InfiLINK 2x2

4.9 – 6.4 GHz
Frequency Bands

The **InfiLINK 2x2** is a wireless Point-to-Point solution, which combines high-speed capability, up to 300 Mbps throughput, with a rich set of best-in-class features and benefits such as leading-edge radio protocols providing unrivalled spectral efficiency and wireless transmissions over distances in excess of 80 km. In its simplest form, it can be deployed by many organisations to provide Ethernet extensions (i.e. LAN-to-LAN) between two locations. In its most advanced configurations, the InfiLINK 2x2 is able to provide a complete infrastructure that enables corporates of all sizes to connect their remote sites to the headquarters, thus allowing the simultaneous transmission of multi-protocol services such as voice, video and data. This family of solutions can also be deployed by mobile operators requiring multi-megabit capacity for their backhaul links.

The **InfiLINK 2x2** range of solutions comprises of a number of high-performance Fixed Broadband Wireless Access (FBWA) units, which operate in both LOS (line-of-sight) and NLOS (non-line-of-sight) environments, in both licensed and unlicensed frequency bands.

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
- Building-to-building connectivity at Fast Ethernet speeds
- Redundant Cellular backhaul
- Cost-effective alternatives to legacy microwave links or wired leased lines
- NLOS backhauling using lower frequency bands
- Reliable backup for fibre lines, high-speed FSO or millimetre- wave links

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Product Highlights

- Available in 4.9–6.05 GHz and 6.05–6.4 GHz frequency bands
- Multiple Input - Multiple Output (MIMO 2x2) innovative technology
- “Pay as you grow” software upgradeable capacity feature
- High capacity – up to 280 Mbps net throughput
- 5/10/20/40 MHz channel widths
- Possible operational distances in excess of 90 km
- Unique plug & play out-of-box 5–6 GHz ultra-long backhaul solution
- 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
- DFS
- Automatic Bitrate Control
- Automatic Transmit Power Control
- Automatic Distance Learning
- Channel Time Adjustment
- Spectrum Analyzer mode
- Channel testing tools

ENVIRONMENTAL

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

- 16 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 2002/95/EC

SECURITY FEATURES

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

InfiNet wireless

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InfiLINK 2x2 4.9 – 6.4 GHz Frequency Bands 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 280 Mbps Integrated Antenna Point-to-Point Backhaul	High capacity 280 Mbps External Antenna Point-to-Point Backhaul	Medium capacity lightweight Integrated 19, 23, 24, 26, 27 or 28 dBi Dual-polarization Antenna Point-to-Point Backhaul	Medium –capacity lightweight External Antenna Point-to-Point Backhaul
Performance	• 300 Mbps (up to 280 Mbps net throughput)		• 8 Mbps (up to 8 Mbps net) • 50 Mbps (up to 50 Mbps net) • 300 Mbps (up to 180 Mbps net) • License upgradeable	
Distance	• 23 and 24 dBi antenna Recommended range: up to 10-20 km Maximal range: in excess of 40 km • 26 dBi antenna Recommended range: up to 12-40 km Maximal range: in excess of 60 km • 27 and 28 dBi antenna Recommended range: up to 15-50 km Maximal range: in excess of 70 km	• Recommended range: up to 80 km (with external high-gain antennas) • Maximal range: in excess of 100 km	• 19 dBi antenna: up to 5-10 km • 23 and 24 dBi antenna: up to 10-12 km • 26 dBi antenna: up to 12-15 km • 27 and 28 dBi antenna: up to 15-35 km	• Long range (up to 70 km with high-gain external antenna)
Frequency Bands/ Antennae	• 4.9 – 6.0 GHz / Integrated 23, 26 or 28 dBi Dual-polarization Antenna • 6.0 – 6.4 GHz / Integrated 24 or 27 dBi Dual-polarization Antenna	• 4.9 – 6.0 GHz / Connectorised (2 x N-type connectors) • 6.0 – 6.4 GHz / Connectorised 2 x N-type connectors)	• 4.9 – 6.0 GHz / Integrated 19, 21, 23, 26 or 28 dBi Dual-polarization Antenna • 6.0 – 6.4 GHz / Integrated 19, 24 or 27 dBi Dual-polarization Antenna	• 4.9 – 6.0 GHz / Connectorised (2 x N-type connectors) • 6.0 – 6.4 GHz / Connectorised 2 x N-type connectors)
Radio	• Radio technology: MIMO 2x2 with OFDM 64/128 • Modulation types: BPSK ½ to QAM64 5/6 • Transmit power: - Up to 27 dBm (4.9-6.0 GHz models) - Up to 23 dBm (6.0-6.4 GHz models) • Receiver sensitivity: -67..-97 dBm • Channel bandwidth: 5/10/20/40 MHz • Instant DFS (optional)		• Radio technology: MIMO 2x2 with OFDM 64/128 • Modulation types: BPSK ½ to QAM64 5/6 • Transmit power: - Up to 27 dBm (4.9-6.0 GHz models) except 19 dBi - Up to 18 dBm (4.9-6.0 GHz models) for 19 dBi - Up to 23 dBm (6.0-6.4 GHz models) • Receiver sensitivity: -67..-97 dBm • Channel bandwidth: 5/10/20/40 MHz	
Wired interfaces	• Gigabit Ethernet port (10/100/1000 Base-T) RJ-45 connector • Serial port (RS-232)		**Smn 19 dBi** • 1 x Fast Ethernet (10/100 Base-T) RJ-45 connector **Smn 21..28 dBi** • 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 802.3at compliant		• Consumption: Up to 7 Watts • Power options: 110-240 VAC @ 50/60 Hz +9..56 VDC	

InfiLINK 2x2 4.9 – 6.4 GHz Frequency Bands 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** **27 or 28 dBi antenna**  600 x 600 x 75 mm, 6.8 kg **R5000-Mmx** **26 dBi antenna**  371 x 371 x 83 mm, 3.3 kg **R5000-Mmx** **24 dBi antenna**  305 x 305 x 60 mm, 2.4 kg **R5000-Mmx** **23 dBi antenna**  305 x 305 x 60 mm, 2.4 kg **Indoor Unit (IDU-BS-G)** 124 x 72 x 38 mm 0.3 kg	**Outdoor Unit (ODU)** **R5000-Omx** **External antenna**  240 x 240 x 51 mm, 2.3 kg **Indoor Unit (IDU-BS-G)** 124 x 72 x 38 mm 0.3 kg	**Outdoor Unit (ODU)** **R5000-Smn** **27 or 28 dBi antenna**  600 x 600 x 75 mm, 6.1 kg **R5000-Smn** **26 dBi antenna**  371 x 371 x 80 mm, 2.8 kg **R5000-Smn** **24 dBi antenna**  305 x 305 x 56 mm, 1.9 kg **R5000-Smn** **23 dBi antenna**  305 x 305 x 56 mm, 1.9 kg **R5000-Smn** **19 dBi antenna**  207 x 207 x 67 mm, 1.0 kg **Indoor Unit (IDU-CPE)** 85 x 76 x 36 mm, 0.15 kg	**Outdoor Unit (ODU)** **R5000-Omx** **External antenna**  240 x 240 x 51 mm, 1.6 kg **Indoor Unit (IDU-CPE)** 85 x 76 x 36 mm 0.15 kg

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