## *Product Brief*

General Description:

The TLSR8261F128 is Telink-developed BLE SoC solution which is completely RoHS-compliant and 100% lead (Pb)-free.

It's compatible with Bluetooth standard and supports BLE specification up to version 4.2. It allows easy connectivity with Bluetooth Smart Ready mobile phones, tablets, laptops, which supports BLE slave and master mode operation, including broadcast, encryption, connection updates, and channel map updates.

The TLSR8261F128 is designed to offer high integration, ultra-low power application capabilities. It integrates strong 32-bit MCU, BLE/2.4G Radio, 16KB SRAM, 128KB internal Flash, 14bit ADC, 6-channel PWM (2-channel IR), one quadrature decoder (QDEC), flexible interfaces, multi-stage power management module and nearly all the peripherals needed for Bluetooth Low Energy applications development.
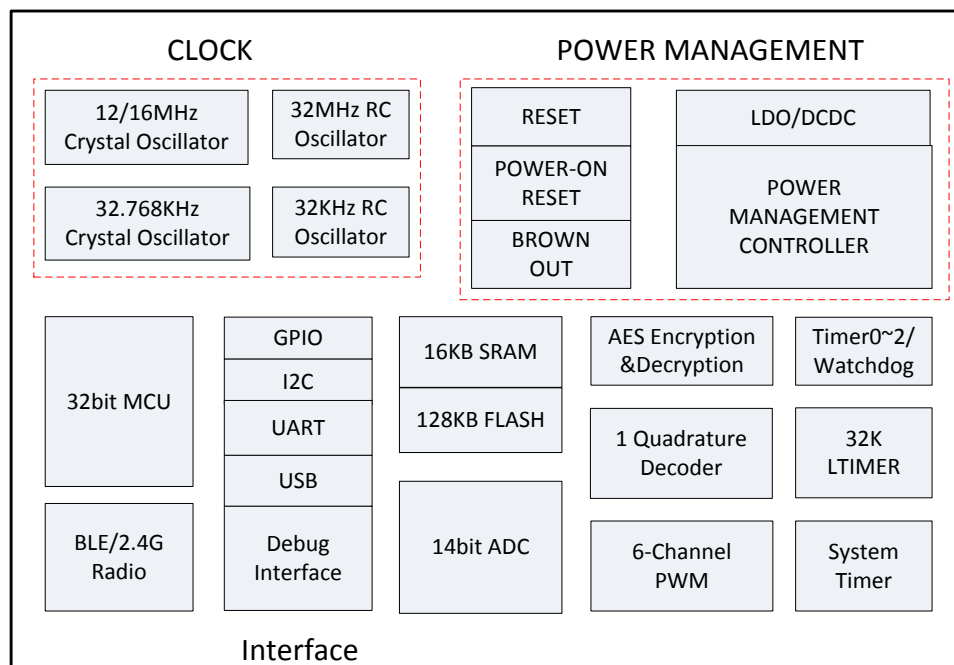
Target Applications:

- Smartphone and tablet accessories
- Sports and fitness tracking
- Remote Control and 3D glasses
- Wearable devices

Key Features:

- General features
  - 32bit high performance MCU, up to 48MHz
  - Program memory: internal 128KB Flash
  - Data memory: 16KB on-chip SRAM
  - 12M/16MHz&32.768KHz Crystal and 32KHz/32MHz embedded RC oscillator
  - A rich set of I/Os:
    - ♢ Up to 14 GPIOs
    - ♢ I2C, USB, Debug Interface, UART with hardware flow control.
  - Up to 6 channels of PWM, 2-channel IR
  - Sensor:
    - ♢ 14bit ADC
    - ♢ Temperature sensor
  - One quadrature decoder
  - Embedded hardware AES
  - Compatible with USB2.0 Full speed mode
  - Operating temperature: -40℃~+85℃ temperature range
  - Package: TLSR8261F128ET24, 24-pin QFN 4x4mm

- RF features
  - BLE/2.4GHz RF transceiver embedded, working in worldwide 2.4GHz ISM band
  - Bluetooth 4.2 Compliant, 1Mbps and 2Mbps LE Enhancement FIPD version
  - Rx Sensitivity: -92dBm@BLE 1Mbps
  - Tx output power: +7dBm
  - Single-pin antenna interface
  - RSSI monitoring

- Features of power management module
  - Embedded LDO
  - Battery monitor: Supports low battery detection
  - Power supply: 1.9V~3.6V
  - Multiple stage power management to minimize power consumption
    - ♢ Receiver mode current: 12mA
    - ♢ Transmitter mode current: 15mA @0dBm power, 22mA @max power
    - ♢ Suspend mode current: 10uA (IO wakeup), 12uA (Timer wakeup)
    - ♢ Deep sleep mode current: 1.7uA

- Flash features
  - Total 128KB (1Mbits)
  - Flexible architecture: 4KB per Sector, 64KB/32KB per block

- Up to 256 Bytes per programmable page
- Write protect all or portions of memory
- Sector erase (4KB)
- Block erase (32KB/64KB)
- Cycle Endurance: 100,000 program/erases
- Data Retention: typical 20-year retention

Development tools:

A full set of development tools for the 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 proprietarily 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.