



USER MANUAL DCARS

Reference	User Manual DCarS
Version	B
Status	Release
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Document History

Version	Status	Date	Author	Description
A	Proposed	11/09/2024	S. KHADRAOUI	Creation of the document
B	WIP	03/10/2024	S. KHADRAOUI	Add Setup/Installation Part

Reference Documents

	Link	Description

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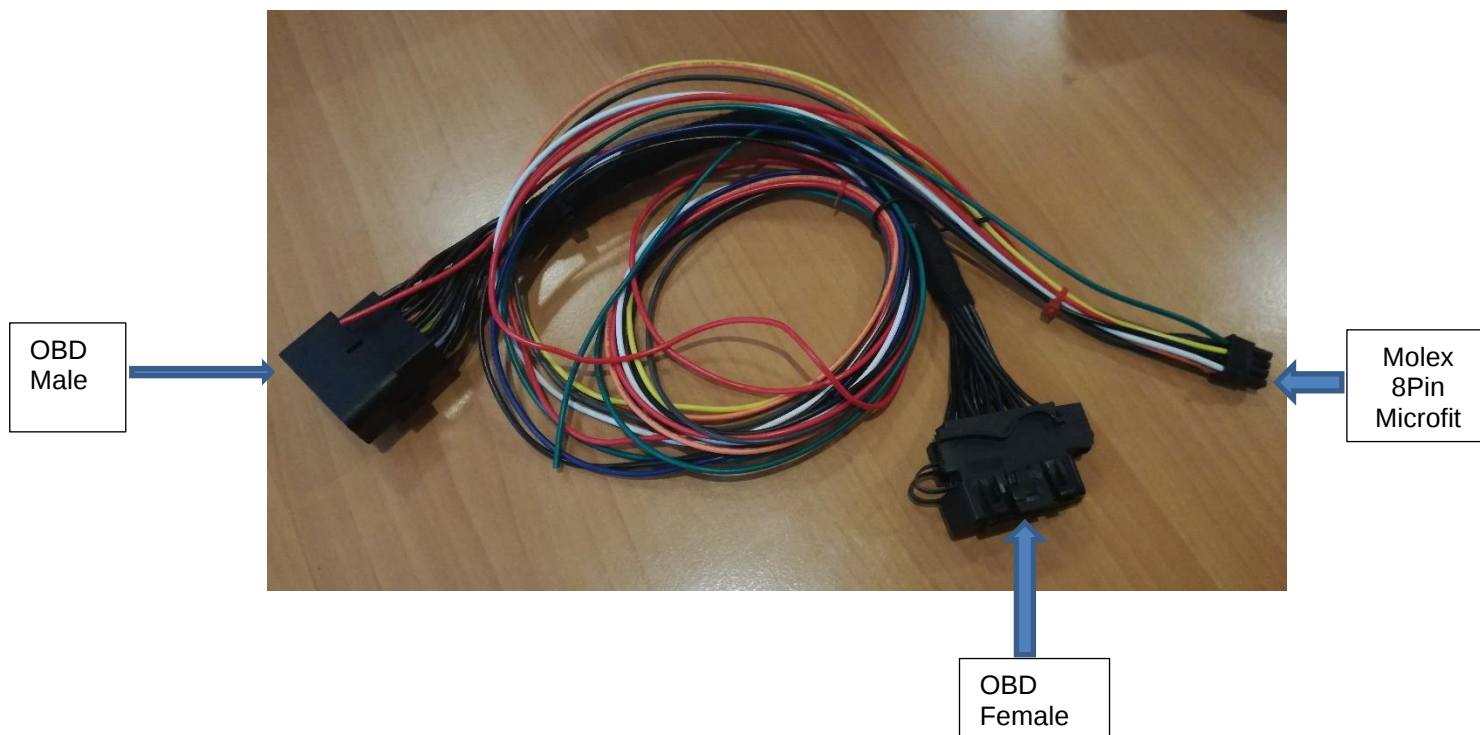
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1 DCarS Kit Description

The DCar-S box comes with a separate cable to plug into the OBD Port in the vehicle easily.



- **OBD male connector** goes to the OBD port in the vehicle.
- **Molex 8-Pin Microfit Plug** goes to the DCar-S Box into the 8-Pin connector
- **OBD female connector** is a spare connector to mimic the OBD port in the vehicle.



