# TTU-3640™

## Weatherproof Telematics Gateway Built for Rugged Environments

The TTU-3640™ is a next-generation telematics gateway built for extreme environments. Providing enterprise applications and fleet features utilizing both cellular and peripheral connectivity (Bluetooth/ Wi-Fi) combined with our leading ECU (Engine Control Unit) interface to deliver instant vehicle updates for both light and heavy duty vehicles.

### Features

**LTE Cat 1 + Bluetooth + Wi-Fi Connectivity**
**IP67 Rated Enclosure**
**Advanced Peripherals Support**
**Battery Operated/Powered**
**Dual-Vehicle Bus Interface**

### Software/Service

PEG™ Embedded Intelligence Engine (included)
PULS™ Device Management (included)
CrashBoxx™ (optional)

### Accessories

TTU Peripherals
Host Serial Devices
I/O Cables

### Related Products

LMU-4500
HMU-3640
TTU-2840XT

### Market Applications

Harsh Environment Fleet
Transportation & Logistics
Industrial Vehicle Monitoring


T3640Q319DS V2-B

Cal/Amp®

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# TTU-3640™ Technical Specifications

## Cellular/Network

| | |
|---|---|
| North American Variant | |
| LTE Cat 1 | 1900 (B2)/AWS 1700 (B4)/850 (B5)/700 (B12) MHz |
| HSPA/UMTS | 850 (V)/1900 (II) MHz |

## Data Support

SMS, UDP, TCP, CalAmp Telematics Cloud API

## Satellite Location (GNSS)

| | |
|---|---|
| Constellation Support | Hybrid GPS, GLONASS, SBAS Engine (WAAS, EGNOS, MSAS) |
| Channels | 55 Channel |
| Tracking Sensitivity | -167 dBm |
| Acquisition Sensitivity | -156 dBm (hot start)<br>-148 dBm (cold start) |
| Location Accuracy | ~2.0m CEP Open Sky (SBAS 24 hours static) |
| Location Update Rate | Up to 4 Hz |
| AGPS Location assistance capable | |

## Comprehensive I/O

| | |
|---|---|
| Ignition Input | 1 (fixed bias) |
| Digital Inputs | 4 (high/low bias selectable 0-30 VDC) |
| Digital Outputs | 3 (open collector relay 150mA) |
| Analog Inputs | 1 external ADC inputs |
| 1-Wire® Interface | 1 (driver ID/temperature sense) |
| DC Power Outputs | 1 switched VIN, 2 (reference voltage 3.3V) |
| Accelerometer | Built in, triple-axis (driver behavior, impact detection, motion sensing, tilt detection) |
| Status LEDs | 4 (GPS, cellular, VBUS, LAN) |
| Serial Interface | 2 TTL ports |

## Certifications

| | |
|---|---|
| Industry Certifications | FCC, IC, PTCRB, RoHS |

## Device Management

| | |
|---|---|
| PULS™ | Monitor, manage, upgrade firmware, configure and troubleshoot devices remotely |

## Embedded Intelligence Engine

| | |
|---|---|
| PEG™ | Update device functionality or develop new on the edge applications |

### CALIFORNIA PROPOSITION 65

**WARNING:** This product can expose you to chemicals including Carbon black and Nickel, which are known to the State of California to cause cancer, and including Bisphenol A and 1,3-Butadiene, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

## Electrical

| | |
|---|---|
| Operating Voltage | 12/24 VDC Vehicle Systems<br>9-30 VDC (start-up, operating)<br>7-32 VDC (momentary) |
| Power Consumption | Typical 500uA @ 12V (deep sleep)<br>Typical 15mA @ 12V (radio-active sleep)<br>Typical 100mA @ 12V (active tracking with GPS and cell enabled) |

## Battery Pack

| | |
|---|---|
| Battery Capacity | Up to 5200 mAh |
| Battery Technology | Lithium-Ion |
| Charging Temperature | 0° to +45° C |

## Environmental

| | |
|---|---|
| Temperature | -30° to +60° C (connected to primary power)<br>-10° to +60° C (operating on internal battery)<br>-20° to +25° C ≤ 6 months (long term storage with battery) |
| Humidity | 95% RH @ 50° C non-condensing |
| Shock and Vibration | U.S. Military Standards 202G, SAEJ1455 |
| ESD | SAEJ1113-13 (4KV Limit) |
| Ingress Protection Rating | IP67 |

## Physical/Design

| | |
|---|---|
| Dimensions | 7.1 x 3.4 x 2.2" (178.7 x 86.1 x 55.9 mm) |
| Weight | 12 oz. (340g) (w/ 5200mAh Battery) |

## Connectors/SIM Access

| | |
|---|---|
| Vehicle BUS I/F | 34-Pin 2.5mm Pitch Sealed |
| SIM Access | Internal (2FF SIM) |

## Interface Standards

| | |
|---|---|
| Bluetooth | Classic Bluetooth v2.1+EDR and BLE v4.0 |
| Wi-Fi | 802.11 a/g/b/n client mode |
| Heavy Duty Truck Data | J1939, J1708 |
| Light Duty Vehicle Data | J1850 PWM, J1850 VPW, SW-CAN<br>ISO 9141-2, KWP 2000, ISO 15765 CAN |

## Product Options

RS-232 on Aux 2

I/O wiring harness

200, 1000 mAh Lithium-Ion backup battery