



## TPM540 Series

TPM540

TPM540S

TPM540M

TPM540MS



TPM540 is high-performance, multi-band dual mode LTE-M/NB-IoT module with extremely low power consumption. The extremely compact form factor of 13.4mm × 14.6mm × 1.85mm profile makes it perfectly suitable for size sensitive applications. TPM540 provides abundant external interfaces and protocol stacks, as well embedded GNSS for positioning application.

TPM540 adopts surface mounted technology, making it an ideal solution for durable and rugged designs. The low profile and small size of LGA package allow TPM540 to be easily embedded into space-constrained applications and provide reliable connectivity with applications.

Due to compact form factor, ultra-low power consumption and extended temperature range, TPM540 is a best choice for a wide range of IoT applications, ranging from smart metering, bike sharing, smart wearables, smart parking, smart city, security and asset tracking to home appliances, agricultural and environmental monitoring, etc. Additionally, TPM540's embedded MCU provides benefit to those cost and space-sensitive application via saving external processor.

### Key Benefits

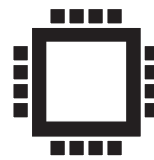
1. Extremely Small Form-Factor
2. Ultra Low Power Consumption
3. OpenCPU and Rich Interface Design for System on Module
4. Multiple Internet Service Protocols Supported
5. LTE-M and NB-IoT Dual Mode Supported
6. One for All Design Supporting Multibands
7. GNSS Embedded



Power Saving



Industrial Grade Temperature Range



Open CPU



Compact Form Factor



Multiple Internet Protocols



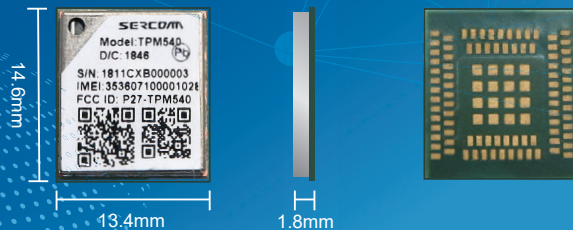
LTE-M/NB-IoT Dual Mode



GNSS

# TPM540 Series

LTE-M/NB-IoT Module



## Frequency Bands

- One SKU for all, Supported Bands are configurable (B1/2/3/4/5/8/9/10/12/13/14/17/18/19/20/25/26/27/28/66)

## Data

- Data rate:  
Max throughput UL/DL (23dBm):  
UL: 375kbps/DL: 300kbps (peak)
- Protocol stack:  
COAP\*/IPV4/IPV6/MQTT\*/HTTPS\*/LWM2M  
PPP/UDP/TCP/TLS/DTLS
- Firmware Download Method:  
UART  
FOTA

## Electrical Specification

- Maximum RF output power: 23 dBm

## Power Consumption

- PSM flow: 1.3uA@3.6V
- eDRX (81.92s): 40uA@3.6V
- I-DRX(1.28s): 1.5mA@3.6V
- Transmission (23dBm): 150mA@3.6V

## Interfaces

- 3 x UART port (1 reserve for option)
- 1 x USIM port
- 1 x PCM\*
- 18 x GPIO (maximum)\*
- 1 x USB 2.0\*
- 2 x ADC\*
- 1 x I2C

\*Reserved for the SKU supporting embedded MCU.

## General Features

- 104 pads
- LGA Package
- LTE eDRX and PSM supported

- Ultra low power consumption for longer battery lifetime
- GNSS embedded (Option)
- Weight: 1.0g

## Temperature Range:

- 40~+85°C

## Supply voltage Range:

- 3.2~4.35V

## Dimension:

- 13.4 x 14.6 x 1.85mm

## AT command:

- 3GPP Rel.13 LTE Cat-M1 compliant

## Applications

- Smart Metering, smart grid
- Traffic Management and Monitoring
- Asset Tracking, people tracker
- Environmental Monitoring

## Approval

- FCC
- PTCRB
- AT&T Certified
- CE\*
- GCF\*
- JATE\*/ TELEC\*

\*Under Development/ Planning

## TPM540 Series

	Modem	Embedded GNSS	Embedded MCU
TPM540	Y	Y	
TPM540S	Y		
TPM540M	Y	Y	Y
TPM540MS	Y		Y