Cohda Wireless

www.cohdawireless.com

MK6 OBU Quick Start User Guide

Version: 3.01

CE

The MK6 OBU complies to Radio Equipment Directive 2014/53/EU. A copy of the Declaration of conformity is available on request.

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

RF Radiation Exposure Statement Caution:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

RF Radiation Exposure Statement Caution: To maintain compliance with the FCC's RF exposure guidelines, place the product at least 20cm away from nearby persons.

WARNING: Modifications not approved by manufacturer could void compliance.

Others

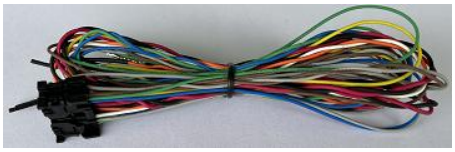
The MK6 OBU is RoHS and Lead-Free compliant. It complies with the "Directive 2011/65/EU of the European Parliament and the Council on the Restriction of Use of certain Hazardous Substances in Electrical and Electronic Equipment" (RoHS).

1 Kit Contents

Unpack the MK6 OBU Kit

Following items are included in the MK6 OBU Kit shipment.

MK6 OBU



*1x Cable harness Cord

2x WiFi/BT Antenna

2x LTE Antenna

1x DSRC/C-V2X Antenna

2x 50ohm terminator

*Refer Appendix A page for pin out definition.

2 Warnings, Symbols and Marking

2.1 Warning

Improper handling may lead to serious injury or even death.

2.2 Caution

Be sure to follow the instructions.

2.3 Attention

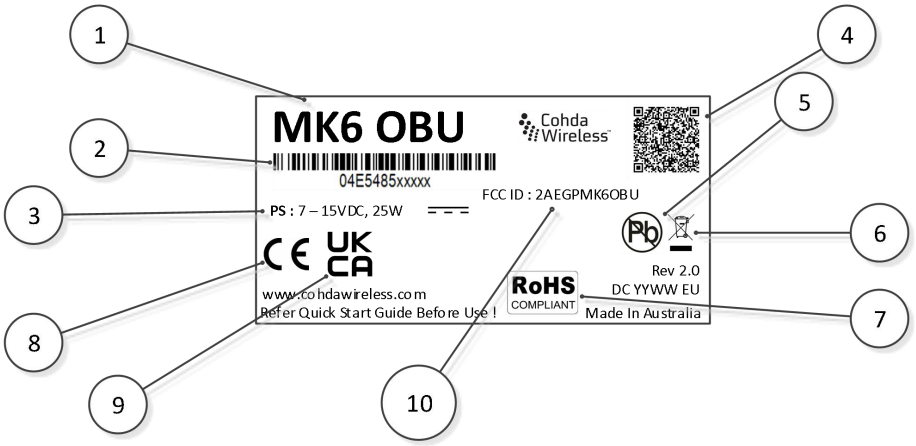
Improper handling may lead to injury or property damage.

2.4 Product Disposal

Products that are marked with the above symbol may not be disposed of as unsorted municipal waste (domestic waste). They should be disposed of through separate collection of electric and electronic devices. This product and its packaging are manufactured from materials that can be recycled by specialist recycling companies. The product must be supplied to a specialist recycling company. Do not use municipal waste collection points. These may be used for privately used products only in accordance with WEEE Directive 2012/19/EU.

2.5 Product Identification

MK6 OBU Product Label (Enclosure) – Label information.



1. Product Model No.
2. Product Sr. No. Bar code information
3. Power supply Rating
4. Product Ordering Code QR Code info
5. Product is manufactured using Lead Free Materials
6. Product Disposal Symbol
7. Product is ROHS complaint
8. CE Mark Symbol
9. UKCA Mark Symbol
10. FCC ID

