FOR ENERGY EFFICIENT INNOVATIONS

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RSL15 Product Presentation

July 2021

Confidential

Presentation Overview – Key Sections

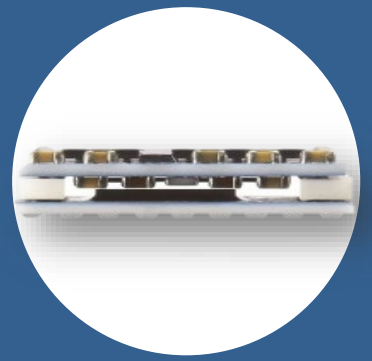
1. Bluetooth® Low Energy – Background, Market Overview
2. The ON Semiconductor Bluetooth Low Energy MCU Family
3. RSL15 Value Propositions
4. RSL15 Software Development Kit – Rapid End Application Development
5. Bluetooth Low Energy Use Cases
6. RSL15 Ordering Information – Ordering Direct or From Distributors
7. RSL15 Product and Design-in Support

Bluetooth Low Energy

Background, Technology and Market Overview

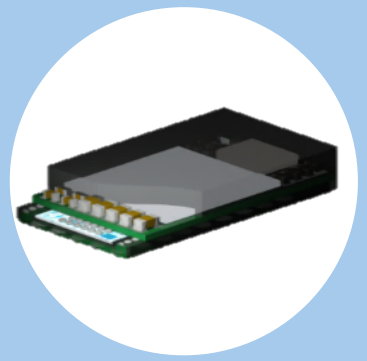
Background - What We Bring to Bluetooth Low Energy

Industrial Solutions Division - Experience & Expertise



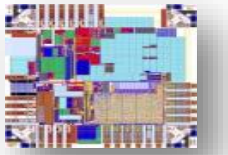
Ultra-Low-Power

Based on 20+ years developing DSP systems for hearing aids and wearable devices



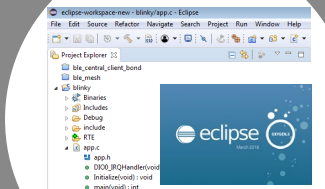
Miniaturization

Advanced 3D packaging technologies and manufacturing facilities



Analog Front End/DSP

Advanced, low-noise sensor interfacing and actuation, signal conversion, and processing



Software Tools

Comprehensive Software Development Kits with samples and tools that enable rapid application development

Market Trends and ON Semiconductor Expertise

Societal Trends	Resultant Actions	What ON Semi Brings
Energy Efficiency	• Widespread initiatives to reduce overall energy consumption • Shift to sustainable energy – "get more for less"	• Expertise in ultra-low power design • We see a need in the market for enabling the use of smaller batteries or sustainable energy sources
Data Security and Protection	• Protection of individuals' information • Emphasis on helping people feel safe that their personal information is not compromised	• Expertise in designing secure semiconductor solutions • We see a need in the market for content and data protection and cybersecurity in Bluetooth Low Energy
Big Data and Analytics	• Growing use of data-driven practices in key decision making – politically and economically • Requires large amount of data collection and computations	• Expertise in designing data processing engines • We see a need in the market for being able to wirelessly connect and process data from sensors
Automation and Connectedness	• Increasing levels of automation – less human interaction required in production • Relies on effective and targeted data connections	• Expertise in wireless communication and protocols • We see a need in the market for being able to wirelessly connect industry equipment for greater production output

Focus Markets and Application Areas

AUTOMOTIVE*

	2021	2025E	CAGR
Units	16MU	65MU	32%

- Remote Keyless Entry
- Tire Monitoring
- Battery Monitoring
- Connected Car

COMPLEX AUTONOMOUS SYSTEMS

OPTIMIZED RESOURCE CONSUMPTION

HEALTH

- Patient Monitoring
- Drug Delivery
- Life-Critical Devices

	2021	2025E	CAGR
Units	310MU	530MU	11%

IoT

INDUSTRIAL

- Smart Buildings/Cities
- Lighting/ Appliances
- Metering
- Surveillance
- Asset Tracking

	2021	2025E	CAGR
Units	363MU	900MU	18%

SENSOR-DRIVEN DECISION ANALYTICS

ACTIVITY TRACKING & LOCATION AWARENESS

DATA TRANSFER

- Smartphones
- Wireless Charging
- Wearables
  - Proximity Devices
  - Trackers

	2021	2025E	CAGR
Units	941M	1.46B	11%

Source: IHS iSuppli, Strategy Analytics, Databeans, TSR, Gartner, Corporate Marketing, BLE SIG Market Study 2021
*Automotive AEC-Q100 RSL15 to be available in 2022

The ON Semiconductor Bluetooth Low Energy MCU Family

RSL15 Secure Wireless MCU

Part of the ON Semiconductor Bluetooth Low Energy Family

Qualified for consumer and medical applications

RSL10 QFN
6 x 6

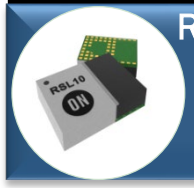
Designed for applications where space is critical

RSL10 WLCSP
2.3 x 2.3

All-in-one solution for easiest design in

Includes antenna, power management, filtering, passive components

Certified to Bluetooth and regional standards

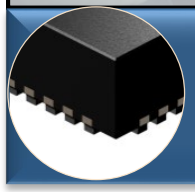


RSL10 System-in-Package (SiP)
6 x 8

Wettable flank-plated QFN

AEC-Q100 qualified (Grade 2)

Higher temperature range (-40 to +105°C)



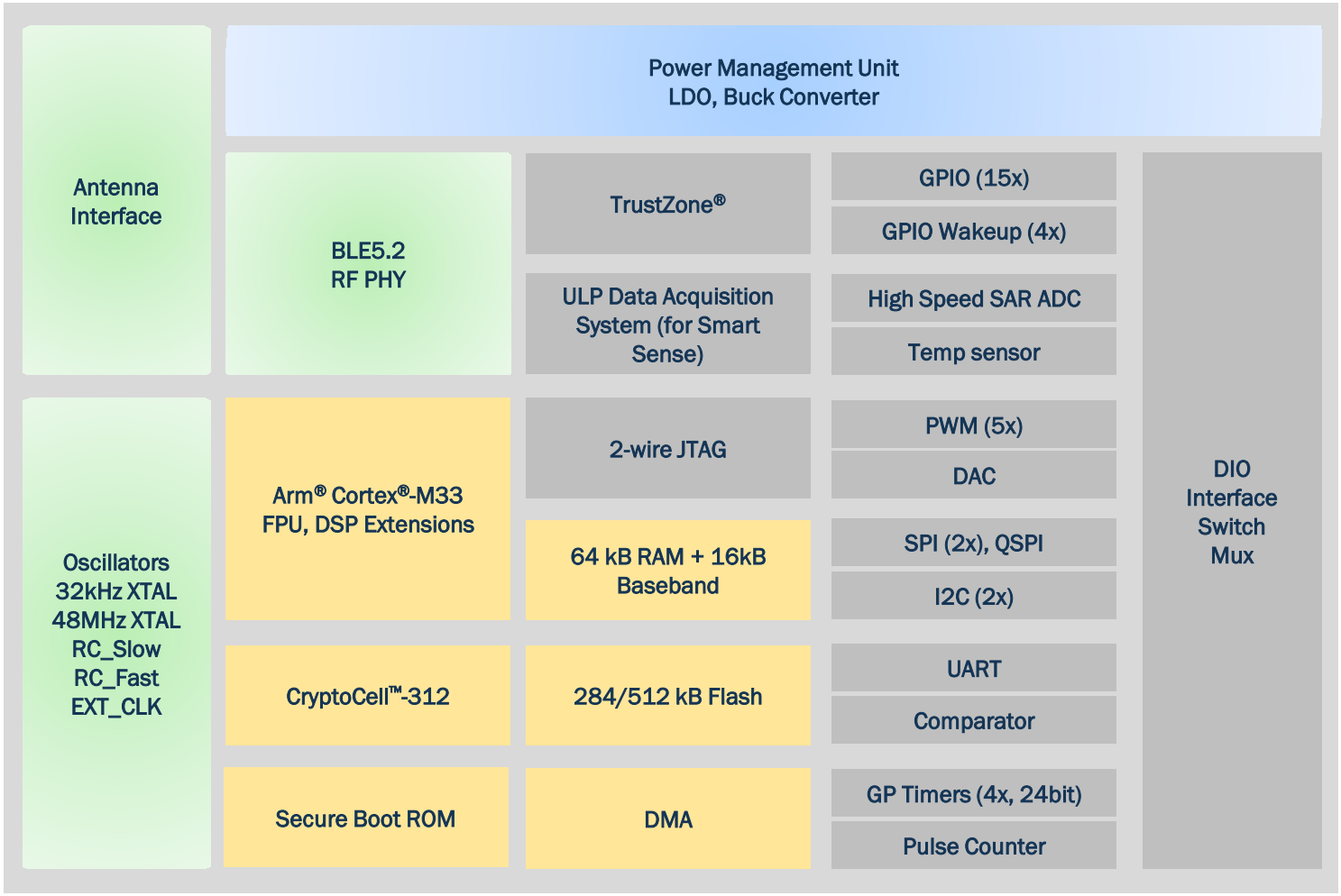
RSL10 Automotive QFN
7 x 7

Qualified for industrial IOT applications, smallest QFN

RSL15 QFN
5 x 5

RSL15 Technical Overview – Block Diagram

RSL15 High-Level Block Diagram



RSL15 Key Attribute	Customer Benefit
BLE5.2 (excl. LE Audio)	• **Long Range (Coded PHY)** • **Faster** firmware over the air (FOTA) upgrades • **Less** Rx/Tx time => reduced power
Internal RF Balun, <500ppm RC Oscillator*	• **Reduced** number of ext. components • **Reduced overall BoM cost**
Built-in PMU (1.2V-3.3V VBAT Typ), Multiple sleep modes	• **Reduced overall BoM cost** • **Optimized** for lowest power consumption
Security (Secure Debug, Secure Keys, CryptoCell, TrustZone)	• **Life Cycle Management** for manufacturing mgmt. incl. secure boot • **No unauthorized access** to proprietary source code
Arm Cortex-M33 processor	• **Industry-recognized** microcontroller core • CMSIS-packs with **numerous samples**

