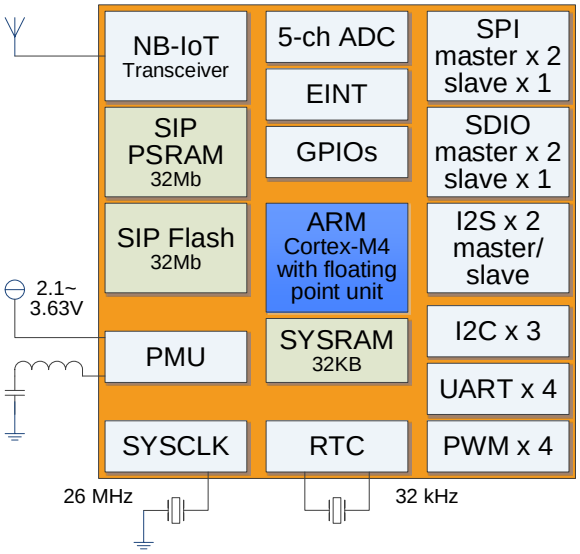
PRODUCT OVERVIEW

MediaTek MT2625 is built around a highly integrated chipset containing a microcontroller unit (MCU), a low power narrowband Internet of Things (NB-IoT) transceiver and a power management unit (PMU). The microcontroller unit is an ARM® Cortex-M4 processor with floating point unit, integrated with up to 32Mb PSRAM and up to 32Mb flash memory.

The NB-IoT transceiver contains radio, baseband and MAC designed for low power and multiband communication support. Supported bands include EUTRA 1, 2, 3, 5, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 66 and 70. Optional bands are EUTRA 11, 21, 31, and 71.

MT2625 also supports interfaces including UART, I2C, SPI, I2S, PWM, SDIO, ADC, USB, USIM and keypad.



BENEFITS

- Highly integrated with RF, MCU, PMU, memory and peripheral interfaces
- Low chip power consumption with more than 10 years of battery life
- Supports a full frequency band (from 450MHz to 2.1GHz) of 3GPP R13 (NB1) and R14 (NB2)
- SIP PSRAM and flash memory with extra low current consumption

TARGET APPLICATIONS

- Smart city appliances
- M2M applications
- Personal and logistics tracking

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
  - Low-Band: 5/8/12/13/17/18/19/20/26/28
  - Mid-Band: 1/2/3/4/25/66/70
  - 1.5G/450M/600M Band: 11/21/31/71
- Supports PSM and eDRX mode

Microcontroller subsystem

- 104MHz 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
- Secure boot, anti-clone and anti-rollback
- 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 memory
- Sleep current 200nA
- Maximum frequency 78MHz
- Embedded 32Mbits pseudo SRAM
- Sleep current 10µA
- Maximum frequency 78MHz
- AESOTF (AES on-the-fly) to secure the data stored in flash

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
- Both support 16/24-bit, master/slave mode
- Both support 16, 24, 48, 96, 192kHz and 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
- Embedded thermal sensor

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