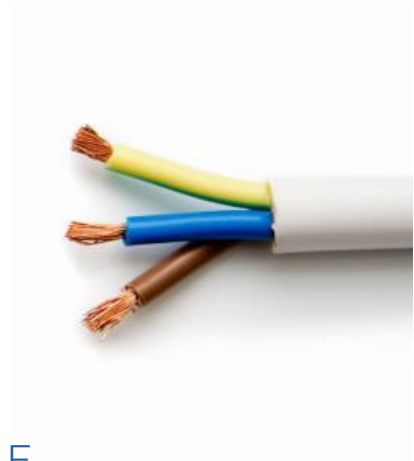


Design. Create. Certify. *Connect.*



Design for Success:  
Simplifying Bluetooth® Smart development with Serial-to-BLE

# Today's presenters



**Chris Hofmeister**  
Senior Software Engineer



**Ryan Erickson**  
RF Products Engineer



Information described herein is furnished for informational use only, is subject to change without notice, and should not be construed as a guarantee, commitment, condition or offer by LS Research. Other trademarks and trade names are those of their respective owners.

# Topics for Today

- What is SaBLE-x™?
- What is Serial-to-BLE and LSR's Developer Tool Suite?
- Understanding the API structure of Serial-to-BLE
- Exploring the PC Host and Script Tools in DTS
- Integration Example: TI MSP430™ as host
- Live Q&A

What is SaBLE-x?

NEW

# SaBLE-x™ certified Bluetooth® Smart Module

Features the new SimpleLink™  
Bluetooth Smart CC2640 Wireless MCU



Over 2x Range improvement at nearly  
1/3 the average power vs. current BLE module



Comes in 2 Antenna configurations:  
On-Module Trace or External Antenna



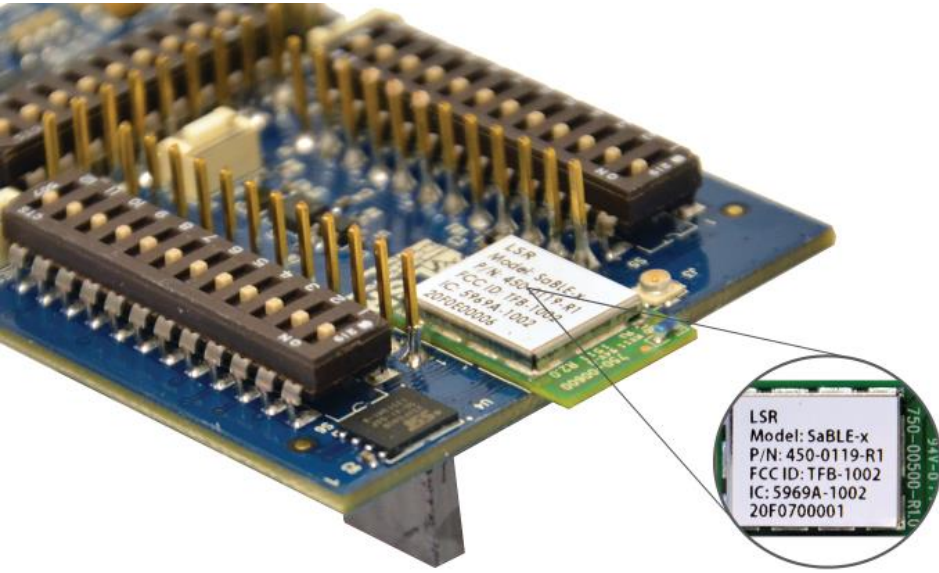
Unmatched breadth of country certifications and  
certified antenna options



Bluetooth SIG Qualified (QDID #66911)



# SaBLE-x Kits get your BLE development started **fast**



Maximize the development power of your Kit with...