**Specifications for single-crystal operation to be released in Q4'21*

RSL15 Value Propositions

RSL15 Value Propositions

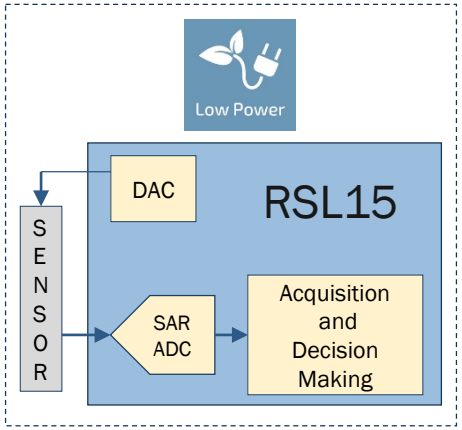
1

Industry Leading General Purpose Microcontroller with Easy to Use SDK

General Purpose MCU

2

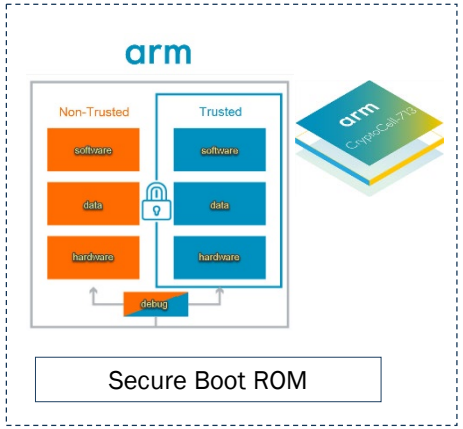
Industry's Lowest Power Flash-based Secure Bluetooth Low Energy MCU



Low Power with Sensor Modes

3

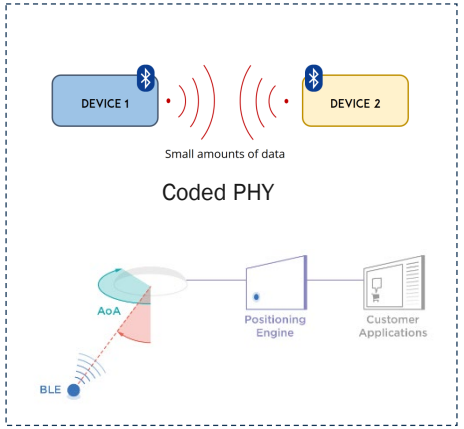
Latest in Embedded Security with Root of Trust



Security

4

Latest in Bluetooth Low Energy with Long Range and Localization



Bluetooth Low Energy 5.2

Images courtesy of Arm and Quuppa

Value Proposition #1: Best Performing General Purpose MCU

RSL15 is the best performing **general purpose microcontroller**

Top Performance score at 60.87 ULPMark™-CoreMark

Clear	Hardware	Core	Vendor Score	Cert.	Performance↓	Energy, Fixed Voltage	Energy, Best Voltage	Date
☐	Eta Compute ECM3531 RevA	Cortex-M3	✓	✓	60.0 2.2V [332]	79.3 3.0V [34.3]	90.6 2.2V [34.3]	2019-05-01
☐	Dialog Semiconductor DA14531 rev AD	M0+	✓	✓	46.7 1.8V [40.3]	48.5 3.0V [40.3]	52.0 1.8V [40.3]	2019-09-26
☐	STMicroelectronics STM32U585 RevB	Cortex-M33	✓		35.6 1.8V [627]	54.6 3.0V [62.7]	58.2 1.8V [62.7]	2021-02-16
☐	STMicroelectronics STM32L452 RevY	Cortex-M4	✓		23.4 2.2V [269]	19.5 3.0V [267]	23.5 2.2V [163]	2019-02-25
☐	Dialog Semiconductor DA14585 rev AC	M0	✓	✓	22.9 1.8V [37.4]	22.4 3.0V [37.4]	25.7 1.8V [37.4]	2019-09-27
☐	STMicroelectronics STM32L412 Rev A	Cortex-M4	✓		17.2 1.8V [269]	22.6 3.0V [80.8]	29.4 2.2V [80.8]	2019-02-25
☐	STMicroelectronics STM32L552 RevA	Cortex-M33	✓		13.9 1.8V [429]	18.4 3.0V [93.6]	20.7 1.8V [93.6]	2019-02-25

EMBC® EMBEDDED MICROPROCESSOR BENCHMARK CONSORTIUM

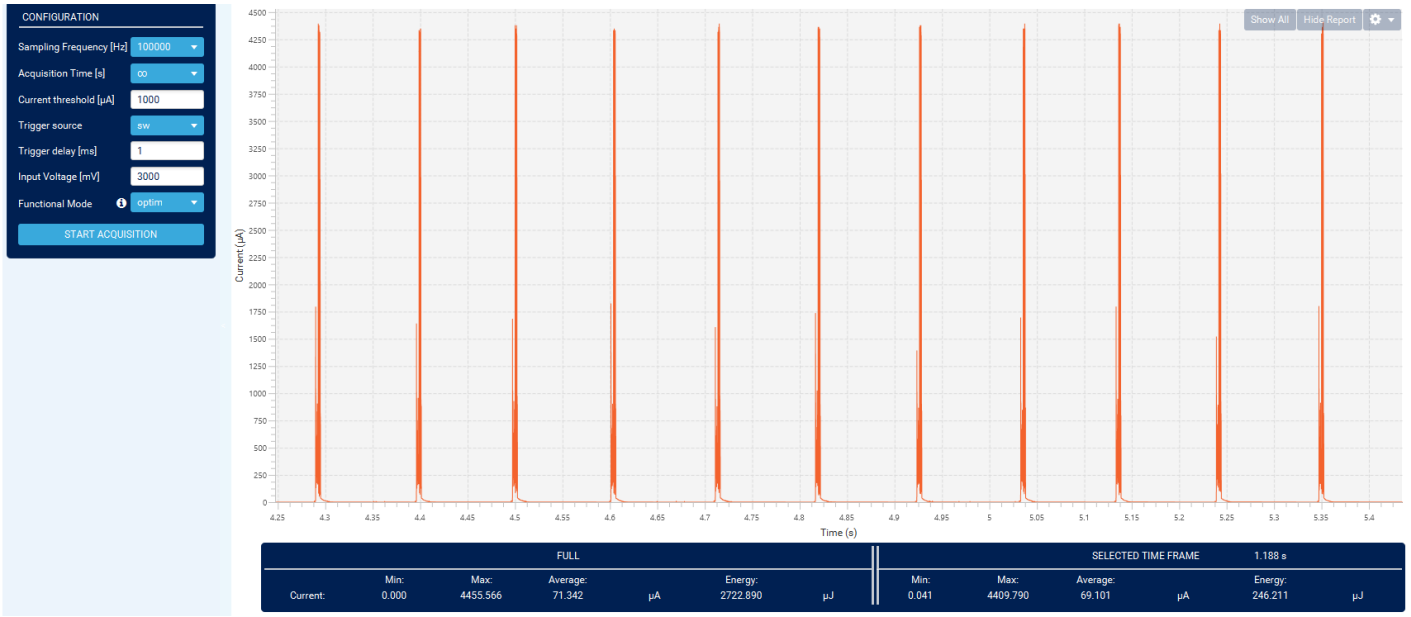
Note: RSL15 will be added to EEMBC website after launch

ULPMark™-CoreMark
An EEMBC Benchmark

EEMBC benchmark of active mode computational efficiency for general purpose microcontrollers

Note: More EEMBC benchmarks coming soon

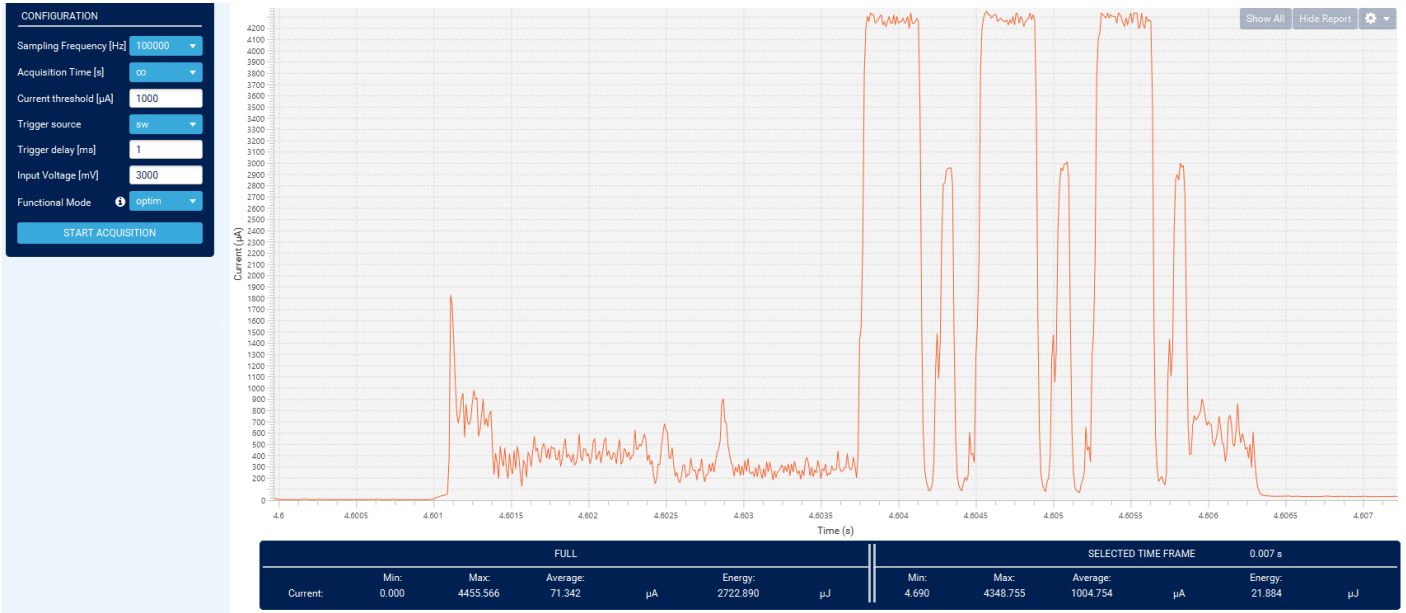
Value Proposition #2: Power Consumption During Advertising



