InfiNet wireless

InfiMAN 2x2

3.1 – 4.0 GHz Frequency Bands

InfiMAN 2x2 3 GHz is InfiNet's latest family of solutions, designed to operate in 3.1 to 4.0 GHz licensed bands. It comprises a number of high-performance broadband wireless point-to-multipoint systems, designed primarily to cater for the specific requirements of service providers, local authorities and organisations that have purchased WiMAX licences.

The innovative base stations provide an unparalleled sector capacity of up to 240 Mbps and use leading-edge radio protocols to provide unrivalled spectral efficiency. They enable operators to deploy more efficient and scalable networks for data, video and voice transmission, whilst at the same time offering up to five times the throughput of existing systems in this frequency range.

Compared to traditional point-to-multipoint systems, both operating range and link reliability have increased significantly through the use of advanced Multiple Antenna Technology and Adaptive Multipoint Access Protocol.

The **InfiMAN 2x2 3 GHz** series represents a unique proposition to operators who have already invested in a WiMAX license but now wish to deliver Fast Ethernet data, voice and video services over long distances, whilst at the same time providing a wide set of networking features and maintaining strict QoS control.

Applications

- Triple-play services for Wireless ISPs operating in licensed bands
- Guaranteed-availablity CCTV and video surveillance networks
- Long-range rural connectivity

2X2 TECHNOLOGY

MIMO stands for Multiple Input / Multiple Output. This innovative technology is based on the use of two antennas at both the transmitter and receiver to improve communication performance.

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Key Features and Benefits

- Available in 3.1 to 4.0 GHz licensed frequency bands
- Unrivaled spectral efficiency of 6.5 Bit/s/Hz
- Increased NLOS range and performance
- 3.5/5/7/10/14/15/20/28/30/40 MHz channel widths
- Advanced Quality of Service (QoS) features, offering a reliable and robust solution
- High Transmit Power Base Stations
- Integrated sector antenna base stations, ensuring maximum RF performance and quick and simple installation
- CCTV optimised subscriber terminals with PoE output for camera power supply

Solution Benefits

- Faster ROI using more capacity in less spectrum
- Best-in-Class Price/Functionality Ratio
- Savings on third-party networking equipment
- Pure IP transport, allowing simultaneous transmission of data, video and voice services
- High MTBF, less resources needed for servicing and maintenance
- Flexible frequency planning and high spectral efficiency, reducing licensing costs
- Ultra-low latency and jitter, optimal for video and voice data transmitting
- Easy and fast deployment

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InfiMAN 2x2 3.1 – 4.0 GHz Frequency Bands

Technical Specifications

FAMILY COMPONENT	InfiMAN 2x2 3 GHz Base Station			InfiMAN 2x2 3 GHz Subscriber Terminals	
Model	**R5000-Mmxb**	**R5000-Omxb**	**R5000-Smnb**	**R5000-Smnc**	**R5000-Lmnc**
Device description	High-capacity 14 dBi 90 deg flat panel integrated sector antenna base station	high-capacity external antenna base station	Medium-capacity 14 dBi 90 deg flat panel integrated sector antenna base station	Medium-capacity 19 or 22 dBi integrated antenna subscriber terminal	Medium-capacity external antenna subscriber terminal
Performance	• Up to 240 Mbps sector net throughput		• 40 Mbps (up to 40 Mbps net per sector) • 300 Mbps (up to 150 Mbps net per sector) • License upgradeable	• 8 Mbps (up to 8 Mbps net) • 50 Mbps (up to 50 Mbps net) • 300 Mbps (up to 180 Mbps net) • License upgradeable	
Distance	• Middle-to-long range (in excess of 20 km)	• Middle-to-long range (in excess of 20 km)	• Short-to-Middle range (up to 12 km)	• Short-to-Middle range (up to 12 km)	• Middle-to-long range (in excess of 20 km)
Radio	• Transmit power: up to 23 dBm • Receiver sensitivity: -67..-97 dBm • Frequency bands: › 3.1-3.4 GHz › 3.4-3.7 GHz › 3.7-3.9 GHz * › 3.9-4.0 GHz • Channel bandwidth: 3.5/5/7/10/14/15/20/28/30/40 MHz • Centre frequency adjustment step: 125 kHz • Channel duplex: TDD * Roadmap item				
Antenna	• 14 dBi dual-pol 90° sector antenna	• 2 x N-type (Female) connectors for external antenna	• 14 dBi dual-pol 90° sector antenna	• 19 and 22 dBi dual-pol integrated antenna	• 2 x N-type (Female) connectors for external antenna
Wired interfaces	• Gigabit Ethernet port (10/100/1000 Base-T) RJ-45 connector • Serial port (RS-232)		• 2x Fast ethernet (10/100 Base-T) PoE output at the second Ethernet port RJ-45 connector	• 2x Fast ethernet (10/100 Base-T) PoE output at the second Ethernet port RJ-45 connector	
Power consumption	• Consumption: Up to 12 Watts • Power options: 110-240 VAC @ 50/60 Hz ±43..56 VDC IEEE 802.3 at		• Consumption: Up to 7 Watts • Power options: 110-240 VAC @ 50/60 Hz • +9..56 VDC	• Consumption: Up to 7 Watts • Power options: 110-240 VAC @ 50/60 Hz • +9..56 VDC	

