

WIRELESS EXCELLENCE

Pre-WiMAX OFDM Radio IHPR MIMO 2x2 & MIMO 2x2 GigE Overview

IHPR/IMPR/ICR Bundle



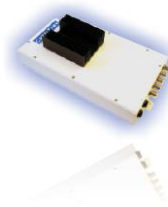
ICR Radio Unit



MPR Radio Unit



HPR Radio Unit



IHPR-DP Bundle



About Wireless Excellence

Founded in 1995 and with headquarters in Oxford UK, Wireless Excellence Limited is a leading designer and supplier of outdoor and indoor Broadband Wireless communication products.

With a complete range of solutions including Radio, Microwave, Millimetre-Wave, Free Space Optics, WiFi and WiMax solutions, customers in over 60 countries have chosen Wireless Excellence as the "one stop shop" solution of choice for dependable wireless networking.

About Our OFDM Range

Wireless Excellence Broadband solutions deliver the power, connectivity, high-demand services and cost-effectiveness that are crucial to increased return on investment whilst offering the flexibility to support virtually any wireless broadband network. The platform combines superior access performance with the flexibility to facilitate a wide range of applications.

The technology is designed to speed deployment and time to market, while helping control equipment, management and installation costs.

System Features

- Pre-WiMax OFDM Radio Platform
- Raw data rates up to 300Mbps using 2x2 MIMO OFDM
- 5.1-5.8GHz ISM bands
- Optional 5.4GHz band support
- Range up to 15km*
- Data Throughput up to 222Mbps*
- Carrier-class OS and resiliency features
- Power-over-Ethernet technology
- Rugged environmental IP67 waterproof enclosure
- 200Km/h Wind Resistance
- Near & Non- LOS Operation
- 2 x 2 MIMO Support
- Interface Options including 1x 10/100 Port & 1x 10/100 + 1 x GigE**

*Depends on radio environment

** 10/100 + GigE Version requires PoE power via the 10/100 Port

Applications

- Point-to-Point or Point-to-Multipoint Data network segments
- Wireless ISP or Hotspots
- Resilience for FSO or Fibre links
- Fast Roll-out & Temporary Deployment



Embedded Router Platform

Wireless Excellence IHPR radios are not cheap enterprise-grade WLAN components. They embody powerful carrier-class routers with advanced features normally not found in wireless bridges or access points. Such features include:

- 500MHz CPU Speed
- IP Bridging
- Layer3 IP Routing
- Border Gateway Protocol (BGP)
- Ethernet-over-IP (EoIP) interfaces
- Virtual Router Redundancy Protocol (VRRP)
- WISP & hotspot –specific features including Walled Garden, Cookies, RADIUS authentication, accounting, control of connection time
- uplink and downlink bandwidth control on a per-user basis
- DHCP Client and Server
- Network Address Translation (NAT), supports TDD transmission

Enhanced Wireless Performance

Wireless Excellence OFDM radios offer major advantages over 'off-the-shelf' WiFi products. Examples are:

- Highly configurable – up to 2 radio cards
- 300Mbps raw data rate using 2x2 MIMO features offers up to 222Mbps throughput
- OFDM Software-defined radio – 'state-of-the-art' radio using powerful DSP technology
- Optional proprietary 'Nstreme' wireless protocol - improves P2P and P2MP wireless links through packet optimisation. No protocol/speed degradation for long links. Added security layer. Full duplex option using dual wireless cards
- Sophisticated RadioOS software platform
- Hotspot features including Radius authentication and per-user bandwidth controls

Accessories

Radio Cards	2 nd radio card for resilience, high throughput, backhaul or hotspot applications
O/S Software	Higher level functions for Public Wireless LAN, Hotspot, etc
Mounting Brackets	Wall, Pole, Tower or Tripod mount options available
Alignment kit	Display of Local & Remote signal levels*
Management Suite	Full range of solutions including SNMP, LinkManager™, AlarmView™, ClusterManager™

Specifications

System Variant	WIHPR-MIMO
Performance	
Range	Up to 15km
Bandwidth	bandwidth up to 222Mbps (300Mbps raw speed) in 2x2 MIMO mode Antenna
Power Consumption	10W; 48V fed from Power-over-Ethernet injector; 115/230Vac; optional Uninterruptible Power Supply (UPS)
Operating Temp	-40...+60 deg C
Wireless	
Frequency	5GHz: 5.150-5.350 (5 MHz step) 5.725-5.825 (5 MHz step) 5.47-5.725 GHz - optional license required. Please contact CableFree for further details.
Radio Type	Direct Sequence Spread Spectrum (DSSS)
Modulation	5GHz: OFDM (BPSK, QPSK, 16-QAM, 64-QAM); Dynamic (Adaptable to Conditions)
Operation Channels	13
Latency	<3ms
RF Output Power	18dBm (63mW, standard power) or 28dBm (630mW, high power version)– under software control
Sensitivity @FER=0.08:	54 Mbps OFDM -73 dBm; 48 Mbps OFDM -76 dBm; 36 Mbps OFDM -82 dBm; 24 Mbps OFDM -85 dBm; 18 Mbps OFDM -88 dBm; 12 Mbps OFDM -89 dBm; 11 Mbps OFDM -91 dBm; 9 Mbps OFDM -90 dBm; 6 Mbps OFDM -91 dBm; 5.5Mbps OFDM -92 dBm; 2 Mbps OFDM -93 dBm; 1 Mbps OFDM -94 dBm
Radio Data Rate	5GHz (Normal mode): 54, 48, 36, 24, 18, 12, 9, 6 Mbps, auto-fallback 5GHz (Turbo mode): 108, 96, 72 48, 36, 24, 18, 12 Mbps, auto-fallback
Compatibility	Proprietary modes plus back compatibility fully interoperable with IEEE 802.11a/b/g compliant products
Radio Architecture	Support ad-hoc, peer-to-peer networks and infrastructure communication to wired Ethernet networks via Access Point
Security	64/128-bit WEP data encryption; WPA; Proprietary mode
Antenna	
Type	Integrated Directional, Flat Panel, Dual Polarised
Gain	23dBi
Router Platform	
CPU	AMD x86-class 400MHz or 500MHz; 128MB SRAM; 4GB FLASH Dimensions
System Software Management	RadioOS 8.1; Choice of license levels 1-6; Remotely Upgradeable via TFTP Local and Remote configuration, control and administration via RS232, Telnet, HTTP, SNMP and Proprietary protocols
Resilience Features	Virtual Router Redundancy Protocol (VRRP) allows two complete radio ODU's to be configured with one in 'hot standby' for high-availability applications
Mechanical	
Dimensions (mm)	386x386x70mm
Connectors	External: 10/100 Ethernet: RJ45 ; Optional N connector for optional second radio card Internal: RS232 console: DB9
Environmental Weight	IP67 2kg

Part Numbers

Product Code	Description
IHPR-DP-MIMO-B-1-5S/2S	P2P IHPR 2x2 MIMO Bundle, 2.4/5GHz, Complete Link, 222Mbps, 10/100 Interface
IHPR-DP-MIMO-G-B-1-5S/2S	P2P IHPR 2x2 MIMO Bundle, 2.4/5GHz, Complete Link, 222Mbps, 10/100 + GigE Interface*

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* 10/100 + GigE Version requires PoE power via the 10/100 Port