

# Ruggedised, High-Performance, Outdoor Wireless Bridging Solution

WaveMAX is a high performance, long range, point to point and multi-point outdoor wireless bridging system from the European innovator in wireless networking solutions



Eliminating the cost, delays and disruption of laying fibre or leasing lines, Wavesight's WaveMAX offers a flexible, cost effective, high-performance, feature-rich outdoor bridging solution. WaveMAX can be used in both point-to-point (PtP) and point-to-multipoint (PtMP) configurations, in either transmit or receive mode.

The advanced OFDM radio and propriety technologies used within WaveMAX enable data transmission ranges of up to 40Km and data rates of up to 108 Mbps. WaveMAX is available in stand alone or integrated versions for maximum flexibility.

WaveMAX is equipped with many features to address WiMAX markets and requirements backed up with a migration plan to support future WiMAX customers.

## Applications

WaveMAX is ideally suited for Fixed Wireless Access (FWA) PtP and PtMP applications, such as:

- Community and Residential Wireless Broadband Access
- Wireless Internet Access
- Wireless Backhaul
- Hotspots (Fixed & Mobile)
- Telco and ISPs VoIP and Data Networks
- Last Mile Access
- Enterprise Network Expansion
  - Building to building
  - Campus Networks
- Wireless CCTV Video transmission
- Train to Track - VoIP, Video and Data transmission
- Ship to Shore - VoIP, Video and Data transmission
- Covert and Overt Security Surveillance Systems
- MAN (Metropolitan Area Networking)
- WAN (Wide Area Networking)

# Wireless Communication across any terrain

## WaveMAX Overview

WaveMAX, the affordable, robust, reliable alternative to wired networks is available in two form factors: Stand alone or integrated antenna unit.

### Stand Alone

Available in two frequencies:

- 2.4 GHz radio - N- Type (F) antenna ports- single or dual port
- 5 GHz radio - N- Type (F) antenna port- single or dual port

### Integrated

- 2.4 GHz radio with Integrated 19 dBi antenna
- 5 GHz radio with integrated 23 dBi antenna

### Propriety Centralised Real Time Management Software Suite

Wavesight's RFAlyser software suite is included and ensures ease of:

- Link setup and configuration
- Antenna alignment
- Data rate and real time statistics logging for each link
- Real time link quality and RF power level monitoring
- SNMP interface allows simple remote management of unlimited WaveMAX radio units

### High Performance

- Distances up to 40km achievable
- Extended Range Mode (XR)
- Near Line of Sight (NLOS) - OFDM Modulation for increased interference resistance
- UHX 108 Mbps (Ultra High eXchange) Turbo mode
- Real time Hardware data compression
- SPG1 - Wavesight's unique packet compression and bursting technology, ensuring even greater throughput and added security
- Dynamic frequency selection (DFS) and transmit power control (TPC)

### Security

- Advanced Security Optimisation
- Hardware Encryption for WPA :
  - 802.11i
  - 128 bit AES plus TKIP
  - 152 bit WEP
- 802.1x Radius Support
- MAC address filtering
- SSID suppression



Stand Alone Unit  
For use with separate antenna

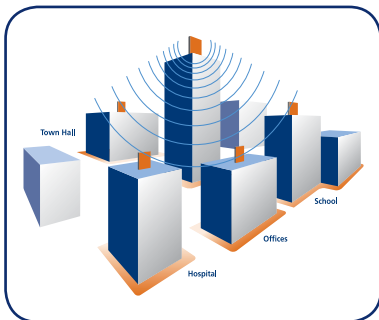


Integrated Unit  
All in one package - integrated antenna

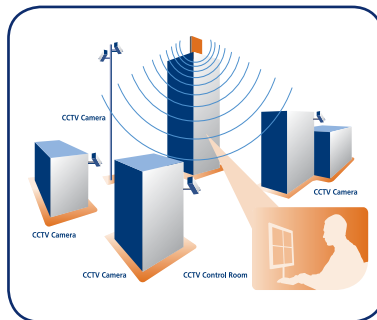


RF Analyser  
Wavesight's unique configuration and monitoring tool is included for fast and accurate deployment

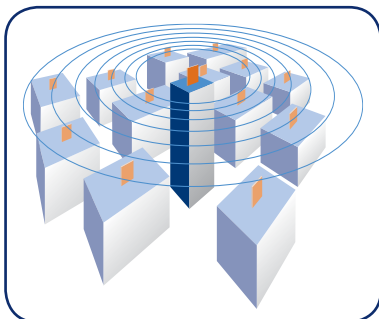




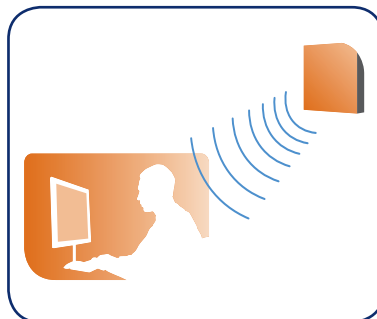
Campus / Building to Building



Security & Surveillance



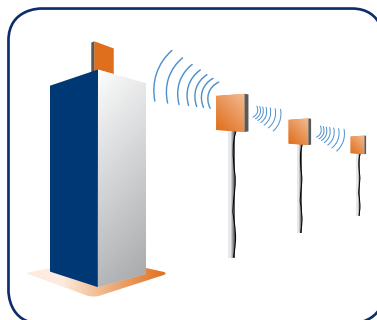
MAN (Metropolitan Area Networking)