**LSR Developer Tool Suite** PC desktop application featuring test tools, API documentation, and source code downloads to accelerate BLE development



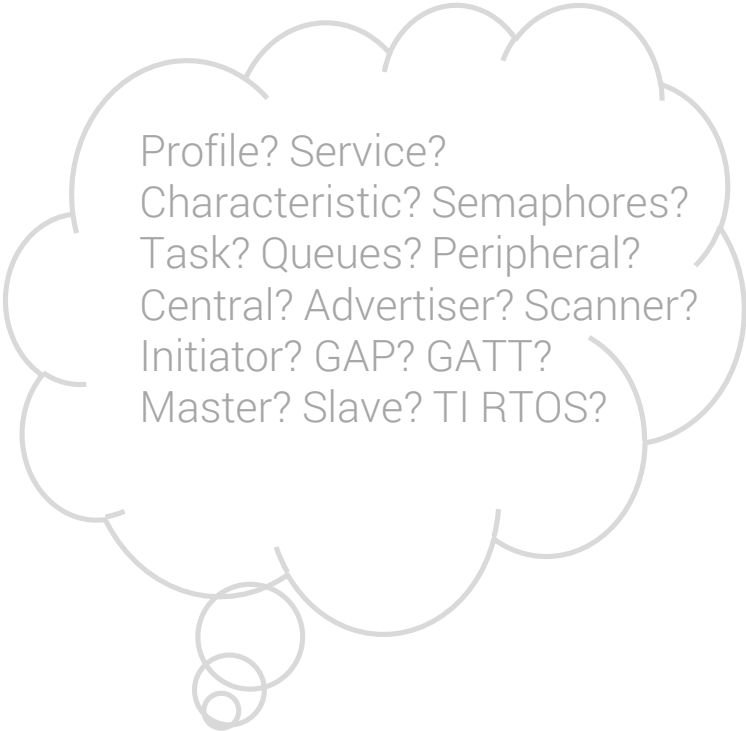
- 1 SaBLE-x Development Kit [Item # 450-0141]
  - Contains: 2 SaBLE-x Dev Boards + Arduino and TI style adapter boards for host MCU
  - Use 1 Dev Board as Central, 1 as Peripheral
- 2 SaBLE-x Evaluation Kit [Item # 450-0150]
  - Contains: 1 SaBLE-x Dev Board w/ PCB Trace
  - Evaluate with free [ModuleLink](#) iOS/Android app
- 3 SaBLE-x Eval Kit + Antennas [Item # 450-0151]
  - Contains: 1 SaBLE-x Dev Board with U.FL, 1 Dipole antenna, and 1 FlexPIFA™ antenna
  - Evaluate with free [ModuleLink](#) iOS/Android app

# Introducing Serial-to-BLE and the LSR Developer Tool Suite

# Why choose Serial-to-BLE?

- No need to become a BLE expert
- Focus on YOUR application
- Fast integration with existing Host Microprocessor  
(UART-connected BLE black box)
- Looking for Low Power
- Just want to get data to a smart device

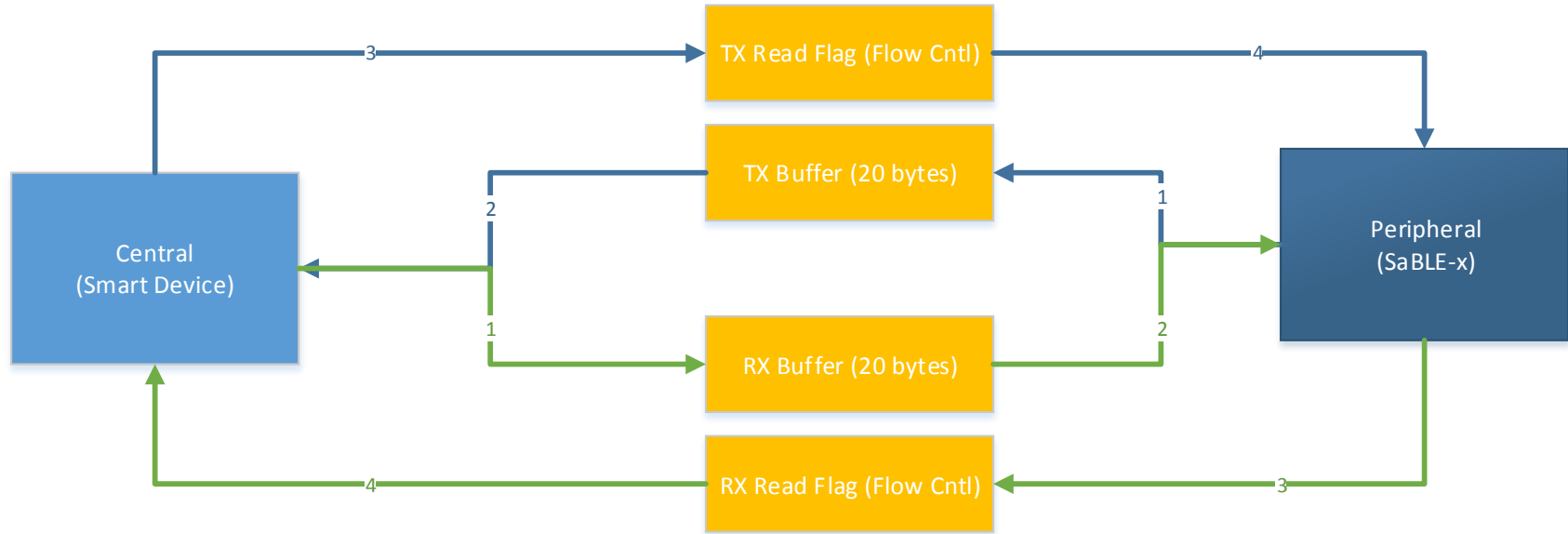
Simplify adding BLE → Accelerate  
your Time to Market



