

C4D / C4D CAN - INSTALLATION GUIDE

V 2.2

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Preface

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Please contact our technical support for current updates and supplemental information concerning the use and operation of this or other Mobile Devices Ingénierie 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

Performance	
ARM9 processor	208 MHz
SDRAM	32 Mbytes
Flash	128 Mbytes
Hardware watchdog	•
Positioning	
GPS Sirf Star III	•
GPS internal antenna	optional
GPS external antenna	•
Communication	
GSM/GPRS (quad band module)	•
GSM internal antenna Bi-band 900/1800 MHz	•
GSM external antenna (Quad band)	optional
Power supply	
Automotive power supply 8 to 32V	•
Charger + power path	•
Ignition detection	•
Internal battery (Li-ion)	1300 mA/h
Interfaces	
RS232 (1 full TX, RX, CTS, RTS / 1 TX, RX)	2
USB	•
Ignition	•
Alarm	•
Digital Inputs	3
Digital outputs	2
1-wire	•
3D accelerometer	3D - 2g / 8g
LED	4
Environmental	
Connector	microFIT 18 pins
Gps antenna	SMA
Operating temperature	-20/+60°C (contact us for extended range)
Dimensions (mm)	85x110x32

2. Hardware description

2.1. Front

1. Heat shrink connector (Molex)
2. Leds (1-4)
3. USB host
4. GPS antenna
5. GSM antenna hole (optional)



2.2. Back

6. Inner battery switch



→ Move the switch outwards (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).

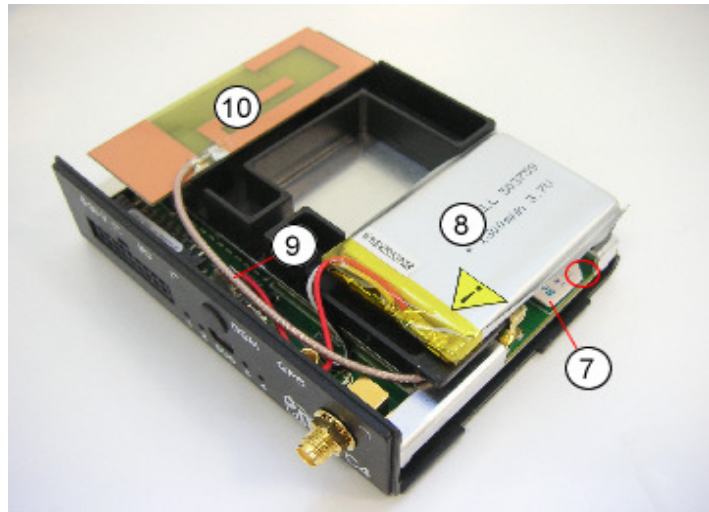


→ Move the switch inwards (O) to deactivate the internal battery.

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.

2.3. Inside

- 7. SIM holder
- 8. Battery holder
- 9. Battery connector
- 10. Internal GPS antenna



The SIM card PIN code must be deactivated.

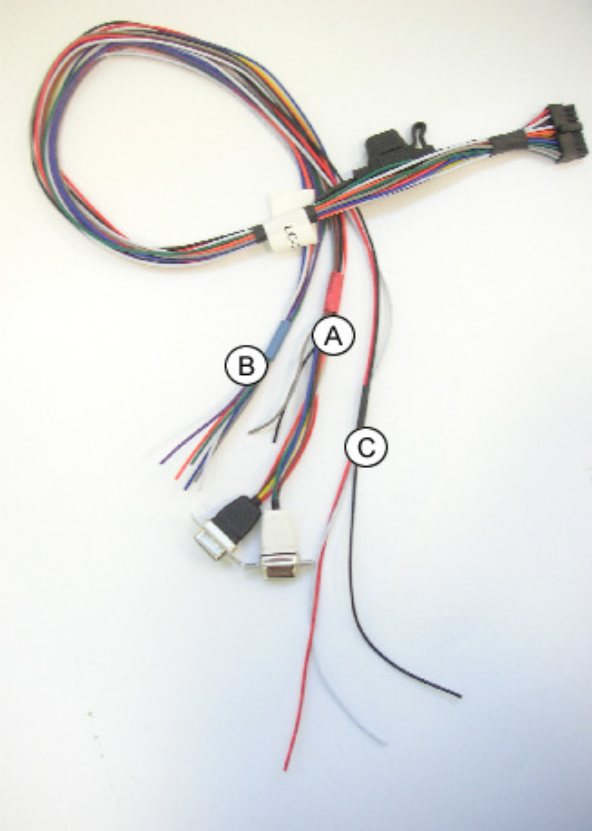
3. Installing the device

3.1. 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. In such a case it is necessary to connect an external antenna.

