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## ***Product Brief***

The TLSR8263 is Telink-developed ultra-low cost BLE and 2.4G dual mode SoC solution which is fully standard compliant and allows easy connectivity with Bluetooth Smart Ready mobile phones, tablets, laptops. It is RoHS-compliant and 100% lead (Pb)-free.

The TLSR8263 is designed to offer ultra-low cost, low power Bluetooth Smart application capabilities, which integrates powerful 32-bit MCU, advanced BLE/2.4G Radio, 16KB on-chip OTP, 6KB on-chip SRAM, a 10bit ADC, a quadrature decoder (QDEC), up to four-channel PWM, flexible I/O interfaces, and nearly all of the peripheral blocks needed for Bluetooth Low Energy applications development. Few external components are needed to satisfy customers' ultra-low cost requirements.

### **Target Applications:**

- Beacon
- Find Me
- Selfie Shutter

### **Key Features:**

#### — General features

- Embed 32-bit high performance MCU with clock up to 48MHz
- Memory: 16KB on-chip OTP, 6KB on-chip SRAM
- 16/12MHz Crystal and 32KHz/32MHz embedded RC oscillator
- Up to 14/9 GPIOs with configurable internal pull-up or pull-down resistors
- Debug interface: SWS (Single Wire Slave)
- Supports MSPI (only for TLSR8263ET24) and I2C Slave interface
- Embeds a SAR ADC: Up to 10bit resolution and 4 input channels.
- Embeds one quadrature decoder (QDEC)
- Supports up to four-channel PWM output
- Embeds three general 32-bit timers Timer0~Timer2.
- Timer2 is programmable as watchdog
- Operating temperature: -40℃~+85℃ industrial temperature range
- Package:
  - ✧ TLSR8263ET24, 24-pin QFN 4X4 mm
  - ✧ TLSR8263ES16, 16-pin TSSOP16 4.96X6.4 mm

— RF features

- BLE/2.4GHz RF transceiver, working in worldwide 2.4GHz ISM band
- Adaptive frequency hopping
- Bluetooth 4.0 Compliant, 1Mbps data rate mode
- Rx Sensitivity: -94dBm at 1Mbps mode
- Tx Output power: up to +6dBm
- Auto acknowledgement and retry
- Single-pin antenna interface
- RSSI monitoring

— Power management features

- Power supply of 1.9V~3.6V
- Embedded low battery detection
- Multiple stage power management to minimize power consumption
- Low power consumption:
  - ✧ Transmitter mode current: 15mA @ 0dBm power, 22mA @ max power
  - ✧ Receiver mode current: 12mA
  - ✧ Suspend mode current: 10uA
  - ✧ Deep sleep mode current: 0.7uA

**Development tools:**

A full set of development tools for BLE SoC are provided, which include EVB, reference design and SDK for customers to perform evaluation, quick application prototyping and firmware development.

**Company Profile:**

Telink Semiconductor Co., Limited is a fabless semiconductor company that provides highly integrated radio-frequency and mixed-signal System-On-Chip (SoC) solutions for a variety of communication and control applications. We serve numerous markets including consumer electronics, medical instruments, industrial control, home automation and smart energy etc.

Our product portfolio currently includes 2.4GHz standard and proprietary wireless SoC, touch screen and touch button controller, and generic wireless MCU, all offering high performance, small silicon area, and low power consumption. We integrate high performance radio frequency, analog and mixed signal front end with efficient digital signal processing, digital communication and control functions into our SoC solutions in standard CMOS process technology.

We provide our customers with world leading level of wireless performance at a price level that is appealing to even the most cost-sensitive products. Our proprietary optimized hardware and software platform makes it extremely easy to design into existing or emerging products, offering our customers rapid time-to-market and exceptional system design value.