

RecovR Lot Management by Kudelski IoT



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Kudelski RecovR – Advanced Solution for Car Dealership

▪ Existing Challenge for Car & Truck Dealers

- Get better and more efficient control and management of their lot(s)
 - which can span multiple lots and locations
- Reduce garage keeper insurance premiums
 - Recover stolen vehicles fast
- Reduce sales cycle time - Find cars faster
- Generate additional F&I revenues with those products

▪ An Innovative Solution by Kudelski – RecovR

- A new solution for car dealers to manage their lots more effectively
- Wi-Fi, BLE, besides GPS and cellular-positioning solution
- Low Power and small size



Experts from RecovR and Silicon Labs



HARDY SCHMIDBAUER, SVP IOT

Executive and entrepreneur in wireless, semiconductor and IoT. 20 years in roles ranging from executive management to design engineering, marketing, sales, and founding start-ups.

DHIRAJ'S PHOTO & BIOS

Introducing RecovR

A revolutionary, wireless game changer

- One-minute installation & registration
- 5-year battery lifetime
- Size: 100x45x22.5 mm
- Cellular: 3G, 4G, LTE Cat M1
- Location: GPS, BLE, Wi-Fi, cellular positioning
- Indoor non-IP and outdoor IP67 variants
- Temp range: -40 to +185 F / -40 to 85 C



Product Overview

- Free lot management solution for dealerships
- Dealerships upsell to end-customers as a stolen vehicle recovery system at the Finance & Insurance desk.
- Theft recovery system is enabled by the same cellular GPS locators used for lot management
- Dealers and customers can monitor vehicle location on their smartphones and receive alerts if and when a theft or towing occurs
- **Indoor tracking is enabled with BLE technology from Silicon Labs**

The screenshot displays the RecovR web application interface. At the top, there are navigation links for 'Home' and 'Locations', along with a user profile for 'Bradley Brad'. The main content area is titled 'Upland, CA' and 'Sales'. A summary table shows 'Total Sales: 104', 'RecovR Sales: 77', and 'Non-RecovR Sales: 27'. Below this is a table of vehicle records with columns for VIN, Date of Sale, Type, Status, Locator Status, Locator ID, Customer Name, and Customer Email. The table lists several vehicles with their respective sale dates and statuses, such as '1GBJG31U28V9EW32X' and 'JHMZF1D49B797GWB4'. A sidebar on the left contains navigation options like 'Vehicle Management', 'Records', 'Installation & Setup', and 'Location Management'. At the bottom of the table, there is a 'Rows Per Page' dropdown set to 20 and a pagination indicator showing '1-20 of 421'.

VIN	Date of Sale	Type	Status	Locator Status	Locator ID	Customer Name	Customer Email
1GBJG31U28V9EW32X	03/02/21	RecovR Sale	Sale Pending	Sale Pending. Replace Locator	1234566	James Schaefer	james@ema
JHMZF1D49B797GWB4	03/02/21	Vehicle Sale	Sale Pending	Sale Pending. Remove Locator	1234566	-	-
3GTEC33JX9D2D8EP5	03/01/21	RecovR Sale	Sale Pending	Sale Pending. Add Locator	-	-	-
1GDKP32U39HDA2PWX	02/27/21	RecovR Sale	Void	Sold	1234566	Steven Lee	steven@err
1HGCG3240YZ0R0LVJ	02/27/21	RecovR Sale	Sold	Sold	1234566	Torrel Williams	torrel@ema
1GBJG31U28V9EW32X	02/27/21	RecovR Sale	Sold	Sold	1234566	Tiffany Wei	tiffany@ema
5XYZKJG8BYV6STF3	02/27/21	Vehicle Sale	Sold	Unpaired	-	-	-
1D3MA46D341T22R6C	02/25/21	Vehicle Sale	Sold	Unpaired	-	-	-
1GTCT14834LZANKME	02/23/21	Vehicle Sale	Sold	Unpaired	-	-	-
3FTZX08L72SHYD91X	02/23/21	Vehicle Sale	Sold	Unpaired	-	-	-
WA1EY74LX9TNLD72C	02/23/21	RecovR Sale	Sold	Sold	1234566	Hannah White	hannah@er

