

C4R V8 - 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 reserves the right to make changes in the content without obligation to notify any person or organization of such changes or improvements. MUNIC 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 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.

There is a risk of explosion if the battery is disposed into fire or a hot oven, or mechanically crushed or cut.

There is a risk of explosion or leakage of flammable liquid or gas if the battery is left in an extremely high temperature surrounding environment or is subjected to extremely low air.

Please discard empty battery according to local regulations.

Dispose of used batteries according to the instructions.

Hardware features

Performance	Processor	ARM A7 – 1.3 GHz
	RAM	200 Mbytes
	NAND Flash	256 Mbytes
Power supply	External power supply	8-32V = 2A max*
	Li-polymer battery	1050 mAh (2100 mAh in option)
Communication	Modem	LTE Cat 4 module (EC25)
	Modem antenna	External
Positioning	GNSS receiver	U-blox M10 (GPS, GLONASS)
	GNSS antenna	External
Inertial sensors	Internal 3-axis accelerometer	3 axis $\pm 2/4/8/16$ g
Interfaces	USB-C	Host / Device (No power delivery)
	Digital Input	4 (Ignition, alarm and 2x general purpose)
	Analog input	2
	Digital Outputs	2 active low output
	1-wire (for driver ID or temp sensor)	Yes
	LEDs	2 (1 controlled by software)
	RTC	Yes
	CAN interface	2 CAN-FD up to 5 mbps
	RS232	1 (RXD, TXD, CTS, RTS) 1 (RXD, TXD)
	RS485	1 (Optionally configurable as J1708)
Environmental	Connectors	Ampseal 35 pins
		USB-C connector
		4 Fakra or SMA
	Operating temperature	-0°C /+70°C
	Dimensions	201 x 126 x 56 mm
	SIM card	Mini SIM slot (3FF) (Optional MFF2 soldered SIM)

* \Rightarrow : direct current

Hardware description

Device views

Front view



1. Main connector
2. GNSS antenna connector
3. 4G Main antenna
4. 4G Diversity antenna

Top view



1. Vent
2. LED indicators
3. Battery compartment cover

Pin out & Wires description

Pin	Signal (V1)
1	n.c.
2	n.c.
3	n.c.
4	n.c.
5	RS485_B
6	RS485_A
7	n.c.
8	n.c.
9	CANH2
10	CANL2
11	CANH1
12	CANL1
13	DOUT1
14	DOUT2
15	n.c.
16	n.c.
17	RS232_RTS1
18	RS232_TXD1

Pin	Signal (V1)
19	RS232_CTS1
20	RS232_RXD1
21	ONE_WIRE
22	n.c.
23	n.c.
24	VBAT+
25	VBAT-
26	IN1_IGNITION
27	IN2_ALARM
28	IN3_TACHO
29	IN4_GP
30	RS232_TXD2
31	RS232_RXD2
32	n.c.
33	n.c.
34	AN_IN2
35	AN_IN1

Power supply may be derived directly from the vehicle's main power or from the board installation. In the first case, it is an absolute must that a fuse on the main cable is present.



Ignition wire must always be connected to the vehicle's ignition
OR tied with the permanent positive to the vehicle's battery.

Ground must be always connected first. It is mandatory to add
a fuse (2A) to the permanent positive. The closer to the
connection point with vehicle power.

Installation Guidance

SIM card installation

To install a SIM card in the device, please follow the following steps.

Begin by unscrewing the two Torx screws on the battery compartment cover using a T20 star-shaped screwdriver (3.8 mm point to point).



Next, lift the battery compartment cover from the front side, as shown below.



After removing the battery compartment cover, detach the battery connector from the device.



After fully detaching the connector, lift the battery pack from the side opposite the wire/connector to remove it.

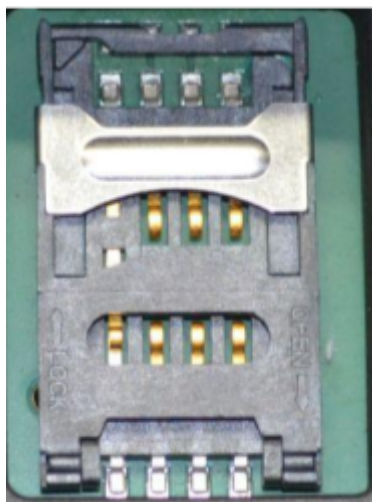


The SIM card connector is located within the battery pack compartment.