Remark: For custom harness you can refer to the connector's pinout

2 DCarS Setup and Installation

Remark:

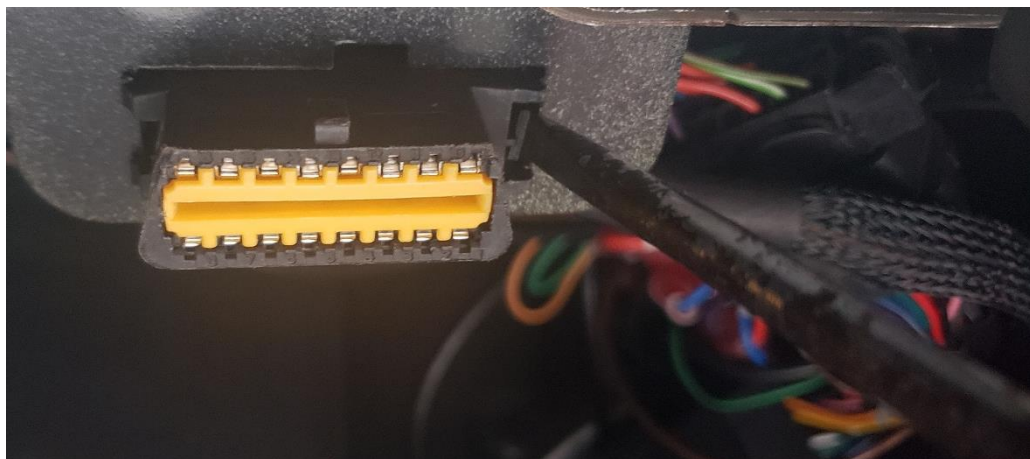
The DCarS will come preconfigured, if it's not the case then check with Dunasys Support Team.

1/ Note the UIN of the DCarS and which vehicle it will be associated with.

The UIN is identifier that will be used to trace the box during it's lifecycle.

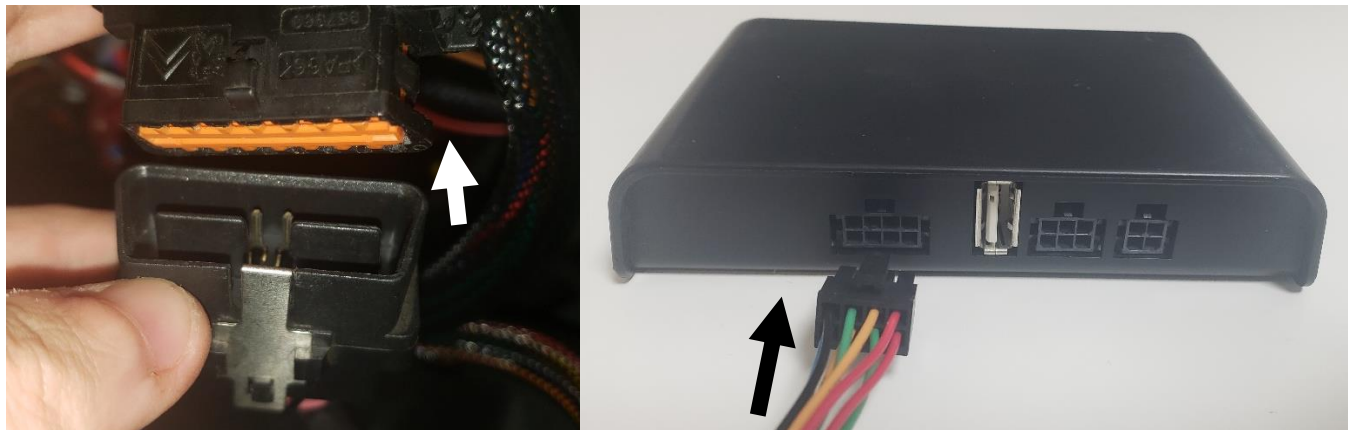


2/ Find the OBD's plug female into the car, then remove it from its socket and Use the OBD female from the Harness supplied to replace it with.



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3/ Plug the OBD Male of the harness supplied to the Original OBD female connector of the vehicle, on the other side lug the Molex connector to the DCarS Box



4/ Turn on the Ignition of the vehicle and check the LEDs of the box

- ⇒ The PWR LED (Green) should be blinking → Confirms the Box is well Powered.
- ⇒ The CAN LED (Blue) should be blinking → Confirms the Box receiving CAN Frames from OBD Port.
- ⇒ The OTA LED (Orange) should be fixed ON → Confirms the Box has Internet Connection.
- ⇒ The GPS LED (Red) should be fixed ON → Confirms the Box has a fixed GPS Position.



5/ Hide the box and the harness at a location of your desire as long as it's in the vehicle interior.

