Dart 2
Feature rich, affordable GPS tracking device

Home of IoT

The Dart 2 is a compact and economical, yet feature rich GPS/GLONASS tracking device available in 4G Cat-M1/NB-IoT.

FEATURES
- High Sensitivity GPS with LNA
- 3D Accelerometer
- Internal back-up Battery
- 1 x Ignition Input
- 2 x Digital Inputs
- 1 x Digital Output
- Easy to Install and Conceal
- Wired or Emulated Ignition Detection
- Geo-fencing and Alerts
- Plug-in 12 Wire Harness
- Driver ID Support: RFID, iButton or Wiegand

APPLICATIONS

Vehicle and fleet tracking

Powered asset tracking

Run hour monitoring

Tax and FBT reporting

Scheduled maintenance reminders

Anchoring and security of assets

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MECHANICAL SPECIFICATIONS

Compact Housing	The ABS plastic housing clips together to make provisioning devices simple and efficient
Dimensions	L 95 x W 55 x H 17mm
Operating Temperature	-20°C to +60°C[1] 1) On external power Below 0°C and above +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.
Harness	12 Pin Wiring Harness (included) OBDII Harness (optional) Cigarette Lighter Harness (optional)

POWER

Input Voltage	8V to 36V DC (max)
Operating Current	25-50mA average (when tracking) 145mA average (battery charging) Sleep current < 1mA
Back-up Battery	200mAh LiPo internal backup battery pack
Self-resetting fuse	The Dart 2 passes stringent automotive power "load dump" tests to ensure that it will continue to operate in the harshest electrical systems. A built-in self-resetting fuse makes installation easy and safe.

OTHER

Internal Memory	Sufficient memory to store over 50,000 records. Normally data is sent to the server immediately but if the device is out of range there is space to ensure no data is lost – for many weeks of driving!
3-axis accelerometer	Allows the Dart 2 to detect harsh driving events, and to go to 'sleep' when not moving, resulting in extremely low standby current.

CONNECTIVITY

SIM Size	Micro (3FF) size cellular SIM card
4G Modem	uBlox SARA-R410M Modem operates on all major global LTE-Cat-M1 and NB-IoT bands. These new low-power networks are specifically designed for IoT applications, providing great battery life. Supported LTE bands: 1-5, 6, 8, 12, 13, 17, 19, 20, 25, 26, 28

GPS TRACKING

GPS and Cellular Antenna	Internal GPS and cellular antennas tuned by RF laboratories for optimal performance. Having the antennas inside the housing makes for very simple and quick installation.
GPS/GLONASS tracking	Concurrent GPS and GLONASS tracking 72 channel high sensitivity receiver -169dBM industry leading tracking performance
AssistNow Offline	AssistNow Offline aiding data or extremely fast time-to-first-fix and performance in urban canyon environments.
Low Noise GPS Amplifier (LNA)	GPS signals are boosted by a special low-noise amplifier (LNA). This allows operation where normal units will fail to receive GPS signal.

INPUTS AND OUTPUTS

Ignition	Ignition digital input 0-48V DC 5V on/off threshold
2 x Digital Inputs	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
1 x Digital Output	1 x Switched Ground digital output, easily wired up to switch external lights, relays, buzzers etc. Can be used to immobilize a vehicle.

Switched Power Out	The Dart 2 can provide power to external sensors and devices via this power line, allowing for easy installation and doing away with the need for additional external power supplies. Voltage: 3.5V to 4.5V Maximum current: 200mA
Driver Identification	Driver ID via RFID reader, iButton or Wiegand interface. The Dart can be update from the server with lists of Drivers that are allowed to drive the vehicle. The Dart can be installed to immobilise a vehicle and only allow authorised drivers/operators to drive it.
TTL/Wiegand/ iButton	Multiple interfaces to support a variety of driver ID options or other devices.

FIRMWARE SMARTS

Auto-APN	Auto-APN allows the device to analyse the SIM card and select the correct APN details from a list that is pre-loaded in the device's firmware.
Text Message Setup	The Dart 2 can be sent text messages to set the APN, server and other details.
Flexible Logging Parameters	The Dart 2 trip logging is flexible and can be configured to log based on a variety of parameters including: Elapsed time, Distance travelled, Change in heading, Change in speed, On Stationary, Accelerometer events (harsh driving).

Harsh Driving	The Dart 2 automatically calibrates its built-in 3 axis accelerometer and uses this to detect harsh driving events: • Excessive acceleration • Harsh braking • Cornering at speed These events are logged in the Dart along with additional event statistics that allow back-end server platforms to perform sophisticated driver profiling and scoring.
Accident and Rollover Detection	The Dart 2 uses the built-in accelerometer to detect high G impacts such as accidents and rollovers and reports these events to the server for emergency alerting.
Accident Data	The Dart 2 keeps a second-by-second "black box" recording of valuable GPS and accelerometer data for a two hour window. This data can be automatically uploaded to the server when an accident is detected, or it can be requested manually.
Geo-Fences	The Dart 2 has the capacity to hold hundreds of geo-fences. A future firmware update will enable the device to download geo-fences from the server. The Dart could use this geo-fence information to: • Implement arrival and departure alerts • Implement speeding zones with audible warning alerts • Implement "No-go" and "Keep-out" areas • Automatically control outputs, e.g. to switch on warning lights when inside a special area

Ignition Detection	The Dart 2 can determine a trip has started based upon: • Wired Ignition input (voltage on/off) • Emulated Ignition (GPS movement) • Run Detect (Voltage Increases)