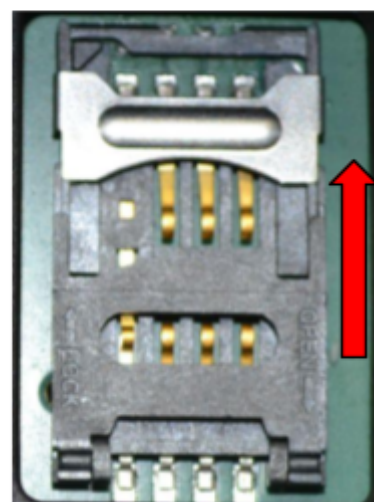


Unlock the connector by sliding the metal clip as follows.

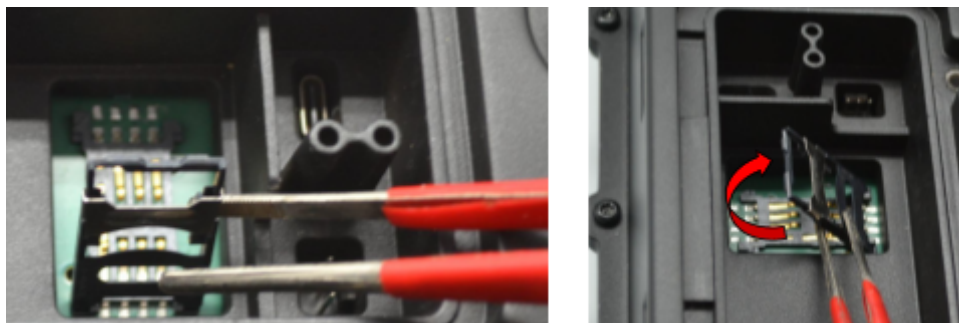
Locked



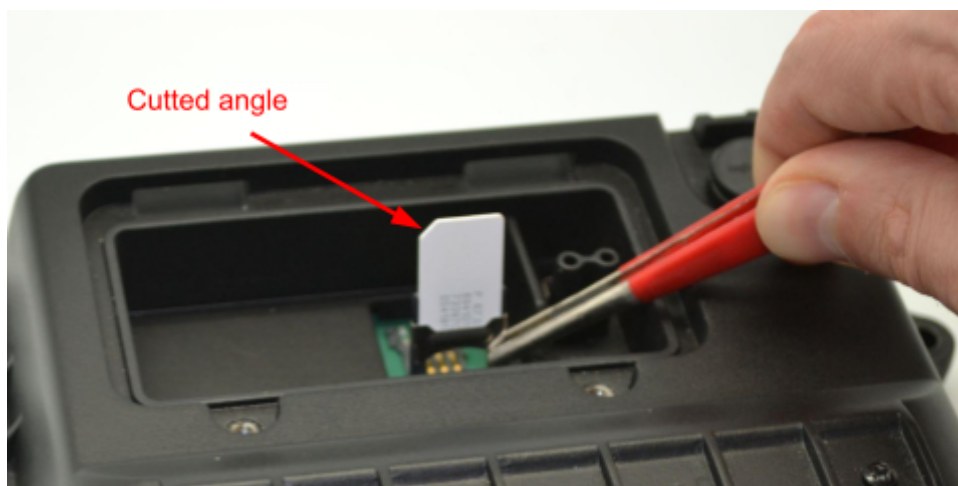
Unlocked



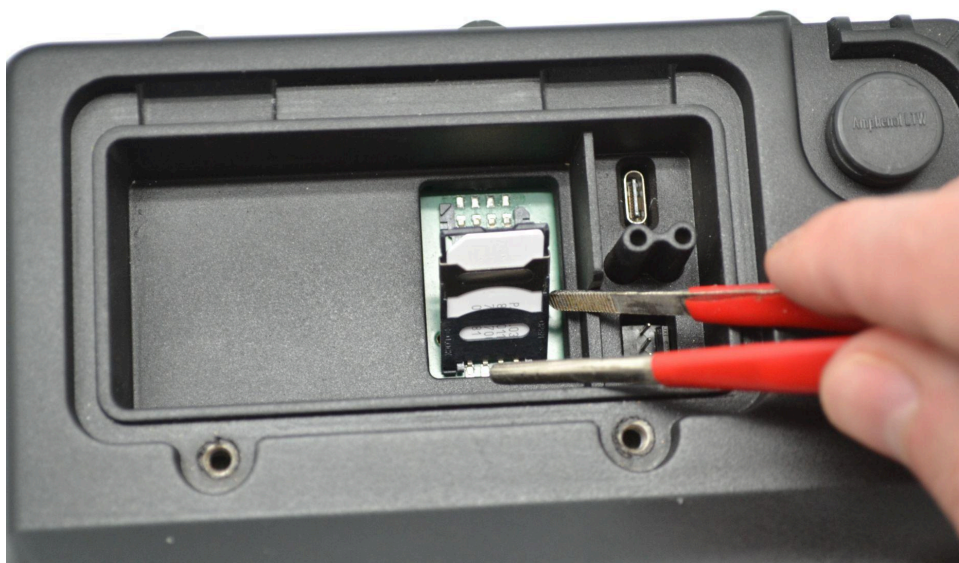
Lift the card holder gently to insert the SIM card.



Insert the SIM card in the correct position as below.



Ensure the SIM card is fully inserted.



With the SIM card in place, rotate the lid back and slide the metal clip to lock it.

Unlocked



Locked



Replace the battery pack, ensuring the battery connector clips securely into place.



