

# EMB-Z2538PA

IEEE 802.15.4/ZigBee® - 2.4 GHz

ARM Cortex™-M3

OEM Module



## Technical Specifications

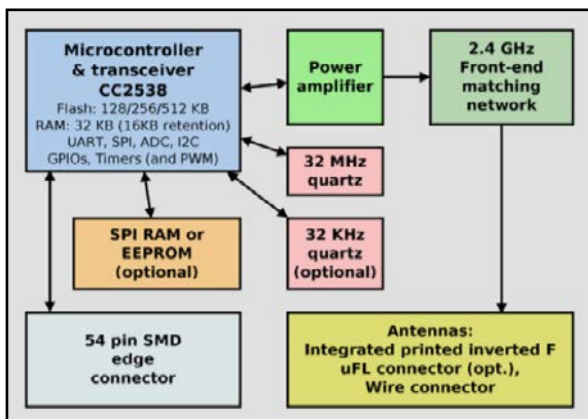
**EMB-Z2538PA** is a powerful OEM wireless module targeting low-power RF applications (specifically IEEE 802.15.4) and featuring the computational power of the ARM Cortex™-M3 core.

**EMB-Z2538PA** can be configured either as an embedded micro system or as a simple data modem for low power applications in the 2.4 GHz ISM band. It is based on Texas Instruments® CC2538 single chip microcontroller, integrating 128, 256 or 512 KB of FLASH and 32 KB of SRAM.

The RF section integrates a PA/LNA stage assuring best-in-class performance in terms of covered area. The output power can be configured through software settings up to +20 dBm, making possible to establish wireless links of up to 500 meters (LoS); the U.FL receptacle allows the connection of an external antenna.

**EMB-Z2538PA** can communicate with other devices through several interfaces: two UART ports, a SPI, several digital I/O ports (up to 15 digital lines) and an ADC port. **EMB-Z2538PA** can be configured as a network coordinator or router (thanks to the availability of up to 512 KB of FLASH), as well as an end-device thanks to the extremely reduced power consumption in sleep mode.

**EMB-Z2538PA** block diagram:



|                             |  |
|-----------------------------|--|
| <b>MCU</b>                  | Texas Instruments® CC2538 (ARM Cortex™-M3 at 32 MHz)                   |
| <b>Memory</b>               | 32 KB RAM / 512 KB Flash   |
| <b>Frequency</b>            | 2405 ÷ 2480 MHz  |
| <b>Tx output power</b>      | up to +20 dBm  |
| <b>Rx Sensitivity</b>       | up to -100 dBm   |
| <b>Data rate</b>            | 250 kbps (802.15.4)  |
| <b>Interfaces</b>           | UART/SPI   |
| <b>Digital I/O</b>          | up to 15 lines   |
| <b>Analog I/O</b>           | One 12-bit channel (6 other channels available)                        |
| <b>Outdoor link range</b>   | Over 500m (LoS)  |
| <b>Indoor link range</b>    | High wall penetration capability for indoor use                        |
| <b>Supply voltage</b>       | 2.0 – 3.6 V  |
| <b>Current consumption</b>  | 138 mA (TX @ +20 dBm)<br>30 mA (RX)<br>1.7 µA (sleep with RTC running) |
| <b>Antenna</b>              | PCB printed inverted F antenna<br>U.FL connector                       |
| <b>Dimensions</b>           | 29.5x22.6x3.5 mm<br>Standard EMBit form factor                         |
| <b>Connector</b>            | SMD Edge Connector   |
| <b>Temperature Range</b>    | -40 °C to +85 °C   |
| <b>Certifications</b>       | CE - FCC   |
| <b>Ordering Information</b> | EMB-Z2538PAX<br>X: IA or UL  |