

Introduction to Apple HomeKit, its Markets and the Ecosystem

Craig Babcock

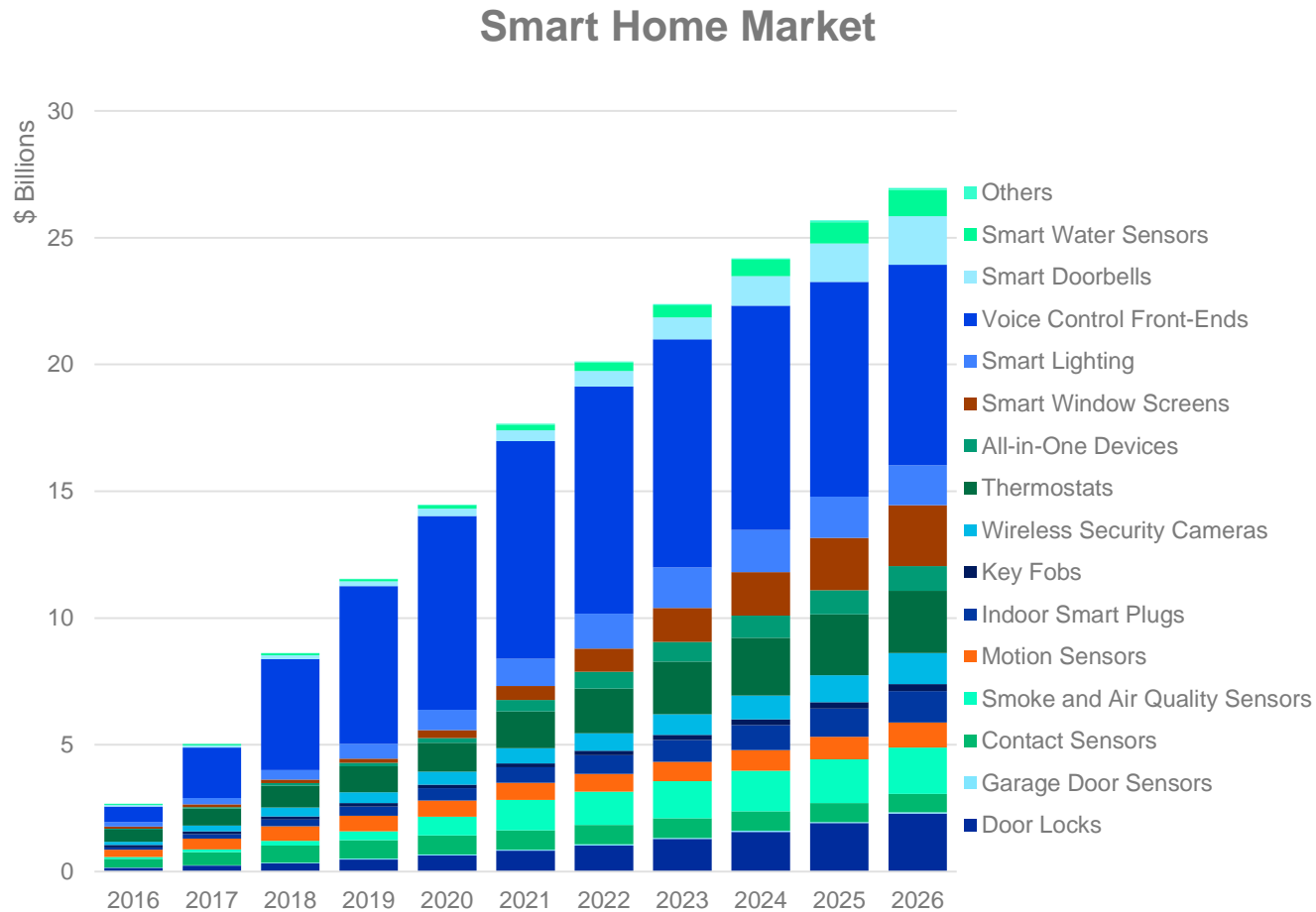


Agenda



- The Smart Home Market
- What is HomeKit
- New Features & Capabilities
- Why use HomeKit?
- Silicon Labs HomeKit Support
- How to Get Started

