Telit designs wireless data transmission solutions for machine-to-machine applications.

Telit's product portfolio offers a wide range of innovative and reliable RF solutions ranging from ready-to-use wireless radio modems to OEM RF modules and RF design services.

Solutions from Telit operate in the license-free worldwide ISM frequency bands of 433 MHz, 868 MHz, 915 MHz, and 2.4 GHz and are available in both standardized and proprietary low-power, low-data rate RF technologies for the m2m/industrial markets.

The long-term experience and extensive expertise in cost-effective state-of-the-art radio solutions allow a significant reduction in TCO [total cost of ownership] and time-to-market. Additionally, having full IP stack ownership and a multi-chip vendor approach ensure continuity of supply and highly reliable products.

**433 MHz band**
- Frequency: 433.05 – 434.79 MHz
- Application: Europe, Australia, South Africa
- Standard: ETSI 300-220
- Power: 10 mW
- Duty cycle: 10% to 100%
- Family: TinyOne™ Lite

**868 MHz band**
- Frequency: 868.00 – 870.00 MHz
- Application: Europe
- Standard: ETSI 300-220
- Power: 5 to 500 mW (Depending on sub-band)
- Duty cycle: 10% to 100% (Depending on sub-band)
- Family: TinyOne™ Lite/Plus/Pro
- PowerOne™

**2.4 GHz band**
- Frequency: 2400 – 2483.5 MHz
- Application: Worldwide
- Standard: IEEE 802.15.4
- Power: 10 mW to 100 mW
- Duty cycle: N/A
- Family: TinyOne™ 2400 MC
- ZE50-2.4 (ZigBee® compliant)
- ZE60-2.4 (ZigBee® compliant)

**915 MHz band**
- Frequency: 902.00 – 928.00 MHz
- Application: U.S., Canada, Australia
- Standard: FCC 15.247
- Power: 1 W with possibility to have 6dB gain antenna
- Duty cycle: Frequency Hopping Spread Spectrum, 400 ms allowed per channel, hop on 50 channels min
- Family: TinyOne™ Plus/Pro

The product line is based on two main family concepts: TinyOne™ and ZigBee®

TinyOne™ family, consisting of TinyOne™ Lite, TinyOne™ Plus, TinyOne™ Pro, and TinyOne™2400MC, is a complete line of products with a reduced form factor for easy integration. The family offers pin-to-pin compatibility and surface mount device (SMD) half moon technology that is dedicated to wireless applications operating in the ISM band (433, 868, 915 and 2.4Ghz), thus providing efficient power consumption management, low-data rates, and long distance. TinyOne™ Lite, TinyOne™ Plus, TinyOne™ Pro and TinyOne™ 2400MC are delivered with proprietary standard firmware [M-One stack]. Telit's stack is fully configurable and upgradeable over-the-air from a point-to-point communication to a star communication with listen before talk and allows mesh networking with efficient power consumption management. The efficient power management process enables multi-year battery powered operation, simple installation, and auto association including self healing and auto-repair functionalities as well as mobility functions.

ZigBee® ZE family offers an extremely compact form factor with complete pin-to-pin alignment. The family consists of low-power digital radios based on the IEEE 802.15.4 standard at 2.4GHz for wireless networks and uses a standard communication protocol dedicated to a range of markets and applications such as home automation and control, building automation, advanced metering, and telecom applications. The ZigBee® ZE family OEM modules are based on the same concept while providing a small SMD component for optimized integration ranging from 1mW up to 100mW. The modules are offered with or without an embedded antenna and are available with the proven world-class in-house ZigBee® stack [Z-ONE].

The ZigBee® ZE family consists of low-power digital radios based on the IEEE 802.15.4 standard at 2.4GHz for wireless networks and uses a standard communication protocol dedicated to a range of markets and applications such as home automation and control, building automation, advanced metering, and telecom applications. The ZigBee® ZE family OEM modules are based on the same concept while providing a small SMD component for optimized integration ranging from 1mW up to 100mW. The modules are offered with or without an embedded antenna and are available with the proven world-class in-house ZigBee® stack [Z-ONE].

**ZigBee® ZE family**
- Family: TinyOne™ Lite/Plus/Pro
- PowerOne™

**ZigBee® ZE family**
- Frequency: 2400 – 2483.5 MHz
- Application: Worldwide
- Standard: IEEE 802.15.4
- Power: 10 mW to 100 mW
- Duty cycle: N/A
- Families: TinyOne™ 2400 MC
- ZE50-2.4 (ZigBee® compliant)
- ZE60-2.4 (ZigBee® compliant)
Telit GG643-SR is an all-in-one gateway terminal that brings together the GSM/GPRS and short-range technology, hosting programmable GE663-PRO™ and any of the short-range modules from Telit’s wide product offer in a unique cost-saving, fully customized solution. Thanks to the possibility of choosing among different ISM bands (433MHz, 868MHz, 915MHz and 2.4GHz), protocol stacks ( ZigBee, M-Bus or proprietary), network topologies (Star, Mesh, Cluster tree) and coverage (from 70m to 4km), time to market and total cost of the final application are significantly reduced. The behavior of the gateway can be customized through the embedded Linux complete development environment and dedicated libraries for GSM and short range, thus simplifying integration in a final application.

License-Free System for Frequencies <1 GHz

**Terminal**

**TinyOne™ Plus 868MHz**

The TinyOne™ Plus IP67 terminal is a complete ETSI certified low-cost RF solution in the license-free 868 MHz ISM band for harsh environments and weather conditions. The terminal includes a 25 mW multi-channel radio module with advanced proprietary embedded standard firmware (S-One) or mesh networking (M-One), and a reinforced hard metal casing with fixed or removable quarter antenna. With a power supply range of 6-40 V, supporting RS232/RS485/RS422 serial interfaces and an efficient low-power mode, this terminal is optimal for outdoor applications such as telemetry, irrigation, urban traffic control, or urban display monitoring, and is capable of transmitting data up to 1,500 m. TinyOne™ Plus is compatible with the extended 500 mW TinyOne™ Pro, for backbone network topology and is upgradeable over-the-air.

