

## C4evo - INSTALLATION GUIDE

V 1.2

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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. Mobile Devices reserves the right to make changes in the content without obligation to notify any person or organisation of such changes or improvements. Mobile Devices 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 Mobile Devices products.

## **Warnings and notices**

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.

## 1. Hardware features

C4E		
Performance	Processor	ARM 11 - 500MHz
	RAM	64 Mbytes
	NAND Flash	256 Mbytes
Power supply	External power supply 8-32V	●
	External voltage measurement	8-32V
	Li-ion battery charger	●
	Li-ion battery	option (900mA.h)
Communication	GSM receiver	●
	GSM antenna	External
Positioning	GPS receiver	●
	GPS antenna	External
Interface & Telematics features	USB (2.0 Host/Slave)	powered (limited to 350 mA on 5V) when connected to external power not powered on internal battery
	Input	Ignition (active high) alarm (active low) and 1 input active low.
	Output	2 (active low 300mA driving current )
	3D Accelerometer	±2g, ±8g
	3 axis Gyroscope	Please contact us
	1-wire	●
	LEDs	2
Environmental	Connectors	microFIT 8 pins
		Mini-USB
		Fakra connectors for the antennas
	Operating temperature *	-20/+60°C (contact us for extended range)
	Dimensions	66x66x24
	SIM card	slot

\*without battery

## 2. Hardware description

### 2.1. Front

1. GSM connector
2. GPS connector
3. USB connector
4. Molex (8pins) connector
5. USB cable Hook



### 2.2. Back

6. Inner battery switch



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→ Move the switch inwards (I) to activate the internal battery.

The switching ON of the internal battery requires a running system. This is about 10 seconds after ignition (the led 4 must be lit then unlit).



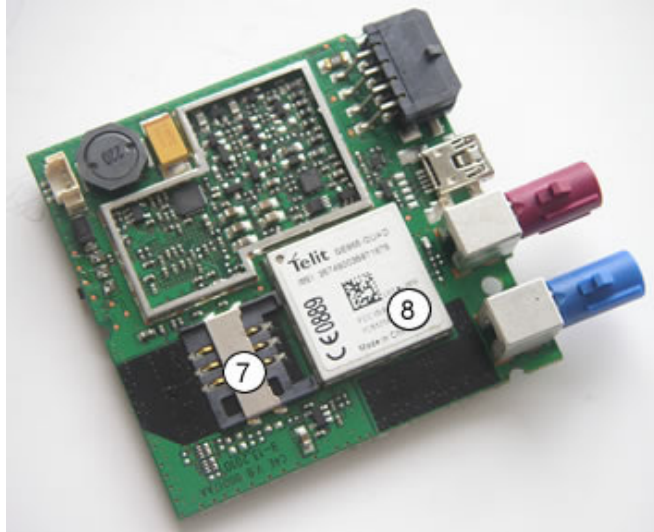
→ Move the switch outwards (O) to deactivate the internal battery.

The switching OFF of the internal battery is instant. Thus, don't switch off the internal battery if the device is running without be connected to an external battery.

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## 2.3. Inside

- 7. SIM holder
- 8. GSM/GPS module



The SIM card PIN code must be deactivated.

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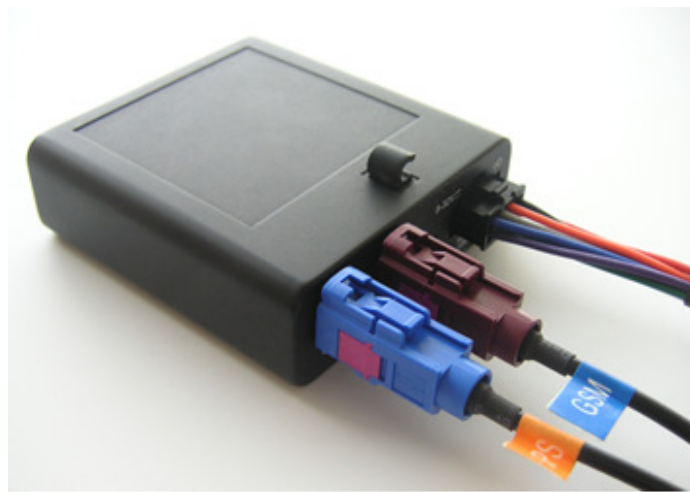
### 3. Preparing/installing the device

#### 3.1. Open the device to insert a sim card

Insert a flat screwdriver into the inner battery switch hole and pry it to remove the back cover. Afterwards pull on the PCB to release it.



### 3.2. Connect the GSM/GPS external antenna



### 3.3. Choose the appropriate location for mounting

The ideal location for mounting the device is under the dashboard. However, some types of coated windshields, as well as windshields with an in-screen heating system can block GPS signals. External antenna should never be covered by any kind of object or material, especially not by metal or aluminium. Transmission and reception of GPS signal is however not hindered by plastic or normal glass. Moreover, put at least 20 cm between the antenna and a speaker.

### 3.4. Pin out & Wires description

Signal	Pin	Colour
VBAT_EXT	1	Red
GND	2	Black
IN1_IGNITION (VBAT)	3	White
IN2_ALARM (GND)	4	Orange
IN3 (GND)	5	Green
ONE_WIRE	6	Grey
DIG_OUT1	7	Purple
DIG_OUT2	8	Blue



8	6	4	2
7	5	3	1

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.



### 3.5. Plug the device to the external battery

The device must have a direct connection with the main power (external battery). Mobile Devices advise against the use of intermediate system.

1. Check that inputs 2 and 3 are free (not connected).
2. Plug the device (black wire) to the ground of the external battery.
3. Plug the device (red wire) to the permanent positive of the external battery.
4. Plug the device (white wire) to the ignition (after contact).

In some case, the use of a circuit breaker can let the ignition (after contact) active. Thus, the device will be ON indefinitely. So, it's important to find a signal where the ignition can be ON or OFF.

Moreover, it is imperative to insulate the GPS antenna in order to avoid it get in touch with the car's chassis.

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#### **The device should be always plugged to :**

- The ground of the external battery.
- A ground point defined by the vehicle manufacturer.



#### **A circuit breaker should never be enabled as long as:**

- Ignition is active.
- Ignition goes OFF since less than 2 minutes. This is the time for the device to do a proper shutdown.

**It is mandatory to add a fuse (2A) to the permanent positive. The closer to the connection point with vehicle power.**

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## 4. Inputs activation threshold

Here are inputs activation thresholds (voltage).

- Input2 (negative) is active from approx. 0 to 2V (disabled if >2V)
- Input3 (negative) is active from approx. 0 to 2V (disabled if >2V)

**Note:** Range voltage on inputs is 0-30V

## 5. LEDs sequences

Green LED (Soft)		Red LED (System)	
Sequence	Meaning	Sequence	Meaning
No GPRS/No GPS	3 times (50ms ON/100ms OFF) 3550ms OFF	C4E OFF	OFF
No GPRS/Fix GPS	2 times (50ms ON/100ms OFF) 3700ms OFF	Ext. Power/Run	ON
GPRS OK/No GPS	1 time (50ms ON/100ms OFF) 3850ms OFF	Int. Bat/Run	200ms ON/800ms OFF
GPRS OK/Fix GPS	2000ms ON 2000ms OFF	Shutdown	5ms ON/2000ms OFF
		Idle/Sleep	twice (5ms ON/50ms OFF) 1895ms OFF

## 6. Support

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