



## Product Description

In the world of IoT, everything starts at the edge, with the devices and the data they generate: that's The First Mile of IoT™. Start your IoT journey from The First Mile with Bravo, the complete, ready-to-use Telit evaluation kit.

The next generation of Telit IoT evaluation kits, Bravo is compatible with the most common open-hardware platforms. The kit features Telit ME910C1-WW, one of Telit's flagship modules with broad frequency band coverage and LTE-M and NB-IoT support with 2G fallback. Bravo includes three Bosch Sensortec high-performance motion and environmental smart sensor chips to make Bravo a complete IoT development platform.

Bravo can be used either alone or coupled with an external CPU. In a standalone mode, Bravo can use Telit's powerful AppZone API and running application software directly on the module integrated application processor, which allows the development and execution of applications on the module CPU itself. This kit can also connect to Arduino or Raspberry Pi, the two most popular and easy-to-use open-hardware platforms. It is ideal for experimenters and seasoned designers who require a complete and affordable platform, making IoT development fast and easy to deploy.

## Key Benefits

- Ideal for rapid IoT application design; most hardware building blocks are readily available
- Arduino stackable (UNO, Zero, Leonardo, Yun, etc.)
- Raspberry Pi stackable (all models of Zero, 1, 2, 3 and 4)
- Mounts ME910C1-WW module, one of Telit's flagship modules, featuring LTE Cat M1/NB1 and GSM/GPRS connectivity
- High-performance Bosch Sensortec motion and environmental sensors, providing accelerometer, gyroscope, magnetometer, temperature, pressure, humidity and volatile organic compounds (VOC) information
- Smooth software integration with dedicated libraries; can control external sensors easily with few lines of code
- Access to USB and UART module communication ports (UART ports either directly to or through USB to serial converter)
- Ready for OneEdge onboarding. OneEdge is Telit's award-winning, module-integrated software and services suite that accelerates development and simplifies management of IoT solutions

### AVAILABLE FOR

- EMEA
- North America
- Latin America
- APAC
- Korea
- Australia



Complete, Ready to Use Access to the Internet of Things



## Bravo

### Product Features

- Powered either from a computer USB port, external power supply or Li-ion battery (3.7 V, minimum capacity 700 mAh)
- High-efficiency battery charger circuit\*
- Built-in wideband cellular antenna
- SMA receptacle for external GNSS antenna with LNA supply
- High-performance, low-power and low-noise Bosch BH160B, BMM150 and BME680 motion and environmental sensors:
  - BHI160B 6-axis motion sensor (accelerometer, gravity, gyroscope, tilt detector, etc.) with integrated hub
  - BMM150 3-axis digital geomagnetic sensor with magnetic range of  $\pm 1300 \mu\text{T}$  (x, y-axis) and  $\pm 2500 \mu\text{T}$  (z-axis)
  - BME680 temperature (-40–85°C), gas, pressure (300–1100 hPa) and humidity (0–100%) sensor
- Connectors exposing module pins for easy debugging and peripheral integration:
  - UART (directly or through USB to serial converter)
  - SPI
  - GPIO pins
  - ADC
  - Digital Voice Interface (DVI)
- Module UART access through FTDI adapter
- Three LEDs and two pushbuttons
- Dimensions: 85x135 mm

\*Battery pack not included

### ME910C1-WW Key Features

- 3GPP Rel. 13 compliant module supporting LTE Cat M1/NB1 and GSM/GPRS
- Power Saving Mode (PSM) and extended Discontinuous Reception (eDRX) allowing longer battery operation
- LTE bands (MHz): B1 (2100), B2 (1900), B3 (1800), B4 (AWS 1700), B5 (850), B12 (700), B18 (800), B19 (800), B20 (800), B26 (850), B28 (700)
- 2G bands: (B2 (1900), B3 (1800), B5 (850), B8 (900))
- Approvals: PTCRB, GCF, RED, FCC/IC, RCM, Jate, Telec, CCC, AT&T, Verizon, NTT DoCoMo, Deutsche Telekom, Anatel\*\*, Telstra\*\*
- IPv4/IPv6, stack with TCP and UDP protocol
- OMA Lightweight M2M (Lwm2m)
- Over-the-Air firmware update (FOTA)
- SSL
- Embedded GNSS (GPS, GLONASS, Beidou, Galileo)
- Interfaces: USB 2.0, UART, SPI, I2C, 1.8 V/3 V SIM interface
- Power supply voltage: 3.8 V nominal (range: 3.4–4.2 V)
- IoT AppZone Integrated SDK
  - Eclipse IDE
  - AppZone C on-module software development environment
  - Available memory: >4 MB Flash, >30 MB RAM

\*\*Certification ongoing

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