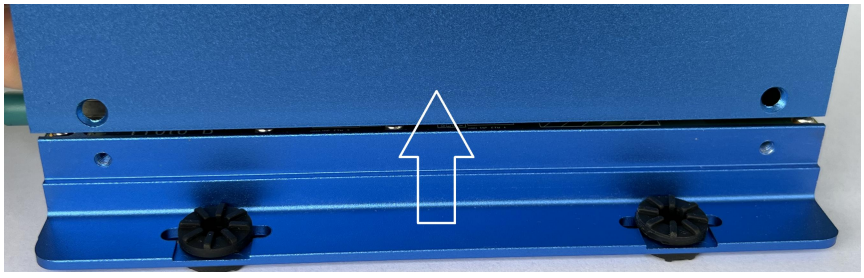
3 Micro SIM Card installation

3.1 Verify that MK6 OBU is not connected to cable harness, USB cable, Ethernet cable and antennas.

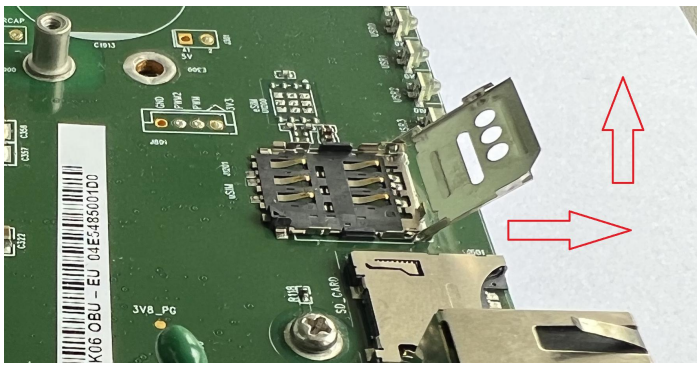
3.2 Remove six screws from front panel and six screws from rear panel. Remove front and real panel with Philips size 1 screwdriver.

3.3 Remove two screws from side of enclosure with Philips size 1 screwdriver.

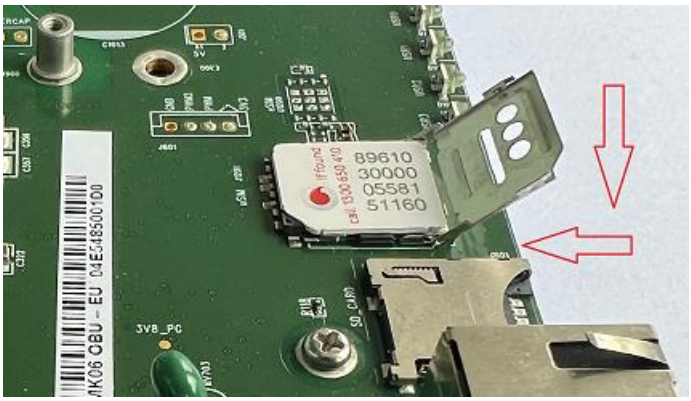
3.4 Lift one side of top enclosure then remove the entire top enclosure. Do not slide top enclosure horizontally. Doing so can damage internal thermal gap pads.



3.5 Slide SIM socket cover toward right and slip it up.



3.6 Insert micro SIM card onto socket. Slip socket cover down and slide it toward left.



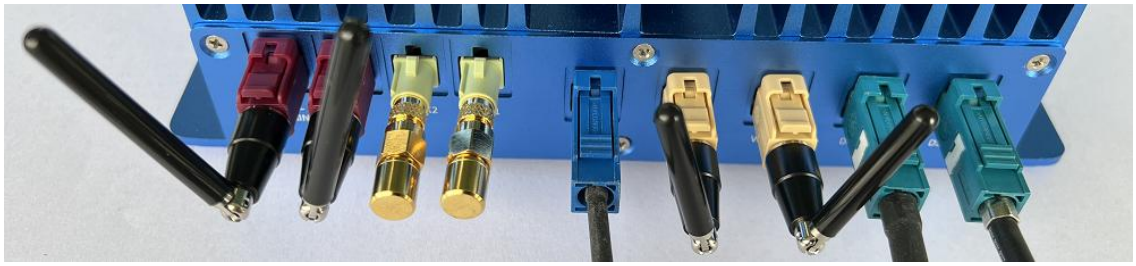
3.7 Close the top enclosure. Reverse steps 2.4. Install and fasten front and rear panel screws. Lastly, fasten two screws at side panel of enclosure. Please use 5kgf.cm +/- 10% torque for all screws.

