# BoltGATE 10-12

**Multi-service IoT Edge Gateway - Rolling Stock and Automotive, LTE Cat 1**


- **Rolling Stock and Automotive Certifications**
- **Internal LTE Cat 1, Wi-Fi, BT, GNSS, CAN**
- **IP67**
- **Internal UPS**
- **ARM Powered**
- **IoT Ready**
- **Expandable**
- **Open Platform**
- **Customizable**

## Features

**ARM Powered** - Powered by TI AM335x CPU: optimum performance for intensive workloads at just 2.6W
**IoT Ready** - Breadth of connectivity options: carrier certified LTE Cat 1 cellular modems for multiple geographies, Wi-Fi, BLE, Fast Ethernet, including CAN bus ports, optoisolated digital I/Os, protected serial ports
**Internal UPS** - An internal, extended temperature battery protects the device from unexpected power interruptions and allows a safe shutdown
**Rolling Stock and Automotive Certified** - Suitable for rugged Rolling Stock and Automotive applications is certified for EN50155, EN45545 (Fire and Smoke) and E-Mark
**Cloud Certified** - Seamless integration with Eurotech Everyware Cloud, Microsoft Azure, AWS IoT Core and other Cloud Services
**Open Platform** - Provides a Java/OSGi gateway middleware, to free the developer from proprietary solutions
**Customizable** - Flexible: personalization and full customization options are available, ranging from branding ("skin" and color) to deep HW/SW configurations

## Description

The BoltGATE 10-12 is a Multi-service IoT Edge Gateway designed to deliver LTE connectivity to rolling stock, automotive and rugged applications. Based on the TI AM335x Cortex-A8 (Sitara) processor family, with 1GB of RAM, 8GB of eMMC and a user-accessible microSD slot, the BoltGATE 10-12 is a low power gateway suitable for demanding use cases: it supports a 9 to 36V power supply with transient protection and vehicle ignition sense, while providing protected serial ports, CAN bus and isolated digital interfaces.

Certified for Rolling Stock and Automotive applications, the BoltGATE 10-12 is also suitable for Heavy-Duty applications, with its metal enclosure and rugged connectors, providing an IP67 protection and thanks to OT4 temperature range (-40 to +70°C).

A unique feature of the BoltGATE 10-12 is an internal battery that protects the device from power interruptions and allows for a safe shutdown.

The BoltGATE 10-12 features a wide range of connectivity capabilities: it integrates an internal LTE Cat 1 cellular modem with dual Micro-SIM support, Wi-Fi, Bluetooth Low Energy, Fast Ethernet ports, and an internal GNSS with Untethered Dead Reckoning. The BoltGATE 10-12 is equipped with a TPM 2.0 technology which provides cutting-edge security features that protect the system integrity and authenticity against unauthorized manipulations.

Expansion options include external, rugged cellular modules for global use that are certified by leading carriers, a LoRa LPWAN Gateway unit, and a DAQ unit that provides analog input and more DI/O ports.

The BoltGATE 10-12 is enriched with Everyware Software Framework (ESF), Eurotech's IoT Edge Framework, that supports ready-to-use field protocols (including Modbus, OPC-UA, S7), MQTT connectivity, a web-based visual data flow programming (ESF Wires) and deep configuration. ESF is a commercial, enterprise-ready edition of Eclipse Kura. ESF is also integrated with Everyware Cloud (EC), Eurotech's IoT Edge Management Platform (separately available), enabling advanced diagnostics, provisioning, and full remote device access and management.

Used stand-alone, or in conjunction with EC, the BoltGATE 10-12 provides a fast go-to-market solution for IoT projects of any size.

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## Ordering Code: BTGATE-10-12-XX

| XX | | -66 | -66U |
|---|---|---|---|
| **PROCESSOR** | CPU | TI AM3352 1GHz, 1 Core | |
| **MEMORY** | RAM | 1GB DDR3 | |
| **STORAGE** | Embedded | 8GB eMMC | |
| | Other | 1x microSD Slot (Service Panel) | |
| **I/O INTERFACES** | Ethernet | 2x 10/100Mbps on M12 D-coded | |
| | USB | 2x Host 2.0 (Noise and Surge Protected) - Type A (Service Panel) | |
| | Serial | 1x RS-422/485 (Protected and Isolated); 1x RS-232/RS-485 (Surge Protected); RS-485 Termination and Fail-safe Resistors; 1x Serial Console TTL (Service Panel) | |
| | CAN 2.0B | 2x CAN bus with 5V (100mA) Power Out | |
| | Digital I/O | 2x Digital Input 36V, 1KV Optoisolated - 2x Digital Output (40VAC/DC), 500mA Sink, 1KHz Max Switching | |
| **RADIO INTERFACES** | Internal Cellular | LTE Cat 1 (EU) with 2G/3G Fallback | |
| | GNSS | Internal (72 channels GPS, Galileo, GLONASS, BeiDou) - Untethered Dead Reckoning | |
| | Wi-Fi / BT | 802.11a/b/g/n, BLE 4.2 | |
| | Antennas (External) | 1x SMA GPS, up to 2x SMA Cellular, up to 2x RP-SMA Wi-Fi/BT | |
| **OTHER** | RTC | Yes (Supercap Backup) | |
| | Ext. Watchdog | Yes | |
| | TPM | TPM 2.0 | |
| | Sensors | Temperature, 3-axis Digital Accelerometer, 3-axis Digital Gyroscope | |
| | LEDs | 1x Power, 5x Programmable | |
| | Buttons | 1x System Reset, 1x Programmable (Service Panel) | 1x System Reset, 1x UPS Reset, 1x Programmable (Service Panel) |
| | SIM Slot | 2x Micro-SIM (Service Panel) | |
| **POWER** | UPS Function | No | Integrated Ext. Temp. Li-Ion Battery (3.65V, 4000mAh), Enabling Safe Shutdown and Power State Restore |
| | Input | Nominal: 24 VDC (Railways: EN50155 Class S1); Nominal: 12 or 24 VDC (Automotive); Vehicle Ignition Sense; Range: 9 to 36 VDC with Transient Protection; Vehicle Ignition Sense | Nominal: 24 VDC (Railways: EN50155 Class S3); Nominal: 12 or 24 VDC (Automotive); Vehicle Ignition Sense; Range: 9 to 36 VDC with Transient Protection; Vehicle Ignition Sense |
| | Consumption | 2.6W Idle, 15W Max | 2.6W Idle, 30W Max |
| **ENVIRONMENT** | Operating Temp | EN 50155 OT4 (-40 to +70°C) | |
| | Storage Temp | -40 to +85°C | |
| **CERTIFICATIONS** | Regulatory | CE | |
| | Safety | EN 62368-1 | |
| | Vertical | E-Mark, EN50155, EN45545 (Fire and Smoke) | |
| | Environmental | RoHS3, REACH | |
| | Wi-Fi / BT Radio | RED | |
| | Cellular Radio | RED | |
| | IoT Platform | Microsoft Azure Certified, AWS IoT Core Qualified, Everyware Cloud Native | |
| | Ingress | IP67 | |
| **MECHANICAL** | Enclosure | Material: Aluminium - Color: Black Anodized | |
| | Dimensions | 150x224x62mm (LxWxH) - With SMA Connectors, Including Integrated Mounting Bracket | |

## Software

| | | |
|---|---|---|
| **SOFTWARE** | OS | Eurotech Everyware Linux |
| | SDK | Yocto-based Eclipse Tooling, Azul Java |
| | IoT Framework | Everyware Software Framework (Java/OSGi) |