Dart3

Cellular LTE-M / NB-IoT

Robust and affordable vehicle tracking device with inputs/outputs, remote immobilisation for fleet management, driver ID, driver safety and behaviour monitoring, theft recovery, and more.

Real-Time Tracking
High-precision GNSS wired tracking device

Inputs/Outputs
1 x Ignition Digital Input
3 x Digital Inputs
1 x Analogue Input
1 x Switched Ground Digital Output
1 x Switched Power Out

Backup Battery
Internal Rechargeable Backup Battery in case of loss of power or tampering

Driver ID
Configure iButton®, Weigand or RFID readers for Driver ID

Driver Behaviour
Run hour monitoring, accident and rollover detection, speeding, harsh braking and cornering, and more

Remote Immobilisation
Immobilisation option to safely disable vehicles and equipment remotely

Flexible Installation
Wired or optional OBDII or 12V power harness available for plug-and-play installation

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Connectivity & Location

Cellular Module	Nordic nRF9160 Modem operates on all major global LTE-M and NB-IoT bands. Supported LTE bands: LTE-M (Cat-M1): B1, B2, B3, B4, B5, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B66 NB-IoT (Cat-NB1/NB2): B1, B2, B3, B4, B5, B8, B12, B13, B17, B19, B20, B25, B26, B28, B66
GNSS Module	uBlox EVA-M8Q
Constellation	Concurrent GPS / GLONASS / Galileo
Channels	72 Channel High Sensitivity Receiver
Tracking Sensitivity	-167dBM industry-leading tracking performance
*Location Accuracy	~2.0m CEP, 50%, 24 hours static, GPS, SBAS, -130dBm, > 6SVs
SIM Size & Access	Internal Micro 3FF SIM
GNSS Assistance	GNSS almanac and ephemeris data for greater sensitivity and position accuracy
Low Noise Amplifier	GPS signals are filtered and boosted by a SAW filter and low-noise amplifier (LNA) allowing operation where other units fail

Power

Input Voltage	8-36 VDC (max)
High-Performance Automotive Power Supply	Stringent power "load dump" tests are conducted to ensure operation in the harshest automotive electrical systems. Built-in self-resetting fuse makes installation simple and safe.
Operating Current	≈50mA when moving + ≈60mA while internal battery charging
Intelligent Power Management	Device enters sleep mode when vehicle is inactive to prevent battery drain
Sleep Current	<1 mA
Backup Battery	200 mAh LiPo internal rechargeable backup battery pack

Mechanics / Design

Dimensions	99 x 76 x 19 mm
Weight	83 g
Housing	ABS Polycarbonate Plastic
Installation	12 wire harness / 1m length supplied as standard OBDII and 12V Cigarette Lighter harness options available for quick and easy (or temporary) installs
Operating Temperature	-30°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
Cellular Antenna	Internal
GPS Antenna	Internal
3-Axis Accelerometer	3-Axis Accelerometer to detect movement, high G-force events, and more
Diagnostic LED	Diagnostic LED signifies operation status

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gps tracking solutions

Mechanics / Design *(continued)*

Flash Memory	Store weeks of records if device is out of cellular coverage. Storage capacity for over 10 days of continuous 30-second logging
On-Board Speed & Heading	The device continuously monitors speed and heading direction, allowing for over-speed alerts as well as updates on speed and heading changes
On-Board Temperature	The device reports internal temperature and prevents the internal battery charging in extreme temperatures. Internal temperature provides an indication of ambient temperature but may not always be precise.

Interfaces

Analogue Inputs	1 x Analogue input. 0-40V DC
Digital Inputs	3* x Digital Inputs with configurable pull-up/down 0-48V DC input range On/Off thresholds: Pull-up enabled: low at 0.4V, high at 1.9V Pull-down enabled: low at 0.8V, high at 2.2V Can be used for pulse counting * Digital Input 3 pin shared with Driver ID. Cannot be used in conjunction with Wiegand or TTL readers.
Digital Outputs	1 x Switched Ground digital output – 2A max Easily wired up to switch external lights, relays, buzzers, etc Can be used to immobilize a vehicle
Ignition	1 x dedicated ignition digital input 0-48V DC – 2.2V on/off threshold Can be used as a digital input if not required
Switched Power Out	3-5 Vout Max current 500mA
TTL Interface	Serial interface used to connect a Digital Matter RFID reader for Driver ID
Wiegand	Enables easy integration with a variety of RFID card types and readers
1-Wire® or iButton®	1-Wire® or iButton® can be used to read Driver ID tags. Readers available to suit multiple card formats.

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
Accident & Rollover Detection	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.
Driver ID Options	RFID reader, iButton®, or Wiegand interface for Driver ID, access control, and logbooking
Driver Safety & Behaviour	Monitor speeding, harsh acceleration, braking, cornering, idling, and more to improve safety and prevent unnecessary wear on vehicles
Geofence Alerts	The server can use device location to create geofences and alerts if an asset enters or leaves designated locations
Geofence Download to Device	Geofences can be downloaded directly to the device from Telematics Guru for enhanced location-based actions and alerts. Maximum of 500 Geofences with up to 100 points per geofence.

Smarts *(continued)*

GPS Jamming Detection	GPS Jamming or Interference can be detected and alerted on
In-Vehicle Alerts	Can be wired up to external buzzers or lights for in-vehicle alerts
Lone Worker Safety	Interface a variety of duress pendants to enable man-down alerts for lone worker safety monitoring
Preventative Maintenance	Set reminders based on distance travelled and run hours to reduce maintenance and repair costs
Real-Time Tracking	Device remains continuously connected while on the move for real-time asset tracking
Remote Immobilization	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
Run Hour Monitoring	Calculate run hours and distance travelled (odometer) to understand and optimize asset utilization
Sensor Monitoring	Interface with a range of devices and switches for seatbelt detection, duress and panic buttons, lights, in-cab warning buzzers, and more
Tamper Alerts	Instant alert if the device is disconnected from its power source
Theft Recovery	Switch to Recovery Mode in the case of theft or loss to activate real-time tracking for asset retrieval

Device Management

Flexible Configuration	Configure device parameters such as position update rate, movement, and accelerometer settings, and more to fit any tracking application
Device Management Platform	Manage, monitor, configure, debug, update, and restart devices remotely from our cloud-based device management system
Configuration App	Configurable with DMLink provisioning tool

Integration

Third-Party Integration	TCP Direct or HTTPS Webhook

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

Warranty	Two-year manufacturer's warranty PLUS additional two-year half price replacement IOTrack warranty

Certifications

Certifications	FCC, ISED, CE, ACMA RCM, EMC, RoHS Please visit Digital Matter Support Homepage for a full list of compliance specifications and documentation for your region

* Positioning accuracy specifications are provided by the GNSS supplier and reflect ideal conditions. Device configuration, installation, environmental conditions, augmentation services, and many other factors may lead to variations in positioning accuracy.

For manufacturer's website see Digital Matter and device page Dart3

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