

PRODUCT OVERVIEW

MediaTek's ultra-low-power MT2625 SoC supports a full frequency band (from 450MHz to 2.1GHz) of 3GPP R13 (NB1) and R14 (NB2) standards for a wide range of IoT applications including smart home control, logistics tracking and smart meters.

Since existing cellular networks like 2G, 3G and 4G do not have the capacity to meet the needs of billions of IoT devices, Low-Power Wide-Area (LPWA) networking was developed to accommodate the increased connectivity needs across the globe. MediaTek has been a key player driving the formulation and implementation of the 3GPP LPWA specification for NB-IoT, which is designed to support large-scale connectivity, reduce equipment complexity and minimize power consumption to prolong battery life for years.

By providing highly integrated, low power and robust connectivity technologies over the years, along with full-featured IoT software and hardware development platforms, MediaTek aims to enable developers and device makers of all sizes to quickly bring to market innovative NB-IoT devices.

MT2625 is MediaTek's first NB-IoT chipset built to meet the requirements of cost-sensitive and small IoT devices. The highly integrated MT2625 combines an ARM® Cortex®-M microcontroller (MCU), pseudo-static RAM (PSRAM), flash memory and power management unit (PMU) into a small package to lower the cost of production while also speeding up time-to-market. The chip leverages MediaTek's advanced power consumption technology to enable IoT devices to work with chargeable batteries for years.

For more about the MediaTek MT2625, please visit: <http://www.mediatek.com/products/nblot/mt2625>

FEATURES

NB-IoT transceiver

- Compliant with 3GPP R13/R14 NB-IoT standard
- Supports DL 200kHz bandwidth/UL single tone and multi-tone
- Supported RF Bands:
B1/B2/B3/B4/B5/B8/B11/B12/B13/B14/B17/B18/B19/B20/B21/B25/B26/B28/B31/B66/B70/B71/B72/B74/B85
- Supports PSM and eDRX mode

Microcontroller subsystem

- 156MHz ARM® Cortex®-M4 with FPU and MPU
- MCU operating frequency at 26/78/104MHz
- 14 DMA channels
- One RTC timer, one 64-bit and five 32-bit general purpose timers
- Development support: SWD, JTAG
- Crypto engine
 - AES 128/192/256 bits
 - DES, 3DES
 - MD5, SHA-1/224/256/384/512
- True random number generator
- JTAG password protection

Memory

- Up to 32KB SYSRAM, with zero-wait state and 52MHz maximum frequency
- Up to 32KB L1 cache, with high hit rate, zero-wait state and 104MHz maximum frequency
- Embedded 32Mbits flash
 - Sleep current 200nA
 - Maximum frequency 78MHz
- Embedded 32Mbits pseudo SRAM
 - Sleep current 10uA
 - Maximum frequency 78MHz

Communication interfaces

- Two SDIO 2.0 masters and one SDIO 2.0 slave
- Three I2C (3.4Mbps) interfaces
- Four UART interfaces (3Mbps, UART1/2 with hardware flow control)
- Two SPI masters and one SPI slave
- Two I2S interfaces
 - One 16/24-bit, master/slave mode; One 16-bit, master/slave mode with TDM
 - Both support 16/24/48/96/192kHz & 11.025kHz, 22.05kHz, 44.1kHz, TX/RX, 2 channels
- Four PWM channels
- 37 GPIOs (5V-tolerant)
- Seven IOs for BPI and MIPI interfaces
- Three IOs for SIM
- 5 channel 10-bit AUXADC (PinMux with GPIO), maximum input voltage 1.4V

Power management

- Three integrated high efficiency buck converters with low quiescent current
- Four integrated LDO regulators for RTC, SIM, RF frontend and GPIOs
- Operating temperature from -40°C to 85°C

Clock source

- 26MHz crystal oscillator
- 32kHz crystal oscillator or internal 32kHz RC for RTC

Package

- 5.6-mm x 5.6-mm x 1.05-mm TFBGA
- with 0.5-mm ball pitch