Finally, reattach the battery compartment cover and secure it with the two Torx screws.

Tip: Ensure the battery compartment and its cover are free of dust along their edges to prevent sealing problems.

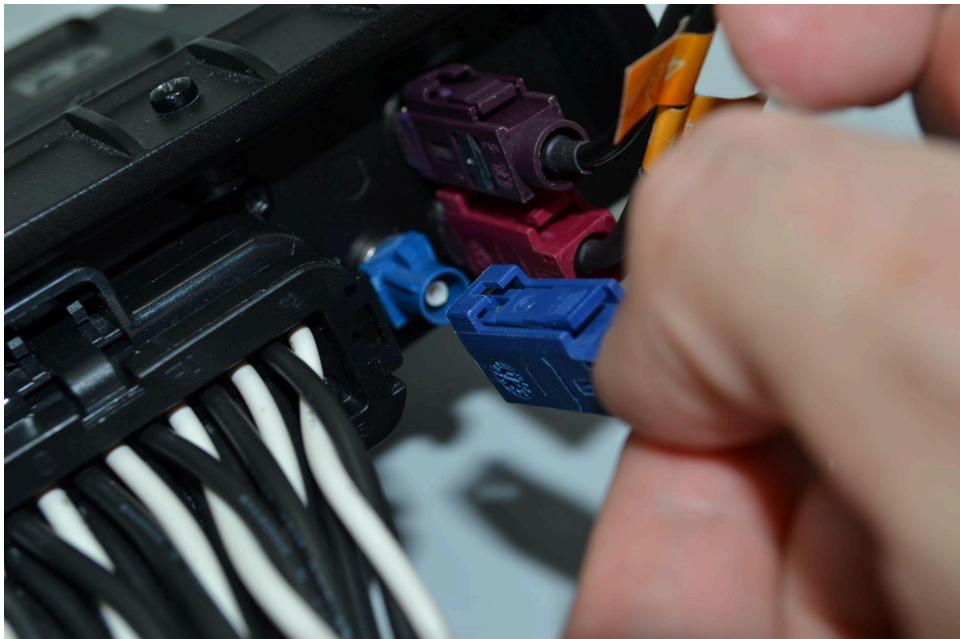
Harness and antenna installation

To install the harness, align its connector with the main connector of the device.

Push the connector of the harness until you hear a clipping sound.



Connect each antenna cable to the correct device connector, following the label on each.