**PowerOne™ 868MHz**

PowerOne™ 868 MHz terminals are a complete ETSI certified RF solution for long-range reliable wireless data transmission. With a line-of-sight range of 16,000 m and featuring the powerful S-One embedded firmware, these 500 mW terminals bring high efficiency to wireless applications such as rural and urban telemetry, GPS data transmission for localization & fleet management, urban display monitoring, weather stations control and industrial control and are compatible with ProfiBus, Modbus, and Unitelway protocols. PowerOne™ terminals are available in a metallic IP65 or IP67 casing, with fixed or removable quarter antenna, with a power supply range of 6-40 V, supporting RS232/RS485/RS422 serial interfaces, and provide integrated or external I/O copy management.

**TinyOne™ Lite 433 MHz**

TinyOne™ Lite OEM RF modules are based on Telit’s TinyOne™ concept and are designed for low consumption volumes at a low price for applications such as cable replacement, meter management and temperature monitoring. TinyOne™ Lite is tailored for use with battery and line powered wireless devices for applications that require proven performance and scalability. These pre-certified SMD RF modules, working in the license-free 433 MHz ISM band of 433 MHz have advanced embedded proprietary S-One and M-One stacks and are easily integrated, thus reducing development time and cost.

**ENG**

 **ENGLISH**

**Compact**

**TinyOne™ Lite 433 MHz RF modules**

16.8 kbps - 50 mW

**TinyOne™ Plus 868 MHz RF modules**

16.8 kbps - 50 mW

**TinyOne™ Pro 868 MHz RF modules**

16.8 kbps - 50 mW

**PowerOne™ 868 MHz RF modules**

16.8 kbps - 50 mW
TinyOne™ Plus OEM RF modules are based on Telit’s TinyOne™ concept in the license-free 868 MHz ISM band. This 25 mW multi-band multi-channel radio module with advanced proprietary embedded S-One or M-One stack can be easily integrated, thus reducing development time and cost for applications in building automation, metering (water, gas, electric), irrigation, tracking, and access control. TinyOne™ Plus is designed to be used with a battery and is compatible with the extended 500 mW TinyOne™ Pro backbone network topology and is upgradeable over-the-air.

TinyOne™ Pro OEM RF modules, based on Telit’s TinyOne™ concept, are optimized for long-range solutions in the license-free ISM band of 868 MHz and operate at a temperature range of -40°C to +85°C. These pre-certified SMD RF modules provide a TTL RS232 interface, integrated digital and analog I/O’s, and advanced embedded proprietary S-One and M-One stacks. The modules are easily integrated into applications such as energy monitoring (windmills and solar panels), weather stations, irrigation, and watering, thus reducing development time and cost while providing highly reliable communications.

TinyOne™ Pro OEM RF modules, based on Telit’s TinyOne™ concept, are optimized for long-range solutions in the license-free ISM band of 915 MHz and operate at a temperature range of -40°C to +85°C. These pre-certified SMD RF modules provide a TTL RS232 interface, integrated digital and analog I/O’s, and advanced embedded proprietary S-One and M-One stacks. The modules are easily integrated into applications such as energy monitoring (windmills and solar panels), weather stations, irrigation, and watering, thus reducing development time and cost while providing highly reliable communications.

TinyOne™ Plus OEM RF modules are based on Telit’s TinyOne™ concept and are optimized for highly reliable communications and provide ultra-low-power for maximum battery life at a low price for applications ranging from energy management and building control to machine health monitoring. Available with or without integrated antenna, these pre-certified SMD RF modules provide a TTL RS232 interface, integrated digital and analog I/O’s, work in the license-free ISM band of 915 MHz, and offer the advanced embedded proprietary S-One stack including and optional wireless M-BUS and M-One stack. These modules are easily integrated into a system, thus reducing development time and cost while providing highly-reliable communications and ultra-low-power for maximum battery life in a wide range of sensor network applications such as those in the growing AMR/AMI market.

TinyOne™ 2400MC modules are compact radio solutions based on the IEEE 802.15.4 standard at 2.4 GHz with advanced proprietary standard firmware (S-One stack) based on the TinyOne™ concept. The modules high-level of integration and flexible firmware can replace wires in many data transmission systems, even for non-RF specialists, in applications such as industrial & building automation, wireless sensor networks.

The ZE 50 – 2.4 is a compact, SMD, and complete ZigBee® - ready module that supports Full Function Device (FFD) and Reduced Function Device (RFD) operation with IEEE 802.15.4 compliant PHY and Mac layers. The module is based on the Texas Instruments CC2430 system on Chip and is optionally available with an integrated antenna. It is an ideal low-cost ZigBee® OEM module for small battery powered devices such as those used in advanced metering, building automation, and wireless sensor networks. Telit offers the proven world-class in-house ZigBee® stack (Z-One) easy-to-use C-API.

The ZE 40 – 2.4 is a compact, SMD, and complete ZigBee® - ready module that outperforms a link allocation of 118 dB for extended performance with its 100 mW output power on the ZE platform. This extended low cost version is fully compatible with ZE50 devices, operates in the industrial temperature range of -40°C to +85°C, and supports low power modes.
### Product Range

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### License-Free System for Frequencies <1 GHz

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<tr>
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<tr>
<td>868 MHz</td>
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<td>Z-One Integrated</td>
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