



# **Bluetooth<sup>®</sup> Real-Time Locating Library 9.0.0.0 GA**

## **Simplicity SDK Suite 2024.12.0**

### **December 16, 2024**

---

Silicon Labs is a leading vendor in Bluetooth hardware and software technologies, used in products such as sports and fitness, consumer electronics, beacons, and smart home applications.

The Real-Time Locating (RTL) library contains features for Angle of Arrival estimation and spatial positioning. The software library comes with a C-programming language API for Windows (x86\_64) and Linux (ARM Cortex A, x86\_64) hosts.

The RTL Library is released with the Bluetooth SDK. These release notes cover the following version(s):

Real-Time Locating Library 9.0.0.0 in Bluetooth SDK 9.0.0.0 released on December 16, 2024.



#### **KEY FEATURES**

---

- Channel Sounding sparse channel map support
- Channel Sounding antenna switching support

---

# Contents

- 1 New Items ..... 3
  - 1.1 New Features ..... 3
- 2 Improvements ..... 4
- 3 Fixed Issues ..... 5
- 4 Known Issues in the Current Release ..... 6
- 5 Deprecated Items ..... 7
- 6 Removed Items ..... 8
- 7 Using This Release ..... 9
  - 7.1 Installation and Use ..... 9
  - 7.2 Support ..... 9
  - 7.3 SDK Release and Maintenance Policy ..... 9

# 1 New Items

## 1.1 New Features

### Added in release 9.0.0.0

#### **Channel Sounding sparse channel map support**

Support for different channel maps used for Channel Sounding is added. This enables the use of different channel spacing and channel count to be used to balance between accuracy performance and range, versus computation time and power consumption.

#### **Channel Sounding antenna switching support**

Support for different number of antenna paths used during Channel Sounding. This enables use of number antenna paths greater than 1 to improve accuracy performance.

## 2 Improvements

### Changed in release 9.0.0.0

None.

### 3 Fixed Issues

#### Fixed in release 9.0.0.0

ID #	Description
1296960	Added proper handling of special value indicating that the RSSI measurement is not available. This prevents large errors in RSSI based distance estimate.

## 4 Known Issues in the Current Release

Issues in bold were added since the previous release.

ID #	Description	Workaround
375152	In heavy multipath conditions, the line-of-sight signal is not always detected correctly. In some cases this may mean large errors in both azimuth and elevation readings.	None
1327378	SL_RTL_CS_ALGO_MODE_STATIC_HIGH_ACCURACY is not supported for SL_RTL_CS_MODE_RTT.	None
1322998	Large fluctuation observed in distance estimate likeliness for SL_RTL_CS_MODE_RTT in conducted test setup.	None
1381042	Interference together with low RSSI may lead to large outliers in distance estimates.	None

## 5 Deprecated Items

### Deprecated in release 9.0.0.0

None.

## 6 Removed Items

### Removed in release 9.0.0.0

None.



## 7 Using This Release

### 7.1 Installation and Use

For instructions on developing with the RTL library, see [AN1296: Application Development with Silicon Labs' RTL Library](#) and the API reference included with the documentation installed through Simplicity Studio in the Bluetooth SDK.

### 7.2 Support

Development Kit customers are eligible for training and technical support. Use the [Silicon Labs Bluetooth LE web page](#) to obtain information about all Silicon Labs Bluetooth products and services, and to sign up for product support.

Contact Silicon Laboratories support at <http://www.silabs.com/support> or through links on the Simplicity Studio Welcome page.

### 7.3 SDK Release and Maintenance Policy

For details, see [SDK Release and Maintenance Policy](#).

# Simplicity Studio

One-click access to MCU and wireless tools, documentation, software, source code libraries & more. Available for Windows, Mac and Linux!



**IoT Portfolio**  
[www.silabs.com/IoT](http://www.silabs.com/IoT)



**SW/HW**  
[www.silabs.com/simplicity](http://www.silabs.com/simplicity)



**Quality**  
[www.silabs.com/quality](http://www.silabs.com/quality)



**Support & Community**  
[www.silabs.com/community](http://www.silabs.com/community)

## Disclaimer

Silicon Labs intends to provide customers with the latest, accurate, and in-depth documentation of all peripherals and modules available for system and software implementers using or intending to use the Silicon Labs products. Characterization data, available modules and peripherals, memory sizes and memory addresses refer to each specific device, and "Typical" parameters provided can and do vary in different applications. Application examples described herein are for illustrative purposes only. Silicon Labs reserves the right to make changes without further notice to the product information, specifications, and descriptions herein, and does not give warranties as to the accuracy or completeness of the included information. Without prior notification, Silicon Labs may update product firmware during the manufacturing process for security or reliability reasons. Such changes will not alter the specifications or the performance of the product. Silicon Labs shall have no liability for the consequences of use of the information supplied in this document. This document does not imply or expressly grant any license to design or fabricate any integrated circuits. The products are not designed or authorized to be used within any FDA Class III devices, applications for which FDA premarket approval is required or Life Support Systems without the specific written consent of Silicon Labs. A "Life Support System" is any product or system intended to support or sustain life and/or health, which, if it fails, can be reasonably expected to result in significant personal injury or death. Silicon Labs products are not designed or authorized for military applications. Silicon Labs products shall under no circumstances be used in weapons of mass destruction including (but not limited to) nuclear, biological or chemical weapons, or missiles capable of delivering such weapons. Silicon Labs disclaims all express and implied warranties and shall not be responsible or liable for any injuries or damages related to use of a Silicon Labs product in such unauthorized applications.

## Trademark Information

Silicon Laboratories Inc.<sup>®</sup>, Silicon Laboratories<sup>®</sup>, Silicon Labs<sup>®</sup>, SiLabs<sup>®</sup> and the Silicon Labs logo<sup>®</sup>, Bluegiga<sup>®</sup>, Bluegiga Logo<sup>®</sup>, EFM<sup>®</sup>, EFM32<sup>®</sup>, EFR, Ember<sup>®</sup>, Energy Micro, Energy Micro logo and combinations thereof, "the world's most energy friendly microcontrollers", Redpine Signals<sup>®</sup>, WiSeConnect, n-Link, EZLink<sup>®</sup>, EZRadio<sup>®</sup>, EZRadioPRO<sup>®</sup>, Gecko<sup>®</sup>, Gecko OS, Gecko OS Studio, Precision32<sup>®</sup>, Simplicity Studio<sup>®</sup>, Telegesis, the Telegesis Logo<sup>®</sup>, USBXpress<sup>®</sup>, Zentri, the Zentri logo and Zentri DMS, Z-Wave<sup>®</sup>, and others are trademarks or registered trademarks of Silicon Labs. ARM, CORTEX, Cortex-M3 and THUMB are trademarks or registered trademarks of ARM Holdings. Keil is a registered trademark of ARM Limited. Wi-Fi is a registered trademark of the Wi-Fi Alliance. All other products or brand names mentioned herein are trademarks of their respective holders.



Silicon Laboratories Inc.  
400 West Cesar Chavez  
Austin, TX 78701  
USA

[www.silabs.com](http://www.silabs.com)