4 Connecting MK6 OBU

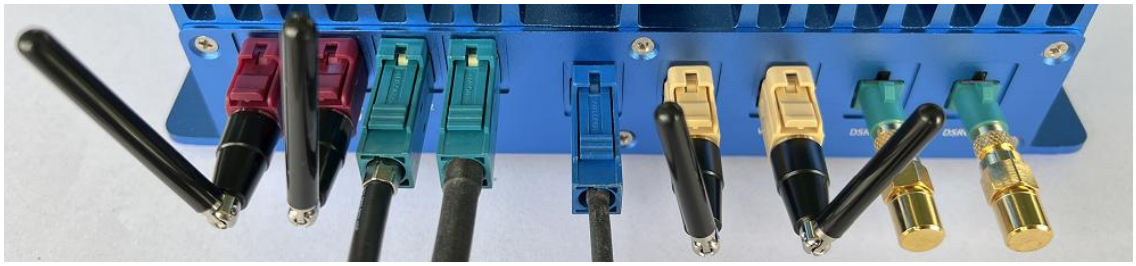
4.1 Connecting DSRC / C-V2X application antenna connection

Connect Antenna to MK6 Unit as shown. DO NOT connect two MK6 units together without 50dB attenuation in between.

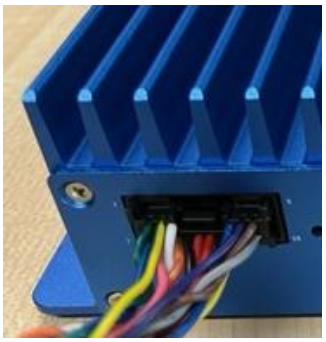
DSRC application antenna connection. Do connect 50 ohm terminator at unused C-V2X RF ports.



C-V2X application antenna connection. Do connect 50 ohm terminator at unused DSRC RF ports.



4.2 Connect 12VDC (nominal voltage) to MK6.



4.3 The SYS (SYSTEM) LED will be illuminated Green immediately after voltage is applied this indicates MK6 is ready to be used.

5 RF bands

- Cellular bands
  - 5G NR FDD bands – n2, n5, n25, n66, n71
  - 5G NR TDD bands – n78, n77
  - LTE-FDD bands – B2, B4, B5, B7, B12, B17, B25, B66, B71 , B29 [1*], B30 [1*]
  - LTE-TDD bands – B41
  - WCDMA band – B2,B4, B5
  - GSM 1900
- DSRC and C-V2X bands
  - C-V2X (LTE TDD – B47) – 5.9Ghz
  - DSRC – 5.9Ghz [2*]
- BT bands
  - BT5.1 2.412 – 2.480 Ghz
- Wi-Fi bands
  - Wi-Fi 2.4GHz
  - Wi-Fi 5GHz 5.15 – 5.925 Ghz
- GPS Band [1*]
  - GPS – L1C/A
- GLONASS – L1OF
- Galileo – E1-B/C
- BeiDou – B1

Note :
1 – Rx only.
2 – The C-V2X technology has applied for the waiver process (waiver document number: DA-23-343, DA-23-586) and strictly follow below conditions.

Operating Frequency range	Channel Band width	OBU RF O/P Power
5905 – 5925 Mhz	20Mhz	33dBm EIRP **Or** 27dBm EIRP (Within +/-5 Degrees in elevation of Horizontal plane)

6 Link to Documentation and Software Support

Please register at Cohda Wireless Support Website

It can be accessed in two ways:

- Directly via https://support.cohdawireless.com
- Through the "Customer Support" on the Cohda Wireless website www.cohdawireless.com

On the signup page that opens, enter your name and email address in order to register for Support and access to technical documentation.

Your email address **has to be the Company email address** and not your personal email address.

Please submit a support request by clicking on the button "Submit a request" to ensure your account is validated.

Once your account has been validated and you have logged into the Customer Support website, you will have access to the information on all Cohda products, how to develop applications and FAQs.

If you have purchased the SDK license, this will be made available to you via the Cohda Wireless Support website upon account validation.

Appendix A – **Cable harness pin out overview**

Pin Number	Pin function	Color
1	CAN_P	Green
2	VIC_GPIO1	Grey
3	RS232_TX	White
4	VIC_GPIO3	Blue
5	VIC_GPIO4	Green
6	VIC_ETH_P	Brown
7	CAN_N	Blue
8	VIC_GPIO2	Brown
9	RS232_RX	Orange
10	GND	Black
11	V-BAT	Red
12	V-BAT	Red
13	GND	Black
14	IGNITION_IN	Yellow
15	NC	
16	VIC_ETH_N	Grey