



Dolphin Connect Advanced Tracker DC200 User Manual

Version 1.1

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1. Product Overview

Dolphin Connect Advanced Tracker (DC200) is a high-performance, multi-interface telematics device developed by Dolphin Connect for professional fleet and connected vehicle use cases. Designed for seamless integration into a wide variety of vehicle types, the DC200 collects, processes, and transmits real-time data from multiple sources — including Engine Control Units (ECUs), wired sensors, wireless BLE devices, cameras, and driver monitoring systems.



The device supports 4G LTE, and a comprehensive range of communication interfaces such as CAN bus, RS232, K-Line, USB Type-C, and Bluetooth 5.2. Equipped with edge computing capabilities and customizable input/output ports via jumper settings, the DC200 enables flexible deployment, intelligent data handling, and real-time decision-making across various industries.

Additional features include a built-in accelerometer, geofencing, remote firmware updates via GPRS, and advanced sleep modes for power efficiency. Its compact design, IP54 environmental durability, and compliance with international safety and electromagnetic standards ensure that the Dolphin Connect Advanced Tracker performs reliably in both personal and commercial vehicles — even under harsh regional conditions such as those found in the Gulf Cooperation Council (GCC) region.

The Dolphin Connect Advanced Tracker is designed in accordance with the regulatory and technical requirements set by the Telecommunications and Digital Government Regulatory Authority (TDRA) of the United Arab Emirates.

2. Key Features

The Dolphin Connect Advanced Tracker (DC200) is equipped with a robust set of features tailored for real-time data collection, secure communication, and seamless integration with vehicle systems and third-party accessories. Key functionalities include:

- **Edge Computing Architecture**
Enables on-device, low-latency data processing for real-time analytics and event detection without relying solely on the cloud.
 - **Configurable Input/Output Interfaces**
Supports 2 analog inputs, 2–5 digital outputs, and 2 digital inputs, allowing flexible integration with external hardware components.
 - **Wireless & Wired Accessory Integration**
Features Bluetooth 5.2 and USB Type-C interfaces for reliable connection to BLE sensors, driver ID devices, and other peripherals.
 - **Remote Firmware Updates and Configuration**
Devices can be configured and updated over-the-air (OTA) through GPRS, reducing operational overhead and downtime.
 - **ECU Data Access**
Supports connection to vehicle Engine Control Units (ECUs) via CAN bus and K-Line to read available operational parameters.
 - **Intelligent Power Management**
Includes power-saving modes (Light and Deep Sleep) for efficient battery usage.
 - **Geofencing and Trip Monitoring**
Built-in support for circular, and polygonal. along with odometer tracking, allows for advanced route and zone management.
 - **Vehicle Engine State Detection**
Determines the vehicle's engine status using a combination of ignition signal and battery voltage monitoring. This multi-layered approach ensures accurate detection of engine ON/OFF states, which is critical for enabling efficient power management and sleep mode transitions.
 - **Jumper-Based Port Customization**
Allows hardware-level configuration of input/output ports through jumper settings, enabling users to select and customize port functions based on specific sensor or accessory integration needs. This flexibility makes the DC200 adaptable to a wide range of deployment scenarios.
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3. Physical Specifications



The Dolphin Connect Advanced Tracker is engineered with a robust polycarbonate enclosure, combining durability with a compact form factor. Its IP54-rated design and high thermal resistance ensure reliable operation in demanding vehicle environments. Equipped with internal antennas and dual-color status LEDs, the device delivers consistent connectivity and clear operational feedback (This will only work if there is GSM signal available) making it ideal for both personal and commercial automotive use.