Asset Tracking

Inventory Management

Lot Management

Overview

- Lot management solution improves operational efficiency, streamlines workflows, and enhances customer experience by providing real-time location on all vehicles
- Receive mobile-optimized location guidance to all cars based on VIN, work order, inventory number, etc.
- Ability to search/filter map to locate cars based on make/model/year and configure geofences with custom alerting

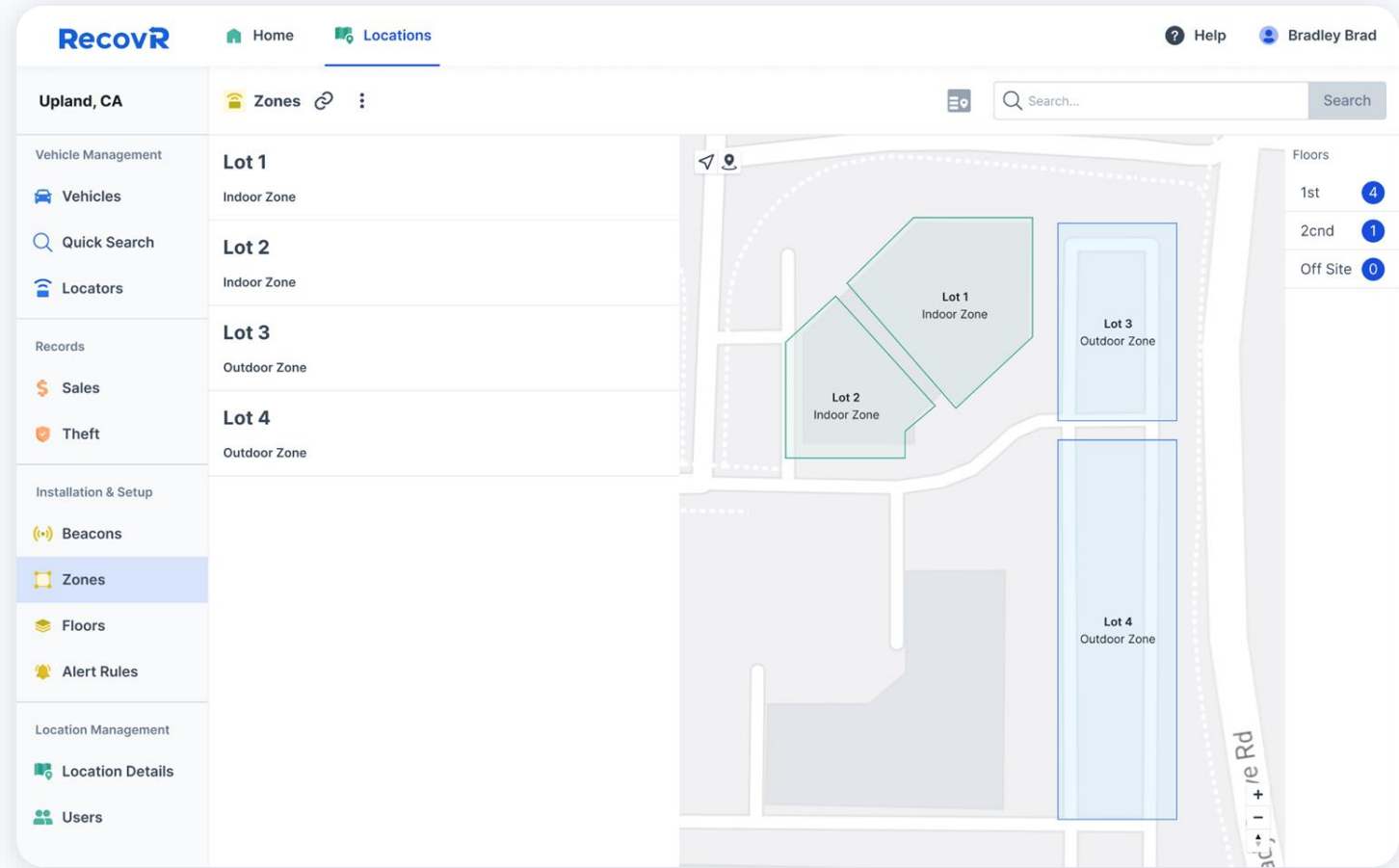
The screenshot displays the RecovR web application interface. At the top, there is a navigation bar with 'Home' and 'Locations' tabs, and a user profile for 'Bradley Brad'. Below this, the 'Upland, CA' location is selected, and the 'Vehicles' section is active. A summary table shows vehicle counts: Total 244, Retail 189, Loaner 55, Paired 201, and Unpaired 43. A search bar is present on the right. The main content area is split into a table of vehicles and a map view. The table lists vehicle details including VIN, Alert status, and Stock Number. The map view shows a layout of lots (Lot 1, Lot 2, Lot 3, Lot 4) with vehicle icons indicating their locations. A 'Floors' sidebar on the right shows counts for 1st (187), 2nd (33), and Off Site (24) floors. The bottom of the interface includes pagination controls showing '1-20 of 421' items and a 'Rows Per Page' dropdown set to 20.

