

# WIRELESS EXCELLENCE

## Microwave Radio (MW) Full Outdoor Microwave Radio Overview



### 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, Millimeter-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 Microwave

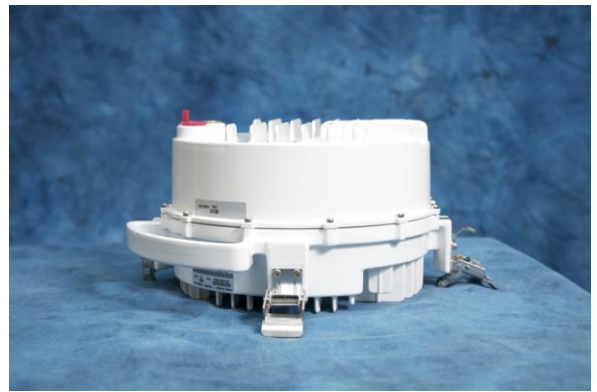
Using the latest RF technology, our microwave links operate in all the popular bands from 6-38GHz, distances over 40km and net throughput up to 364Mbps full duplex.

Our advanced Full-Outdoor Microwave Radio provides a platform with IP/Gigabit Ethernet interfaces, with Power-Over-Ethernet technology to ensure simplicity of installation in zero-footprint deployment scenarios. Flexibility, performance and low cost of ownership are ensured.

## Full-Outdoor Microwave IP Radios 6-38GHz

Wireless Excellence is offering a range of high performance low cost microwave radios using licensed frequencies in the common 6-38GHz bands. Using advanced modulation techniques, native IP/Ethernet traffic up to 364Mbps capacity can be transmitted reliably.

Microwave radio is an established technology used by telecommunication operators and organizations where quality of service is ensured through careful frequency and link planning. Wireless Excellence Microwave Radios are distinguished by high performance, advanced radio features and flexible reconfigurable network interfaces.



### System Features

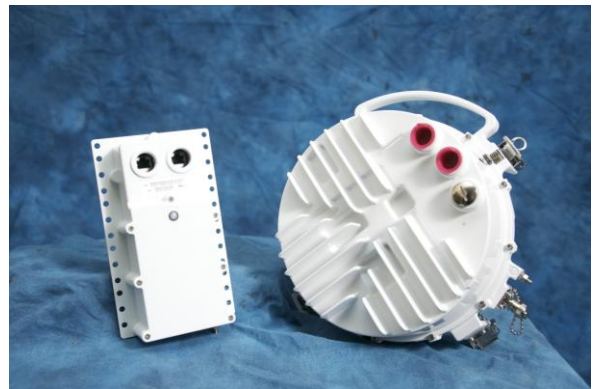
- Compact, All-Outdoor configuration
- Spectrally Efficient, Software-Defined IDU
- Powerful Forward Error Correction (FEC)
- Adaptive Power Control
- Capacity up to 364Mbps Full Duplex
- IP/Ethernet Interfaces
- Rugged & proven telecom-grade design
- 1+0, ring, star and mesh architectures

### Applications

- Point-to-Point Wireless networking
- Corporate backbone or Telecom service provider
- Resilience for Fibre links
- Fast Roll-out & Temporary Deployment

Wireless Excellence Microwave radios are high performance, modern generation wireless networking platforms supporting IP/Ethernet interfaces, operating from 6 to 38GHz frequency bands and payloads up to 364Mbps. Wireless Excellence has pioneered the use of Software-Defined Radio, which enables in-service upgrades, remote configuration, low equipment costs. Wireless Excellence Microwave systems offer users maximum useful lifespan and minimal capital and operating expenditure (CAPEX and OPEX).

Operating distances vary depending on local weather conditions, specifically link frequency and rain intensity. Planning for microwave wave spectrum use must take into account the propagation characteristics of radio signals at this frequency range. While signals at lower frequency bands can propagate for tens of miles, higher frequency microwave signals can travel only a few miles or less. Higher frequency microwaves can permit more densely packed communications links, with very efficient spectrum utilization.



### Flexible Modular System Configuration

Wireless Excellence Full Outdoor Microwave radios feature software-programmable All-outdoor radio platform. The Full-outdoor radios feature the same RF properties as the ODUs of our split-mount radios giving installers ease of familiarity with the platform.

The Wireless Excellence Full-outdoor Microwave radio includes a complete range of units for various frequency bands. Examples include:

	Frequency Band (GHz)											
Band	6	7	8	11	13	15	18	23	26	28	32	38
Frequency Range	6.5-7.1	7.1-7.9	7.9-8.5	10.7-11.7	12.7-13.3	14.4-15.4	17.7-19.7	21.2-23.6	24.2-26.5	27.5-29.5	31.8-33.4	37.0-40.0

## Specifications

System Variant	CFMW-FOR-256QAM-O
<b>System Parameters</b>	
Frequency Band	7, 8, 10/11, 13, 15, 18, 23, 38GHz depends on ODU
Bandwidth	CEPT/ETSI: 1.75, 3.5, 7, 14, 28MHz depends on ODU ANSI/FCC: 1.25, 2.5, 5, 10, 20, 30MHz depends on ODU
Capacity	2 up to 364Mbps Full duplex
Modulation Type	QPSK, 8PSK, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Rx Sensitivity	Depends on specific modulation used
Output Power	Up to 27dm – depends on specific version and modulation
Forward Error Correction	Trellis-Coded Modulation concatenated with Reed-Solomon Coding.
Network Management	SNMP Enabled
Remote Parameters Monitoring	Full range of SNMP, HTTP/web, CLI, serial
<b>Data Interface</b>	
IP/Ethernet Interface	100Base-T, 1000Base-T (Standard IEEE 802.3) with proprietary High-Power-over-Ethernet,
<b>Antenna</b>	
Antenna Type	Cassegrain type antenna with radome – 30cm up to 2.4m – please see separate datasheet
Antenna Gain/beamwidth	Depends on specific antenna and frequency chosen
<b>Power / Environment</b>	
DC Power	18 to 75 Volts DC
Power Consumption	50-75W (depends on ODU type)
Operational Temperature	-20°C to 55°C ETS 300 019-2-4 Class 4M5
Humidity	0 to 95%, non-condensing
<b>Physical Dimensions</b>	
Dimensions (Outdoor Radio)	350x250x80mm, pole mount fixings
Dimensions (FOR w/o antenna)	267 diameter x 89mm
Weight (FOR w/o antenna)	5 kg max

## Product codes

Product Code	Description
CFMW-FOR-256QAM-O-ETH - 1+0-xxxx	Full Outdoor Microwave radio link 1+0 configuration including IP67-rated outdoor modem with Ethernet interfaces, IP67-rated outdoor unit, antennas, management software, Outdoor-rated Power-over-Ethernet Injector. Does not include network cables. Frequency License required

Note – precise product code depends on frequency, band, antennas, resilience and other options.  
Please contact Wireless Excellence for more information

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