni)
RF Connector	N Connector
Certification	ETSI, SRRC, SIRIM
Network Support	
Network Connection	10/100 Base T, for sector blades, Gigabit Ethernet for Ethernet Switch Blade, E1/T1 option, VoIP option
VLAN Compliance	Yes, IEEE 802.1q
CIR/MBR	Yes
Bridge Functionality	Yes
Network Filtering	MAC address, IP address, Ip subnet
QoS Support	Turbo W-OFDM Sector - IP TOS WiMAX Sector - IP TOS, Best Effort, Non-Real-Time, Real-Time, Continuous Grant
Topologies	Point-to-Point, Point-to-Multipoint
Number of Subscriber Stations per Sector	2,047
Security	
Data Scrambling	Turbo W-OFDM Sector - Proprietary WiMAX Sector - DES/AES
Data Security Password	Yes
Configuration Security	Yes
Management	
Remote Management	Telnet, SNMP
Remote Access Management	From the wired LAN or from the wireless link
Local Management Port	RS 232 Serial Port
Software Upgrade	Remote upgradable, over the air

E1/T1 Blade

E1 Digital Line Interface	
Number of Ports	Up to 4x E1
Standards	ITU-T Rec. G.703, G.704, G.706, G.732, G.823
Framing	Unframed, CRC4 MF, CAS MF
Line Code	HDB3
Connector	Balanced: RJ-45 Unbalanced: RJ-45 (RJ-45 to BNC adaptor cable is supplied)
Line Impedance	Balanced: 120Ω Unbalanced: 75Ω
T1 Digital Line Interface	
Number of Ports	Up to 4x T1
Standards	ANSI T1.403, ITU-T Rec. G.703, G.704
Framing	Unframed, SF, ESF
Line Code	B8ZS, B7ZS, AMI
Connector	RJ-45
Line Impedance	100Ω balanced

VoIP Gateway Blade

Features	Automatic call type detection (voice, modem, fax); Automated load balancing; Auto-Switching for superior voice quality; Integrated H.323 gateway or SIP User Agent
T1/E1/PRI Spans	4
VoIP Channels	Up to 240

Ethernet Switch Blade

I/O Bandwidth	Up to 2.4 Gbps
Network Connectivity	100/1000 Base-T

MX Outdoor Subscriber Station

Frequency Range	3.4 - 3.6 GHz
PHY Technology	W-OFDM 256 FFT
Output Power (Antenna Port)	BPSK, QPSK: 23dBm; QAM16: 20dBm; QAM64: 17dBm
Channel Size	3.5 / 7 MHz
Throughput (Raw/Effective)	24/18 Mbps (7 MHz) 13/9 Mbps (3.5 MHz)
Antenna	Integrated / Non Integrated
Duplexing Format	FDD, HDX
Network Interface	10/100 Base-T
Power Consumption	Max 30W
Input Voltage	24V DC
Operating Temperature	-45° - 45°C
Relative Humidity	5-90%
Enclosure	Fully Weatherproof Outdoor

## MAX Indoor Subscriber Station

Frequency Range	3.4 - 3.6 GHz, future WiMAX bands
PHY Technology	WiMAX/802.16-2004 256 FFT
Output Power (Antenna Port)	BPSK, QPSK: 23dBm; QAM16: 20dBm; QAM64: 17dBm
Throughput (Raw/Effective)	26/17 Mbps
Channel Size	3.5 / 7 MHz
Antenna	Integrated / Non Integrated
Duplexing Format	FDD, HDX
Network Interface	10/100 Base-T
Power Consumption	Max 15W
Operating Temperature	0° - 45°C
Relative Humidity	5-90%
Enclosure	Indoor

MAX Outdoor Subscriber Station

Frequency Range	3.4 - 3.6 GHz, future WiMAX bands
PHY Technology	WiMAX/802.16-2004 256 FFT
Output Power (Antenna Port)	BPSK, QPSK: 23dBm; QAM16: 20dBm; QAM64: 17dBm
Channel Size	3.5 / 7 MHz
Throughput (Raw/Effective)	26/17 Mbps (7 MHz) 13/9 Mbps (3.5 MHz)
Antenna	Integrated / Non Integrated
Duplexing Format	FDD, HDX
Network Interface	10/100 Base-T
Power Consumption	Max 20W
Input Voltage	24V DC
Operating Temperature	-45° - 45°C
Relative Humidity	5-90%
Enclosure	Fully Weatherproof Outdoor

