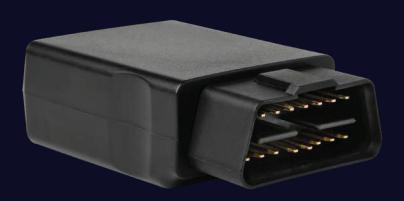
# TAROSOFTWARE

# BALLAST 40

### LTE-M (Cat-M1)/NB-IoT

Compact and affordable vehicle tracking device featuring simple plug-and-play installation and backup battery for real-time fleet management, driver safety and behavior monitoring, theft recovery, and more



### (P)

#### Real-Time Tracking

High-precision GPS/GLONASS tracking device plugs into existing OBDII ports



#### **Backup Battery**

Internal backup battery – if the device is removed from power it will continue to track for a period of time



#### **Critical Alerts**

Unplugged/power loss alerts to notify users of device removal, tampering, unauthorized trips, or theft



#### **Driver Behavior**

Speeding, harsh braking and cornering, accident and rollover detection



#### **Run Hour Monitoring**

**Electronic Odometer Calculations** 



#### **Movement-Based Tracking**

Accelerometer for adaptive and movement-based tracking



#### Plug-and-Play

Plug and play or splitter installation options for covert install

## Connectivity

	Nordic nRF9160 Modem operates on all major global LTE-M and NB-loT bands
Cellular Module	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
SIM Size & Access	Internal Nano 4FF SIM

### Location

GNSS Module	ublox EVA-M8Q with TCXO	
Constellations	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	
GNSS Assistance	GNSS almanac data for greater sensitivity and position accuracy	
Low Noise Amplifier	GPS signals are boosted by a unique low-noise amplifier (LNA) allowing operation where other units fail	

<sup>\*</sup>Results vary based on real world conditions. Device configuration, installation, environmental conditions, augmentation services, and many other factors may lead to variations in positioning accuracy.

### **Power**

Input Voltage	8-33V DC (max). OBDII connector draws power from vehicle's OBD port.
Self-Resetting Fuse	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.
Operating Current	~25/50mA when moving
Sleep Current	<1mA
Backup Battery	200mAh LiPo internal backup battery pack

# **Mechanics / Design**

Dimensions	71 x 46 x 24 mm (2.8 x 1.81 x 0.94)		
Weight	48 g (1.69 oz)		
Housing	ABS Polycarbonate Plastic. Non-branded housing for optional white-labeling.		
Operating Temperature	-30°C to +60°C		
Installation	OBDII standard connector draws power from the OBDII port to operate		
Cellular Antenna	Internal		
GPS Antenna	Internal		
RF Antenna	Internal		
3-Axis Accelerometer	3-Axis Accelerometer to detect movement, high G-force events, and more		
Diagnostic LED	Diagnostic LED signifies operation status		
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 and Heading	The device continuously monitors speed and heading, allowing for over-speed alerts as well as updates on speed and heading changes.		
The device reports internal temperature and prevents the internal battery from charging in temperatures. Internal temperature provides an indication of ambient temperature but may always be precise.			

### **Smarts**

Auto-APN	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	
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 c pacity of approximately 2 hours of data. In the event of an accident, a subset of the data (60 secon 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 Safety & Behavior	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	
Preventative Maintenance	Set reminders based on distance traveled 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	
Run Hour Monitoring	Calculate run hours and distance traveled (odometer) to understand and optimize asset utilization	
Tamper/Removal Detection	Critical 'unplugged/power loss' alerts to notify users of device removal, tampering, unauthorized trips, or theft	
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 DM-Link provisioning tool

# Integration

# Security

Data Security	Military-level AES-256 Encryption from device to Device Manager 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