










# Dart2

CELLULAR 2G OR 4G LTE-M / NB-IOT

## FEATURES

-  High-precision GPS/GLONASS tracking device
-  Hardwired to permanent power for real-time tracking
-  Internal Backup Battery in case of loss of power or tampering
-  2 x Digital Inputs, 1 x Switched Ground Digital Output, 1 x Ignition Digital Input, Switched Power Out
-  Configure iButtons, RFID readers and Wiegand Interface for Driver ID
-  Accident and rollover detection, speeding, harsh braking, and more
-  Optional OBDII or Cigarette Lighter Power Harness available for Plug and Play Installation

## OVERVIEW

Feature-rich and affordable vehicle tracking device with customizable inputs/outputs, remote immobilization for fleet management, driver ID, driver safety and behavior monitoring, theft recovery, and more.

## APPLICATIONS



Fleet Management



Real-Time Vehicle Tracking



Theft Recovery



Driver ID



Driver Safety & Behavior



Accident & Rollover Detection



Remote Immobilization



Lone & Remote Worker Safety



Run Hours Monitoring



Preventative Maintenance



Digital Logbooking

## CONNECTIVITY

<b>2G</b>	2G: SARA-G350-02S-01 850/900/1800/1900 MHz
<b>4G LTE-M / NB-IoT</b>	uBlox SARA-R410M Modem operates on all major global LTE-M and NB-IoT bands.  Supported LTE bands: 1*, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 26*, 28 (*roaming bands)
<b>SIM SIZE &amp; ACCESS</b>	Internal Micro 3FF SIM

## LOCATION

<b>MODULE</b>	uBlox EVA-M8
<b>CONSTELLATION</b>	Concurrent GPS / GLONASS
<b>CHANNELS</b>	72 Channel High Sensitivity Receiver
<b>TRACKING SENSITIVITY</b>	-167dBm industry-leading tracking performance
<b>ASSISTNOW OFFLINE</b>	GNSS aiding data (such as ephemeris, time, coarse position) for a faster Time To First Fix (TTFF).
<b>LOW NOISE AMPLIFIER</b>	GPS signals are boosted by a unique low-noise amplifier (LNA) allowing operation where other units fail.

## POWER

<b>INPUT VOLTAGE</b>	8-36V DC (max)
<b>SELF-RESETTING FUSE</b>	Built-in self-resetting fuse makes installation simple and safe. Stringent automotive power "load dump" tests are conducted to ensure operation in the harshest electrical systems.
<b>OPERATING CURRENT</b>	~25/50mA when moving ~150mA battery charging
<b>SLEEP CURRENT</b>	<1mA
<b>BACK-UP BATTERY</b>	200mA LiPo internal backup battery pack

## MECHANICS/DESIGN

<b>DIMENSIONS</b>	L 95 x W 55 x H 17 mm
<b>WEIGHT</b>	79g
<b>HOUSING</b>	ABS Polycarbonate Plastic
<b>INSTALLATION</b>	12 Pin harness as standard. Optional OBDII or cigarette lighter power harnesses available for plug and play installation.
<b>OPERATING TEMPERATURE</b>	-20°C to +60°C (connected to external power)  At < 0°C and > +40°C the internal backup battery will not be charged as a safety precaution due to the dangers associated with charging batteries at extreme temperatures.
<b>GPS ANTENNA</b>	Internal
<b>CELLULAR ANTENNA</b>	Internal
<b>3-AXIS ACCELEROMETER</b>	3-Axis Accelerometer to detect movement, acceleration, high G-force events, and more.
<b>DIAGNOSTIC LED</b>	Diagnostic LED signifies operation status.
<b>FLASH MEMORY</b>	Store weeks of records if device is out of cellular coverage. Storage capacity for over 10 days of continuous 30-second logging.

