Datasheet

Advanced MIMO OFDM Radio

CableFree 10.5GHz HPR 2x2 MIMO

Overview

About Wireless Excellence

Founded in 1996 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, Millimeter-Wave, Free Space Optics, WiFi and 4G/5G/LTE, customers in over 80 countries have chosen Wireless Excellence as the "one stop shop" solution of choice for dependable wireless networking.

About Our OFDM Range

CableFree OFDM Radio solutions deliver the performance, reliable connectivity, and cost-effectiveness that are crucial to modern wireless broadband networks. Our scalable wireless platform delivers superior performance even in demanding conditions, with the flexibility and features to enable a wide range of applications. CableFree OFDM Radio technology combines the best hardware and software technology to ensure best possible network performance.

Note: Due to policy of continuous product improvement, product specifications may change without notice

System Features

- Advanced MIMO OFDM Radio Platform
- Raw data rates up to 300Mbps using 2x2 MIMO OFDM
- 10.5GHz band
- Range up to 20km*
- Directional and Sector Antenna options available
- Data Throughput up to 250Mbps*
- Carrier-class OS and resiliency features
- Power-over-Ethernet technology
- Rugged environmental IP67 waterproof enclosure
- 200Km/h Wind Resistance
- LOS Operation
- 2 x 2 MIMO Support
- Modulation up to 64 QAM
- Network interfaces 2x 10/100/1000 GigE
- Optional Fibre Optic SFP Interface with SingleMode (SM), MultiMode (MM), CWDM & DWDM fibre options

*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

Embedded Router Platform

CableFree OFDM radios from Wireless Excellence 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, 600MHz MIPS architecture
- IP Bridging
- Layer3 IP Routing
- Advanced Networking features

Enhanced Wireless Performance

CableFree OFDM radios from Wireless Excellence offer major advantages over competing radio products.
Examples are:

- Highly configurable – advanced feature set with software defined radio settings
- 300Mbps raw data rate using 2x2 MIMO features offers up to 220-250Mbps throughput
- MIMO OFDM Software-defined radio – 'state-of-the art' radio using powerful DSP technology
- Sophisticated Linux-Based software platform
- Extensible Feature Set

 Note: Due to policy of continuous product improvement, product specifications may change without notice

Specifications

System Variant	Amber Crystal: WIHPR-MIMO-N-10.5
Performance	
Range	Up to 20km or more with suitable external antennas
Bandwidth	bandwidth up to 250Mbps (300Mbps raw speed) in 2x2 MIMO mode
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	10.5GHz: 10.1-10.6GHz (1 MHz step) DFS (Dynamic Frequency Select) feature for regions requiring DFS enabled
Radio Type	Direct Sequence Spread Spectrum (DSSS)
Modulation	10.5GHz: OFDM (BPSK, QPSK, 16-, 64- & 256QAM); Dynamic (Adaptable to Conditions)
RF Channels	Software Selectable 5, 10, 20, 40, 80MHz; custom channel widths 7, 14, 28MHz and others
Latency	<3ms
RF Output Power	0-1dBm (standard power version)– TPC (Transmit Power Control), 1dB steps under software control. Maximum power 0dBm. Higher power versions optionally available
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	10.5GHz (Normal mode): 54, 48, 36, 24, 18, 12, 9, 6 Mbps, auto-fallback 10.5GHz (N 2X2 mode): 300, 270, 240, 180, 120, 90, 60, 30 Mbps, auto-fallback
Compatibility	Proprietary modes only work with identical CableFree radios
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
Antenna	
Type	For use with External Antennas - waveguide
Gain	Depends on External Antenna
Router Platform	
CPU	600MHz MIPS CPU; 128MB SRAM; 8MB FLASH Memory
System Software	RadioOS- V8+; Remotely Upgradeable via TFTP
Management	Local and Remote configuration, control and administration via Telnet, SSH, HTTP, SNMP protocols
Resilience Features	Network configurations with multiple units allows two complete radio ODUs to be configured with one in 'hot standby' for high-availability applications
Mechanical	
Dimensions (mm)	386x386x70mm
Connectors	External: 10/100/1000 Ethernet: RJ45 ; Waveguide for Antenna. Optional N connector for optional second radio feature
Environmental	IP67
Weight	2kg

Part Numbers

Product Code	Description
HPR-MIMO-N-U-1-10.5S	P2P HPR 2x2 MIMO Unit, 10.1-10.6GHz, Single Unit, 300Mbps, 10/100/1000 POE Interface, Waveguide for External antennas
HPR-MIMO-N-B-1-10.5S	P2P HPR 2x2 MIMO Bundle, 10.1-10.6GHz, Complete Link, 300Mbps, 10/100/1000 POE Interface, Waveguide for External antennas

T: +44 (0870) 495 9169
E: sales@cablefree.net
W: www.cablefree.net

Wireless Excellence Limited
The Oxford Science Park,
G6, Magdalen Centre
Robert Robinson Avenue,
Oxford OX4 4GA

 Note: Due to policy of continuous product improvement, product specifications may change without notice