SILICON LABS | matter

Matter Connectivity Standard FAQ

1

Matter looks to be complex.

Where do I start?

Like any new standard, there is a learning curve to Matter. That is why we have created the Matter Developer Journey. This web-based tool will help guide you through getting started, development, and even deploying your product. In addition, it includes information along the way for the key Matter ecosystems.

2

Matter supports different protocols, including Wi-Fi and Thread.

How do I know which Matter protocol is best for my product?

Silicon Labs has developed a Selector Guide to help guide you through the process of selecting the best technology and device are for your product. With guidance on what technology is best for different applications and device types and comparison tables on our various offerings, our Selector Gide will speed your decision making process to get you down the path to developing your Matter product.

3

Do users pay royalty for Matter stack software, or is it given free by Silicon Labs?

No, users will not pay a royalty. The software will be released under a permissive license and the Connectivity Standards Alliance (CSA) has RANDZ licensing from its members.

4

When would the Matter use TCP? When would it use UDP?

Matter makes use of UDP messages with retries to provide reliability. This is known as the Message Reliability Protocol (MRP) and is provided by the Matter stack.

5

What about non IPv6 protocols/ devices? Should they be aggregated somewhere using bridges?

Matter has bridges as a native device type, so non IPv6 networks can be incorporated into the Matter fabric via the bridge. Examples of these include Zigbee to Matter and Z-Wave to Matter bridges that allow those existing networks to be controlled by the Matter fabric.

6

Device support: Is there a schedule that is published? Where can it be found?

Silicon Labs supports all released Matter device types, either directly in sample applications or by enabling support through ZAP. You can refer to the Matter SDK extension in Simplicity Studio for a list of supported device types.

As for upcoming device schedules from the CSA, you would need to join the CSA Working Groups to be a part of the discussion on new device type spec additions. A full list of existing devices can be found in the Matter Device Type spec from the CSA.

The CSA updates the Matter specification twice a year so this provides plenty of opportunities to quickly add new features and devices to the standard.

7

How many devices can be connected in the network, does it only depend on AP capability?

There is no inherent limit on the number of devices that the Matter standard supports in a single fabric.

8

What is the current development on multiple ecosystems or multi-coordinator?

This is called Multi-admin or Multi-fabric in Matter. This is required functional in the current Matter spec and implementation to allow for a device to be controlled by multiple ecosystems. There is ongoing work in the CSA working groups to improve the user experience for multiple admin scenarios.

9

If my end device type is not supported by Matter right now, but Matter adds support later, can that be updated over the air (OTA)? Will I be able to convert my non-Matter device to Matter compliant if the manufacturer adds support?

This is permitted as per the standard. It ultimately depends on the device's capabilities, such as available Flash, RAM, and some other logistic (such as how the manufacturer can convey the Matter QR Code so it can be commissioned, when the product has already been shipped without one). We already see examples of this for deployed device in the field for Matter over Thread and Matter over Wi-Fi. In addition, many hubs (Zigbee for example) are being upgraded in the field to bridge their non-Matter devices to Matter and they use their own mobile apps to facilitate that.

10

Can I design a wireless product and connect it to a Matter network if the product is not one of the predefined types in the Matter standard?

It is possible to design a product outside the list of specified device types, or extend an existing device type, but that would only work if you are building both the controller and the end device sides. The new device type or feature wouldn't work with the other released controllers due to proprietary devices and features from existing ecosystems.

11

Can you define border router in more detail?

A border router is a device defined by the Thread protocol that routes IP traffic from the Thread network to other IP networks like Wi-Fi or ethernet. This is different from a typical IoT gateway because it does not stop the traffic and translate at the application level, it simply takes the Thread packet and IP address and puts it into the other IP network format to seamlessly pass the packet through.

12

What about security? Does Matter have any advantages over other protocols in terms of security?