## INTERFACES

<b>DIGITAL INPUTS</b>	2 x Digital Inputs with configurable pull-up/down 0-48V DC input range On/Off thresholds: Pull-up enabled: low at 0.8V, high at 1.0V Pull-down enabled: low at 2.0V, high at 2.4V Can be used for pulse counting
<b>DIGITAL OUTPUTS</b>	1 x Switched Ground Digital Output Easily wired up to switch external lights, relays, buzzers, etc. Can be used to immobilize a vehicle.
<b>IGNITION</b>	1 x dedicated ignition Digital Input 0-48V DC 5V on/off threshold
<b>SWITCHED POWER OUT</b>	3.5-4.5Vout Max current 200mA
<b>TTL INTERFACE</b>	Serial interface used to connect a Digital Matter RFID reader for Driver ID.
<b>1-WIRE® OR IButton®</b>	1-Wire® or "iButton®" can be used to read Driver ID tags. Readers available to suit multiple card formats.

## SMARTS

<b>AUTO-APN</b>	Auto-APN allows the device to analyze the SIM card and select the correct APN details from a list that is pre-loaded in the device's firmware.
<b>ACCIDENT &amp; ROLLOVER DETECTION</b>	Configure accident and rollover alerts triggered by extreme changes in velocity and orientation of vehicle or equipment. Second-by-second GPS data is saved on the device's flash memory, with a capacity of approximately 2 hours of data. In the event of an accident, a subset of the data (60 seconds before / 10 seconds after) is uploaded to the server automatically (if configured) or can be requested manually for a detailed reconstruction of the incident.
<b>DRIVER ID OPTIONS</b>	RFID, iButton® or Wiegand interface for Driver ID, access control, and logbooking.
<b>DRIVER SAFETY &amp; BEHAVIOR</b>	Monitor speeding, harsh acceleration, braking, cornering, idling, and more to improve safety and prevent unnecessary wear on vehicles.
<b>GEOFENCING</b>	Create custom geofences and alerts if an asset enters or leaves specific locations.
<b>GEOFENCE DOWNLOAD TO DEVICE</b>	Geofences can be downloaded directly to the device from Telematics Guru for enhanced location-based actions and alerts. Maximum of 20 Geofences with up to 30 points per geofence.
<b>IN-VEHICLE ALERTS</b>	Can be wired up to external buzzers or lights for in-vehicle alerts. Also features Built-in-Buzzer for alerts.
<b>LONE WORKER SAFETY</b>	Interface a variety of duress pendants to enable man-down alerts for lone worker safety monitoring.
<b>PREVENTATIVE MAINTENANCE</b>	Set reminders based on distance traveled and run hours to reduce maintenance and repair costs.
<b>REAL-TIME TRACKING</b>	Device remains continuously connected while on the move for real-time asset tracking.
<b>THEFT RECOVERY</b>	Switch to Recovery Mode in the case of theft or loss to activate real-time tracking at 30-second intervals for asset retrieval.
<b>REMOTE IMMOBILIZATION</b>	Digital outputs can be connected to a relay to enable remote immobilization of vehicles and equipment in the case of theft, abuse, or unauthorized usage.
<b>RUN HOUR MONITORING</b>	Calculate run hours and distance traveled (odometer) to understand and optimize asset utilization.
<b>SENSOR MONITORING</b>	Interface with a range of devices and switches for seatbelt detection, duress and panic buttons, lights, in-cab warning buzzers, and more.
<b>TAMPER ALERTS</b>	Instant alert if the device is removed from your asset or disconnected from its power source.

## DEVICE MANAGEMENT

### FLEXIBLE CONFIGURATION

Configure device parameters such as heartbeat rate, movement and accelerometer settings, and more to fit any tracking application.

### OEM SERVER

Manage, monitor, configure, debug, update, and restart devices remotely from our cloud-based device management system.

## INTEGRATION

### THIRD-PARTY INTEGRATION

Webhook, TCP or HTTPS, Direct and Data Splitting Integration Options

## SECURITY

### DATA SECURITY

Military-level AES-256 Encryption from device to OEM Server to protect the integrity and confidentiality of telematics data.

Data forwarded to third-party systems is sent via HTTPS for end-to-end security.

## WARRANTY

### MANUFACTURER'S WARRANTY

One year manufacturer's warranty.

## CERTIFICATIONS

Please contact us for a full list of compliance specifications and documentation for your region.

**4G** - FCC, ISED, ACMA (DoC), PTCRB, AT&T, CE (Doc)  
**2G** - ICASA, CE (DoC)



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Questions: [support@calchipconnect.com](mailto:support@calchipconnect.com)

TECH SPECS