Vehicle Management	Total	Retail	Loaner	Paired	Unpaired
	244	189	55	201	43

VIN	Alert	Stock Number
<input type="checkbox"/> 1GBJG31U28V9EW32X		3531541
<input type="checkbox"/> 1GKW7PDA7B3XR9YUG	Low Battery Locator	9345231
<input type="checkbox"/> JHMZF1D49B797GWB4	Low Battery Locator	2133943
<input type="checkbox"/> 3GTEC33JX9D2D8EP5	Sale Pending. Remove Locator	6538103
<input type="checkbox"/> 1GDKP32U39HDA2PWX		1598413
<input type="checkbox"/> 1HGCG3240YZ0R0LVJ		1185732
<input type="checkbox"/> 1GBJG31U28V9EW32X		9503813
<input type="checkbox"/> 5XYZKJG8BYV6STF3		3335193
<input type="checkbox"/> 1D3MA46D341T22R6C		5138983
<input type="checkbox"/> 1GTCT14834LZANKME		3531541
<input type="checkbox"/> 3FTZX08L72SHYD91X		0549382
<input type="checkbox"/> WA1EY74LX9TNLD72C		8509390

View Vehicles in User-Defined Zones

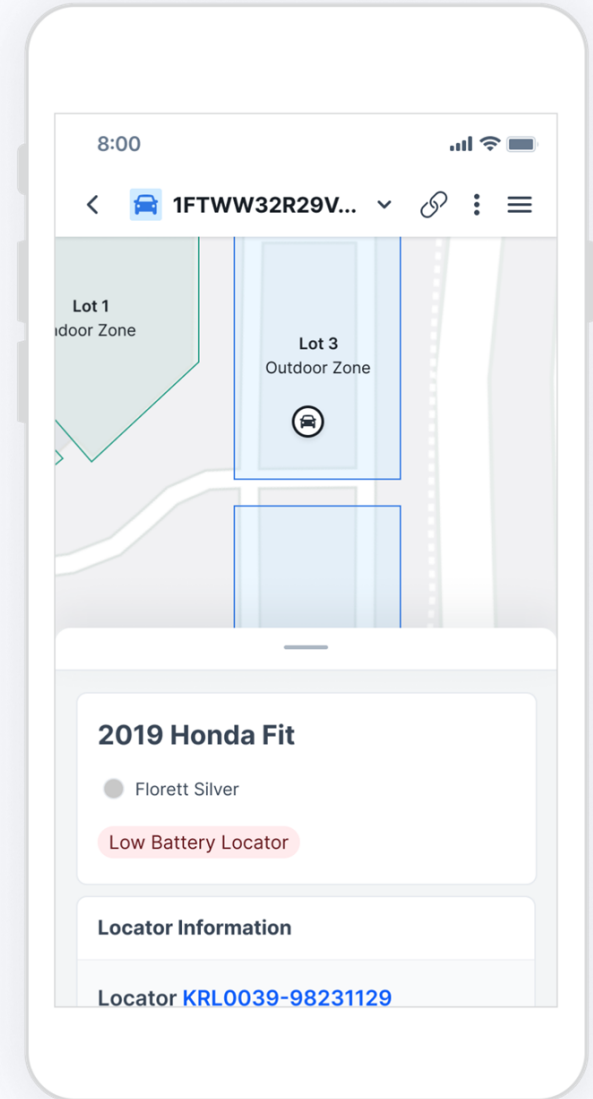
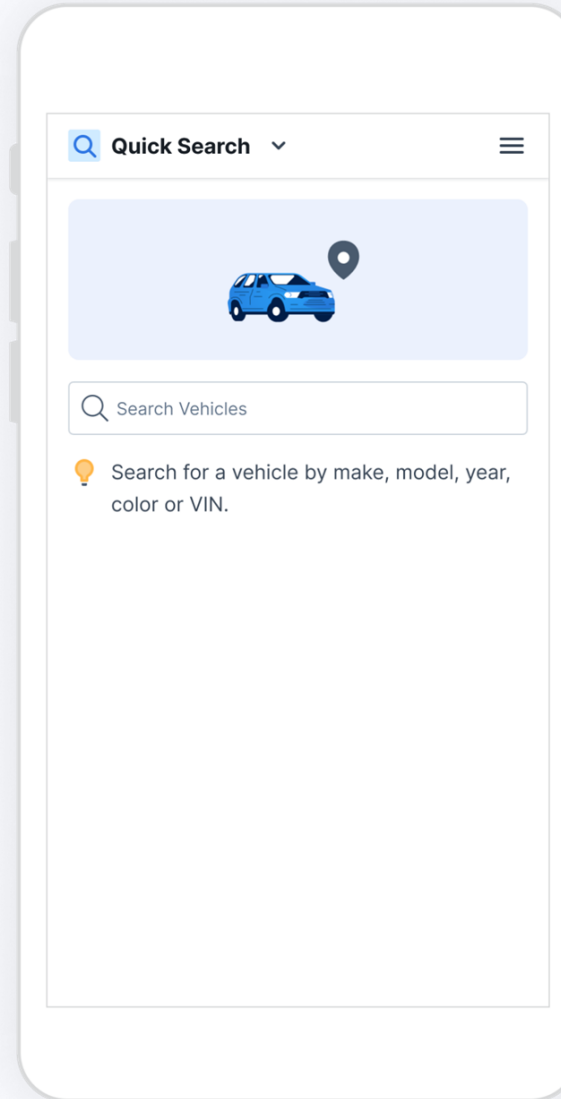
- Battery-powered, standalone GPS trackers placed in interior of the vehicle or hidden in compartments to minimize detection. No install required.
- View the current location of the car on the map with geofenced boundaries and customized text message alerts based on user-defined rules
- Works across multiple lots, indoors/outdoors and on multiple showroom or garage floors