Connectable Advertising:

- **Connected advertising performed approx. every 100ms (or 10 times per second) on 3 channels as per BLE5.2 Specification**

- Peak Rx current 2.9mA
- Peak Tx current 4.3mA
- Average current of ~69uA
- Total energy consumption of 246uJ
- @3V Supply, DCDC mode



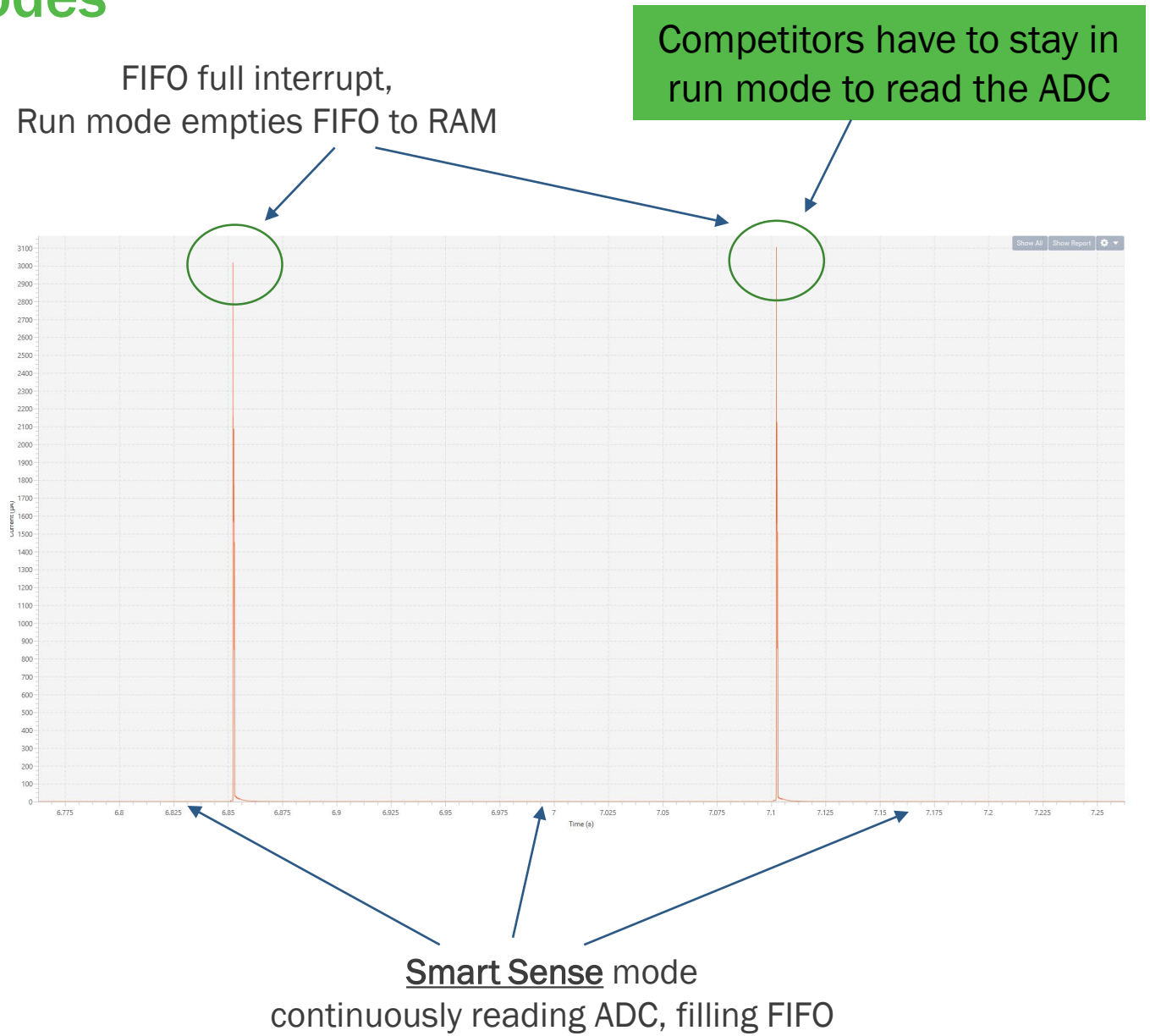
Single Connectable Advertising Event

- **Connected advertising event on 3 channels as per BLE5.2 Specification**

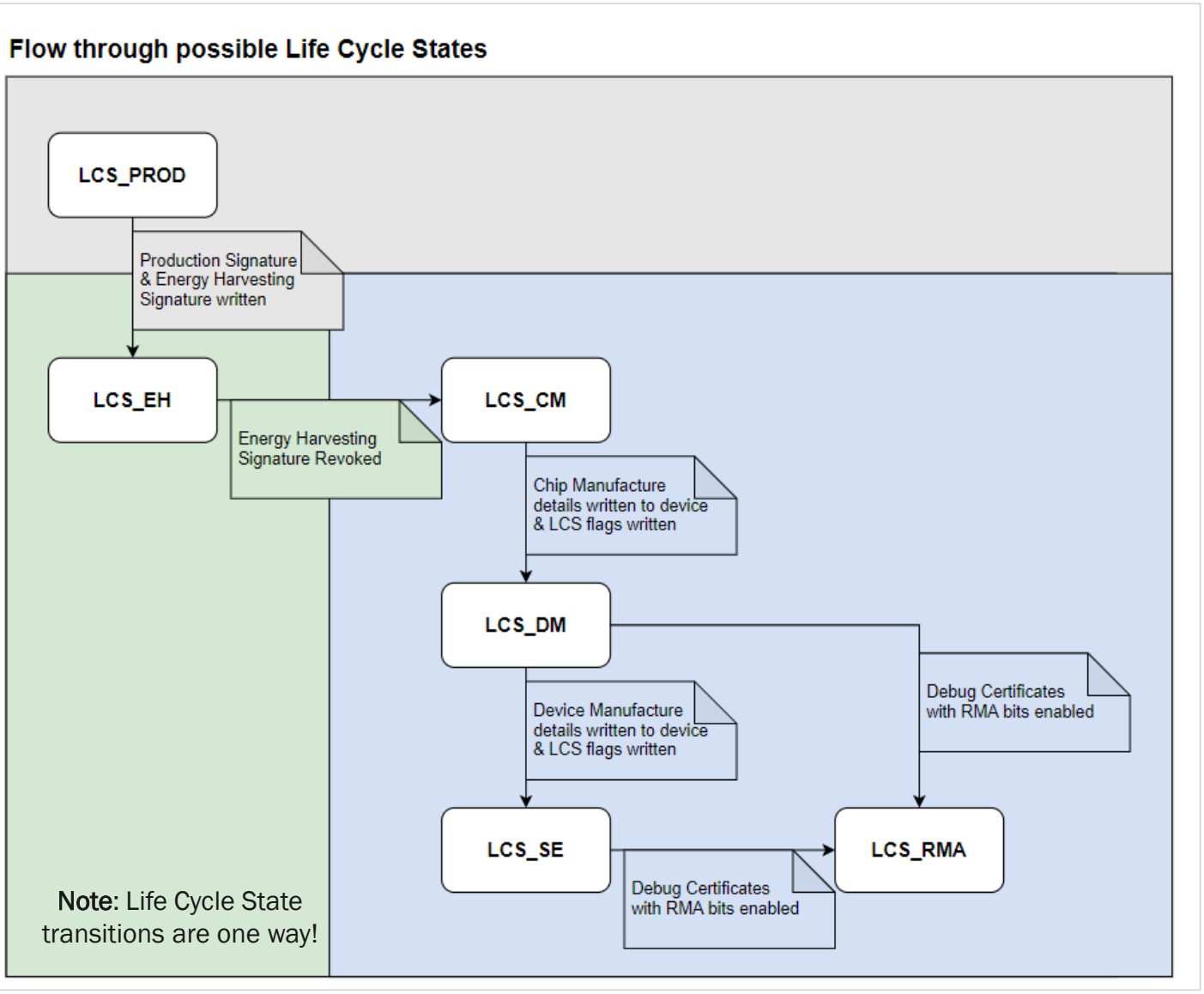
- Peak Rx current 2.9mA
- Peak Tx current 4.3mA
- Average current of ~1mA during event
- Total energy consumption 22uJ
- @3V Supply, DCDC mode

Value Proposition #2: Low Power Modes

- **Sleep** – lowest power mode
- **Standby** – low power with faster wakeup time
- **Idle** – low power with fastest wakeup time
- **Smart Sense** – low power mode to run the SAR ADC to continuously sample and store sensor data at very low system level power consumption



