Sercomm TPM541 Series Product Brief

LTE CAT-M/NB-IoT Module

TPM541 is high-performance, multi-band dual mode LTE-M/NB-IoT module with ultra-low power consumption. TPM541 provides abundant external interfaces and protocol stacks. Take an advantage of highly integrated module which boasts in Embedded GNSS, a-GPS, cellular positioning technology allow location applications to track both outdoor and indoor positioning in addition to fast Time-to-First-Fix (TTFF), integrated MCU and iUICC (iSIM).

TPM541 adopts surface mounted technology, making it an ideal solution for durable and rugged designs. The low profile and extremely compact size (13.4×14.6×1.85mm) of LGA package allow TPM541 to be easily embedded into space-constrained applications and provide reliable connectivity.
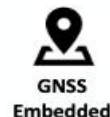
Due to compact form factor, ultra-low power consumption and industrial grade temperature range, TPM541 is a best choice for a wide range of IoT applications, ranging from asset tracking, transportation, bike sharing, wearables, smart city (metering, lighting, parking), security, agricultural and environmental remote monitoring and more!

KEY BENEFITS

1. Extremely Compact Form-Factor
2. Best-in-class Power Consumption
3. Open CPU & Rich Interface
4. LTE-M and NB-IoT Dual-Mode Support
5. iUICC (iSIM) Support
6. Location, Location, Location! -- Embedded H/W GNSS, a-GPS & Cellular Positioning Technology (POLTE)
7. One-for-All Design Supporting Multi-bands
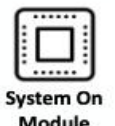8. Design Flexibility with 4 variant modules Multiple Protocols Support

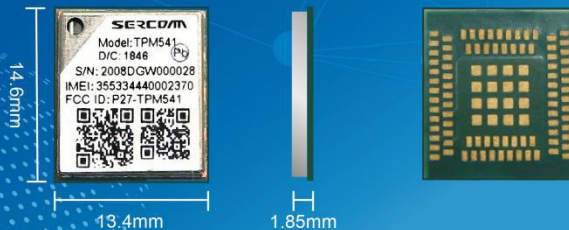Best Power Consumption · GNSS Embedded · POLTE Inside · System On Module · Extremely Compact Size · Certified Module · iSIM Support · Global SKU

TPM541 Series Variants – Design Flexibility

Model #	Modem	GNSS	MCU	iSIM
TPM541S	V			
TPM541	V	V		
TPM541MS	V		V	
TPM541M	V	V	V	
TPM541MSi	V		V	V
TPM541Mi	V	V	V	V

TPM541 Series

LTE-M/NB-IoT Module

14.6mm
13.4mm
1.85mm

DATA

- Data Rate:
  Max throughput UL/DL (23dBm):
  UL: 375kbps/DL: 300kbps (Peak)
- Protocol Stack:
  IPv4/IPv6/COAP/MQTT/HTTPS/LWM2M/
  PPP/UDP/TCP/TLS/DTLS
- F/W Upgrade: UART & FOTA

FREQUENCY BANDS

- One SKU for all, Supported Bands are configurable
  (2/3/4/5/8/12/20/25/26/28)

PACKAGE

- Dimension: 13.4 x 14.6 x 1.85mm
- LGA, 104 pads

ELECTRICAL SPEC.

- Supply Voltage: VBAT (ranges from 2.2V ~ 4.3V)
-                 VBAT-FEM (ranges from 3.0V ~ 4.3V)
- Maximum RF output power: 23 dBm

POWER CONSUMPTION (@ 3.6V)

- PSM Floor: 1.18uA
- e-DRX (81.92s): 40uA
- i-DRX (1.28s): 1.55mA
- Active (23dBm): 131mA

GENERAL FEATURES

- Embedded H/W GNSS, a-GPS, POLTE
- iUICC (iSIM)
- Integrated MCU with Secure Elements
- Integrated PMU w/ Voltage Regulators & RTC

INTERFACE

- UART x3
- USIM
- I2S/PCM*
- GPIO (maximum x18)
- USB 2.0*
- ADC x2
- I2C Master
- PWM
- JTAG
  * Reserved for the SKU supporting embedded MCU.

TEMPERATURE RANGE

- Operation: -40 to +85°C
- Storage: -40 to +85°C
- RF Compliant: -20 to +65°C

APPLICATION

- Utilities: Smart Metering, Lighting, Parking, Smart Grid
- Tracking: Asset Management, Automotive, Transportation, Consumer, Retail.
- Remote Monitoring: Traffic, Industrial, Agricultural, Environmental

CONFORMANCE & CERTIFICATIONS

- 3GPP Release 13, Upgradable to Release 14
- FCC / CE
- PTCRB / GCF
- Various Operator Certifications
- JATE* / TELEC*
- RoHS, Halogen-Free
  *Under Development / Planning

CONTACT

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