

ALT1250 Chipset - Product Brief



Lowest Power



Smallest Size



Most Secure



Most Integrated

Altair's Cellular IoT chipset, ALT1250, is the most integrated dual mode LTE CAT-M & NB-IoT chipset with 2G fallback. It supports 3GPP Releases 13 & 14, enabling a wide set of Cellular IoT features and outstanding performance, making it ready for the deployment of 5G networks.

The ALT1250 integrates an LTE and 2G baseband processor, RF transceiver, memory, a GNSS, cellular based location engine, MCU subsystem, and a hardware based integrated SIM (iSIM). The system is based on best-in-class security foundations which are used by both iSIM and application layer security.

ALT1250-based devices require only a few external components. The small chipset size enables complete miniature modules of 10x10mm, targeted for wearables, trackers and other size-constrained devices.

Incorporating Altair's OneSKU™ technology, the ALT1250 enables multiple LTE band combinations with a single hardware design.

The chipset features ultra-low power consumption in a variety of modes, optimizing the power for IoT relevant use cases such as: PSM and eDRX modes, enabling more than 15 years of battery life in real life applications. The ALT1250 is designed to operate with rechargeable Li-ion and prime batteries supporting a wide 2.2-4.5V power supply range.

The ALT1250 features a rich set of host, peripheral, and sensor interfaces, making it ideal for integration within IoT devices. This includes smart meters, wearables, tracking devices, smart city management, utilities, digital signs, and many more.

Totally independent from the modem, the integrated Cortex M4 MCU in ALT1250 has been specifically designed to serve a variety of customer applications.

HIGHLIGHT FEATURES

- CAT-M1 Release 13, 300 Kbps DL, 375 Kbps UL
- CAT-M1 Release 14, 600 Kbps DL, 1000 Kbps UL (Release 14 features available by software update)
- CAT-NB1 Release 13, 27 Kbps DL, 65 Kbps UL
- CAT-NB2 Release 14, 120 Kbps DL, 140 Kbps UL (Release 14 features available by software update)
- HDFDD (Half Duplex FDD) and TDD
- 3GPP Release 13 features including eDRX, PSM, Enhanced Coverage (EC) modes A and B, integrated voice processing for VoLTE and Voice over the top applications, secure Boot and a robust hardware-based security framework.
- Carrier grade integrated SIM (iSIM)
- OneSKU™ frequency range 617 – 960 MHz and 1700 – 2200 MHz, optional support for 400-465 MHz bands 31, 72, 73, 87, 88. HD-FDD bands: 1, 2, 3, 4, 5, 8, 9, 10, 12, 13, 14, 17, 18, 19, 20, 25, 26, 27, 28, 66, 71, 85. TDD bands: 33, 34, 35, 36, 37, 39.
- ARM Cortex M4 MCU with 128KB (256KB) RAM for user applications
- GNSS technologies: Assisted GPS and GLONASS
- Cellular based location
- Interfaces include: UART (3), SPI, FS USB2.0, USIM(x2) or eUICC, I2S/PCM audio, GPIOs, I2C, Auxiliary ADC and PWM
- WLCSP packaging for low cost and small size devices

ORDERING INFORMATION

Part number	Description
ALT1250TG	IoT Modem CAT-M1/NB/2G
ALT1250BZ	IoT Modem CAT-M1/NB/2G, MCU with 128KB RAM
ALT1250ST	IoT Modem CAT-M1/NB/2G, iSIM enabled
ALT1250SB	IoT Modem CAT-M1/NB/2G, iSIM enabled