Value Proposition #3: Security – Life Cycle States (LCS)



- Life Cycle States are used to manage the security needed during the various states of a product
- Security does not need to be enabled during initial engineering development
- Security can then be added gradually as the product changes hands – and end up being fully secure when shipped to the consumer

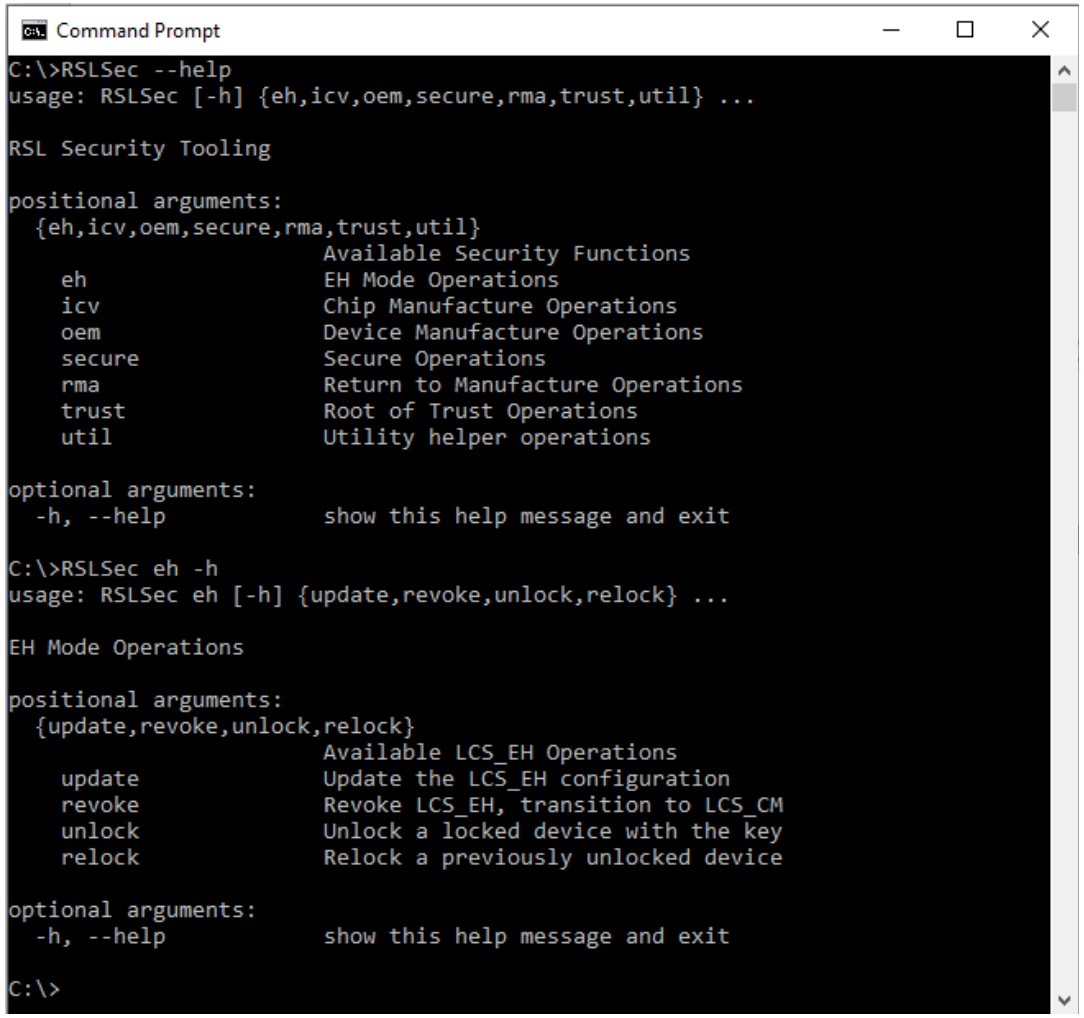
- **Energy Harvesting State (LCS_EH)**
  This is the default state upon delivery from ON Semiconductor – it allows the fastest boot to accommodate energy harvesting devices as security is disabled by default
- **Chip Manufacture State (LCS_CM)**
  This state allows provisioning of keys, setting up root of trust and generating encryption keys – typically done to create a first, secure bootloader
- **Device Manufacture State (LCS_DM)**
  Similar to Chip Manufacture State, this state allows provisioning of keys, setting up root of trust and generating encryption keys – typically done to create a second, secure bootloader
- **Secure State (LCS_SE)**
  This is the state used when shipping a device to a customer – no one can alter the content of the device without appropriate authentication
- **RMA State (LCS_RMA)**
  This is the state used if devices are returned from the field to enable troubleshooting

Value Proposition #3: Security – Life Cycle Management

Two components to make use of RSL15 security features:

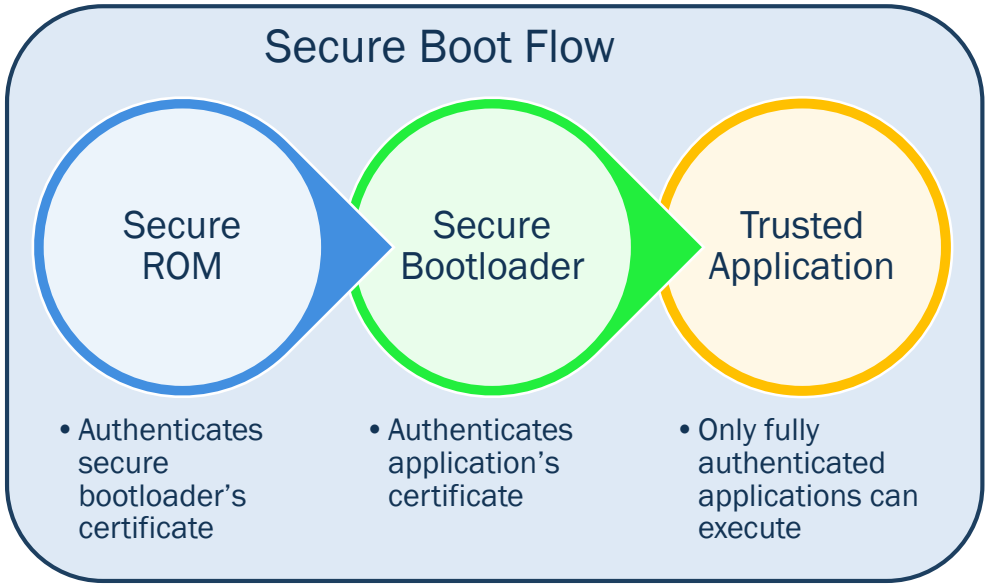
1) Command line PC application *RSLSec*
   - Creation of keys
   - Signing of applications
   - Generation of keys, hashes and certificates
   - Manages LCS and secure debug

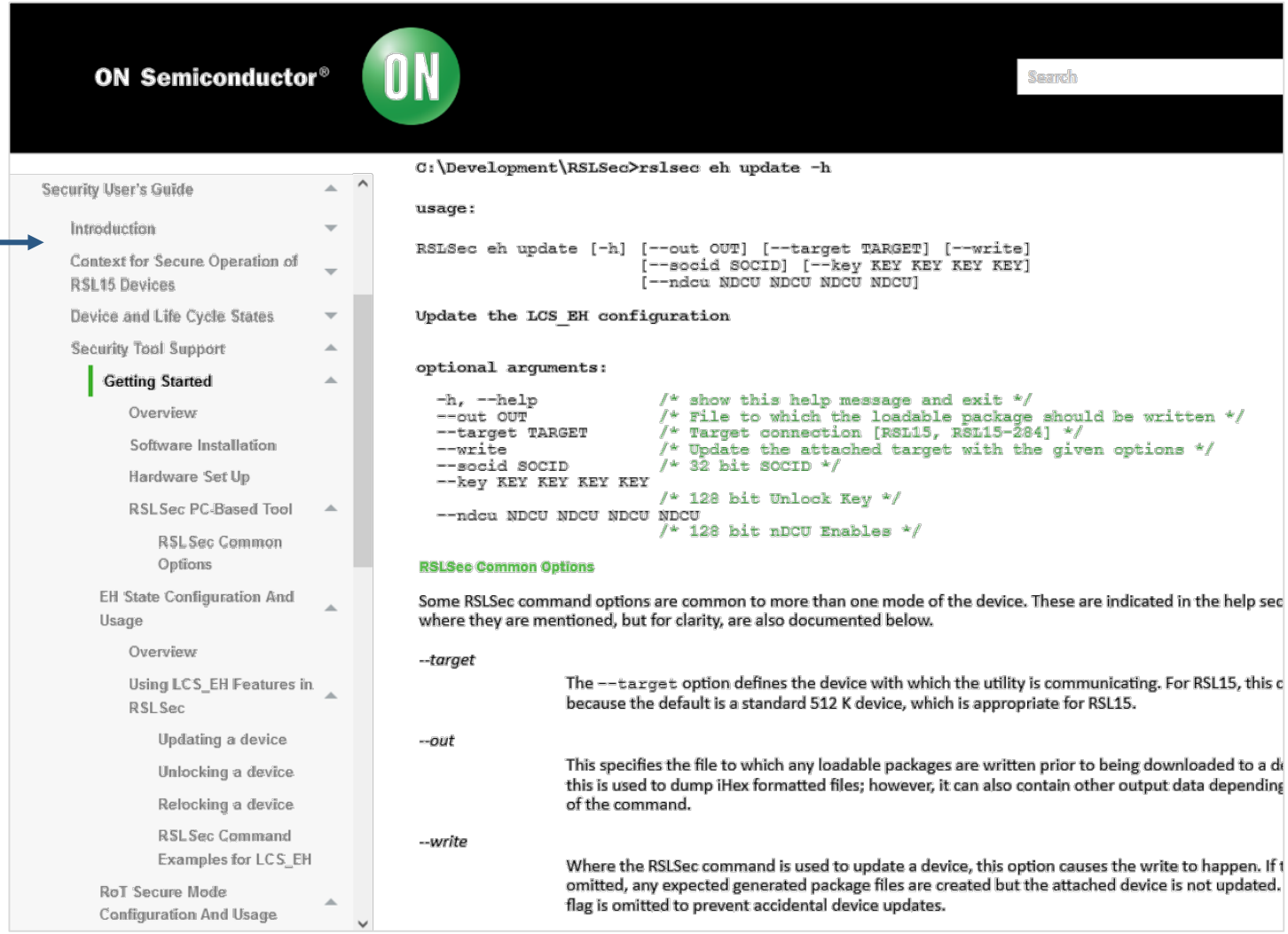
2) Embedded application on RSL15
   - Communicates with *RSLSec*
   - Performs specific lifecycle transition



