



# NetMAX™ M SA BST

## WiMAX Compact Base Station

The Netronics NetMAX M is a member of the NetMAX M family of base stations. Netronics designed its NetMAX M Base Stations with a Soc based approach using the WiMAX Forum® Certified Mobile WiMAX product model SQN2130 RD for Mobile WiMAX (MIMO) base stations.

Netronics NetMAX M compact base station is an ideal, cost effective solution for wireless access services designed for point-to-multipoint broadband wireless access for mobile and fix applications in various conditions and locations. Netronics NetMAX M is a full outdoor base station, designed for simple installation and mounting on various poles, street lamps or walls.



### Features

- Low cost, compact base station for lower OPEX and CAPEX
- Supporting 1.X, 2.X, 3.X GHz bands
- Full outdoor unit – simple installation with mounting on walls, poles, street lamps

The NetMAX M is a one sector station which supports up to 1000 subscriber units. By adding switch routing units, the system can be extended to as many sectors as required and can support additional subscribers and bandwidth. The base station provides all the functionality necessary to communicate with fixed and mobile subscriber units according to the service criteria and customer Service Level Agreements (SLA), and to connect to the backbone of the Service Provider, supporting the necessary end-to-end Quality of Service (QoS). The system uses OFDMA radio technology, which is robust in adverse channel conditions and enables Non-Line-Of-Sight (NLOS) operation. This allows for improved coverage, while maintaining a high level of spectral efficiency. Modulation and coding are continuously adapted to prevailing link conditions, ensuring an optimal balance between robustness and efficiency. The use of STC/MRC and MIMO radio technologies optimize link performance to ensure maximum bandwidth and service coverage.

### NetMAX M Highlights

- **Mobile-WiMAX** compliance based on IEEE 802.16e standard and WiMAX Forum Wave2 (MIMO)
- **Support of worldwide WiMAX deployments** in 1.X, 2.X and 3.X GHz bands
- **Daisy Chain architecture** to support multi-sector sites
- **Low cost of ownership** - ideal solution for entry level deployment with a pay-as-you-grow build-out for rapid penetration into new market segments with minimal CAPEX
- **WiMAX relay (802.16j) support** – for better network performance, higher bandwidth, longer range and lower networking costs (in development)
- **Outdoor installation** – easy to install on walls, poles and street lamps
- **Optimize link performance** in NLOS conditions through STC/MRC and MIMO radio technologies
- **Adaptive modulation** to optimize throughput and facilitate performance robustness
- **Automatic Transmit Power Control (ATPC)** to allow for optimal network deployment and interference avoidance
- **Numerous applications and services** - guaranteed voice, video and data services based on advanced QoS levels and a variety of classification/prioritization schemes

## Specifications

### Radio and Modem

Frequency	NetMAX M: 1350 MHz to 1400 MHz NetMAX M: 1400 MHz to 1525 MHz NetMAX M: 2496 MHz to 2690 MHz NetMAX M: 3400 MHz to 3600 MHz NetMAX M: 3600 MHz to 3720 MHz
Radio Access Method	IEEE802.16-2005 (16e OFDMA)
Compatibility	WiMAX Forum Wave 2 Profile
Operation Mode	TDD
Channel Bandwidth	3.5 MHz, 5 MHz, 7 MHz, 10 MHz
Frequency Resolution	0.25 MHz
Antennas	Integral Omni External Sector
Number of Antennas	2
Default Antenna	Omni
Antennas Connectors	2x N-Type, 50 ohm, lightning protected
Diversity Support	STC/MIMO
Output Power [P1dB]	2 x 10W; 2 x 45W; 2 x 90W
Output Power (average)	Type (ZZ) 45: 36 dBm +/-1dB maximum Type (ZZ) 90: 39 dBm +/-1dB maximum (available for NetMAX M)
FFT/Modulation	512/1024 FFT points; QPSK, 16QAM, 64QAM
FEC	Convolution Code and Turbo Code
TPC	15dB
Synchronization	GPS or IEEE1558 (optional)

### Network Interfaces

Network	1. 37-60VDC 2. 10/100BaseT Half/full Duplex IEEE 802.3 CSMA/CD Fiber Optic - optional
ASN GW Compatibility	WiMAX Forum R6 Profile C Compatible with CISCO ASN-GW

### Configuration and Management

Management	SNMP
SNMP Agent	SNMP ver 2 client: MIB II (RFC 1213), Private NetMAX M MIBs
Software Upgrade	FTP
Remote Configuration	FTP

### Mechanical

Dimensions [HxWxD]	60cm x 27cm x 10cm
Weight	<15Kg

### Power Interface

Input	48VDC
Power Consumption	Type 45: 140 Watt maximum Type 90: 216 Watt maximum

### Environmental

Operating Temperature	-40°C to +55°C
Operating Humidity	5%-95% non condensing, Weather protected

### Standards Compliance

IEMC	FCC part 15, subpart B, class B ETSI EN 301489-1/4
Safety	TUV-UL 60950-1 IEC 61950-1
Environmental	ETS 300 019 Part 2-1 T 1.2 & part 2-2 T 2.3 Part 2-4 T 4.1E
Water Tightness	IPx6 (Type3R)
Immunity	EN61000-4-2 EN61000-4-4 EN61000-4-5
Radio	FCC Part 27 ETSI EN302 326

### Ordering Information

Part Number	NetMAX M-2-Y-ZZE-W
XX - Frequency range	See frequency table for details
Y - Sync. Interface	E - IEEE1588; G - GPS
ZZ - PA peak power [Watt]	45; 90



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