



# Cohda Wireless™

Mobile Broadband

## CohdaMobility MK2 Cooperative-ITS Module

*Complete Cooperative-ITS OBE / RSE with superior positioning & communications*

### Description

Incorporating an IEEE 802.11p radio, applications processor and GPS the CohdaMobility MK2 is a small, low cost module that includes everything needed for a complete On Board Equipment (OBE) or Road Side Equipment (RSE). Companies and organizations that are developing and testing the new Cooperative-ITS based safety and mobility applications require an IEEE 802.11p radio with outstanding performance. The radio uses Cohda Wireless' advanced physical layer, offering unmatched performance in harsh outdoor, mobile environments, enabling Cooperative-ITS applications to work in conditions that challenge radios built with traditional WiFi chipsets. The CohdaMobility MK2 has two independent radios and can also be configured to do channel switching.

### Applications

- Robust radio for integration in vehicle On-board-Equipment (OBE) and road side equipment (RSE)
- Test beds and larger scale field operational trials (FOTs)
- Full-range of V2V and V2I functions that require constant and robust communications



### Features

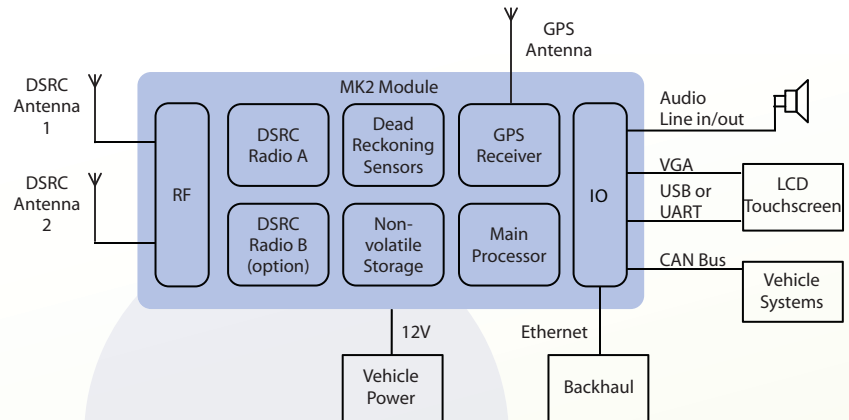
- Small size
- Low cost
- Embedded processor
- Embedded GPS
- Gyroscope for dead reckoning
- 100% compliant with IEEE 802.11 standards
- IEEE 1609 Network Layer software available
- ETSI TC-ITS Network Layer software available
- Cooperative-ITS Facilities Layer software available
- Cooperative-ITS Applications Layer available
- Software Development Kit available
- Upgradeable to IEEE 802.11a/g
- Dual or single antenna operation
- Dual or single radio operation
- Simultaneously tackles delay spread & mobility
- Outstanding performance under outdoor, mobile conditions
- Dramatically extends range, particularly in non-line of sight conditions
- Allows mobility up to fast-train speeds
- US and European RF compliance
- USB 2.0 host interface
- CAN bus interface
- Ethernet interface
- 12V Operation
- Available in OBE enclosure
- Available in weatherproof RSE enclosure

## Functional Description

The Cohda*Mobility* MK2 Cooperative-ITS Module is an IEEE 802.11p/IEEE 1609 compliant radio. It incorporates the advanced physical layer receiver technology from Cohda Wireless, dramatically improving performance in V2V and V2I applications.

The Radio can be configured for single antenna operation, or dual antenna operation, but optimal performance is achieved with dual antenna operation. The single board module supports dual radio applications. Channel switching configuration is also possible.

This is a complete OBE/RSE solution. It includes an IEEE 802.11p radio, embedded GPS receiver and embedded processor. The embedded processor runs Linux and has USB 2.0, Ethernet, VGA and CAN interfaces. Both ETSI TC-ITS and IEEE 1609 Network Layers are available.



The use of a Cohda*Mobility* MK2 Cooperative-ITS Module in V2V or V2I applications will result in performance improvements such as:

- Greatly improved range, particularly in Non-Line-of-Sight conditions
- Performance independent of vehicle speed or packet length
- Improved adjacent channel rejection
- Reduced likelihood of packet failures results in support for greater vehicle densities, or larger data transfers

## Specifications

### Standards Conformance

IEEE 802.11p - 2010  
ETSI ES 202 663  
IEEE 1609 - 2010

### Bandwidths

10 MHz  
20 MHz

### Data Rates

20 MHz mode: 6, 9, 12, 18, 24, 36, 48, 54 Mbps  
10 MHz mode: 3, 4.5, 6, 9, 12, 18, 24, 27 Mbps

### Modulation

OFDM

### Operating System

Linux 2.6

### Antenna Options

1 or 2 receive antennas

### Radio Options

Single or Dual radios

### Environmental Operating Ranges

Temperature: -40° to 85° C  
Humidity: 5-95% non-condensing

### Frequency Bands

USA: 5850 MHz – 5925 MHz  
Europe: 5875 MHz – 5905 MHz

### Processor

533 MHz ARM 11

### GPS

CEP <2.5m

### Interfaces

CAN, Ethernet, USB, VGA

### Dimensions

135 x 55 x 20 mm

### Power Supply

12V, 10W (Dual Radio configuration)

*Specifications subject to change without notice*

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