Value Proposition #3: Security – Documentation

Step-by-step guides to get started with *RSLSec* and make use of RSL15 security





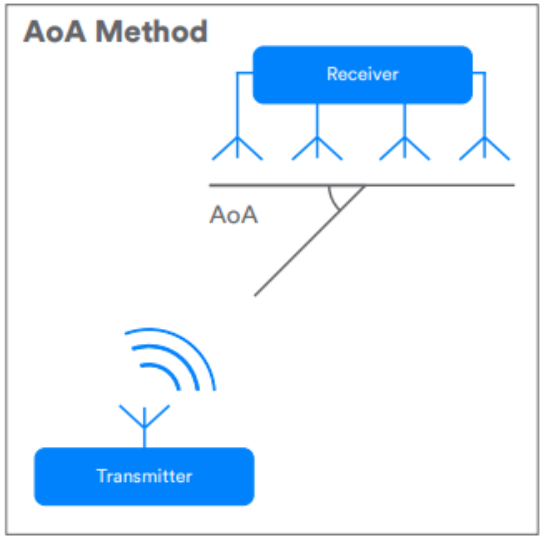
Value Proposition #3: Security – CryptoCell-312 and TrustZone

- True random number generator (TRNG)
- Standard encryption accelerators
- Support for a wide range of encryptions algorithms, including:
  - AES 128/192/256
  - SHA
  - PKI Support (RSA/DSA)
  - Elliptic Curve Cryptography (ECDH/ECDSA)
  - Message authentication (CMAC/HMAC)
- Secure boot embedded in hardware ROM
  - Hardware based Root of Trust using secrets stored in dedicated hardware
  - Multiple roots of trust (ICV/OEM)
  - Managed life cycle model
- Secure key storage
- Secure debug (controlled using certificates)
- Support for trusted execution environments by the incorporation of Arm TrustZone

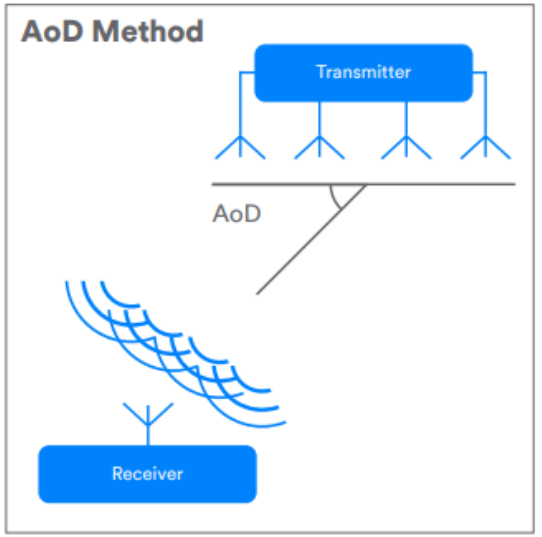
Value Proposition #4: Real-Time Localization Systems Use Cases and Concepts

Localization Use Cases

Asset Tracking & Monitoring | Industrial Automation | Smart Buildings



Bluetooth direction finding using angle of arrival (AoA)



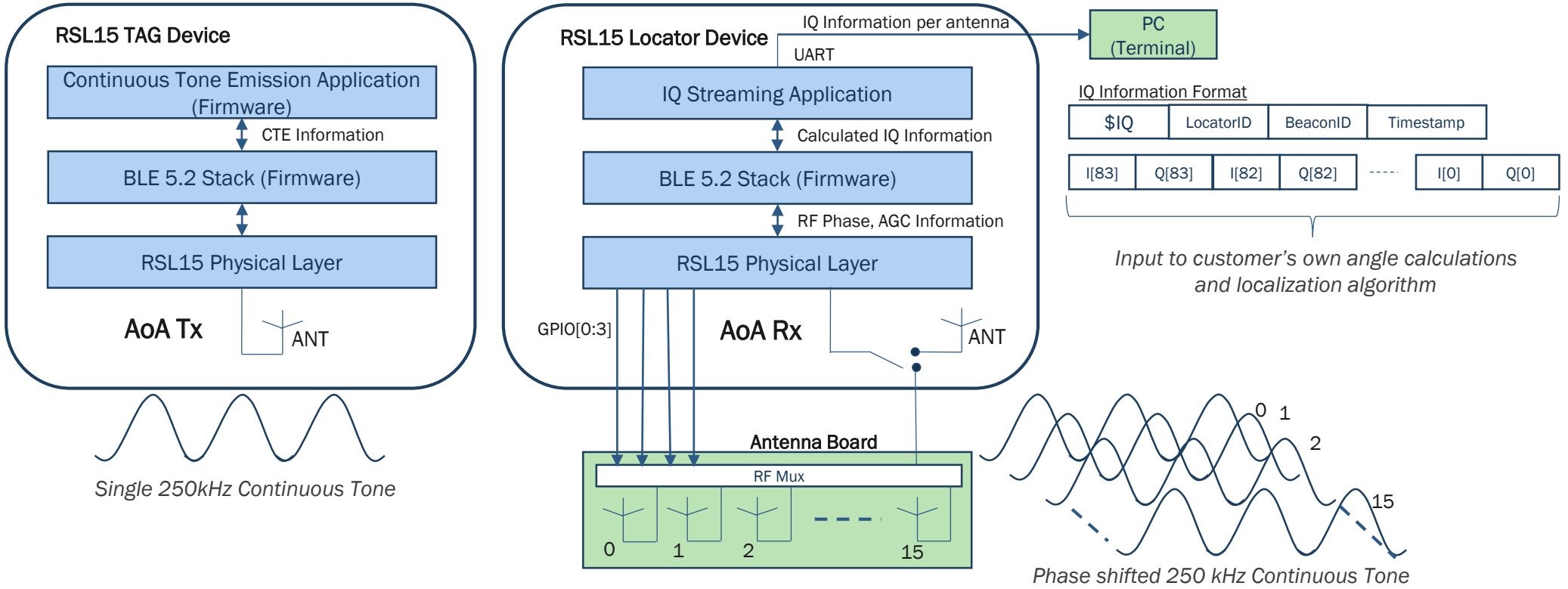
Bluetooth direction finding using angle of departure (AoD)

Localization Concepts

- **Trilateration** – localization based on RSSI – supported by RSL10/15
- **Angle of Arrival (AoA), Angel of Departure (AoD)** – supported by RSL15
- **Phase-based (HADM)**– localization based on phase difference between transmitted and received (reflected) signals – not supported by RSL10/RSL15

Images courtesy of Bluetooth SIG

Value Proposition #4: Localization Enablement



Localization Commands:

GAPM_PER_SYNC_IQ_SAMPLING_CTRL_CMD
GAPM_PER_ADV_IQ_REPORT_IND
GAPM_PER_ADV_CTE_TX_CTL_CMD

GAPC_CTE_TX_CFG_CMD
GAPC_CTE_RX_CFG_CMD
GAPC_CTE_REQ_CTRL_CMD
GAPC_CTE_RSP_CTRL_CMD
GAPC_CTE_IQ_REPORT_IND

Design Comments:

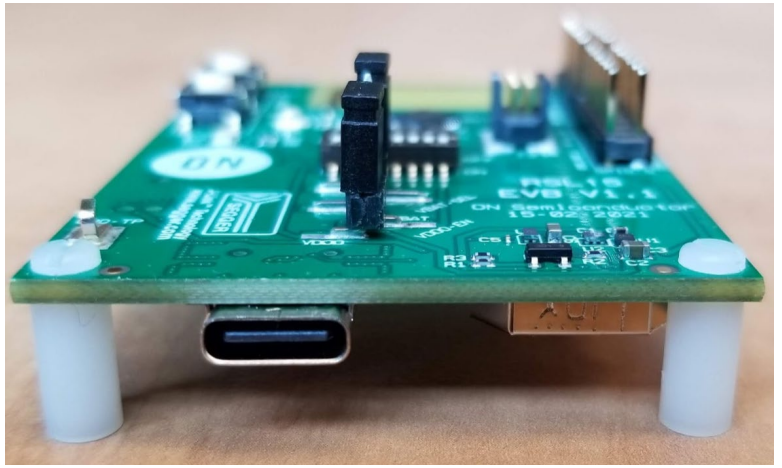
- Antenna boards with RF-mux not offered by ON Semi but can be purchased from www.corehw.com or others
- Method to physical connect antenna board to RSL15 EVB will vary and software may need to be adapted