Base Station Overview

1. System Controller Blade
2. Sector & Application Blades
3. Ethernet Switch Blade
4. Alarm Card
5. Redundant Power Supplies
6. Fan Tray
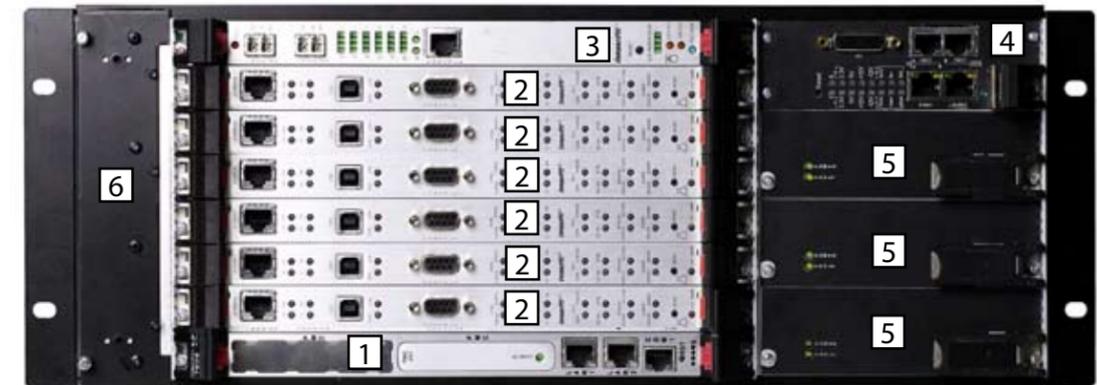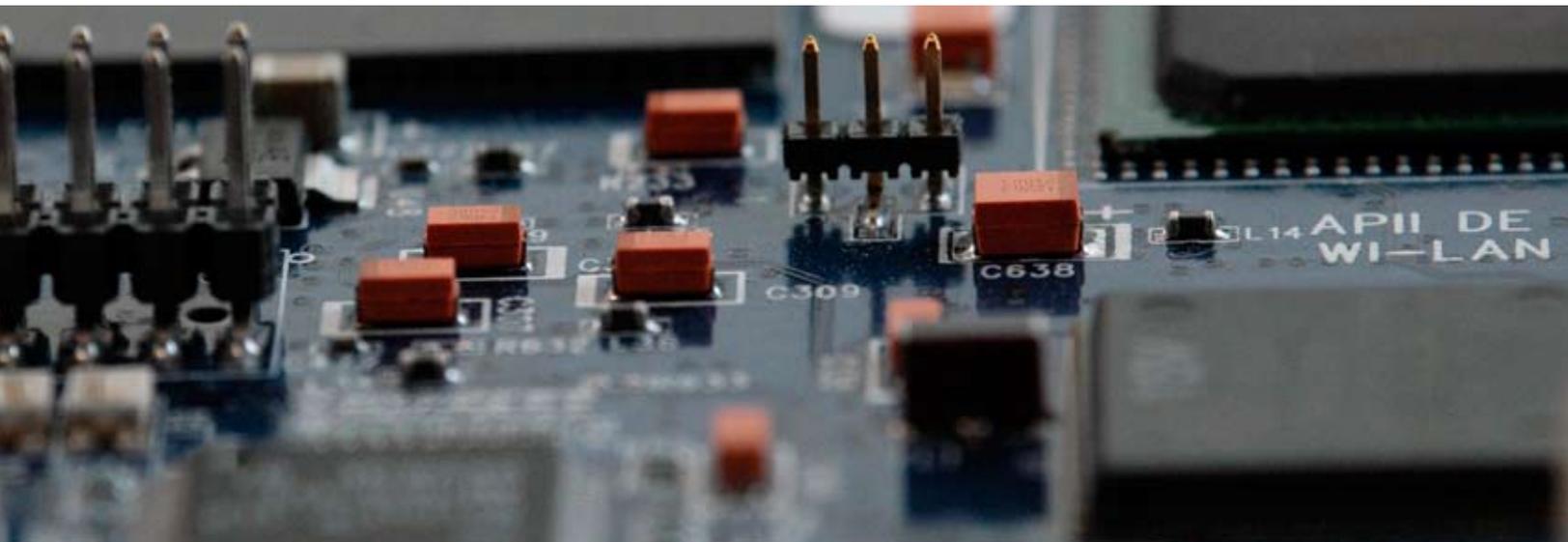
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