InfiMAN 2x2 3.1 – 4.0 GHz Frequency Bands Technical Specifications

FAMILY COMPONENT	InfiMAN 2x2 3 GHz Base Station			InfiMAN 2x2 3 GHz Subscriber Terminals	
Model	**R5000-Mmxb**	**R5000-Omxb**	**R5000-Smnb**	**R5000-Smnc**	**R5000-Lmnc**
Form factor and dimensions	**Outdoor Unit (ODU)** **R5000-Mmxb** **90 deg sector antenna**  370 x 370 x 85 mm, 3.7 kg **Indoor Unit (IDU-BS-G)** 140 x 45 x 40 mm, 0.3 kg	**Outdoor Unit (ODU)** **R5000-Omxb** **External antenna**  240 x 240 x 51 mm, 2.3 kg **Indoor Unit (IDU-BS-G)** 140 x 45 x 40 mm, 0.3 kg	**Outdoor Unit (ODU)** **R5000-Smnb** **90 deg sector antenna**  371 x 371 x 83 mm, 2.8 kg **Indoor Unit (IDU-CPE)** 85 x 76 x 36 mm, 0.15 kg	**Outdoor Unit (ODU)** **R5000-Smnc** **22 dBi antenna**  371 x 371 x 83 mm, 2.8 kg **R5000-Smnc** **19 dBi antenna**  305 x 305 x 73 mm, 2.0 kg **Indoor Unit (IDU-CPE)** 85 x 76 x 36 mm, 0.15 kg	**Outdoor Unit (ODU):** **R5000-Lmnc** **External antenna**  240 x 240 x 51 mm, 1.6 kg **Indoor Unit (IDU-CPE)** 85 x 76 x 36 mm, 0.15 kg

Specification

RADIO

- Voice/RTP Aware Superpacketing
- Automatic Bitrate Control
- Automatic Transmit Power Control
- Automatic Distance Learning
- Channel Time Adjustment
- Spectrum Analyser mode
- Channel testing tools

MAC

- Dynamic adaptive polling
- Pseudo-radio Interface
  - Unique feature to join InfiNet-only networks via third party equipment (Wired Ethernet segments, IP clouds)
- Automatic over-the-air firmware upgrade

QUALITY-OF-SERVICE

- 16 priority queues
- IEEE 802.1p support
- IP TOS / DiffServ support
- Full voice support
- Traffic limiting (absolute, relative, mixed)
- Traffic redirection

ENVIRONMENTAL

- Outdoor Units: -40..+60°C, 100% humidity, condensing
- Indoor Unit: 0..+40°C, 95% humidity, non-condensing

MANAGEMENT FEATURES

- Command-line interface for in-depth configuration and diagnostics
- SNMPv1 / SNMPv3 support (MIB II, private MIB)
- Configurable SNMP Traps

SECURITY FEATURES

- Storm / flood protection
- Password protection
- Secure command-line access via SSH protocol

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