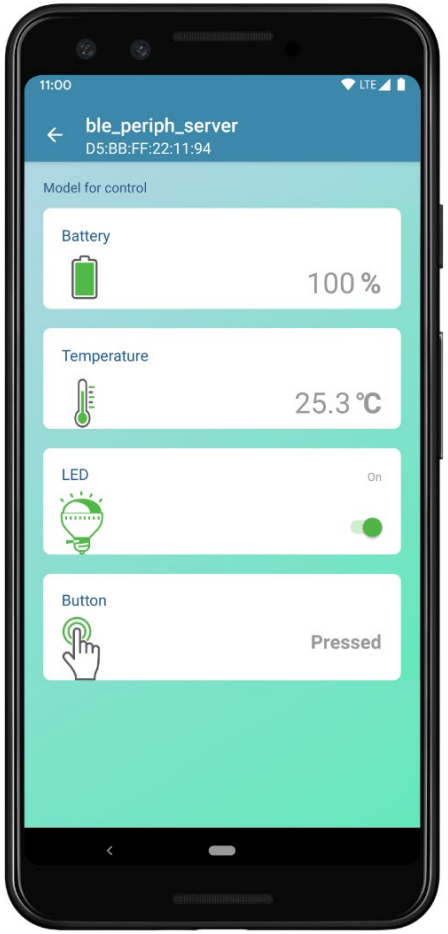
RSL15 Software Development Kit

Rapid End Application Development

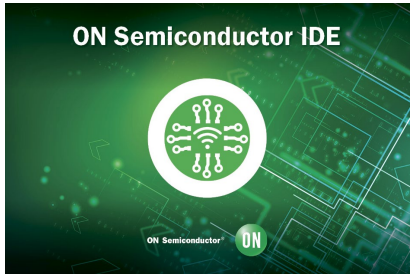
RSL15 EVB - 'Out-of-the-Box' Experience

- Clean design for improved ease of use
- Connects to *RSL15 Central* mobile app out of the box
- CR2032 coin-cell battery holder





RSL15 Software Ecosystem Overview



arm KEIL

Download at www.onsemi.com/rsl15

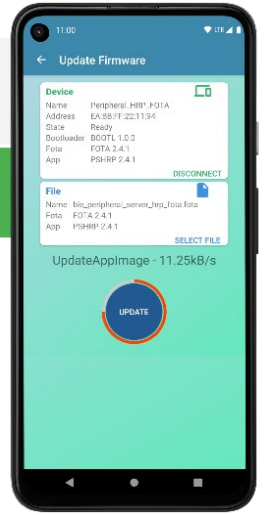
Downloads	Software Product	Description
Download	RSL15 Documentation Package	Start here. Getting Started Guide, Developer's Guide and detailed firmware and hardware documentation
Download	ON Semiconductor IDE Installer	Eclipse-based ON Semiconductor IDE
Download	RSL15 Firmware Package	RSL15 CMSIS-Pack containing drivers, libraries, and sample code and SDK release notes
Download	RSLSec	PC application to manage device security features, lifecycle states and the manufacturing provisioning process
Download	BLE Explorer	PC application that acts as a Bluetooth central to your peripheral device (requires RSL10-USB001GEVK)
Download	RF Tools	PC application to help test, tune and validate Bluetooth Low Energy RF PHY performance
Visit the **Community Forums** to learn more and join the conversation.		

← Searchable HTML docs

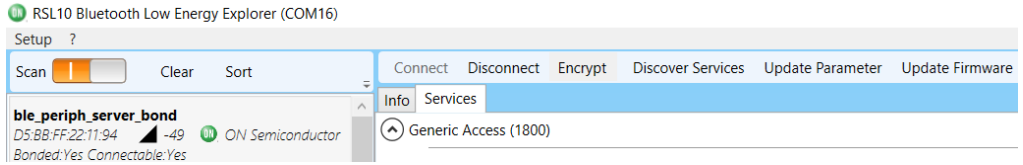
← Includes support for Keil µVision®

Mobile app downloads:
- Android - RSL15 Central, RSL FOTA
- iOS - RSL15 Central, RSL FOTA

App source code available by request

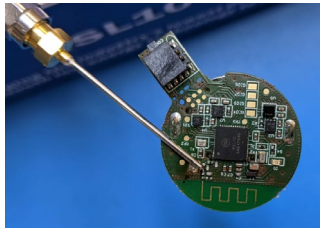


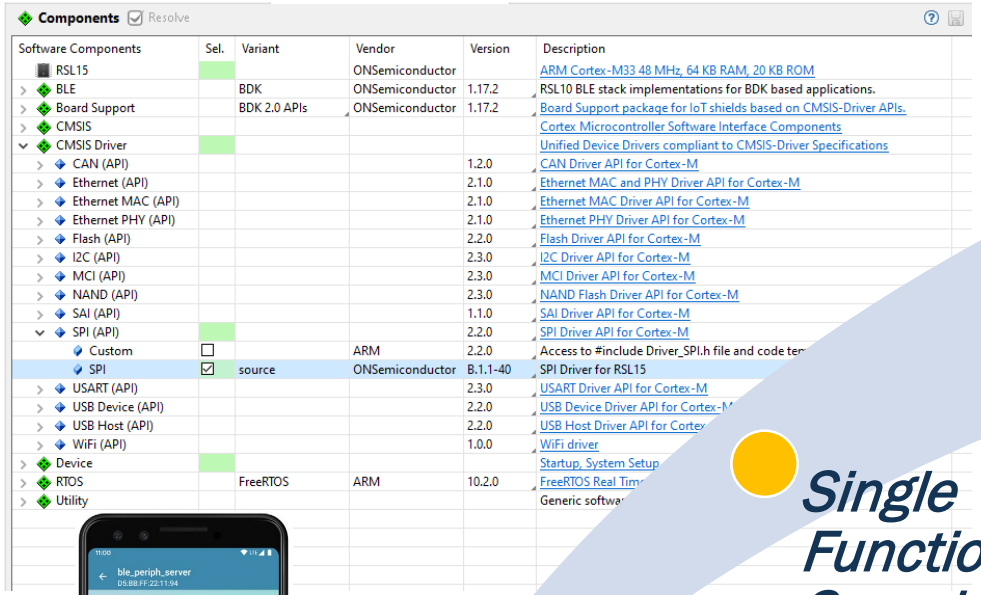
The Firmware Developer's Journey

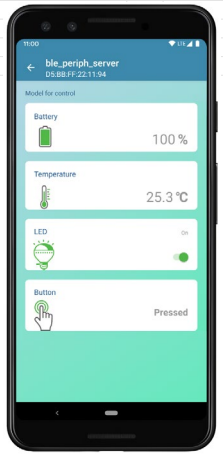


ON Community Forums

Bluetooth®







Start Here

- Load '*blinky*' sample onto EVB

Single Function Samples

- Focus on a single function such as *uart* or *sleep*

Wireless Samples

- Make a BLE connection without worrying about sleep
- Tune BLE parameters for your application

Integrated Samples

- Learn how *BLE sleep*, *FOTA*, etc. interact as a complete system

Build Your Application

- Build your application on top of sample code
- Follow the guide to get started quickly

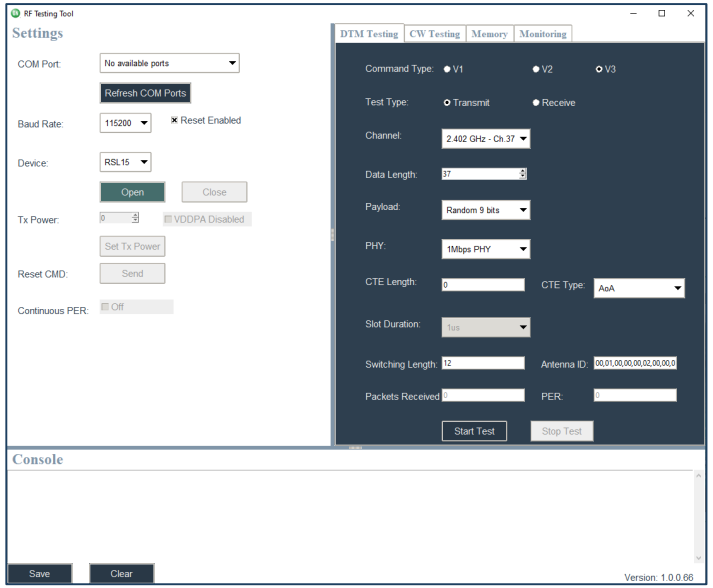
Firmware Samples

- *ble_** samples for BLE connectivity
- **_cmsis* peripheral drivers
- *sleep_mode* and *standby_mode* for power mode samples
- *CC312** for CryptoCell-312 encryption samples
- *swmTrace* for printing and logging

