

## OBDv8+ - INSTALLATION GUIDE

V 1.0

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## Preface

The information contained in this installation guide is subject to changes in order to improve the reliability, design or features without prior notice. MUNIC Car Data reserves the right to make changes in the content without obligation to notify any person or organisation of such changes or improvements. MUNIC Car Data can in no event be held liable for technical or editorial errors or omissions herein, nor for incidental, special or consequential damages from the furnishing, performance or use of this installation guide.

Please contact our technical support for current updates and supplemental information concerning the use and operation of this or other MUNIC Car Data products.

## Warnings and notices



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Please read the installation guidelines, as well as the safety and operating instructions before operating your device. Follow all instructions and heed all warnings in the installation guide.

There is a risk of explosion if the battery is replaced by a wrong battery type. Please discard empty battery according to local regulations.

Dispose of used batteries according to the instructions.

## FCC Regulations

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.

This device 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 radiated 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 or more 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.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## FCC RF Exposure Information (SAR)

This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the United States.

During SAR testing, this device is set to transmit at its highest certified power level in all tested frequency bands (and placed in positions that simulate RF exposure in usage **near the body with the separation of xx mm.**) Although the SAR is determined at the highest certified power level, the actual SAR level of the while operating can be well below the maximum value. This is because the device is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output.

The exposure standard for wireless employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg.

The FCC has granted an Equipment Authorization for this model device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model device is on file with the FCC and can be found under the Display Grant section of [www.fcc.gov/oet/ea/fccid](http://www.fcc.gov/oet/ea/fccid) after searching on FCC ID: **A6GC4D-4G4USV8.**

For this device, the highest reported SAR value for usage near the body is **X.XX W/kg.**

While there may be differences between the SAR levels of various devices and at various positions, they all meet the government requirement.

(SAR compliance for body operation is based on a separation distance of **XXmm** between the unit and the human body.)

## 1. Hardware features

| OBD Dongle                      |                              |   |
|---------------------------------|------------------------------|---|
| Performance                     | Processor                    | ARM Cortex-A7 Dual-Core 1.2GHz                          |
|                                 | RAM                          | 256 Mbytes  |
|                                 | NAND Flash                   | 512 Mbytes  |
| Power supply                    | External power supply range  | 8-18V   |
|                                 | External voltage measurement | ●   |
|                                 | Internal battery             | Li-pol battery 270mAh                                   |
| Communication                   | Modem                        | 4G Cat.4 module EC25-T                                  |
|                                 | Bands                        | B2, B4, B5, B12, B66, B71                               |
|                                 | Modem antenna                | Internal  |
| WLAN                            | SIM                          | MFF2 soldered SIM                                       |
|                                 | WiFi                         | WiFi 802.11 a/b/g/n/ac 2.4GHz, 5 GHz                    |
|                                 | Bluetooth                    | BT 5.0 /BT 2.0  |
| Positioning                     | GNSS receiver                | U-blox M8 (GPS,GLONASS)                                 |
|                                 | GNSS antenna                 | Internal  |
| Interface & Telematics features | IMU                          | Accelerometer 3 axis $\pm 2/4/8/16$ G                   |
|                                 | OBD protocols                | CAN, KWP2000, VPW, PWM                                  |
|                                 | Buttons                      | 1 reset button  |
|                                 | Leds                         | 2 bicolor LED   |
| Environmental                   | Connectors                   | OBD connector<br>Micro USB type B connector             |
|                                 | Operating temperature        | -20°C/+50°C with Battery<br>-20°C/+60°C without battery |
|                                 | Dimensions                   | 27.3x51x71 mm   |

