Introduction

The InfiNet Wireless 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.

The InfiLINK 2x2 3.5 GHz is a high-performance broadband wireless point-to-point solution designed to operate in the licensed 3.4 to 3.7 GHz frequency range. 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, whilst at the same time offering up to five times the throughput of existing systems in this frequency range. This is achieved with even fewer network elements, thereby reducing the overall Whole-Life Cost of managing their networks.

The inherent features built into our 3.5 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.

Applications

- 4G/LTE/WiMAX BTS 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, multiple E1/T1 TDM & Ethernet/IP transport
- Cost-effective alternatives to legacy microwave links
- NLOS and nLOS configurations
- Reliable backup for fibre lines, high-speed FSO or millimetre-wave links

Product Key Features and Highlights

- Available in 3.4 to 3.7 GHz frequency bands
- High spectral efficiency 6.5 Bit/s/Hz
- Multiple Input-Multiple Output (MIMO 2x2) innovative technology
- “Pay as you grow” software upgradeable features
- High-capacity - up to 240 Mbps effective throughput
- Channel width: 3.5/5/7/10/14/15/20/28/30/40 MHz
- Operational distances in excess of 80 km
- LOS (Line-Of-Sight) and NLOS (Non-Line-of-Sight)
- Advanced Quality-of-Service Support
- Robust design
InfiLINK 2x2 3.5 PRO

RS5000-Mmx
High-capacity 40/80/150/300 External Antenna Point-to-Point backhaul
- Long range (90 km)
- Radio technology: MIMO 2x2 with OFDM 64/128
- Modulation types: BPSK ½ to QAM64 5/6
- Transmit power: up to 20 dBm
- Receiver sensitivity: -67 to -101 dBm
- Frequency bands: 3.4-3.7 GHz
- Channel bandwidth: 3.5/5/7/10/15/20/28/30/40 MHz
- 22 dB dual pol integrated antenna
- Center frequency adjustment step: 125 kHz
- Channel duplex: TDD
- Gigabit Ethernet port (10/100/1000 Base-T) RJ-45 connector
- Serial port (RS-232)
- Up to 30 Watts
- Consumption: 110-240 VAC @ 50/60 Hz
- Outdoor Unit (ODU): 370 x 370 x 85 mm 3.7 kg
- Indoor Unit (IDU-BS-G): 140 x 45 x 40 mm 0.3 kg

RS5000-Omx
High-capacity 40/80/150/300 External Antenna Point-to-Point backhaul
- Long range (90 km)
- Radio technology: MIMO 2x2 with OFDM 64/128
- Modulation types: BPSK ½ to QAM64 5/6
- Transmit power: up to 20 dBm
- Receiver sensitivity: -67 to -101 dBm
- Frequency bands: 3.4-3.7 GHz
- Channel bandwidth: 3.5/5/7/10/15/20/28/30/40 MHz
- 2 x N-type (Female) connectors
- Center frequency adjustment step: 125 kHz
- Channel duplex: TDD
- Gigabit Ethernet port (10/100/1000 Base-T) RJ-45 connector
- Serial port (RS-232)
- Up to 30 Watts
- Consumption: 110-240 VAC @ 50/60 Hz
- Outdoor Unit (ODU): 240 x 240 x 51 mm 2.3 kg
- Indoor Unit (IDU-BS-G): 140 x 45 x 40 mm 0.3 kg

Features

- High-capacity CCTV infrastructure backhaul
- 4G/LTE/WIMAX BTS High-capacity backhaul
- WISP infrastructure backhaul
- WISP Internet POP for remote areas
- Redundant Cellular backhaul, Ethernet/IP transport
- Reliable backup for fibre lines, high-speed FSO or millimetre-wave links
- A cost-effective alternative for legacy microwave links
- Ultra-high spectral efficiency backhaul
- LAN-to-LAN connectivity at Fast Ethernet speeds