Lot Management

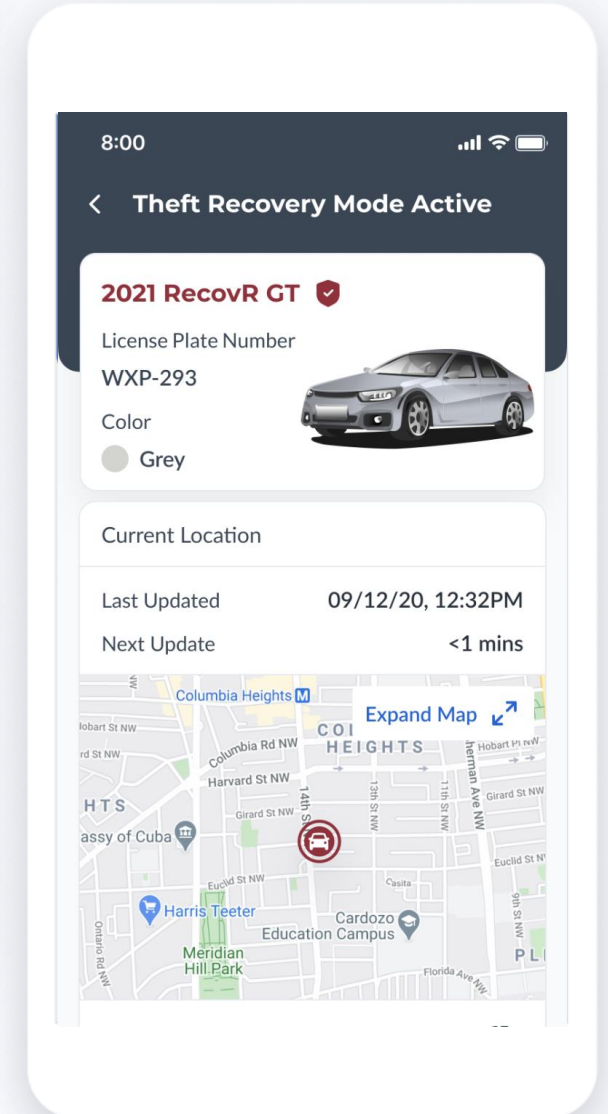
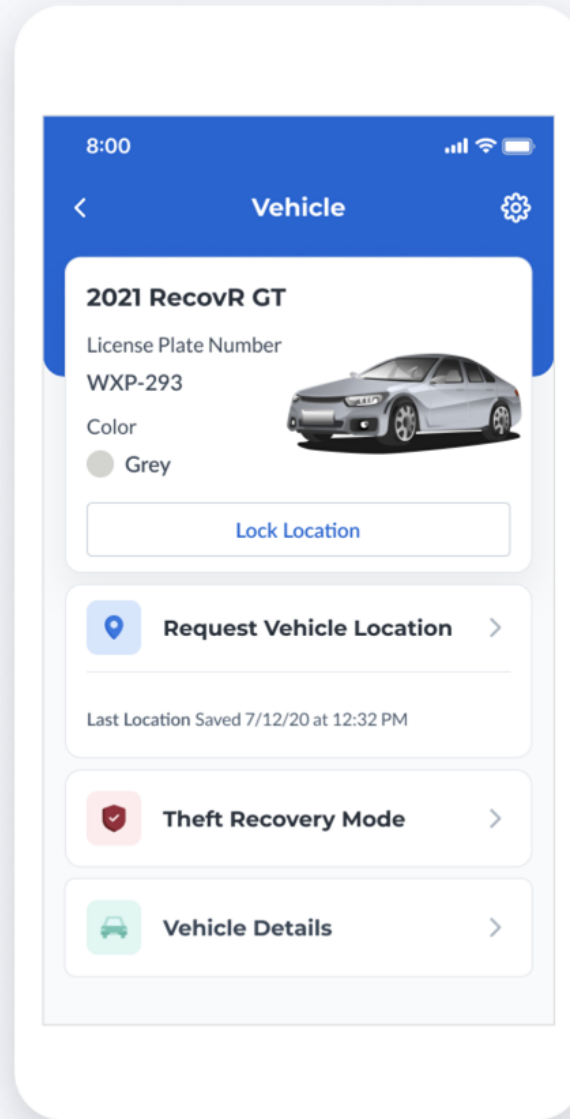
Find Any Car at Any Time

- Receive location guidance (distance and direction) to any vehicle on your mobile device
- Equip sales people with mobile view to minimize frustration in finding cars - enhancing the customer experience
- Dealer staff use mobile app to demonstrate value of anti-theft product to customer during sales process - increasing sell through