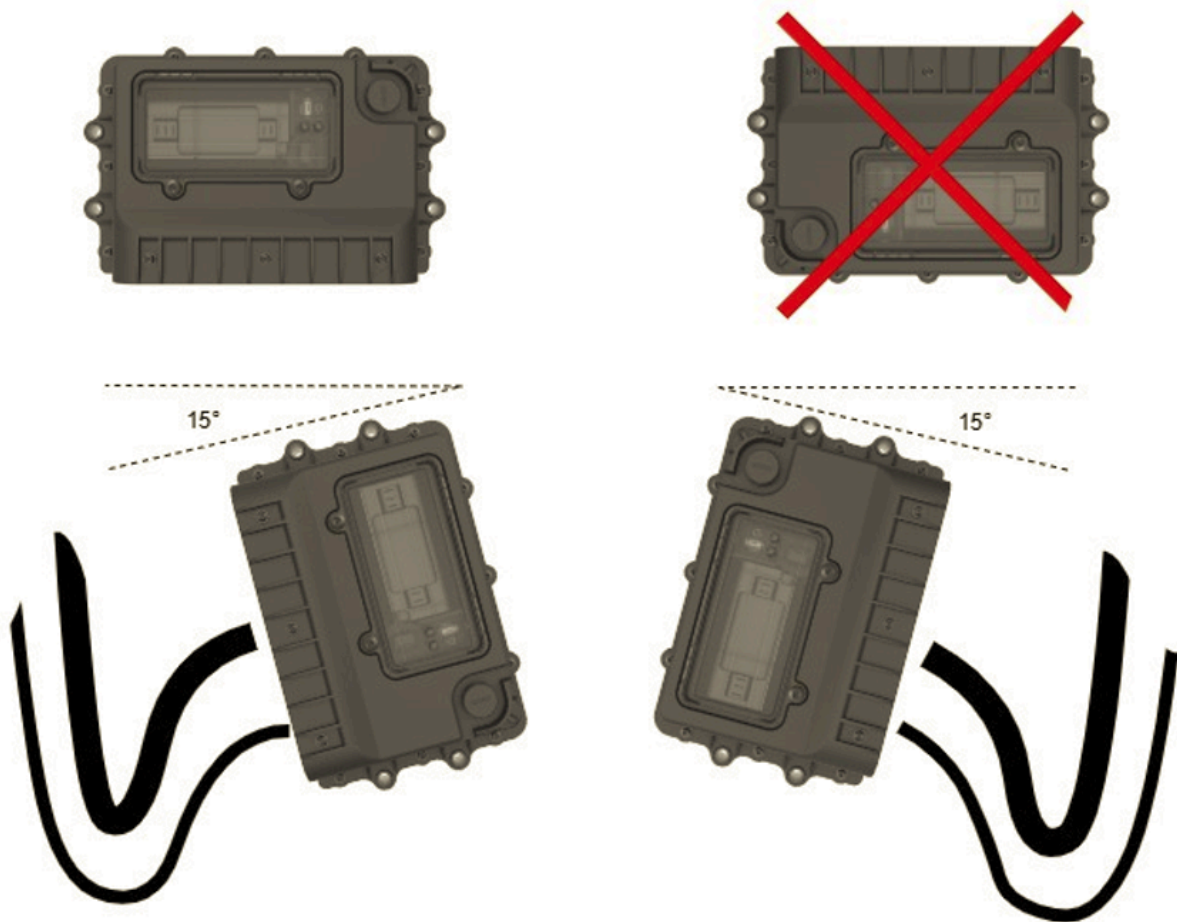


Device Orientation

To prevent water and dust accumulation, we recommend the following positioning for the C4R V8 device.

As shown, if mounting vertically, the device should be slightly inclined ($\sim 15^\circ$ in the back to front direction) and the harness and antenna cable inclined in a U-shape. This prevents water from traveling along the cable and collecting on the front panel and connectors.

Both C4R V8 LEDs should remain visible to facilitate easy diagnostics during maintenance.



Outputs information

The two Outputs are active low and they can deliver up to 300mA.

Note: Outputs have a pull-up resistance of 10Kohms.

LED sequences

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

When both colours are brightened, you can see an orange light.

Green LED		Red LED	
Sequence	Meaning	Sequence	Meaning
		device OFF	OFF
No Modem /No GNSS	3 times (50ms ON/100ms OFF) 3550ms OFF	Ext. Power/Run	ON
No Modem /Fix GNSS	2 times (50ms ON/100ms OFF) 3700ms OFF		
Modem OK /No GNSS	1 time (50ms ON/100ms OFF) 3850ms OFF		
Modem OK /Fix GNSS	2000ms ON 2000ms OFF		
		Shutdown/Hibernate	30ms ON / 1 s OFF
		Idle/Sleep	30ms ON / 1 s OFF

Configuration

Regarding device configuration, please see our [online documentation](#).

Support

For all questions not related in this installation guide, please contact the support team by email at support@munic.io