Description
The UZ2400 is a solution that complies with the IEEE 802.15.4/ZigBee™ specifications. It integrates a wireless RF transceiver operating at 2.4 GHz with 802.15.4 compliant baseband and MAC layer function blocks. UZ2400 can be combined with a microprocessor (e.g. 8051) for low data rate applications such as home automation, consumer electronics, PC peripherals, toys, industrial automation, etc. The RF block of UZ2400 integrates receiver, transmitter, VCO and PLL within a single IC. It uses advanced radio architecture to minimize the external component count and the power consumption. UZ2400 MAC / Baseband provides the hardware architecture for both the 802.15.4 MAC and the PHY layers. It mainly consists of TX/RX FIFOs, CSMA-CA controller, Superframe constructor, receiving frame filter, security engine and digital signal processing module. The UZ2400 is fabricated with advanced 0.18μm CMOS process and is sealed in a 40-pin QFN 6x6 mm² package.

Features
RF/Analog
- ISM band 2.405~2.480 GHz operation
- Complete IEEE 802.15.4-2006 specification compliance
- -95 dBm sensitivity and 3 dBm maximum input level
- 0 dBm typical output power and 40 dB TX power control range
- Differential RF input/output and integrated TX/RX switch
- Integrated low phase noise VCO, frequency synthesizer and PLL loop filter
- Integrated 32MHz and 32.768KHz oscillator drive.
- Integrated internal oscillator circuit
- 32MHz reference clock output
- Digital VCO and filter calibration
- Integrated RSSI ADC and I/Q DACs
- Integrated DC-DC converter
- High receiver and RSSI dynamic range
- Support power saving modes
- Low current consumption, 16 mA in RX and 17.5 mA in TX mode
- 2.4 μA deep sleep mode
- Small 40-pin leadless QFN 6x6mm² package
- 0.18 μm CMOS technology
- Low external component count
- 1M/2M bps turbo mode supported

MAC/Baseband
- Complete IEEE 802.15.4 - 2006 specification compliance
- Hardware CSMA-CA mechanism, automatic ACK response and FCS check
- Programmable Superframe construction
- Functionally independent TX FIFO, including beacon FIFO, transmit FIFO, and GTS FIFOs
- Dual RX FIFOs
- Hardware security engine (AES-128)
- Various power saving modes
- Support all CCA modes and RSSI/LQI
- Simple four-wire SPI interface
- I²C slave supported

Applications
- Automated meter reading (AMR)
- Home/Building/Factory automations
- 2-way low data rate applications
- Wireless sensor network
- PC peripherals
- Low power wireless communications
- Consumer electronics

\*ZigBee™ is a trademark of ZigBee™ Alliance. All other trademarks are the property of their respective owners.