InfiLINK 2x2

3.1 – 4.0 GHz
Frequency Bands

The **InfiLINK 2x2** family of products was among the very first radio solutions to introduce MIMO technology for Broadband Wireless Access, and has continued ever since to set new standards across the industry for throughput, spectrum optimisation, efficiency, Quality of Service and system reliability. InfiLINK 2x2 3 GHz is a high-performance broadband wireless point-to-point solution designed to operate in licensed 3.1 to 4.0 GHz frequency bands. The various products within this family have been designed primarily to cater for the specific requirements of local authorities, service providers or other organizations that have purchased WiMAX licences. They enable them to deploy more efficient and scalable networks for data, video and voice, offering up to five times the throughput of existing systems.

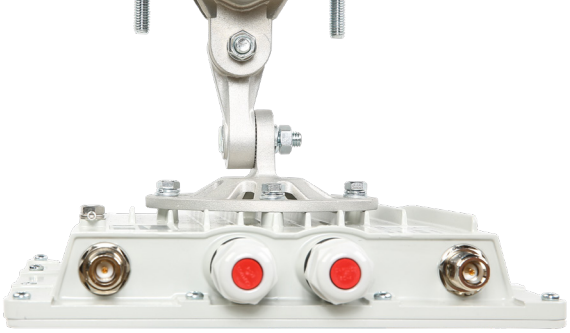
The inherent features built into our 3 GHz solutions are key enablers in licence-exempt backhauls for CCTV/IP surveillance systems, Wireless-ISP networks, high-capacity corporate connectivity and last-mile provisioning, as well as for backing up Free Space Optics (FSO) and microwave links.

MIMO 2X2 TECHNOLOGY
(MIMO—Multiple Input / Multiple Output)

MIMO 2x2 stands for Multiple Input / Multiple Output innovative technology and it requires the use of two antennas at both the transmitter and receiver to improve communication performance.

Applications

- GSM/3G/LTE High-capacity backhaul
- WISP infrastructure backhaul and internet PoP for remote locations
- Building-to-building or LAN-to-LAN connectivity at Fast Ethernet speeds
- Redundant Cellular backhaul
- Cost-effective alternatives to legacy microwave links
- NLOS and nLOS configurations
- Reliable backup for fibre lines, high-speed FSO or millimetre-wave links



Product Highlights

- Available in 3.1–4.0 GHz frequency bands
- Multiple Input - Multiple Output (MIMO 2x2) innovative technology
- High spectral efficiency 6.5 Bit/s/Hz
- «Pay as you grow» software upgradeable features
- High-capacity - up to 280 Mbps effective throughput
- Channel width: 3.5/5/7/10/14/15/20/28/30/40 MHz
- Operational distances in excess of 80 km
- Gigabit Ethernet port and flexible uplink/downlink reallocation
- LOS (line-of-sight) and NLOS (non-line-of-sight) deployments
- Advanced Quality-of-Service Support

Features

RADIO

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

ENVIRONMENTAL

- Outdoor Units: -40..+60°C (-55..+60°C models with index “t” in PN), 100% humidity, condensing
- Indoor Unit: 0..+40°C, 95% humidity, non-condensing

NETWORKING

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

QUALITY-OF-SERVICE

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

STANDARD 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 2011/65/EU

SECURITY FEATURES

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

INFINET wireless

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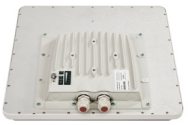
Technical Specifications

Recommended applications	▸ High spectral efficiency backhaul for ISP or operator networks ▸ LAN-to-LAN connectivity at Fast Ethernet or higher speeds ▸ A cost-effective alternative for legacy microwave links		▸ Reliable backup for fibre lines, high-speed FSO or millimetre-wave links ▸ High-capacity capacity backhaul for IP-based CCTV networks ▸ Long range high capacity network access solution	
Product family	**InfiLINK 2x2 PRO**		**InfiLINK 2x2 LITE**	
Model	**R5000-Mmx**	**R5000-Omx**	**R5000-Smn**	**R5000-Lmn**
Device description	High-capacity Integrated 19 or 22 dBi Dual-polarization Antenna Point-to-Point Backhaul	High capacity External Antenna Point-to-Point Backhaul	Medium capacity lightweight Integrated 19 or 22 dBi Dual-polarization Antenna Point-to-Point Backhaul	Medium–capacity lightweight External Antenna Point-to-Point Backhaul
			All InfiNet LITE models and subscriber terminals can be easily configured to operate in either Point-to-Point or Point-to-Multipoint modes. A simple licence only is required to change their mode of operation from PtMP to PtP or vice-versa.	
Performance	• 300 Mbps (up to 280 Mbps net throughput)		• 8 Mbps (up to 8 Mbps net) • 20 Mbps (up to 20 Mbps net) • 50 Mbps (up to 50 Mbps net) • 300 Mbps (up to 180 Mbps net) License upgradeable	
Distance	• 19 dBi antenna: short-to-middle range, up to 20 km • 22 dBi antenna: middle-to-long range, 25+ km	• Long range: 80+ km with high-gain external antenna	• 19 dBi antenna: short-to-middle range, up to 15 km • 22 dBi antenna: middle-to-long range, 25+ km	• Long range: up to 75+ km with high-gain external antenna
Antenna	• Integrated 19 or 22 dBi Dual-polarization Antenna	• 2 x N-type (Female) connectors) for external antenna	• Integrated 19 or 22 dBi Dual-polarization Antenna	• 2 x N-type (Female) connectors) for external antenna
Radio	• Radio technology: MIMO 2x2 with OFDM 64/128 • Modulation types: BPSK ½ to QAM64 5/6 • Transmit power: Up to 23 dBm • Receiver sensitivity: -70...-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 • Center frequency adjustment step: 125 kHz • Channel duplex: TDD			
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	
Power consumption	• Consumption: Up to 20 Watts • Power options: 110-240 VAC @ 50/60 Hz ±43..56 VDC Proprietary PoE		• Consumption: Up to 15 Watts • Power options: 110-240 VAC @ 50/60 Hz +9..56 VDC Proprietary PoE	

Technical Specifications

Product family	InfiLINK 2x2 PRO		InfiLINK 2x2 LITE	
Model	**R5000-Mmx**	**R5000-Omx**	**R5000-Smn**	**R5000-Lmn**
Form factor and dimensions	**Outdoor Unit (ODU)** **R5000-Mmx** **22 dBi antenna**  371 x 371 x 90 mm, 3.4 kg **R5000-Mmx** **19 dBi antenna**  305 x 305 x 81 mm, 2.9 kg	**Outdoor Unit (ODU)** **R5000-Omx** **External antenna**  240 x 240 x 57 mm, 2.2 kg	**Outdoor Unit (ODU)** **R5000-Smn** **22 antenna**  371 x 371 x 83 mm, 2.8 kg **R5000-Smn** **19 dBi antenna**  305 x 305 x 74 mm, 2.3 kg	**Outdoor Unit (ODU)** **R5000-Lmn** **External antenna**  240 x 240 x 50 mm, 1.6 kg
	Indoor Unit (IDU-BS-G) 125 x 72 x 38 mm 0.3 kg		**Indoor Unit (IDU-CPE-G (24W)** 97 x 53.5 x 33.5 mm 0.133 kg	

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