You might use double sided tape or zip ties to fix the box.

6/ Use your online platform or Dunasys platform to register the Box/Vehicle and check that all the info required are available.

For more info about this part, please contact Dunasys Support Team Directly at support@dunasys.com

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3 DCarS HMI

The DCar-S box has multiple user interfaces to check and ensure the full functionality of the box:

3.1 LED Status

The Leds on the DCar-S Box are the simplest way to check that the basic functions are working and not in dead or stop state.

⇒ **Green LED: Heartbeat LED**

Blinking at 1Hz confirms that the product is well powered, and the life cycle application is running.

⇒ **Blue LED: CAN Activity LED**

Blinking rapidly ensures that the box is receiving/sending CAN frames from/to the CAN Bus

⇒ **Red LED: GNSS Status LED**

Fixed ON means the box has a GPS fix.

⇒ **Orange LED: Internet Access LED**

Fixed ON means the box has a well-established data connection.

3.2 Bluetooth

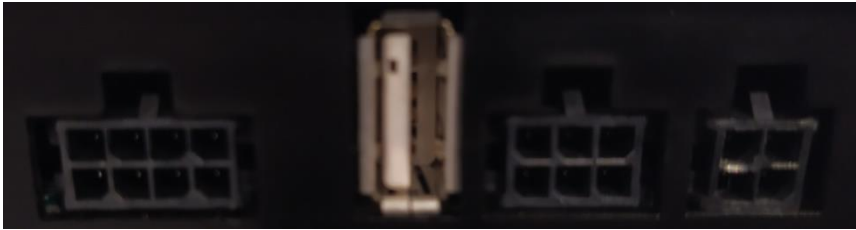
Custom services can be provided via Bluetooth to the client depending on what it is needed.

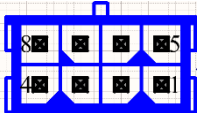
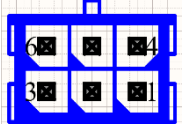
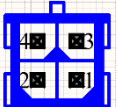
Eg: Accelerometer Data, GPS data, CAN data ...etc

3.3 Online Server Access

Data from the box are uploaded to a server online, where the final user can have access to these data depending on the requirements

4 Connectors and Pinout



Connector View	PIN #	Function	Mating Plug
	1	ADC Input	Molex 43025-0800
	2	CAN_1_H	
	3	CAN_0_L	
	4	GP Input/APC	
	5	+VBAT	
	6	CAN_1_L	
	7	CAN_0_H	
	8	GND	
	1	RS232_TX	Molex 43025-0600
	2	GPIO/1-Wire	
	3	GP Output / 5V Output	
	4	RS232_RX	
	5	GND	
	6	GND	
	1	GP Output (OC)/ Relay-1	Molex 43025-0400
	2	GP Output (OC)/ Relay-2	
	3	GP Output (OC)/ Relay-3	
	4	GP Output (OC)/ Relay-4	
USB Connector	N/A	USB Host or USB OTG	USB-A Female

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5 Safety And Hazards

Do not operate the DCarS product:

- In areas where blasting is in progress
- Where explosive atmospheres may be present including refueling points, fuel depots, and chemical plants
- Near medical equipment, life support equipment, or any equipment which may be susceptible to any form of radio interference.

In such areas, the DCarS **MUST BE IN AIRPLANE MODE OR POWERED OFF**. Otherwise, the product can transmit signals that could interfere with this equipment

At least 20 cm separation distance between the antenna and the user's body must be maintained at all times.

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6 Regulatory Compliance

6.1 CE

The device is CE compliant

6.2 RoHS

The device is RoHS compliant

6.3 E2

In progress

6.4 FCC

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.

6.4.1 § 15.21 Information to user

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

6.4.2 § 15.105 Information to user

NOTE: 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 instruction, 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 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 circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

6.4.3 § RF Exposure for Mobile Device– Intentional radiator

This device complies with FCC RF radiation exposure limits set forth for general population. This device must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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6.5 IC

6.5.1 § 8.4 RSS Gen / Notice License Exempt apartus

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

6.5.2 RF Exposure for Mobile device

This device complies with ISED radiation exposure limits set forth for general population. This device must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Le présent appareil est conforme aux niveaux limites d'exigences d'exposition RF aux personnes définies par ISDE. L'appareil doit être installé afin d'offrir une distance de séparation d'au moins 20cm avec les personnes et ne doit pas être installé à proximité ou être utilisé en conjonction avec une autre antenne ou un autre émetteur.