The Smart Home Market



Source: ABI Research Smart Home Q12020

- **Market growing at 26% CAGR between 2016-26**
- **Voice control front ends lead**
- **Smart Door Locks, Window Screens & Thermostats are the top 3 accessory categories**

The Key Driver: Smart Home Ecosystem



Stand Alone
Confusion and Fragmentation



Ecosystem
Unification and Clarity



**Simplified App with
One User Experience**



HomeKit – Apple’s Smart Home Ecosystem

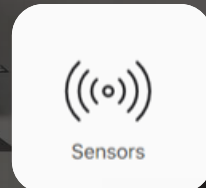
HomeKit enables you to communicate with, configure, and control home automation accessories from multiple vendors to present a coherent, user-focused interface

[Learn more >](#)

The World of HomeKit Accessories

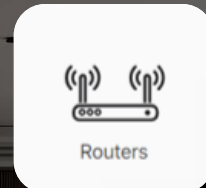
>30

DEVICE TYPES
CAN BE BUILT
WITH HOMEKIT
TODAY

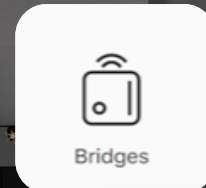


Sensors

Temperature, Humidity,
Smoke, Presence, CO₂



Routers



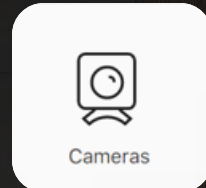
Bridges

Gateways & Bridges

These connect other
accessories and controls
with applications



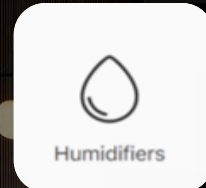
Faucets



Cameras



Fans



