



Advanced OFDM Radio

Multi-Radio, High Performance HPR Radio

IHPR/IMPR/ICR Bundle



ICR Radio Unit



MPR Radio Unit



HPR Radio Unit

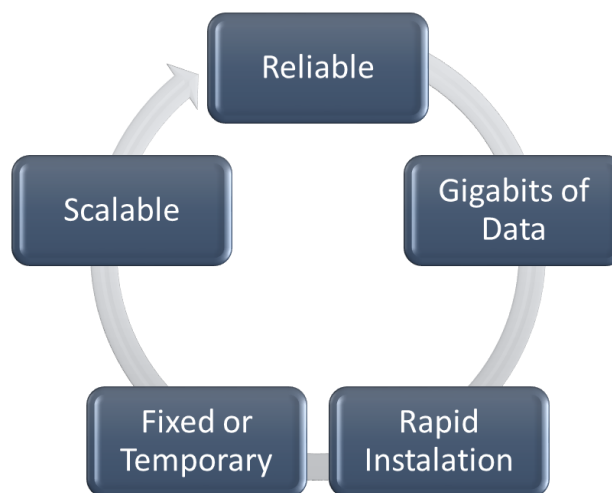


IHPR-DP Bundle



Overview

OFDM (MIMO) 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.



System Features

- Advanced OFDM Radio Platform
- Raw data rates up to 108Mbps
- Operates in 2.3-2.5 or 5.1-5.8GHz ISM bands
- Supports extended 4.9-6.0GHz licensed bands
- Range up to 60km* with external antennas
- DFS and TPC features for regulatory regional compliance
- Data Throughput up to 74+Mbps
- Carrier-class OS and resiliency features
- Power-over-Ethernet technology;
- 10/100 POE and optional GbE ports

- Rugged environmental IP66 waterproof enclosure

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

*Depends on radio environment and antennas

Embedded Router Platform

CableFree OFDM radios are high-performance carrier-grade Radio Solutions. They embody state-of-the-art software-defined-radio hardware, coupled with a powerful carrier-class router operating software with advanced Layer 2 Bridging and Layer 3 Routing features:

- High performance CPU, 500MHz x86 architecture
- IP Bridging
- Layer3 IP Routing
- Advanced Networking: RSTP, BGP, OSPF & MPLS
- VPN and Ethernet-over-IP (EoIP) tunnels
- Virtual Router Redundancy Protocol (VRRP)
- WISP & hotspot –specific features including Walled Garden, Cookies, RADIUS authentication, accounting, control of connection time
- Advanced, feature-rich QoS & traffic prioritisation
- Uplink and downlink bandwidth control on a per-user basis
- Firewall, NAT, DHCP Client and Server

Enhanced Wireless Performance

CableFree OFDM radios offer major advantages over competing radio products.:

- Highly configurable – up to 5 radio cards – ‘mix and match’ 2.4/5GHz
- 108Mbps raw data rate using ‘turbo mode’ offers 74+Mbps throughput.
- OFDM Software-defined radio – ‘state-of-the art’ radio using powerful DSP technology
- Software Selectable 5, 10, 20, 40MHz; also custom channel widths available
- Optional proprietary TDMA 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

Part Numbers

Product Code	Description
HPR-M/S-X-X-XX-WC/NC	Dual Band High Performance radio with IP66-rated indoor-mounted unit, Up to 5 radio cards, pre-loaded software, Power-over-Ethernet injector with mains 115/230Vac input. Does not include Antennas, Ethernet or RF cables.

X: Variable Value. Specify Frequency, Number of Radio Cards (up to 5)

Specifications

System Variant	WHPR
Performance	
Range	Up to 40km or more with appropriate antennas
Bandwidth	54Mbps (108Mbps Turbo mode)
Power Consumption	25W; 24V fed from Power-over-Ethernet injector; 115/230Vac; optional Uninterruptible Power Supply (UPS)
Operating Temperature	-20...+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, 4.90-6.00GHz 2GHz: 2.192 - 2.539GHz (5 MHz step) DFS (Dynamic Frequency Select) feature for regions requiring DFS enabled
Radio Type	Direct Sequence Spread Spectrum (DSSS)
Modulation	2.4GHz: CCK (11, 5.5Mbps), DQPSK (2Mbps), DBPSK (1Mbps); OFDM for data rate >20 Mbps 5GHz: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
RF Channels	Software Selectable 5, 10, 20, 40MHz; also custom channel widths available
RF Output Power	18dBm (63mW, standard power) or 28dBm (630mW, high power version)– TPC (Transmit Power Control), 1dB steps 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 Rates	2GHz & 5GHz 108, 96, 72, 48, 36, 24, 18, 12 Mbps, 54, 48, 36, 24, 18, 12, 9, 6 Mbps, auto-fallback
Compatibility	Proprietary modes plus back compatibility fully interoperable modes
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, WPA2, TKIP, CCMP, AES; Proprietary modes
Router Platform	
CPU	AMD x86-class 500MHz, 1GHz or 1.4GHz options; 256MB SDRAM; 64MB FLASH
System Software	RadioOS 8.1; Choice of license levels 1-6; Remotely Upgradeable via TFTP
Management	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 ODUs to be configured with one in 'hot standby' for high-availability applications
Mechanical	
Dimensions (mm)	405x235x65mm
Connectors	External: RF: N-type 1 - 5 ports; 10/100 and optional GbE with auto MDI/MDIX: RJ-45 Internal: RS232 console: DB9
Environmental	External version – IP66
Weight	4kg