Profile? Service?  
Characteristic? Semaphores?  
Task? Queues? Peripheral?  
Central? Advertiser? Scanner?  
Initiator? GAP? GATT?  
Master? Slave? TI RTOS?



# How Serial-to-BLE sends data OTA



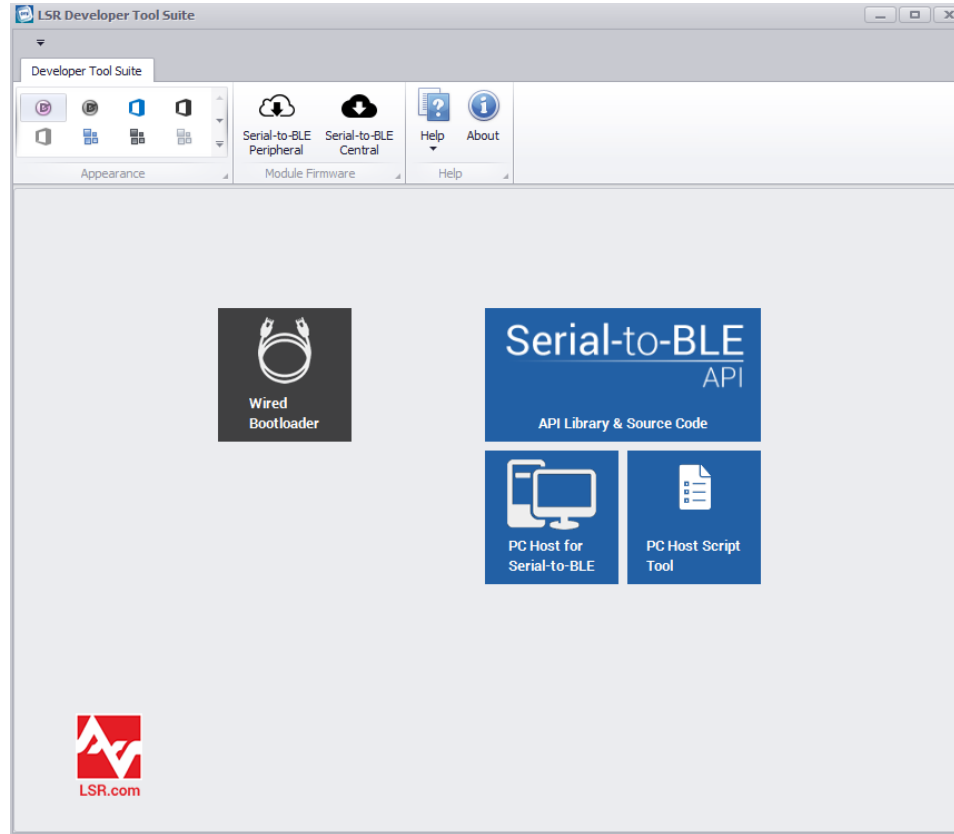
Serial-to-BLE includes a custom *Bluetooth* profile

# SaBLE-x offers additional design options beyond Serial-to-BLE

- Develop own firmware on the module
  - Module has on-board ARM Cortex-M3 application processor
  - Outstanding TI software and tools
- LSR customization of Serial-to-BLE for your applications