Product Family

InfiMAN, InfiLINK

Model

RS5000-Mmx
RS5000-Omx

Device description

Recommended Applications

- High-capacity CCTV infrastructure backhaul
- 4G/LTE/WIMAX BTS High-capacity backhaul
- WISP infrastructure backhaul
- WISP Internet POP for remote areas
- Redundant Cellular backhaul, Ethernet/IP transport
- Reliable backup for fibre lines, high-speed FSO or millimetre-wave links
- A cost-effective alternative for legacy microwave links
- Ultra-high spectral efficiency backhaul
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Wired interfaces

- Serial port (RS-232)
- Gigabit Ethernet port (10/100/1000 Base-T) RJ-45
- 2 x N-type (Female) connectors

Power consumption

- Consumption: 110-240 VAC @ 50/60 Hz
- Outdoor Unit (ODU): 370 x 370 x 85 mm 3.7 kg
- Indoor Unit (IDU-BS-G): 140 x 45 x 40 mm 0.3 kg

Form factor and dimensions

- Outdoor Unit (ODU): 240 x 240 x 51 mm 2.3 kg
- Indoor Unit (IDU-BS-G): 140 x 45 x 40 mm 0.3 kg

Management

- Web-interface
- channel diagnostics: spectrum analysis, antenna alignment, channel throughput measurement
- unit and RF links monitoring
- maintenance: firmware upgrade, license and configuration import/export
- tech support diagnostic reports generation
- command-line access
- Command-line interface for in-depth configuration and diagnostics accessible via:
  - secure shell (SSH)
  - telnet
  - serial port
  - remote shell

- SNMPv1 / SNMPv3 support
- Configurable SNMP Traps

Networking

- Ethernet-over-IP tunneling
- ARP protocol support
- MAC/IP Filtering
- Fully-fledged Layer 2 switch:
  - Transparent transport for any type of Ethernet traffic including MPLS, stacked VLANs, etc.
  - Multiple switching groups
  - Full VLAN support including Q-in-Q
  - IEEE 802.1Q and 802.1ad
  - STP/rSTP support
  - IGMP Snooping with Querrier mode
  - Trunk groups support
  - BGPv2 / 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

- With many QoS permutations, QoS implementation works transparently in the network based on IEEE802.1p standard as well as ToS/ DiffServ, guaranteeing perfect performance under any load and lowest jitter/delays for priority traffic.

Quality-of-Service features:

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

Safety

- EN 60 950-1:2006
- FCC Part 90 pending
- EN 302 326-2 pending
- EMC
  - EN 301 489-1
  - EN 301 489-17
- Safety
  - EN 60 950-1:2006
- RoHS
- Directive 2002/95/EC

Standards compliance

- Radio
  - FCC Part 90 pending
  - EN 302 326-2 pending
- EMC
  - EN 301 489-1
  - EN 301 489-17
- Safety
  - EN 60 950-1:2006
- RoHS
- Directive 2002/95/EC

Security features

- Line-speed AES128 over-the-air encryption
- Storm / Flood protection
- Password protection
- Protocol messages encryption
- Secure command-line access via SSH protocol

Mac

- Dynamic adaptive Polling
  - Centralized marker grant mode
  - Dynamically takes into account channel activity
  - Permanent channel testing
- Pseudo-radio Interface
  - unique InfiNet Wireless feature to join InfiNet Wireless networks via 3rd party equipment (Wired Ethernet segments, IP clouds)
- Automatic over-the-air firmware upgrade

Standard connection interfaces

- Gigabit Ethernet port (10/100/1000 Base-T) RJ-45
- Serial port (RS-232)
- 2 x N-type (Female) connectors

Voice/RTP Aware Superpckaging

- to minimize jitter and latency for multimedia applications

Automatic Bitrate Control

- to ensure a 100% stable link no matter how external conditions change

Automatic Transmit Power Control

- to track and keep optimal input signal level to maximize performance per each link and reduce overall interference within given transmit power and EIRP limitations

Automatic Distance Learning

- to optimize performance for any link distances from tens of meters to 100 km and above

Channel Time Adjustment

- to improve performance on heavily loaded links

Spectrum Analyzer mode

- for interference detection and avoidance

Channel testing tools

- channel performance measurement
  - advanced diagnostics