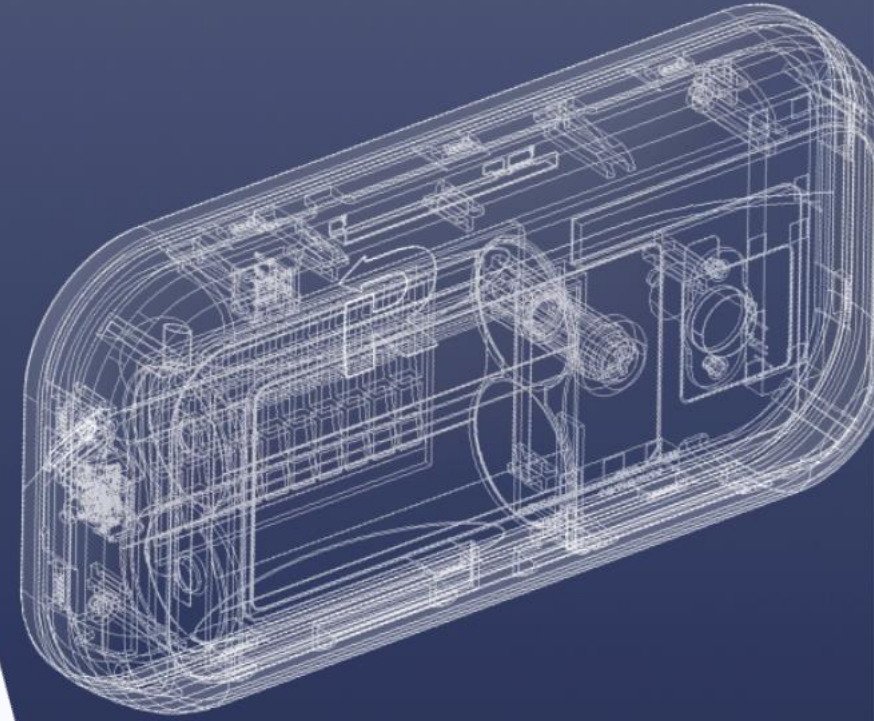
End-Customer Theft Protection App

- Dealerships can offer a theft protection and vehicle recovery system to end-customers during F&I
- Customers receive daily location from tracker and can report stolen vehicles to authorities, insurance providers, and more



Why Silicon Labs?

- Power efficiency was key to the success of our product, and Silicon Labs helped us achieve our 5-year battery life target.
- RS9116 offers us high throughput and extended range with power-optimized performance to meet our design requirements, creating the first real viable wireless, battery-powered GPS theft recovery solution on the market.
- This gives us significant differentiation compared to any other wired device.