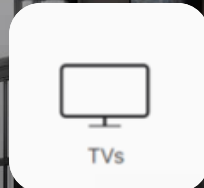
Humidifiers



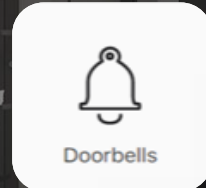
Air Purifiers



Garage Doors



TVs



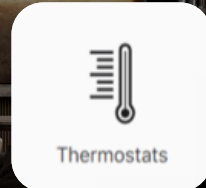
Doorbells



Sprinklers



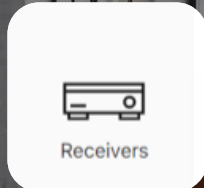
Air Conditioners



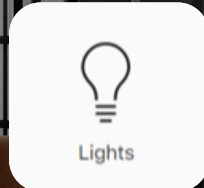
Thermostats



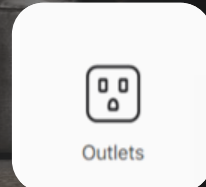
Switches



Receivers



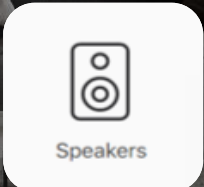
Lights



Outlets



Windows



Speakers



Locks

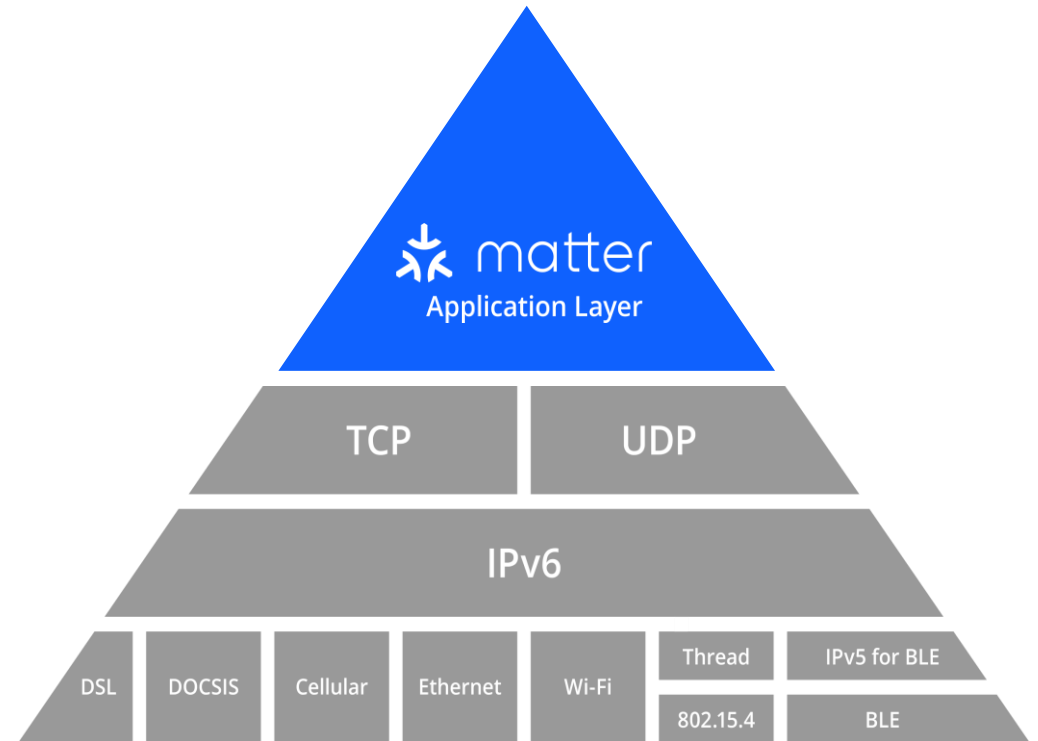


Security

Controls

Light, door locks,
thermostats, garage door
openers

What's New? - HomeKit over Thread



Why Develop with HomeKit?

**Powerful
Ecosystem**

**Many consumer
trusted devices**

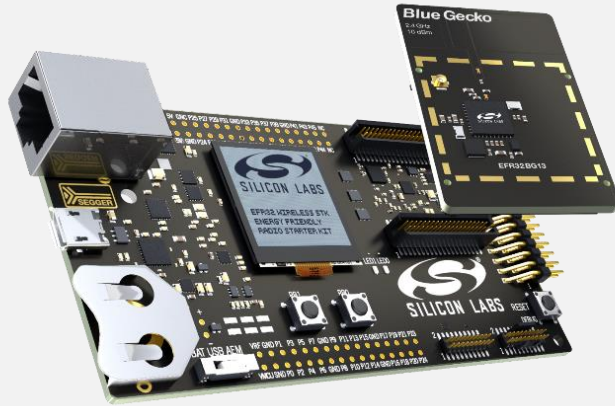
Thread & BLE

**Matter via
HomeKit**



Silicon Labs Solutions for Apple HomeKit

MULTIPROTOCOL SOCS AND MODULES



A platform of multiprotocol SoC and modules with different price and feature points

Easy migration within the portfolio

STACKS AND SDKS



Lightbulb
Accessory



HomeKit Accessory
Protocol (HAP)



Platform Abstraction
Layer(PAL)