Parameter	Specification
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Enclosure Material	Polycarbonate
Ingress Protection Rating	IP54
Device Dimensions	60 × 105 × 24 mm
Weight	100 grams
Status Indicators	2 LEDs (Red and Blue)
Resistance – Outer Enclosure	Up to 150 °C
Operating Temperature – Internal Components	–40 °C to +85 °C
Antenna	Built-in antennas for GNSS and GSM
Connectivity Interfaces	Bluetooth, GSM (Mobile Network), USB, Internet Messaging

4. Technical Specifications

The Technical Specifications define the DC200's electrical, environmental, and communication capabilities. It supports a wide input voltage range, multiple wired and wireless interfaces, internal antennas, and secure data transmission, making it suitable for professional vehicle tracking and integration.

Parameter	Specification
Power Supply Range	7V – 48V DC with overcurrent and overvoltage protection
Internal Battery	It uses vehicle power and also includes a backup battery – 250 mah (up to 5 hours)
GNSS Channels	Multi-constellation support
GNSS Sensitivity	–161 dBm (acquisition), –165 dBm (tracking)
GNSS Antenna	Internal, passive
GSM Antenna	Internal, passive
Network Support	4G LTE
GSM Bands	Quad-band GSM 850 / 900 / 1800 / 1900 MHz
eSIM Compatibility	Yes
Bluetooth Version	BLE 5.2
USB Interface	USB Type-C
Communication Ports	CAN bus ×1, RS232 ×1, K-Line ×1
Analog Inputs	1 (jumper configurable)
Digital Inputs	1 (jumper configurable)

Digital Outputs	1 (jumper configurable)
Internal Memory	8 MB
Accelerometer	Built-in, 3-axis, supports behavior monitoring
Geofencing	Circular, Polygon, and Line-based zones
Odometer	Supported
Remote Configuration & Updates	GPRS-based OTA configuration and firmware update
Sleep Modes	Deep Sleep / Light Sleep
Engine Mode Detection	Based on ignition, voltage, and accelerometer signals
MCU	ESP32-S3
Main Cellular Module	Quectel EC200EU (Region-specific variants)

5. Wiring & Relay Integration

The following table outlines the standard wire colors and their corresponding functions for the proper installation and integration of the Dolphin Connect Advanced Tracker.

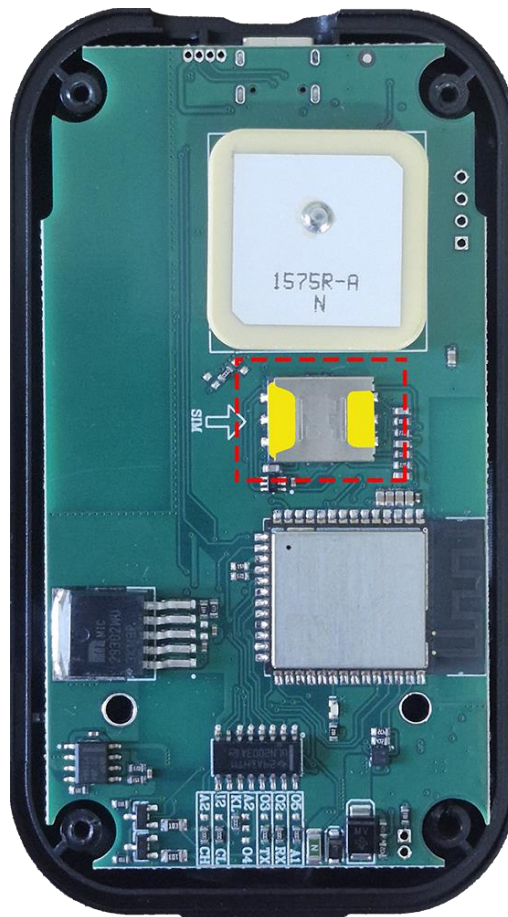
Wire Color	Primary Function	Alternative Functions
Purple	CAN H	Analog Input 2
Gray	CAN L	Digital Input 2
Brown	K-Line	Digital Output 4 / Analog Input 2
Orange	RX	Digital Output 2
Green	TX	Digital Output 3
White	Digital Output 1	—
Blue	Analog Input 1	Digital Output 5
Yellow	Digital Input 1 (Switch)	—
Red	Power Supply	—
Black	Ground	—

6. Installation Guidelines

To ensure proper installation and full eligibility for warranty and support, the following guidelines must be followed:

Pre-Installation Requirements:

- Before installing the tracker, insert a valid SIM card with an active data plan and sufficient credit.

