



Advanced OFDM Radio

ICR - Integrated Client Radio

IHPR/IMPR/ICR Bundle



ICR Radio Unit



MPR Radio Unit



HPR Radio Unit

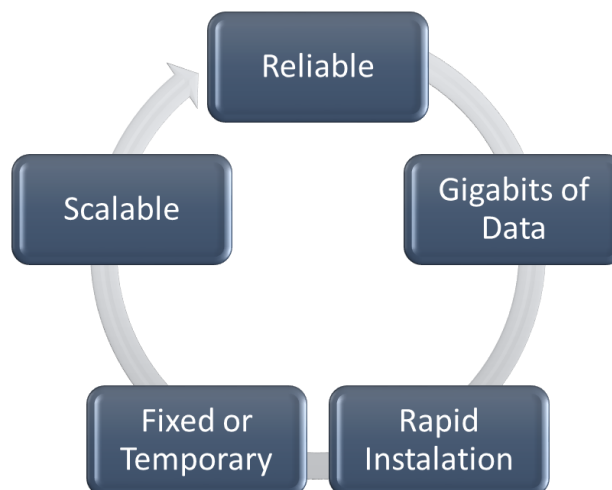


IHPR-DP Bundle



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 Solution
- Integrated Client Radio (ICR) ideal as CPE
- Raw data rates up to 108Mbps
- Versions for either 2.3-2.5 or 5.1-5.8GHz ISM band
- Optional 5.4GHz band support
- Range up to 15km*
- Data Throughput up to 30Mbps
- Carrier-class OS with NAT, filtering, full management features
- Power-over-Ethernet technology
- No RF cables – single Cat 5 carries power + network data
- Rugged environmental IP66 waterproof enclosure

Applications

- Ideal CPE for Wireless ISP deployments
- Point-to-Point or Point-to-Multipoint Data network segments
- Wireless ISP
- Fast Roll-out & Temporary Deployment

*Depends on radio environment and choice of base-station 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, 400MHz MIPS 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 2 radio cards – ‘mix and match’ 2.4 or 5.3/5.8GHz
- Software-selectable 5, 10, 20, 40MHz channel widths.
- OFDM and DSSS Software-defined radio – ‘state-of-the-art’ radio using powerful DSP technology
- 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
ICR-U-1-2S	P2P ICR Unit, 2.3-2.5GHz, Single Unit, 30Mbps, 10/100 Interface, integrated antenna
ICR-U-1-5S	P2P ICR Unit, 4.9-6.0GHz, Single Unit, 30Mbps, 10/100 Interface, integrated antenna
CCR-U-1-2/5S	P2P CCN Unit, 2.3-2.5GHz,4.9-6.0GHz, Single Unit, 30Mbps, 10/100 Interface, N connector +

+ note that external antennas are required. For integrated antenna model use ICR-N

Specifications

System Variant	W2GICRO (2.4GHz) and W5GICRO (5.3/5.8GHz)
Performance	
Range	Up to 15km (depends on base station antennas)
Bandwidth	Up to 54Mbps (108Mbps Turbo mode)
Power Consumption	10W; 48V fed from Power-over-Ethernet injector; 115/230Vac; optional Uninterruptible Power Supply (UPS)
Operating Temp	-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)
Operation Channels	13
RF Output Power	18dBm (125mW) – 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 Rate	2GHz & 5GHz (Normal mode): 54, 48, 36, 24, 18, 12, 9, 6 Mbps, auto-fallback 2GHz & 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, WPA2, TKIP, CCMP, AES; Proprietary modes
Integrated Antenna	
Type	2.4GHz 19dBi, Linear H/V Polarisation, 20degree beamwidth 5GHz 23dBi, Linear H/V Polarisation, 10.5degree beamwidth
Router Platform	
CPU	MIPS 400MHz; 8MB SRAM; 8-64MB 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)	305x305x15mm (diamond shape for 5GHz, square shape for 2.4GHz)
Connectors	Internal: RS232 console: DB9 External: 10/100 Ethernet with auto MDI/MDIX: Waterproof RJ45
Environmental	IP66
Weight	3kg