# What is the Developer Tool Suite (DTS)?



- Free PC Desktop Application
- Downloadable from LSR.com
- Tools/Resources to support development with LSR modules
- It is not meant to be another IDE! You can continue to work in the IDE development you're most comfortable with (e.g. IAR)

# Exploring the Developer Tool Suite (DTS)

# Using the 'PC Host' and Script Tools in the DTS

# Bringing it All Together

Implementation Example with TI MSP430™ as Host

## Central

### RF Module



SaBLE-x Dev Board

USB to UART  
interface



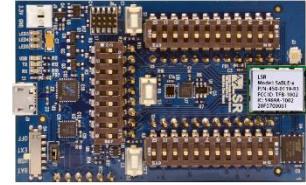
### Host



PC Laptop with DTS

## Peripheral

### RF Module

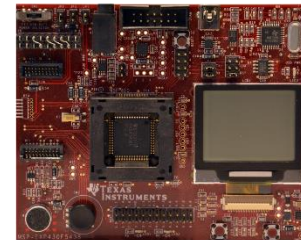


SaBLE-x Dev Board

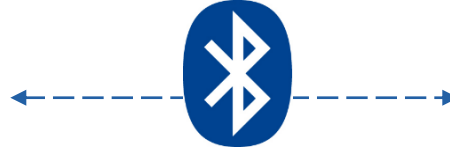


UART

### Host



TI MSP430



# Getting Started with Serial-to-BLE



Upcoming Webinar: Simplifying *Bluetooth* development with Serial-to-BLE. [Register Now](#)

You are here: [Home](#) > [Embedded Wireless Modules](#) > [Bluetooth Modules](#) > [SaBLE-x BLE Module](#)

## SaBLE-x™

### 2.4 GHz *Bluetooth* Low Energy (BLE) Module

[Datasheet](#) [Brochure](#)

SaBLE-x is a certified **Bluetooth® Smart module** built to deliver unmatched RF and power performance. This module can deliver over twice the signal range of previous generation *Bluetooth* low energy technology, and can operate at nearly 1/3 the average power for a 1 second connection interval when compared to previous *Bluetooth* low energy modules. Based on the new **TI SimpleLink™ Bluetooth® Smart CC2640** wireless microcontroller (MCU), this self-contained module provides unmatched integration, including an ARM Cortex-M3 application processor, an ARM Cortex-M0 processor for the RF core, separate Sensor Processor Engine, FLASH memory, and both high- and low-speed clocks.

Need to communicate directly with a smartphone or connect to the cloud? SaBLE-x development is simplified with LSR's new **Developer Tool Suite**, featuring a breadth of software resources designed by developers, for developers. Whether your application utilizes an external host processor or leverages the module's on-board Cortex-M3 processor, SaBLE-x provides tools to accelerate your time-to-market by minimizing the learning curve.



[Buy Now](#)

Part Numbers [+]

[Features](#) | [Specifications](#) | [Kits & Software](#) | [Antennas](#) | [Documentation](#) | [Support](#)

#### SaBLE-x Development Kit

LSR's Development Kit for the SaBLE-x Bluetooth Smart module will provide you with a fast out-of-the-box experience with all the hardware you need, including adapter boards for development with TI or Arduino platforms. A simplified evaluation kit version is also available (Item # 450-0150).

Along with the Development Kit hardware, BLE developers can utilize LSR's **Developer Tool Suite** software. This suite of developer

[www.lsr.com/sablex](http://www.lsr.com/sablex)

# Questions and Answers

Learn more about the SaBLE-x™  
Bluetooth® Smart Module and  
Serial-to-BLE API at:  
[www.lsr.com/sablex](http://www.lsr.com/sablex)



SaBLE-x™

Thank you for your time!

Chris Hofmeister | [lsrtechsupport@lsr.com](mailto:lsrtechsupport@lsr.com)  
Ryan Erickson | [lsrtechsupport@lsr.com](mailto:lsrtechsupport@lsr.com)



Design. Create. Certify. *Connect.*

[www.lsr.com](http://www.lsr.com) | [sales@lsr.com](mailto:sales@lsr.com) | [twitter.com/lsresearch](https://twitter.com/lsresearch)