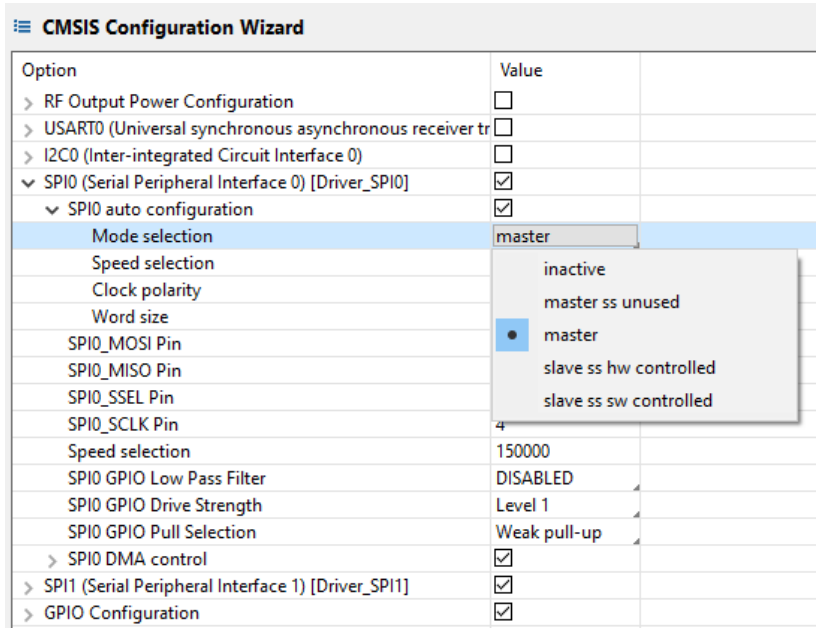
Example	Action	Description
ble_advertiser_DF (RSL15 Evaluation Board)	Copy	BLE Advertiser Directional Finding Sample Code
ble_central_client (RSL15 Evaluation Board)	Copy	BLE Central Client Sample Code
ble_central_DF (RSL15 Evaluation Board)	Copy	BLE Central Directional Finding Sample Code
ble_peripheral_cntl_priv (RSL15 Evaluation Board)	Copy	BLE Peripheral Server Controller Privacy Sample Code
ble_peripheral_DF (RSL15 Evaluation Board)	Copy	BLE Peripheral Directional Finding Sample Code
ble_peripheral_server (RSL15 Evaluation Board)	Copy	BLE Peripheral Server Sample Code
ble_peripheral_server_sleep (RSL15 Evaluation Bo	Copy	BLE Peripheral Server Sleep Sample Code
ble_peripheral_server_standby (RSL15 Evaluation	Copy	BLE Peripheral Server Standby Sample Code
ble_radioADC_IQ (RSL15 Evaluation Board)	Copy	BLE Radio ADC and IQ Sampling Steaming Sample Code
ble_scanner_DF (RSL15 Evaluation Board)	Copy	BLE Scanner Directional Finding Sample Code
blinky (RSL15 Evaluation Board)	Copy	Blinky Sample Code
blinky_fota (RSL15 Evaluation Board)	Copy	Blinky FOTA Sample Code
bootloader (RSL15 Evaluation Board)	Copy	Bootloader Sample Code
calibratelib_sample (RSL15 Evaluation Board)	Copy	Calibratelib Sample Code
CC312_AES (RSL15 Evaluation Board)	Copy	AES Sample Code
CC312_AES_256_CTR (RSL15 Evaluation Board)	Copy	AES-CTR Profiling Sample Code
CC312_CCM (RSL15 Evaluation Board)	Copy	CCM Sample Code
CC312_CMAC (RSL15 Evaluation Board)	Copy	CMAC Sample Code
CC312_ECDH (RSL15 Evaluation Board)	Copy	ECDH Sample Code
CC312_ECDSA (RSL15 Evaluation Board)	Copy	ECDSA Sample Code
CC312_HMAC (RSL15 Evaluation Board)	Copy	HMAC Sample Code
CC312_HMAC_Interleaved (RSL15 Evaluation Boa	Copy	HMAC Interleaved Sample Code
CC312_QuickStart (RSL15 Evaluation Board)	Copy	Crypto Quick Start Sample Code
CC312_RSA (RSL15 Evaluation Board)	Copy	RSA Sample Code
CC312_SHA (RSL15 Evaluation Board)	Copy	SHA Sample Code
CC312_TRNG (RSL15 Evaluation Board)	Copy	TRNG Sample Code
CC312_TRNG_Self_Test (RSL15 Evaluation Board)	Copy	TRNG Self Test Sample Code
dma_driver (RSL15 Evaluation Board)	Copy	DMA Driver Sample Code
flash (RSL15 Evaluation Board)	Copy	Flash Sample Code
hardfault_handler (RSL15 Evaluation Board)	Copy	HardFault Handler Sample Code
hci_app (RSL15 Evaluation Board)	Copy	BLE HCI Sample Code
i2c_cmsis (RSL15 Evaluation Board)	Copy	I2C CMSIS-Driver Sample Code
lsad (RSL15 Evaluation Board)	Copy	LSAD Sample Code
print_device_info (RSL15 Evaluation Board)	Copy	Print Device Info Sample Code
sleep_mode (RSL15 Evaluation Board)	Copy	Sleep Mode Sample Code
spi_cmsis (RSL15 Evaluation Board)	Copy	SPI CMSIS-Driver Master Sample Code
spi_master_cmsis (RSL15 Evaluation Board)	Copy	SPI CMSIS-Driver Master Sample Code
spi_slave_cmsis (RSL15 Evaluation Board)	Copy	SPI CMSIS-Driver Slave Sample Code
standby_mode (RSL15 Evaluation Board)	Copy	Standby Mode Sample Code
swmTraceExample (RSL15 Evaluation Board)	Copy	SwmTrace Sample Code
timer_driver (RSL15 Evaluation Board)	Copy	Timer Driver Sample Code
timer_free_run (RSL15 Evaluation Board)	Copy	Timer Free Run Sample Code
trustzone_non_secure (RSL15 Evaluation Board)	Copy	Trustzone non-secure Sample Code
trustzone_secure (RSL15 Evaluation Board)	Copy	Trustzone secure Sample Code
uart_cmsis (RSL15 Evaluation Board)	Copy	UART CMSIS-Driver Sample Code

Easy-to-Use Development Tools

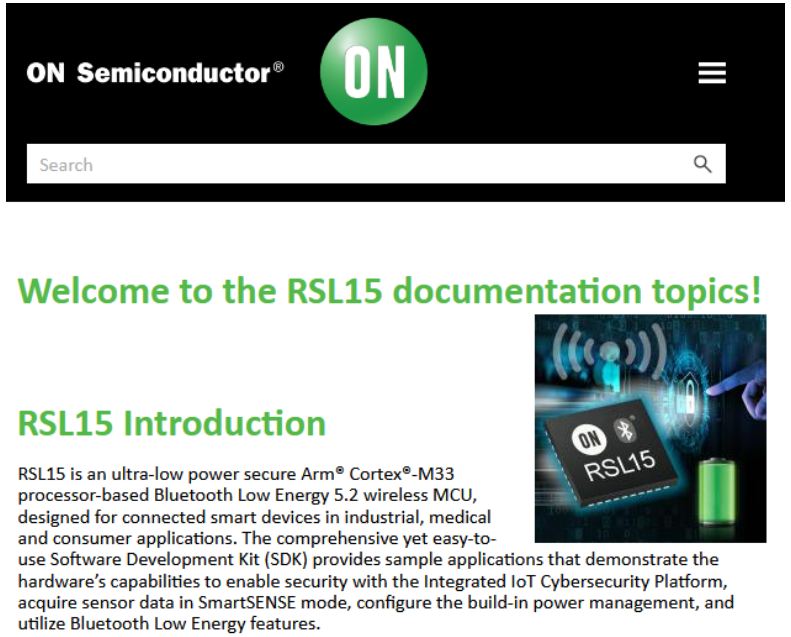
- Free Eclipse-based ON Semiconductor IDE for RSL10 and RSL15
- Support for Keil development environment
- Convenient CMSIS-Pack with code generation wizards
- Fully searchable HTML documentation
- RF Testing Tool for antenna development as well as pre-certification assessments



RF Testing Tool

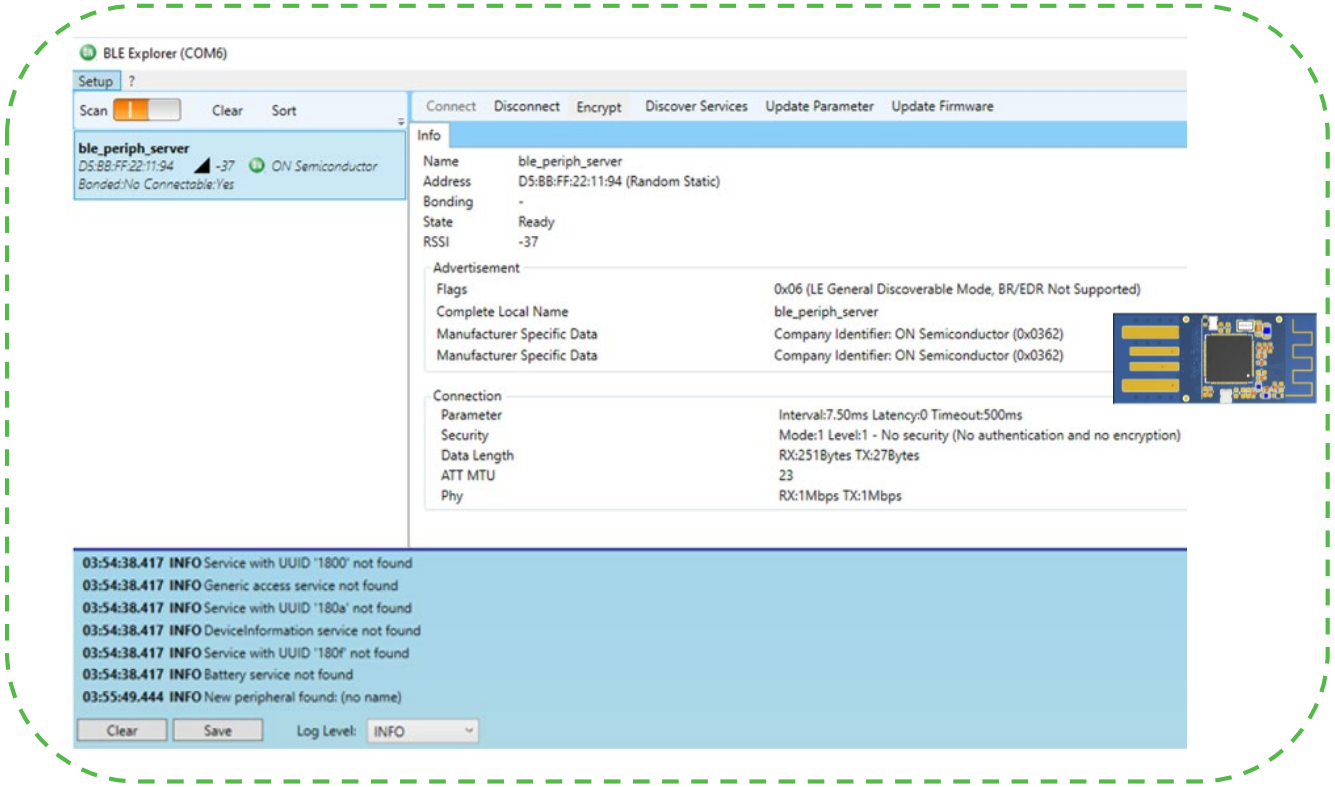


CMSIS Configuration Wizard



BLE Explorer – PC Application with RSL10 USB Dongle

- Acts as a BLE central device to your RSL15 peripheral application under development
- Visualizes data, logs the wireless interactions and even displays beacon data
- Discovers peripheral services and performs FOTA