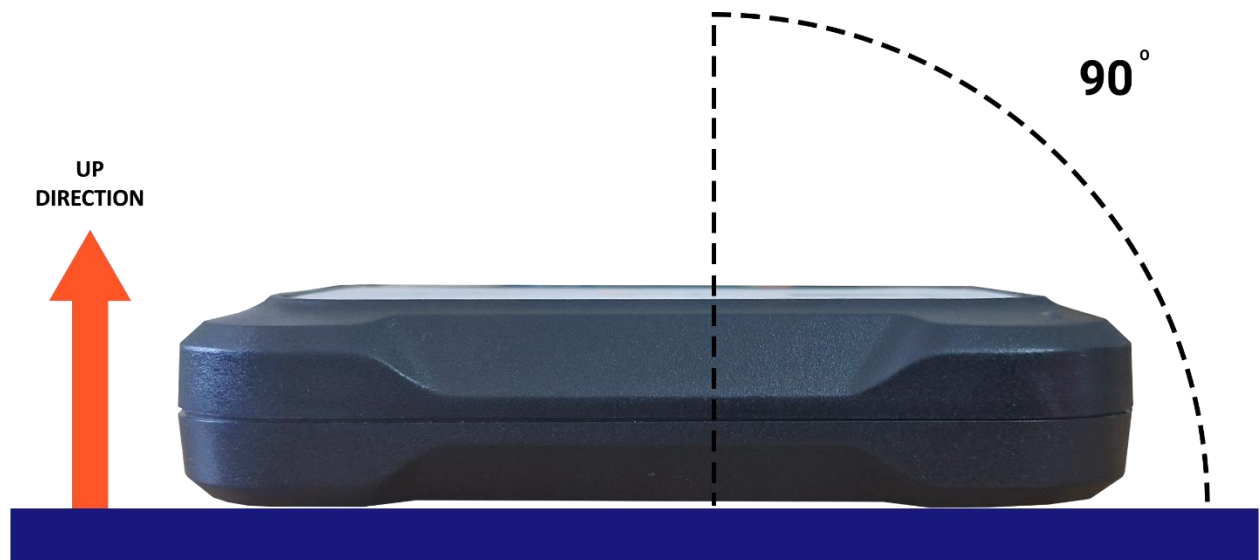


Device Placement Recommendations:

For best GPS/GNSS and behavior monitoring performance, install the tracker:

- Behind the dashboard or instrument cluster
- Behind the steering wheel frame
- Under the roof light panel
- Inside the trunk or under seats
- Away from direct sunlight or heat sources
- On a flat, horizontal surface without tilt
- Away from shock zones to avoid accelerometer misreadings

 Avoid placing the device in areas with high vibration, temperature extremes, or where signal reception may be blocked.



Mounting Orientation:

To ensure accurate accelerometer, the tracker must be mounted vertically or horizontally as shown below, with the "Up" direction aligned with the vehicle's vertical axis.

OBD Installation Option:

For DC200 variants that support OBD connectivity, the device can read ECU data directly via the OBD port.

- Locate the OBD-II port, typically under the steering column.
- Ensure the port is active and powered.
- If the OBD socket does not supply ignition state or is internally switched, use manual wiring to ensure ignition detection.



Final Wiring Step:

Once the device is fixed and orientation confirmed, proceed to connect wires based on the wiring diagram and pin definitions.