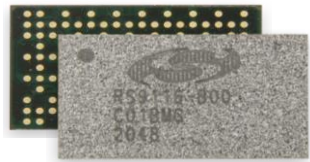


Silicon Labs Products in RecovR



Silicon Labs Product in RecovR: RS9116

RS9116 SiP Pkg

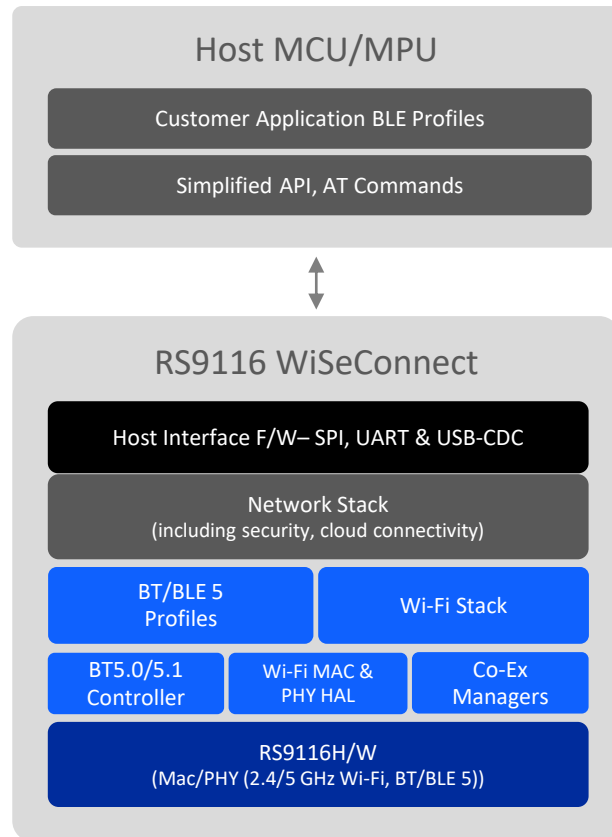


Ultra-Low Power Wi-Fi + BLE Connectivity



- Industry leader in Low power Wi-Fi + BT/BLE 5
 - Enabled RecovR to achieve 5-year battery life
- Industry leader in small form-factor design
 - System-in-Package, 4.63mm x 7.90mm
 - Easy to fit into the RecovR space constrained design
- Integrated wireless stacks, networking stacks, cloud connectivity and security
 - Offloaded the processing from the main processor of RecovR and provided ease of integration
 - Over the air firmware upgrade enables easy maintenance of RecovR in the field
- Completely calibrated and FCC/IC/CE/TELEC certified module provided faster time to market

RS9116 WiSeConnect (Full NCP) Overview



- **Integrated stacks and profiles**

- Wi-Fi stack, BT/BLE stack and profiles
- TCP/IP (IP v4) Networking stack with SSL 3.0/TLS 1.2, HTTP/HTTPS, Websockets, DHCP, MQTT Client; TCP/IP bypass mode (networking stack runs on host)
- SPI, UART, USB-CDC host interfaces

- **Operating Modes**

- Wi-Fi Station, Wi-Fi Access Point, BT/BLE 5
- Wi-Fi Concurrent Station and Access Point
- Wi-Fi Station + BLE 5, Wi-Fi Station + BT, Wi-Fi Station + BT + BLE5
- Provisioning using Wi-Fi AP or BLE modes

- **Multiple power modes for reducing system power**

- **2.4 and 5 GHz Wi-Fi Support**

- Personal and enterprise security
- Enterprise security with TLS 1.0, TTLS, PEAP
- WPA/WPA2; WPA2 enhancements and WPA3 in roadmap

- **Bluetooth and BLE Support**

- BT EDR 2.1, BLE 4.0/4.1/4.2, BLE 5
- Support for BLE long range, data rates up to 2 Mbps
- BLE dual role (central and peripheral) support
- BT Profiles: GAP, SDP, SPP, RFCOMM, L2CAP
- BLE Profiles: GATT, GAP, PXP
- Support for BT dual-mode (BT + BLE simultaneously)

Silicon Labs Delivers Asset Management Foundation

Applications



Asset Tracking

Silicon Labs Technology
(In-house or via partners)



Technology

Advanced hardware with Low Power and high Security

Hardware

EFR32 Technology

Series-1



EFR32xG1x
1 MB / 256 kB
2.4/sub-GHz

Series-2



EFR32xG2x
1MB / 96 kB
2.4/sub-GHz

RS9116



QFN SoC



Small Form Factor SiP



SoC roadmap in flight

Silicon Labs hardware & software technology solutions enable Asset Management

Silicon Labs Advantage for Asset Management

APPLICATION-CONNECTIVITY FIT	POWER OPTIMIZATION	SECURITY
<p data-bbox="216 606 886 692">Connectivity </p>		
<ul data-bbox="208 1035 853 1220" style="list-style-type: none">• Advanced hardware• Easy-to-use stack for hassle-free development• Wide partnership for various solutions	<ul data-bbox="932 1035 1523 1263" style="list-style-type: none">• Low sleep & active current for best battery life• Industry-leading performance, e.g.<ul data-bbox="1049 1192 1523 1263" style="list-style-type: none">• RS9116 for Wi-fi• BG22 for Bluetooth Low-Energy	<ul data-bbox="1656 1035 2331 1263" style="list-style-type: none">• First IoT Security Solution to Achieve PSA Certified Level 3• Hardware-based Cryptography• Secure key storage, Secure firmware updates, etc



works with
BY SILICON LABS
VIRTUAL CONFERENCE

