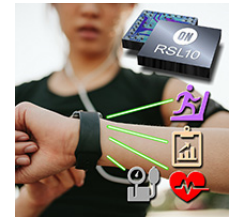




Product Overview

RSL10: Radio SoC, Bluetooth® 5 Certified

For complete documentation, see the data sheet.



RSL10 is a Bluetooth 5, multi-protocol radio System on Chip (SoC) bringing ultra-low-power Bluetooth Low Energy to wireless applications. Offering the industry's lowest power consumption, RSL10 enables advanced wireless features while optimizing system size and battery life. RSL10 is designed for applications using as low as 1.2 V batteries, and supports a voltage supply range between 1.1 and 3.3 V without external components. The highly-integrated radio SoC features a dual-core architecture and a 2.4 GHz transceiver, providing the flexibility to support Bluetooth Low Energy and 2.4 GHz custom protocols. The RSL10 Software Development Kit (SDK) enables rapid development of ultra-low power Bluetooth Low Energy applications by leveraging convenient abstraction, drivers and sample applications from Blinky to complete BLE peripherals, and everything in between. Key features: Free Eclipse-based ON Semiconductor IDE plus support for Keil uVision® and IAR Embedded Work Bench® Complete Bluetooth Low Energy protocol stack Bluetooth Low Energy mesh networking FOTA (Firmware Over The Air) with Android app on Google Play FreeRTOS. Container

Download RSL10 Getting Started Guide
 Download RSL10 Documentation Package
 Download RSL10 Software Utility Apps
 Download ON Semiconductor IDE Installer
 Download RSL10 Bluetooth Mesh Package
 Download RSL10 LPDSP32 Software Package
 Download RSL10 Software Package
 Download RSL10 USB Dongle BLE Explorer

Features

- Ultra-Low-Power:- Industry's lowest power consumption in Deep Sleep Mode (62.5 nW) and Rx in Receive Mode (7 mW) - Industry's best EEMBC® ULPMark™ scores (1090 ULPMark CP @ 3 V; 1260 @ 2.1 V)
- Advanced Multi-Protocol Wireless Functionality:- Rx Sensitivity: - 94 dBm - Transmitting Power: -17 to +6 dBm - Supports Bluetooth Low Energy and 2.4 GHz proprietary/custom protocols - Supports Firmware Over The Air (FOTA)
- Flexible Voltage Supply Range (1.1 and 3.3 V): Supports devices using 1.2 and 1.5 V batteries without a required external DC/DC converter
- Ultra-Miniature:RSL10 is offered in a 5.50 mm² WLCSP and a 6 x 6 mm QFN. For added miniaturization, the radio SoC is also available in a complete System-in-Package (SiP) solution.
- Sophisticated Dual-Core Architecture:Features a programmable Arm Cortex-M3 processor for clocking speeds up to 48 MHz and the flexibility to support 2.4 GHz proprietary and custom protocol stacks. An embedded Digital Signal Processor (DSP) enables signal processing intensive applications, such as wireless audio codecs.
- On-Chip and Software Wireless Support:Features a 2.4 GHz Radio Frequency Front-End (RFFE) and a Bluetooth 5 certified baseband controller which supports 2 Mbps data rates. A wide range of supported Bluetooth low energy protocols are provided in the RSL10 development tools kit.
- Highly-Integrated System-on-Chip (SoC): The powerful dual-core architecture is complemented by high-efficiency power management units, oscillators, flash, and RAM memories, a DMA controller, and peripherals and interfaces.
- Other Key Technical Features:- 384 kB of flash memory- IP protection feature to secure flash contents- Configurable analog and digital sensor interfaces (GPIOs, LSADs, I2C, SPI, PCM)

Applications

- IoT Edge-Node Applications
- Bluetooth Low Energy Technology
- Wearables
- Energy Harvesting