7. Power Optimization Modes

The Dolphin Connect Advanced Tracker (DC200) includes built-in power management features that reduce energy consumption and preserve vehicle battery life during idle periods:

- **Light Sleep Mode:**
Automatically engaged during short periods of inactivity (e.g., stoplights or brief parking). In this mode, the device reduces data transmission frequency while maintaining essential monitoring.
- **Deep Sleep Mode:**
Activated after extended periods of non-movement or ignition-off state. Most hardware modules are powered down, and the device only wakes periodically or upon predefined triggers.

These intelligent power-saving modes are essential for minimizing energy draw in both active fleets and parked vehicles, especially in applications with limited power resources.

8. Troubleshooting – LED Status Indicators

The Dolphin Connect Advanced Tracker (DC200) is equipped with 2 onboard LEDs that provide real-time visual feedback for system diagnostics:

LED Color	Fast Blink	Slow Blink	Steady for 5 Seconds	Steady Mode
Red	No GPRS network reception	GPRS network reception	Connected to server and data upload	Safe mode
Blue	No GPS connection	GPS connection	—	Safe mode

9. Initial Device Setup via Dolphin Connect Platform

After hardware installation is complete, go to <https://app.dolphinconnect.tech> and follow the steps below to initialize the device through the Dolphin Connect platform:

For a detailed step-by-step guide on using the Dolphin Connect application and platform features, please refer to the Platform User Guide.

- 1. User Authentication**

Launch the application and enter your Email to begin. Submit the verification code sent via Email to proceed with authentication.

- 2. Device Registration**

Input essential device details, including the IMEI, SIM card number, and a custom device name for easy identification.

- 3. Vehicle Profile Configuration**

Select the appropriate vehicle type and complete any additional required fields relevant to the asset being tracked.

- 4. Accessory Detection**

If compatible accessories (e.g., sensors or peripherals) are connected, they will be detected and displayed on this screen.

- 5. Activation and Configuration**

Before proceeding, ensure the vehicle's ignition is turned ON to enable communication. Tap

“Install” to initiate the configuration process. This step may take a few moments to complete.

6. **Completion and Confirmation**

Once setup is successful, a confirmation message will appear along with the remaining subscription period linked to the device.

The device is now fully connected to the Dolphin Connect ecosystem and ready for operation.

10. Safety Notices & Warnings

To ensure safe and proper operation of the Dolphin Connect Advanced Tracker (DC200), please follow the safety guidelines below:

General Safety

- Do not disassemble, modify, or open the device. Unauthorized alterations may void warranty and regulatory approvals.
- Do not operate the device if it has been physically damaged or exposed to excessive heat, moisture, or chemicals.
- Keep the device out of reach of children and untrained individuals.

Electrical Safety

- Ensure proper voltage input (7V – 48V DC) using a fused power line.
- Do not short-circuit the power supply lines. Doing so may damage the device or cause fire.
- Always disconnect the vehicle battery before performing electrical wiring.

Installation Safety

- Avoid installing the device near airbags, fuel lines, heating elements, or in high-vibration zones.
- Ensure the device is securely mounted on a stable and flat surface to avoid inaccurate sensor readings.
- Do not block or cover the internal antennas with metallic parts or foils.

RF Exposure

- This device contains GSM and Bluetooth radio modules. Keep a safe distance from sensitive medical equipment.

- The device complies with RF exposure limits set by international regulatory agencies when installed and operated correctly.

11. Servicing & Support

- Only qualified technicians or authorized service providers should perform installation, servicing, or repairs.
- In case of malfunction or suspected defect, do not attempt self-repair. Contact Dolphin Connect support: support@dolphinconnect.tech

12. Warranty Disclaimer

This product is covered by a limited hardware warranty against manufacturing defects and failures under normal use.

The warranty is provided to all buyers of the device.

It does not apply to damages caused by improper installation, misuse, unauthorized modifications, or operation outside the recommended conditions.

For warranty service or claims, please contact your point of purchase or Dolphin Connect support: support@dolphinconnect.tech