## 2. Hardware description

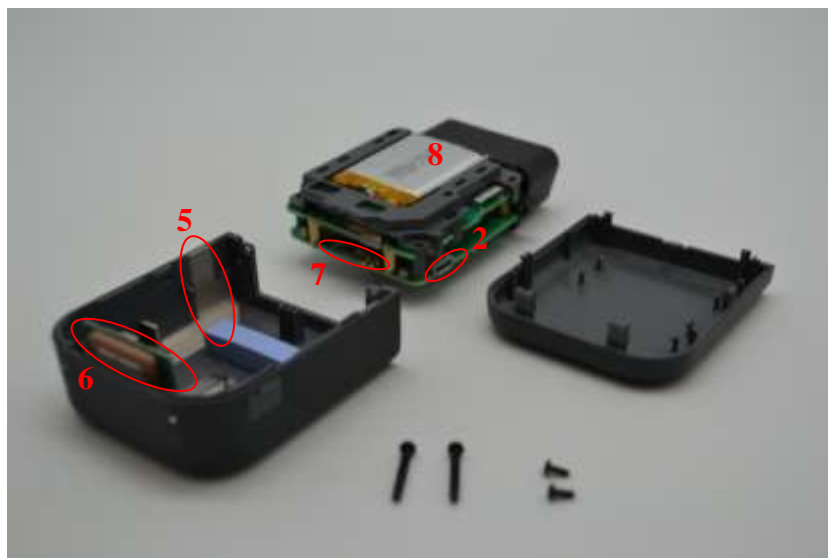
### 2.1. External view

- 1 : OBD connector
- 2 : micro USB connector
- 3 : signal bicolor led
- 4 : power bicolor led



### 2.2. Internal view

- 2 : micro USB connector
- 5 : Modem antenna
- 6 : GNSS antenna
- 7 : nano SIM holder\*
- 8 : Internal battery\*\*

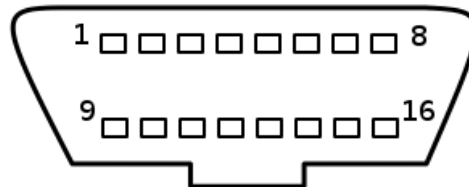


\* SIM holder can be absent if device have eSIM chip.

\*\* Please read warnings section at the beginning of the installation guide.

## 2.3 OBD connector pin out

| Pin # | Comment          |
|-------|------------------|
| 1     | OEM specific     |
| 2     | J1850+ (PWM/VPW) |
| 3     | OEM specific     |
| 4     | Chassis ground   |
| 5     | Signal ground    |
| 6     | CAN High         |
| 7     | K line           |
| 8     | OEM specific     |
| 10    | J1850- (PWM)     |
| 11    | OEM specific     |
| 14    | CAN low          |
| 15    | L line           |
| 16    | Battery voltage  |



## 2.4 OBD adapter wires

This adapter is only used to connect the OBD to a computer (laptop/desktop).

| Pin # | Wire color |
|-------|------------|
| 2     | Yellow     |
| 4     | Black      |
| 5     | Grey       |
| 6     | Green      |
| 7     | Blue       |
| 10    | Violet     |
| 14    | Orange     |
| 15    | White      |
| 16    | Red        |



### 3. Preparing/installing the device

Those operations may need the use of specific tools like :

- T4 Torx screwdriver for the external screw.
- T6 Torx screwdriver for the internal screw.
- Small slotted screwdriver to remove the cover.
- Thin tweezers to insert/remove the SIM card.

#### 3.1. Open the device

Insert slotted screwdriver between top cover and body to pop-out the top cover on each side and extract it.



Remove the screw located on each side of the OBD connector using T4 Torx screwdriver



Remove the screw located on the PCB at the bottom of the device using T6 Torx screwdriver



Move apart the side of the device first and then pull the OBD connector out of the body.

