Matter

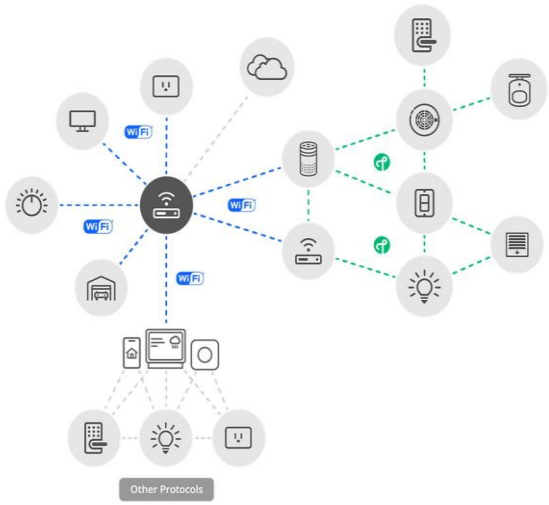
Product Brief v1.0

Overview

Matter is a home automation connectivity standard designed to reduce fragmentation across different IoT device vendors and achieve interoperability among smart home platforms from different providers. Matter is an application layer that runs over Wi-Fi, Ethernet, and Thread protocols and uses Bluetooth Low Energy (LE) for commissioning. The initiative was launched by some of the most influential names in the smart home ecosystem, including Amazon, Apple, Google, Comcast. Together, along with Silicon Labs and others, this group comprises the Connectivity Standards Alliance (CSA).

The Significance of Matter Standard

Existing wireless protocols offer different benefits, such as low power operation for Thread, Zigbee and Z-Wave, longer range like Z-Wave Long Range and Wi-SUN, or high bandwidth such as in Wi-Fi. Matter allows these different technologies to share the same application layer and create seamless communication with the cloud. Matter will initially support Wi-Fi and Thread network layers for core, operational communications, and Bluetooth LE to simplify device commissioning and setup. For networks not directly supported like Z-Wave and Zigbee, Matter enables bridging to allow these devices to communicate over the Matter network. Matter enables device manufacturers to build devices that are compatible with smart home and voice services such as Amazon Alexa, Apple Siri, Google Assistant, and others. A new Matter device can be controlled and be part of multiple ecosystems at the same time. For example, a light bulb can connect to Amazon Alexa, Google Home, and Apple HomeKit. Standardized Bluetooth commissioning, including device authentication, ensures secure and easy installation. Consumers can add new products and brands to their smart home without additional effort trying to figure out if they'll work together. With Matter, it just works.



Key Features of Matter

Consumer Benefits	
Simplicity	Matter Products are easy to purchase, set up and use
Compatibility	Devices from multiple brands work natively together
Privacy	Consumers are in control of the privacy and authorization for interaction with devices
Developer Benefits	
Unifying Application Layer	Simplifies development, lowers development and operational costs
Open Source	Community collaboration has improved quality, expedites development and captures broader use-cases
Proven Technologies	Faster time to market, as developers can leverage existing implementations
IP Class Security	Open source and trusted cryptographic algorithms with well protected keys

Selection Guidelines for Matter over Thread Ecosystems

Use Case	Protocols	OTA Image Storage	EFR32MG21 1024kB Flash 96kB RAM	EFR32MG24 1536kB Flash 256kB RAM
Matter to Thread Gateway	Single Protocol RCP Mode	External Flash (Host)	✓	✓
Matter to Zigbee / Thread Gateway	Concurrent Zigbee / Thread Dynamic 802.15.4 / BLE[1]	External Flash (Host)	✓	✓
Matter Thread End Device	Dynamic 802.15.4 / BLE SoC Mode[2]	External Flash		✓
Matter Thread End Device	Dynamic 802.15.4 / BLE SoC Mode[2]	Internal Flash		✓

Silicon Labs' Matter Development Kits

Silicon Labs offers several Matter compliant development kits for Thread into three categories based on your development need:

- Starter Kits
- Development Kits
- Thunderboard Kits

For more information on the portfolio, check the link: https://www.silabs.com/development-tools/wireless/zigbee

Technical Resources

Matter xG24 Technical Library
Data Sheets, App Notes, and more

Matter xG21 Technical Library
Data Sheets, App Notes, and more

Matter Training Documentation
Trainings and Videos on Matter

RS9116W
Data Sheets, App Notes, and more

SiWx917
Data Sheets, App Notes, and more

Matter Target Applications

- Smart Home
- LED Bulbs
- Smart Locks
- Commercial Lighting
- Access Control
- HVAC

Thread Software / Stack / Tools

Silicon Labs is a founding board member of the Thread Group with thousands successful customer deployments of mesh networking solutions based on 802.15.4 and Zigbee.

Software features

- Provides low-power, IPv6-based wireless communication between devices for home and commercial building applications
- Simplicity Studio IDE
- Both GATT Services
- Thread Sample Applications
- Wi-Fi Coexistence
- Tool Chain – GCC
- Packet Trace Interface

Links: Thread SDK

Selection Guidelines for Matter over Wi-Fi Ecosystems

Use Case	Protocols	Mode	RS9116W + EFR32 MG24[1]	WF200 + EFR32 MG24[1]	SiWx917[2]	SiWx917[2] + EFR32 MG24[1]
Matter Wi-Fi End Device	Wi-Fi 4	RCP		✓		
Matter Wi-Fi End Device	Wi-Fi 4, Bluetooth LE	NCP	✓			
Matter Wi-Fi End Device	Wi-Fi 6, Bluetooth LE	SoC			✓	
Matter Wi-Fi End Device	Wi-Fi 6, Bluetooth LE	NCP				✓