

WiMax

InfI MAN 2 x 2 4.9Ghz – 6.4Ghz



Point to Multi-Point WiMax System



The Case Communications **InfI MAN 2x2** is the highest capacity Point-to-Multipoint solution available for unlicensed and licensed bands including 4.9 – 6.0 GHz and 6.0 – 6.4 GHz. The innovative base station and subscriber terminal models are available for both licensed and unlicensed bands. As an example, the base station units provide a high sector capacity of up to 240 Mbps and uses leading-edge radio protocols providing unrivalled spectral efficiency.

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 Case Communications InfI MAN 2x2 portfolio represents a unique proposition to all types of operators (e.g. WISP's, organisations of all sizes, government authorities, etc.) wishing to deliver Fast Ethernet data, voice and video services at ultra-long ranges, whilst at the same time providing a wide set of networking features and maintaining strict QoS control. With their increased aggregate bit rates and improved coverage range, our base stations now allow operators to cater for more and higher capacity remote subscriber units than ever before, thus reducing capital expenditure on network infrastructure.

Applications

- **High-Speed local or wide area corporate networks.**
- **CCTV and Video surveillance Networks**
- **Triple-play services for Wireless ISP's**
- **Long-range Rural Connectivity**
- **Government & Municipal Networks**

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INFILINK 2 X 2 Frequency Bands 4.9Ghz – 6.4Ghz

- Available in 4.9–6.05 GHz and 6.05–6.4 GHz frequency bands
- 240Mbps base station sector capacity with just 40Mhz spectrum
- Increased NLOS range and performance
- Supports channel width size from 5 to 40Mhz reducing license expenditure
- Advanced Quality-of-Service features, offering a reliable and robust solution
- Integrated Sector Antenna Base Stations, ensuring maximum RF performance and quick and simple installation
- Unparalleled selection of integrated antenna subscriber terminals ranging from compact and lightweight 19 dBi antenna model to unique 28 dBi terminal ideally suitable for long-range connectivity in excess of 15-20 km from a base station

FEATURES

RADIO

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

ENVIRONMENTAL

Outdoor Units: -40..+60C,
100% humidity, condensing

Indoor Unit: 0..+40C,
95% humidity, non-condensing

NETWORKING

- Ethernet-over-IP tunnelling
- ARP protocol support
- MAC/IP filtering
- RIPv2 / OSPFv2 /static routing
- Tunnelling (Ethernet-over-IP, IP-over-IP)
- L2/L3 Firewall
- NAT(multi-pool, H.323-aware)
- DHCP client/server/relay

QUALITY-OF-SERVICE

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

STANDARDS COMPLIANCE

RADIO

ETSI EN 301 893 v.1.7.1
ETSI EN 302 502 v.1.2.1
FCC Part 15.247

EMC

ETSI EN 301 489-1
ETSI EN 301 489-17
FCC Part 15 Class B

SAFETY

ETSI EN 60 950-1:2006

ROHS

Directive 2002/95/EC

SECURITY FEATURES




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

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FACT SHEET

SYSTEM COMPONENTS	Case Communications Infiman 2 x 2 Base Station		
	R5000-Mmxb	R5000-Omxb	R5000-Smn
Model			
Device description	High Capacity integrated Sector Antenna Base Station	High Capacity integrated Sector Antenna Base Station	Medium- capacity integrated Sector Antenna Base Station
Performance	240Mbps sector net throughput		Up to 150 Mbps sector net throughput
Distance	Middle to long range (35+km)	Middle to Long range (20+km)	Middle range (up to 15-20km)
Frequency Bands/ Antennae	<ul style="list-style-type: none"> 4.9 – 6.0 GHz Integrated 16dBi dual-pole integrated 90 degree sector antenna 6.0- 6.4Ghz Integrated 16dBi dual-pole integrated 90 degree sector antenna 	<ul style="list-style-type: none"> 4.9 – 6.0 GHz / Connectorised (2 x N-type Female connectors) 6.0 – 6.4 GHz / Connectorised 2 x N-type Female connectors) 	<ul style="list-style-type: none"> 4.9 – 6.0 GHz Integrated 16dBi dual-pole integrated 90 degree sector antenna
Radio	<ul style="list-style-type: none"> Radio technology: MIMO 2x2 with OFDM 64/128 Modulation types: BPSK ½ to QAM64 5/6 Transmit power: up to 23 dBm Receiver sensitivity: -67..-97 dBm Channel bandwidth: 5/10/20/40 MHz Instant DFS (optional) 		<ul style="list-style-type: none"> Radio technology: MIMO 2x2 with OFDM 64/128 Modulation types: BPSK ½ to QAM64 5/6 Transmit power: Up to 18 or 23 model dependant. Receiver sensitivity -67 ~97dBm Channel Bandwidth 5/10/20/40Mhz
Antenna	16dBi dual Pole integrated 90 degree antenna	2 x Ntype (Female) connectors	16dBi dual Pole integrated 90 degree antenna
Wired interfaces	<ul style="list-style-type: none"> Gigabit Ethernet port (10/100/1000 Base-T) RJ-45 connector Serial port (RS-232) 		Smn 19 dBi <ul style="list-style-type: none"> 2 x Fast Ethernet (10/100 Base-T) RJ-45 connector PoE output at the second Ethernet port RJ-45 connector
Power consumption	<ul style="list-style-type: none"> Consumption: - Up to 12 Watts Power options: 110-240 VAC @ 50/60 Hz ±43..56 VDC IEEE 802.3at compliant 		<ul style="list-style-type: none"> Consumption: - Up to 7 Watts Power options: 110-240 VAC @ 50/60 Hz +9..56 VDC
FORM FACTORS AND DIMENSION	Outdoor Unit (ODU) R5000-Mmxb 16 dBi Antenna	Outdoor Unit (ODU) R5000-Omxb External Antenna	Outdoor Unit (ODU) R5000- Smnb 16 dBi Antenna
			