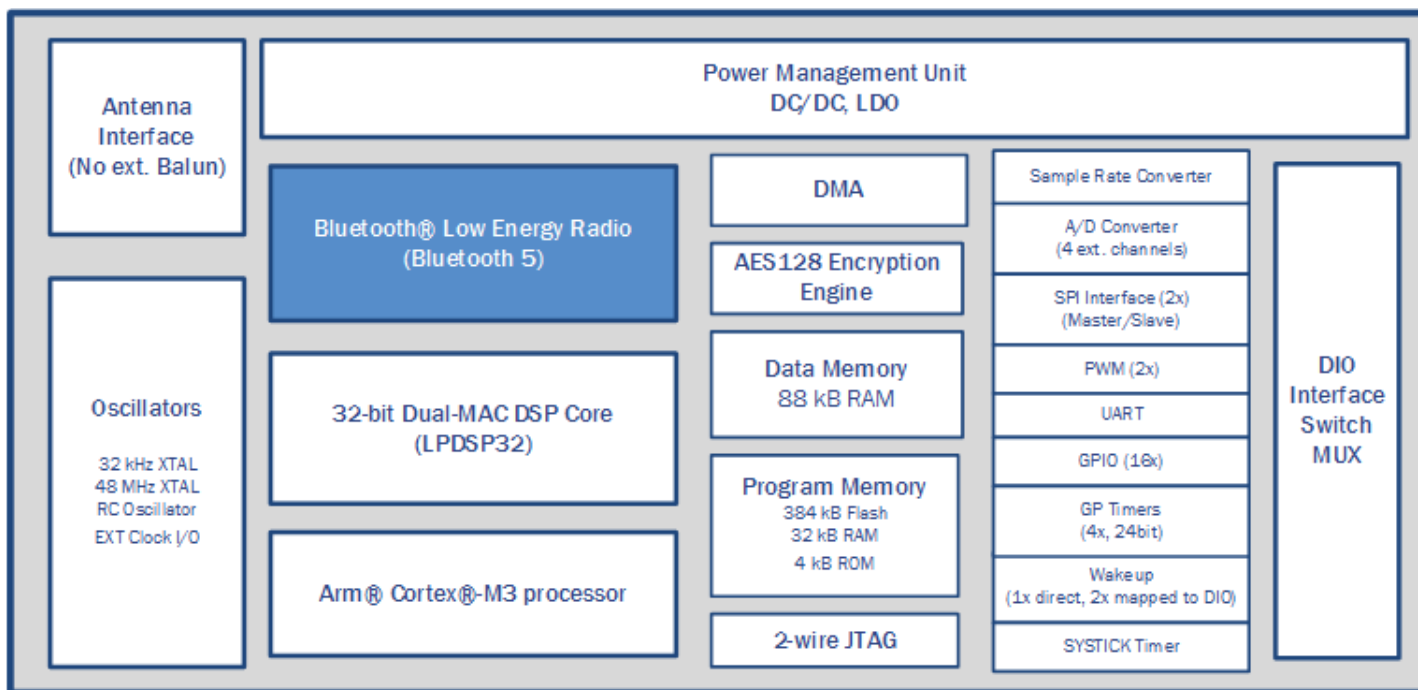
End Products

- Fitness Trackers/Activity Monitors
- Smart Watches
- Hearing Aids/Hearables
- Heart Rate Monitors
- Blood Glucose Monitors (BGM)

Part Electrical Specifications

Product	Compliance	Status	Data Transmission Standard	Frequency Band (MHz)	Carrier Frequency (MHz)	Package Type
NCH-RSL10-101Q48-ABG	Pb-free	Active	RF	2400-2480	2400-2480	QFN-48
	Halide free		Bluetooth Low Energy			
NCH-RSL10-101WC51-ABG	Pb-free	Active	Bluetooth Low Energy	2400-2480	2400-2480	WLCSP-51
	Halide free		RF			

Application Diagram



For more information please contact your local sales support at www.onsemi.com.

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