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.

3.2. Wires description

<p>Red bag (A) Serial port 1 (black) Maroon wire : Ground RS232 Yellow wire: TX - RS232 Orange wire: RX - RS232 Red wire: CTS RS232 White wire: RTS RS232</p> <p>Serial port 2 (white):</p> <ul style="list-style-type: none"> • Maroon wire: <i>Ground RS232</i> Green wire: <i>RX - RS232 / CAN High (pin #3)</i> Blue wire: <i>TX - RS232 / CAN Low (pin #2)</i> <p>Grey wire: <i>1-wire</i> Black wire: <i>1-wire</i></p>	
<p>Blue bag (B) Grey wire: <i>Output 1 (ground)</i> White wire: <i>Output 2 (ground)</i> Purple wire: <i>Input 3 (positive)</i></p> <ul style="list-style-type: none"> • Blue wire: <i>Input 2 (ground)</i> Green wire: <i>Input 1 (ground) /K-Line (provides 6V)</i> Orange wire: <i>Input 4/Alarm (ground)</i> 	
<p>Black bag (C) Red wire: <i>Permanent positive (8-30 V)</i></p> <ul style="list-style-type: none"> • Black wire: <i>Ground (battery)</i> White wire: <i>Ignition</i> 	

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.

3.3. Pin out description

Signal	C4D pin out	White DB9 Pin out
VBAT	18	
GND	17	
IGNITION	16	
ALARM	15	
1-Wire N	14	
1-Wire P	13	
RS232_RTS1	12	
RS232_CTS1	11	
RS232_RXD1	10	
RS232_TXD1	9	
GND	8	5
Input 1	7	
Input 2	6	
Input 3	5	
RS232_RXD2/CAN_H	4	3
RS232_TXD2/CAN_L	3	2
Output 1	2	
Output 2	1	



18	16	14	12	10	8	6	4	2
17	15	13	11	9	7	5	3	1

3.4. 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 1 and 2 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.

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.

4. Inputs activation threshold

Here are inputs activation thresholds (voltage).

- Input1 (negative) is active from approx. 0 to 2V (disabled if >2V)
- Input2 (negative) is active from approx. 0 to 2V (disabled if >2V)
- Input3 (positive) is active from approx. 2 to 3V (disabled if <2V)
- Input4 (negative) is active from approx. 0 to 2V (disabled if >2V)

Note: Range voltage on inputs is 0-30V

5. How to check if the device works – LED status

To check if the device is properly installed, check the 4 front LEDs.



LED₁ (Green) indicates the external power status. It must be ON.

- If the LED is OFF, the external power is missing / incorrect or the device runs on his inner battery.

LED₂ (Orange) indicates the software status. It must be ON.

- If the LED is ON the software is started.
- If the LED is OFF the software is not started.
- If the LED blinks the device is in sleep/idle mode.

LED₃ (Green) indicates the GPRS status. It must blink slowly (3 second ON, 3 seconds OFF).

- If the LED is OFF, the device is restarting. Wait for a few minutes.
- If the LED is OFF 3 seconds and ON shortly, the device can not connect to the GPRS network. Wait for 5 minutes then if the device still can not connect, check the SIM card the APN.
- If the LED is blinking in a different interval, the device is in update mode. Wait for at least 20 minutes.

LED₄ (Orange) indicates the GPS status. It must blink slowly (3 second ON, 3 seconds OFF).

- If the LED is OFF, the device is starting up. Wait for a few minutes.
- If the LED is OFF 3 seconds and ON shortly, the device can not get a fix from the GPS satellites.
 - Wait for a few minutes.
 - Check that the device can see the sky.
 - If the device is properly connected to an external antenna, check antenna orientation and position. In this case the device must be configured to use an external antenna.
 - Check that the vehicle is not in a covered area (underground parking...)
- If the LED is blinking in a different interval, the device is in update mode. Wait for at least 20 minutes.

6. Support

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