

Pre-WiMAX OFDM Radio
 MPR Radio
 Overview



About CableFree

Founded in 1997 and with headquarters in London, UK, CableFree is a leading designer and supplier of broadband Wireless communication equipment.

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

About Our OFDM Range

CableFree Wireless 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 108Mbps
- Operates in 2.4 and/or 5.1-5.8GHz ISM bands
- Optional 5.4GHz band support
- Range up to 20km*
- Data Throughput up to 30+Mbps
- Carrier-class OS and resiliency features
- Power-over-Ethernet technology
- Rugged environmental IP66 waterproof enclosure

*Depends on radio environment and antennas

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

Accessories

Antennas	Wide range of Directional, Sectorized and Omnidirectional antennas available
Radio Cards	2 nd radio card for resiliency, high throughput, and 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™, and ClusterManager™

Embedded Router Platform

CableFree MPR 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:

266MHz CPU

- 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/FDD transmission

Enhanced Wireless Performance

CableFree OFDM radios offer major advantages over ‘off-the-shelf’ WiFi products. Examples are:

- Highly configurable – up to 2 radio cards – ‘mix and match’ 2.4/5GHz
- 108Mbps raw data rate using ‘turbo mode’ offers 25Mbps 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

Specifications

System Variant	WMPR-dual
Performance	
Range	Up to 20km
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 Temperature	-20...+60 deg C
Wireless	
Frequency	2.4GHz: 2.412-2.472 (5 MHz step, channels 1-13), 2484 (channel 14) 2.512-2.732 (20 MHz step, channels 15-26) - optional license required 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	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) – 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	2.4GHz-b: 11, 5.5, 2, 1 Mbps, auto-fallback, 2.4GHz-g (Normal mode): 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps, auto-fallback, 2.4GHz-g (Turbo mode): 108,96,72,48,36,24,18,12 Mbps, auto-fallback, 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
Router Platform	
CPU	AMD x86-class 133MHz or 266MHz; 8MB SRAM; 64MB FLASH
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 ODUs to be configured with one in 'hot standby' for high-availability applications
Mechanical	
Dimensions (mm)	180x130x60mm
Connectors	External: RF: N-type; 10/100 Ethernet with auto MDI/MDIX: RJ45 Internal: RS232 console: DB9
Environmental Weight	IP66 2kg

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