OpenThread &
Bluetooth LE

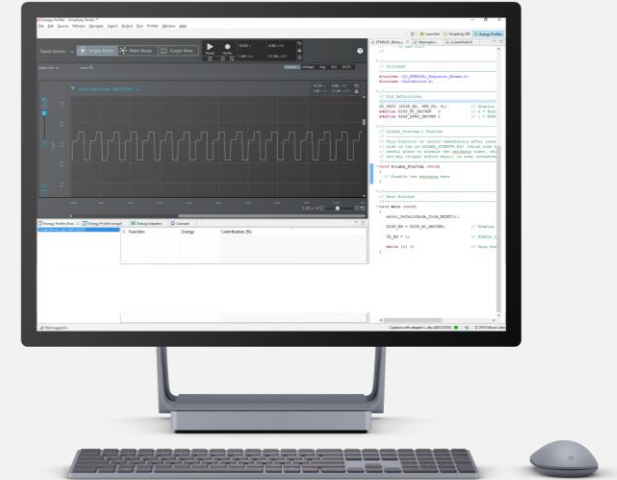


Gecko SDK
Platform

Robust stacks and Gecko SDK integration

SDK and tools for operating systems and toolchains

DEVELOPMENT TOOLS



Free-of-charge development and protocol analysis tools to boost productivity

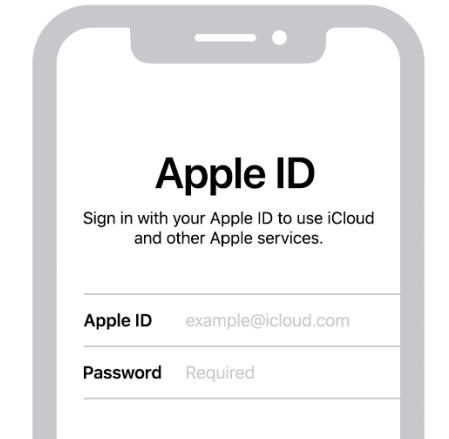
EFR32 Silicon Supporting Apple HomeKit

CHOICE OF SILICON TO MEET VARIED NEEDS OF ACCESSORIES

	EFR32xG12	EFR32xG13	EFR32xG21
Freq. Bands	2.4 GHz, Sub-GHz, Dual Band	2.4 GHz, Sub-GHz, Dual Band	2.4 GHz
Core	Cortex-M4 (38.4 MHz)	Cortex-M4 (38.4 MHz)	Cortex-M33 (80 MHz)
Max Flash	1024 kB	512 kB	1024 kB
Max RAM	256 kB	64 kB	96 kB
Security	Hardware Crypto (AES 128/256, SHA and ECC), TRNG	Hardware Crypto (AES 128/256, SHA and ECC), TRNG	Enhanced Crypto, Debug Access Control, Secure Element
RX Sensitivity (802.15.4)	-102.7 dBm	-102.7 dBm	-104.5 dBm
RX Sensitivity (BLE 1 Mbps)	-94.8 dBm	-94.8 dBm	-97.5 dBm
RX Sensitivity (38.4 kbps GFSK 868 MHz)	-109.5 dBm	-109.5 dBm	N/A
Active Current	88 µA/MHz	87 µA/MHz	63.8 µA/MHz
Sleep Current (EM2, 16 kB ret)	1.5 µA	1.3 µA	4.5 µA
TX Current @ +0 dBm (2.4 GHz)	9.5 mA	9.5 mA	9.3 mA
TX Current @ +10 dBm (2.4 GHz)	34 mA	34 mA	33.8 mA
TX Current @ +20 dBm (2.4 GHz)	131 mA	131 mA	185 mA
TX Current @ +20 dBm (868 MHz)	79.7 mA	79.7 mA	N/A
RX Current (802.15.4)	11 mA	10.3 mA	9.4 mA
RX Current (BLE 1 Mbps)	10.0 mA	9.5 mA	8.8 mA
RX Current (38.4 kbps GFSK 868 MHz)	8.6 mA	8.6 mA	N/A
Operating Voltage	1.8 V to 3.8 V	1.8 V to 3.8 V	1.71 V to 3.8 V
GPIO	31, 46, 65	16, 31	20
Package	7x7 QFN48 7x7 BGA125 8x8 QFN68	5x5 QFN32 7x7 QFN48	4x4 QFN32

Getting Started on Accessory Development

HOBBYISTS AND MAKERS



Requires Apple ID & signing up

support.apple.com/en-us/HT204316



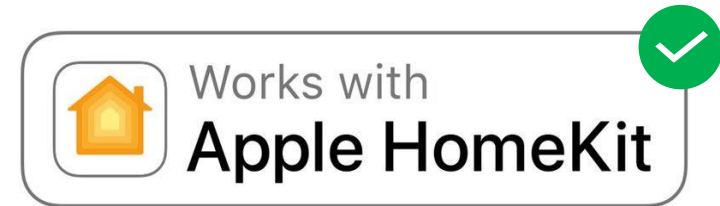
Non-Commercial Version

Access to

[HomeKit Accessory Protocol Specification](#)

[HomeKit Open Source ADK](#)