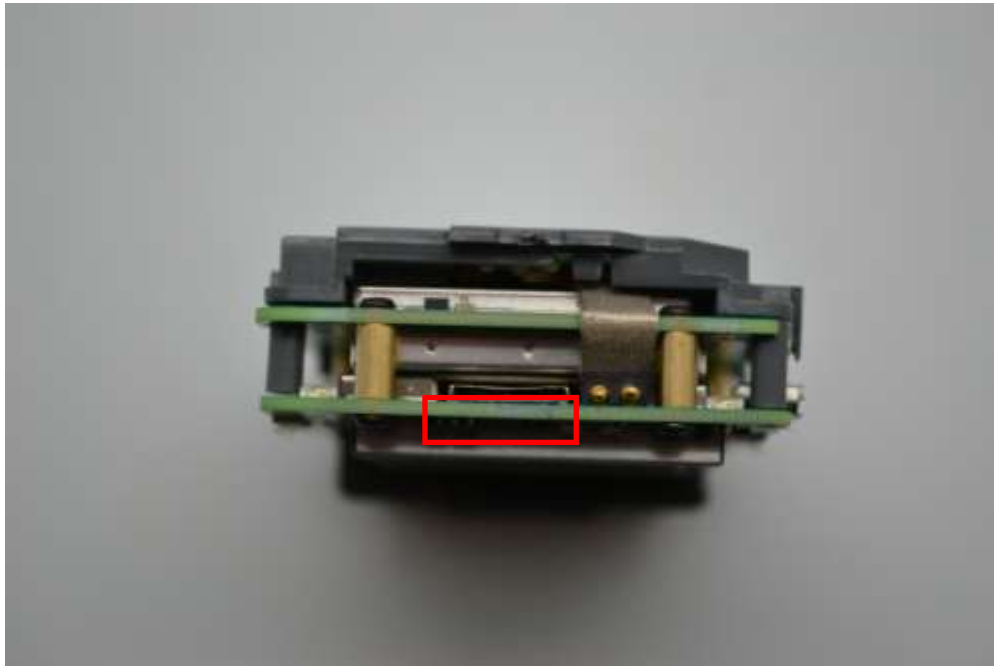


Device is now open



### 3.2. Insert the SIM card

The nano SIM card slot is located between the two electronic cards.



Insert the card with contact on bottom into the slot and push it as far as it will go.



Once inserted the SIM card looks like this:

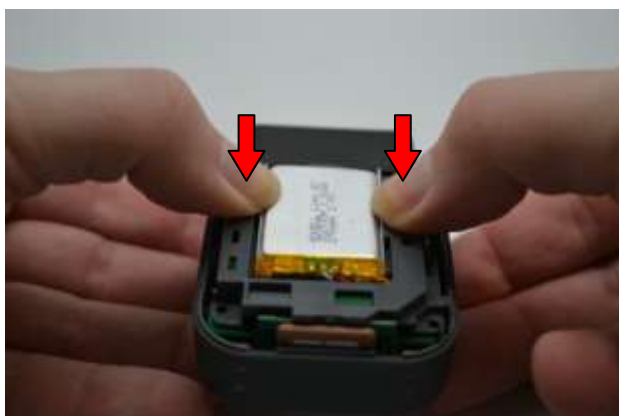


### 3.3. Properly close the device

First, insert the main part into the bottom cover. Insert the rear first and take care of the pogo pin of the GNSS antenna.



Once inserted, push the main part into the back cover until you hear two “clac”



Place the long screw on the rear of the electronic cards in order to fix it to the body.



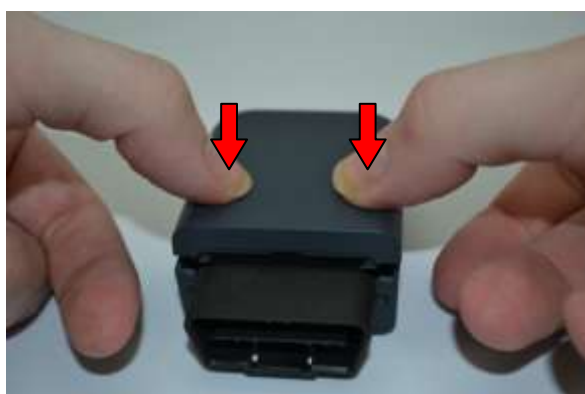
Place the screw on each side of the OBD connector to fix it to the body.



Insert the top cover beginning with the rear.



Finally, push the top cover down until you hear the "clac".



Device is ready.

### 3.4. Install the OBD Dongle

Connect the OBD Dongle on your vehicle OBD connector.

## 4. LED sequences

The Dongle has a two-coloured LED, green and red.

Please note that when both LEDs are brightened, you can perceive the colour as orange.

| Signal LED (Left)     |  | Power LED (Right)  |                        |
|-----------------------|--|--------------------|------------------------|
| Sequence              | Meaning  | Sequence           | Meaning                |
|                       |  | Dongle OFF         | OFF                    |
| No Modem<br>/No GNSS  | 3 times 50ms Green ON/100ms<br>OFF<br>3550ms OFF | Ext. Power/Run     | Green ON               |
| No Modem<br>/Fix GNSS | 2 times 50ms Green ON/100ms<br>OFF<br>3700ms OFF |                    |                        |
| Modem OK<br>/No GNSS  | 1 time 50ms Green ON<br>3950ms OFF               |                    |                        |
| Modem OK<br>/Fix GNSS | 2000ms ON<br>2000ms OFF                          |                    |                        |
|                       |  | Shutdown/Hibernate | 30ms Green ON / 1s OFF |
|                       |  | Idle/Sleep         | 30ms Green ON / 1s OFF |

## 5. Support

For all questions not related in this installation guide, please contact the support team by email at [support@munic.io](mailto:support@munic.io)