	370 x 370 x 85mm 3.7Kg	240 x 240 x 51mm 2.3Kg	371 x 371 x 83mm 2.8Kg
	Indoor Unit (IDU-BS-G) 124 x 72 x 38mm 0.3Kg	Indoor Unit (IDU-BS-G) 124 x 72 x 38 mm 0.3Kg	Indoor Unit (IDU-CPE) 85 x 76 x 36mm 0.15Kg

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Case Communications - InfI MAN 2 x 2 Base Subscriber Stations			
SYSTEM COMPONENT	MODEL		
	R5000-Smn	R5000-Lmn	R5000-Smnc
Device Description	High-capacity Integrated Antenna Subscriber Terminal	High-capacity Integrated Antenna Subscriber Terminal	High-capacity Reduced Form Factor Integrated Antenna Subscriber Terminal
Performance	<ul style="list-style-type: none"> 8 Mbps (up to 8 Mbps net) 50 Mbps (up to 50 Mbps net) 		<ul style="list-style-type: none"> 300 Mbps (up to 180 Mbps net) License upgradeable
Distance	<ul style="list-style-type: none"> 21 dBi antenna: middle range (up to 8-10 km) 23 or 24 dBi antenna: middle-to-long range (10-12 km) 28 dBi antenna: long range (15-25 km) 	<ul style="list-style-type: none"> Middle-to-long range (35+ km with external high-gain antenna) 	<ul style="list-style-type: none"> Short-to-middle range (up to 5-7 km)
Frequency Bands / Antenna	<ul style="list-style-type: none"> 4.9 – 6.0 GHz / Integrated 21, 23 or 28 dBi Dual-polarization Antenna 6.0 – 6.4 GHz / Integrated 24 or 27 dBi Dual-polarization Antenna 	<ul style="list-style-type: none"> 4.9 – 6.0 GHz / Connectorised Antenna (2 x N-type connectors) 6.0 – 6.4 GHz / Connectorised Antenna (2 x N-type connectors) 	<ul style="list-style-type: none"> 4.9 – 6.0 GHz / Integrated 19 dBi Dual-polarization Antenna 6.0 – 6.4 GHz / Integrated 19 dBi Dual-polarization Antenna
Radio	<ul style="list-style-type: none"> Radio technology: MIMO 2x2 with OFDM 64/128 Modulation types: BPSK 1/2 to QAM64 5/6 Duplex method: TDD Frequency bands: 4.9-6.0 GHz and 6.0-6.4GHz 		<ul style="list-style-type: none"> Transmit power: <ul style="list-style-type: none"> Up to 18 or 23 dBm (4.9-6.0 GHz models) Up to 23 dBm (6.0-6.4 GHz models) Receiver sensitivity: -67..-97 dB
Wired Interfaces	<ul style="list-style-type: none"> 2 x Fast Ethernet (10/100 Base-T) Rj 45 connector PoE output at the second Ethernet port 		<ul style="list-style-type: none"> 1 x Fast Ethernet (10/100 Base-T) Rj 45
Power Consumption	<ul style="list-style-type: none"> Consumption: Up to 7 Watts Power options: 		<ul style="list-style-type: none"> 110-240 VAC @ 50/60 Hz +9..56 VDC
FORM	Outdoor Unit (ODU)	Outdoor Unit (ODU)	Outdoor Unit (ODU)
	R5000-Smn. 27 or 28 dBi antenna	R5000-Lmn. External antenna	R5000-Smnc. 19 dBi antenna
FACTOR	600 x 600 x 75mm 6.1Kg	240 x 240 x 51mm 1.6Kg	207 x 207 x 67mm 1.0Kg
AND	R5000-Smn 23dBi Antenna		
	R5000-Smn 21 or 24dBi Antenna		
DIMENSIONS	371 x 371 x 83mm 2.8Kg		
	Indoor Unit (IDU-CPE)		
	85 x 76 x 36mm 0.15Kg		