RSL15 peripheral application

Bluetooth Low Energy Success Stories

RSL15 Use Cases

With corresponding success stories based on RSL10

Smart Building

Electronic access badges, vending machines, smoke alarms, HVAC systems

Smart lock

ON Semi was selected for:

- Best-in-class power consumption
- Easy connectivity to smartphone
- Excellent customer support

Smart City

People & asset tracking, door access control, fleet management, equipment control

Beacons for contact tracing and Healthcare IoT

Reasons for selecting ON Semi:

- High performance processing
- Increased accuracy and reliability
- Double the battery life of previous solution

Smart Industry

Electronic tags, data logging, worker safety, machine monitors

Trackable tags for real-time location

ON Semi solution selected for:

- Brand reputation
- High accuracy and reliability
- Ultra-low power consumption

Smart Industry

Electronic tags, data logging, worker safety, machine monitors

Wireless testing & reporting for commercial equipment

Customer selected ON Semi for:

- Ultra-low power consumption
- Small size and high quality
- Timely responses from support team
- FOTA (Firmware-over-the-Air) capability

Low/No-Power Connected Devices

Circuit breakers, light switches, utility meters, thermostats

Energy harvesting light control

Reasons ON Semi was selected:

- Allows for smartphone control
- Eliminates need for wiring from switch to light
- Switch can be placed anywhere, no battery or wall power required

RSL15 Ordering Information

RSL15 Ordering Information

- Two P/Ns available:
  - NCH-RSL15-284-101Q40-ACG (284kB Flash)
  - NCH-RSL15-512-101Q40-ACG (512kB Flash)
- Evaluation board:
  - RSL15-EVB (come with 512kB Flash)

- Eval boards & samples available directly from ON Semi and also via distributors

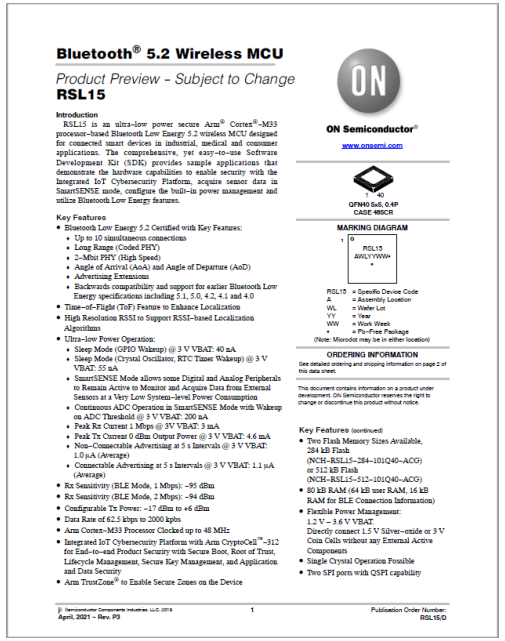
RSL15 Product and Design-in Support

Support and Collateral at www.onsemi.com/RSL15

Links to resources will be live on launch date

Data Sheet

Click Here



Bluetooth® 5.2 Wireless MCU

Product Preview – Subject to Change

RSL15

ON Semiconductor®

www.onsemi.com

QFN40 5x5, 0.4P
CASE 485CR

MARKING DIAGRAM

RSL15
AWLYYWW•

RSL15 = Specific Device Code
A = Assembly Location
WL = Wafer Lot
YY = Year
WW = Work Week
• = Pb−Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

This document contains information on a product under development. ON Semiconductor reserves the right to change or discontinue this product without notice.

Introduction

RSL15 is an ultra−low power secure Arm® Cortex®−M33 processor−based Bluetooth Low Energy 5.2 wireless MCU designed for connected smart devices in industrial, medical and consumer applications. The comprehensive, yet easy−to−use Software Development Kit (SDK) provides sample applications that demonstrate the hardware capabilities to enable security with the Integrated IoT Cybersecurity Platform, acquire sensor data in SmartSENSE mode, configure the built−in power management and utilize Bluetooth Low Energy features.

Key Features

- Bluetooth Low Energy 5.2 Certified with Key Features:
  - Up to 10 simultaneous connections
  - Long Range (Coded PHY)
  - 2−Mbit PHY (High Speed)
  - Angle of Arrival (AoA) and Angle of Departure (AoD)
  - Advertising Extensions
  - Backwards compatibility and support for earlier Bluetooth Low Energy specifications including 5.1, 5.0, 4.2, 4.1 and 4.0
- Time−of−Flight (ToF) Feature to Enhance Localization
- High Resolution RSSI to Support RSSI−based Localization Algorithms
- Ultra−low Power Operation:
  - Sleep Mode (GPIO Wakeup) @ 3 V VBAT: 40 nA
  - Sleep Mode (Crystal Oscillator, RTC Timer Wakeup) @ 3 V VBAT: 55 nA
  - SmartSENSE Mode allows some Digital and Analog Peripherals to Remain Active to Monitor and Acquire Data from External Sensors at a Very Low System−level Power Consumption
  - Continuous ADC Operation in SmartSENSE Mode with Wakeup on ADC Threshold @ 3 V VBAT: 200 nA
  - Peak Rx Current 1 Mbps @ 3V VBAT: 3 mA
  - Peak Tx Current 0 dBm Output Power @ 3 V VBAT: 4.6 mA
  - Non−Connectable Advertising at 5 s Intervals @ 3 V VBAT: 1.0 μA (Average)
  - Connectable Advertising at 5 s Intervals @ 3 V VBAT: 1.1 μA (Average)
- Rx Sensitivity (BLE Mode, 1 Mbps): −95 dBm
- Rx Sensitivity (BLE Mode, 2 Mbps): −94 dBm
- Configurable Tx Power: −17 dBm to +6 dBm
- Data Rate of 62.5 kbps to 2000 kpbs
- Arm Cortex−M33 Processor Clocked up to 48 MHz
- Integrated IoT Cybersecurity Platform with Arm CryptoCell™−312 for End−to−end Product Security with Secure Boot, Root of Trust, Lifecycle Management, Secure Key Management, and Application and Data Security
- Arm TrustZone® to Enable Secure Zones on the Device

Key Features (continued)

- Two Flash Memory Sizes Available, 284 kB Flash (NCH−RSL15−284−101Q40−ACG) or 512 kB Flash (NCH−RSL15−512−101Q40−ACG)
- 80 kB RAM (64 kB user RAM, 16 kB RAM for BLE Connection Information)
- Flexible Power Management: 1.2 V − 3.6 V VBAT. Directly connect 1.5 V Silver−oxide or 3 V Coin Cells without any External Active Components
- Single Crystal Operation Possible
- Two SPI ports with QSPI capability

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Docs Package

Click Here

RSL15 Documentation Package:

- Getting started guide
- Developer's guide
- Firmware reference manual
- Hardware reference manual
- And more …

User Manual

Click Here

RSL15 Evaluation and Development Board User's Manual

EVBUM2757/D

ON Semiconductor®

www.onsemi.com

EVAL BOARD USER'S MANUAL

(Top Side)

(Bottom Side)

Figure 1. RSL15 Evaluation and Development Board Overview

INTRODUCTION

Purpose

This manual provides information on the hardware configuration and use of the RSL15 Evaluation and Development Board.

The Evaluation and Development Board (referred to as the EVB) is designed to be used with the RSL15 Software development kit. It is intended for evaluating the performance and capabilities of RSL15, and for developing software applications for this device. The Software Development Kit is available at www.onsemi.com/rsl15.

Conventions

In this manual, component and pin names are shown in a CAPITALIZED MONOSPACE font.

Manual Organization

The RSL15 Evaluation & Development Board User Guide contains the following sections:

- "Introduction" describes the purpose of this manual, explains how the manual is organized, and provides a list of suggested reading for more information.
- "Board Design and Overview" provides an overview of the Evaluation and Development Board as described in this manual.
- "Configuration" provides detailed information about the Evaluation and Development Board. This chapter contains information on the following topics:
  - Automatic switching power supply
  - SEGGER® J−Link® on−board Debug Port
  - RF Outputs
  - General Purpose Input/Output (GPIO)
  - Test Points
  - Indicator LEDs

Further Reading

For any technical information not covered in this manual, refer to the following documents:

- The searchable HTML documentation
- RSL15 Evaluation and Development Board Schematics
- RSL15 Evaluation and Development Board 3D Model

The above documentation can be found at www.onsemi.com/rsl15.

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Evaluation Board

Click Here

ON Semiconductor Community Forums for RSL10 and RSL15

ON Community Forums

www.onsemi.com/forums

Explore Knowledge Base articles and FAQs

Collaborate with ON Semi SMEs and customers

Start a new topic or respond to a thread to share your insights

Search for specific topics or products

Share ideas, firmware and design solutions

Filter by connectivity type to find exactly what you're looking for

Log in with your MyON account to contribute