Hotspots



Train to Track



Wireless Backhaul

### Features & Specifications:

- Designed for fast installation
- Weatherproofed to IP67+
- Dual radio capability
- 2.4GHz and 5GHz (bands a,b & c) support
  - a) 5.150GHz to 5.350GHz internal
  - b) 5.470GHz to 5.725GHz external mobility
  - c) 5.725GHz to 5.850GHz external FWA
- Integrated antenna and stand alone variants
- Simultaneous Access Point and Bridging Mode
- Support for 802.11b, g and a clients in standard mode
- 10/100Mbps RJ-45 Ethernet port
- Power Over Ethernet - 802.3af compliant
- DFS and TPC
- QoS - 802.11e
- Wavesight's unique centralised remote enterprise management software - RF Analyser
- ETSI and FCC Certified
- Migration plan to ensure ease of transition for WiMAX customers

SPECIFICATIONS	2.4GHz Stand Alone / Integrated	5GHz Stand Alone / Integrated
<b>RADIO</b>		
Operating Frequency	2.4 - 2.4835GHz	5.150-5.350GHz, 5.470-5.725GHz, 5.150-5.850 GHz (country dependant)
Modulation	802.11b: CCK, 802.11g: OFDM	802.11a, OFDM
Maximum RF Output Power	100mW EIRP	4W EIRP
Data Rate	Up to 54 Mbps	Up to 54 Mbps or 108 Mbps (Turbo Mode)
Frequency & Power Control		DFS, TPC
Management Tools	Remote via ethernet using RFAnalyser	Remote via ethernet using RFAnalyser
<b>QUALITY OF SERVICE</b>		
IEEE	801.1P	801.1P
VLAN	802.1Q	802.1Q
<b>INTERFACE</b>		
Ethernet Interface	10/100 BaseT Auto Sensing, All ports screened	10/100 BaseT Auto Sensing, All ports screened
Antenna Port	1 or 2 x N Type (F)	1 or 2 x N Type (F)
<b>SECURITY</b>		
Security	WEP 64/128/152, WEP 2, WPA, 128 Bit AES with TKIP, Access Control, SSID Suppress, MAC Address Filtering IEEE 802.1 x / EAP, 802.1x Radius Client Support	WEP 64/128/152, WEP 2, WPA, 128 Bit AES with TKIP, Access Control, SSID Suppress, MAC Address Filtering IEEE 802.1 x / EAP, 802.1x Radius Client Support
Authentication	802.1x with Radius Authentication	802.1x with Radius Authentication
<b>POWER SUPPLY</b>		
Input to PoE Injector	110VAC - 240VAC, 47Hz - 63Hz	110VAC - 240VAC, 47Hz - 63Hz
Output from PoE Injector	48V (802.3af compliant)	48V (802.3af compliant)
Power Consumption	9W at 48VDC	9W at 48VDC
<b>PHYSICAL</b>		
Dimensions (HxWxD)	Stand Alone: 138 x 165 x 74mm Integrated: 310 x 310 x 80mm	Stand Alone: 138 x 165 x 74mm Integrated: 310 x 310 x 80mm
Weight	Stand Alone: 1.6Kg      Integrated: 0.98Kg	Stand Alone: 1.6Kg      Integrated: 0.98Kg
Mounting	Stand Alone: Wall mount Integrated: Wall and pole mount	Stand Alone: Wall mount Integrated: Wall and pole mount
<b>ENVIRONMENTAL</b>		
Weatherproof	IP67	IP67
Operating Temperature	-20°C to +50°C	-20°C to +50°C
Humidity	95% Relative Humidity (Non Condensing)	95% Relative Humidity (Non Condensing)
<b>APPROVALS</b>		
Approvals	ETS 301-893, ETS 300-328, EMC 301-489/17 FCC Part 15/18, Canada IC2324 A, B, C, F EN60950	ETS 301-893, ETS 300-328, EMC 301-489/17, FCC Part 15/18 Canada IC 2324A, B, C, F EN60950
<b>CONFIGURATION</b>		<b>ORDER CODE</b>
2.4GHz / 5GHz Stand Alone single port		WM201
2.4GHz Radio with Integral 18.5dBi Antenna		WM701
<b>CONFIGURATION</b>		<b>ORDER CODE</b>
2.4GHz / 5GHz Stand Alone dual port		WM101
5GHz Radio with Integral 23dBi Antenna		WM601

Data transmission speeds may vary depending upon distance and data type.

Antennas and Accessories. All WaveMAX radios are supplied as standard with an internal PoE power injector, 20m external grade Cat5e cable with weather proof plug, wall and pole mounting brackets, country specific power cord, documentation and software CD-ROM. For more information on antennas and further cable options, please view separate datasheet or visit [www.wavesight.com](http://www.wavesight.com)

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When used in the UK, privately operated radio equipment in band C must take into consideration the location of the primary users and be licensed with OFCOM. Details of licensing and the locations of 5GHz equipment can be found at:  
<http://www.ofcom.org.uk/radiocomms/ifi/licensing/classes/rfns/information>.

When operating this radio equipment in bands A,B or C please consider the local governing radio authority legislation in the design of your radio network. There is a level of harmony within the un-licensed radio spectrum for 2.4 and 5GHz bands but there are worldwide variances.

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