On-Board LTE Mezzanine for the DragonBoard 410C

Introducing the Shiratech LTE and Sensor Mezzanine, the easiest and fastest way to add LTE connectivity and full context awareness to your product.

MAIN FEATURES

CELLULAR MODEM QUECTEL EC25 LTE

- LTE CAT 4 Max 150Mbps (DL) 50Mbps (UL).
- LTE category 4 module optimized for M2M and IoT applications.
- Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage.
- Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment.
- MIMO technology meets demands for data rate and link reliability in modem wireless communication systems.

ON-BOARD SENSOR KEY FEATURES

BOSCH BNO055:

Outputs fused sensor data – Quaternion, Euler angles, Rotation vector, Linear acceleration, Gravity, Heading.

- 3 sensors in one device – triaxial 16bit gyroscope, triaxial 14bit accelerometer and full performance geomagnetic sensor.
- Intelligent power management – normal, low power and suspended modes.

ANALOG DEVICE ADUX1020:

- Multifunction photometric sensor and signal conditioning.
- Fully integrated AFE, ADC, LED driver and timing core.
- Enables an ambient light rejection capability using both optical and analog filtering.
- Gesture recognition with 0.5cm to 15cm range
- Proximity sensing to 20cm.
- Gesture/proximity works under infrared (IR) transparent glass or other materials.

ST VL53L0CX:

- Fully integrated miniature module: 940nm Laser VCSEL, VCSEL driver, ranging sensor with advanced embedded micro controller.
- Fast accurate distance ranging – Measures absolute range up to 2m, Reported range is independent of the target reflectance.
- Eye safe – Class 1 laser device.

ANALOG DEVICE ADT7410:

- High performance temperature sensor.
- Temperature accuracy
  - +/-0.5C from -40C to +105C (2.7V to 3.6V)
  - +/-0.4C from -40C to +105C (3.0V)
- 16 bit temperature resolution.
- Fast first temperature conversion on power up of 6ms.
- Easy implementation- No temperature calibration/correction required by user, No linearity correction required.

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New! On-Board LTE Mezzanine for the DragonBoard 410C

Introducing the Shiratech LTE and Sensor Mezzanine, the easiest and fastest way to add LTE connectivity and full context awareness to your product.

Get Your Product Moving!

→ The new Shiratech LTE and Sensor Mezzanine adds the first-ever LTE modem and a full complement of context-aware sensors to the DragonBoard 410C.

- Adds mobile connectivity, orientation, proximity and gesture awareness to the DragonBoard 410C.
- Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage.
- Perfect for context aware applications like autonomous systems, augmented reality and more.
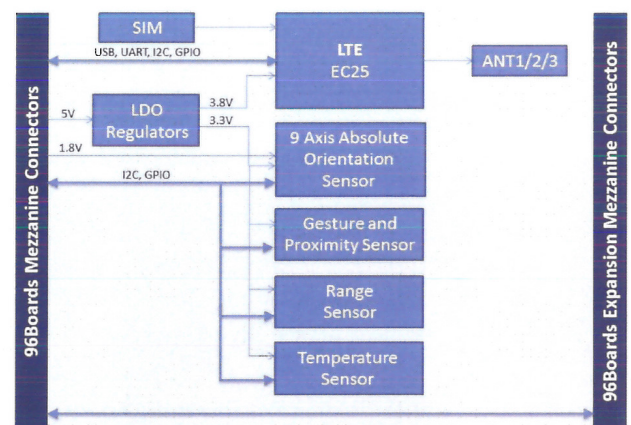
The standard 96Boards mezzanine includes a premium Quectel LTE modem that delivers whopping 150Mbit/s speeds. We've also added a 9-axis absolute orientation sensor, gesture, proximity and range sensors and a highly accurate digital temperature sensor.

The Shiratech LTE and Sensor Mezzanine on top of a DragonBoard 410C forms a complete solution for any application that has your product moving around and sending data over mobile networks. Typical uses that require LTE connectivity and context awareness are: autonomous systems, augmented reality, IoT, navigation, robotics, fitness and well-being.

The LTE and Sensor Mezzanine can be extended with additional functionality through the built-in expansion connectors. These allow you to plug-in additional mezzanines as needed. Additional sensors and peripherals, like a USB camera, can be connected to the DragonBoard USB ports to enhance context awareness capabilties. The LTE and Sensor Mezzanine is compatible with the 96Boards consumer edition (CE) products.

→ BLOCK DIAGRAM

→ The mezzanine consists of the following key elements:

- Quectel EC25 LTE – A high throughput LTE CAT 4 delivering 150Mbit/s downlink 50Mbit/s uplink data rates.
- Bosch BNO055 – A high quality 9-axis absolute orientation sensor that includes a triaxial gyroscope, triaxial accelerometer and magnetometer.
- Analog Device ADUX1020 – Gesture and proximity sensor.
- ST VL53L0CX – Range and gesture detection sensor.
- Analog Device ADT7410 – High accuracy digital temperature sensor.