ACCESSORY MANUFACTURERS



Must enroll in MFi Program

<https://mfi.apple.com/>

HomeKit Accessory Protocol Specification

Commercial version

Third-party SDKs for commercial development

Silicon Labs is a popular provider of HomeKit SDK

Works with Apple HomeKit Certification and tools

HomeKit Accessory Tester

HomeKit Certification Assistant

HomeKit Accessory Simulator

Apple HomeKit Product Compliance

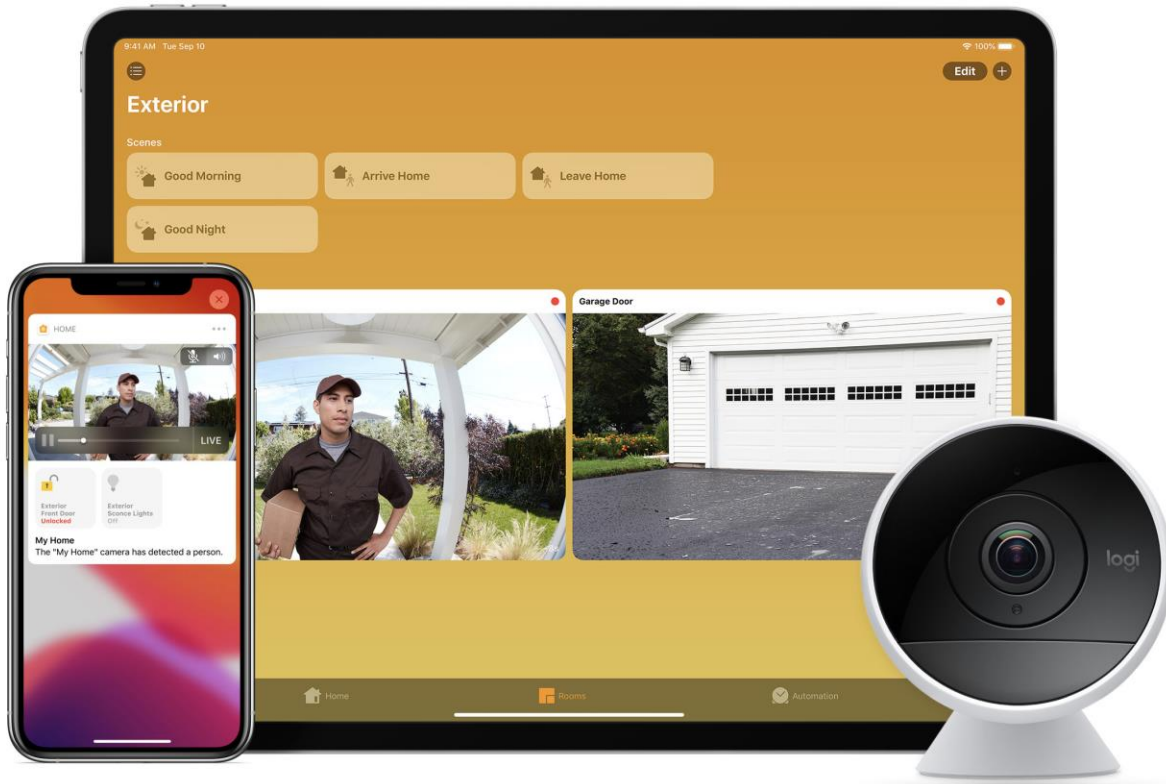


Photo: Apple Inc.

- **Final HomeKit products must be approved by Apple**
- **Official Silicon Labs Apple HomeKit compliant software releases have:**
 - Been tested against the HomeKit Accessory Tester (HAT)
 - Been tested against HomeKit Certification Assistant (HCA)
 - Passed the HomeKit Self-Certification Test cases
 - A Bluetooth QDID
 - Gone through the Apple Adjunct review
- **This simplifies and speeds up the approval process of the final end product**
- **Contact your MFI representative via [MFI portal](#) for details about HomeKit product compliance**

Quick Links

**Introduction to Silicon Labs
Solution for Apple HomeKit.
Request access for HomeKit
SDK also from here.**

www.silabs.com/products/development-tools/software/bluetooth-software-for-apple-homekit

HomeKit Deep Dive

www.developer.apple.com/videos/play/wwdc2018/231/

**Matter Support in smart home
apps**

<https://developer.apple.com/videos/play/wwdc2021/10298/>

Signing up for MFi Program

www.developer.apple.com/programs/mfi/

Signing up for Apple ID

www.support.apple.com/en-us/HT204316

**HomeKit Accessory
Protocol Specification**
Non Commercial Version

www.developer.apple.com/homekit/specification

HomeKit Open Source ADK
Non Commercial version

www.github.com/apple/HomeKitADK

HomeKit enabled products' list

www.apple.com/shop/accessories/all-accessories/homekit

HomeKit developer guide

www.developer.apple.com/documentation/homekit

Set up and use the Home app

www.support.apple.com/en-us/HT204893



works with



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