Yes. Matter requires devices be fully authenticated and authorized before joining the network and make use of industry best practices for security establishment and encryption before and after joining the fabric. Matter requires a commissioner obtain a device-specific passcode that is used as a shared secret during a Password Authenticated Session Establishment (PASE) to first communicate with the joining device. The commissioner also checks the device's manufacturer specific credentials to verify the authenticity of the device to ensure is an official product from the manufacturer specific credentials to verify the authenticity of the device and checks the device against a Distributed Compliance Ledger (DCL) to verify it is an officially certified device. The device generates a unique credentials that are signed by the commissioner for use as operational certificate and then used to establish future communications with valid Matter devices on the same fabric. Lastly, Matter makes use of Access Control Lists (ACLs) to determine what devices on the same fabric are allowed to com-municate with one another.

13

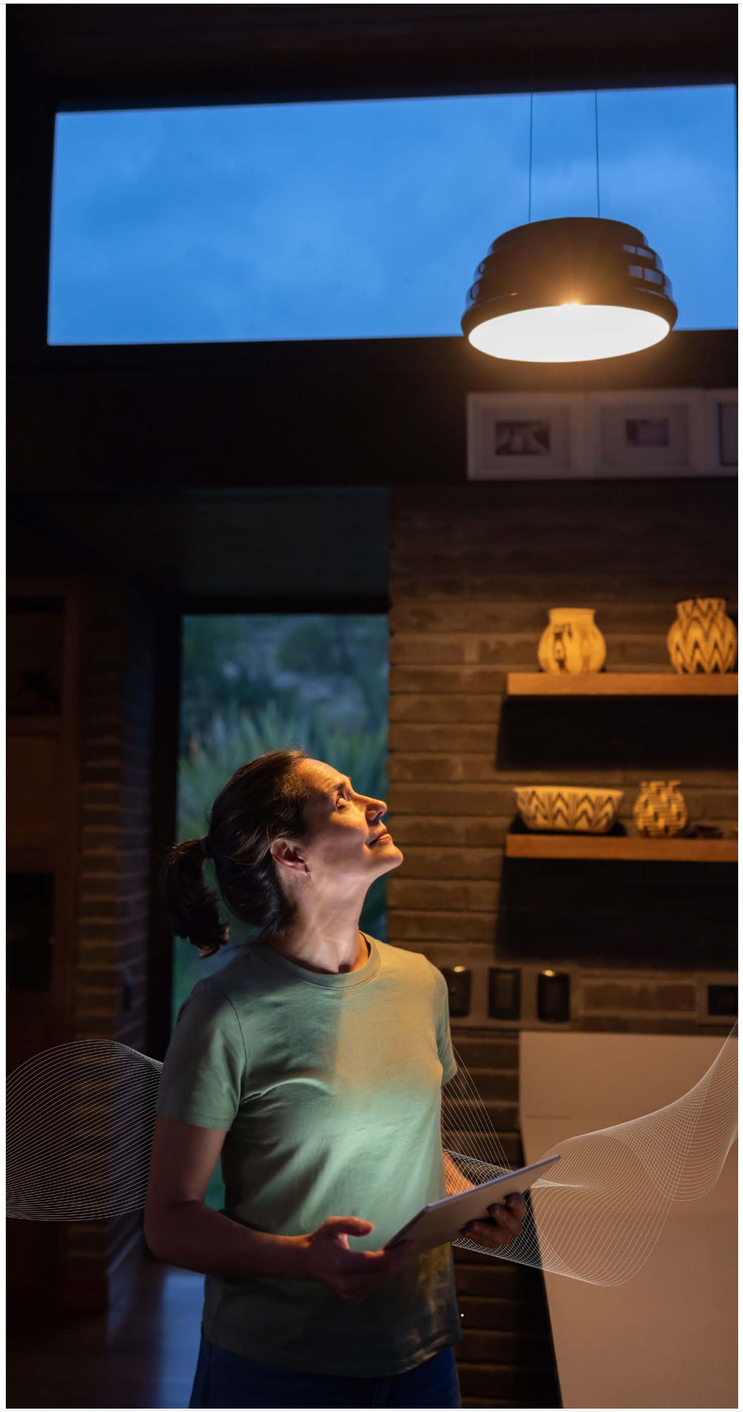
If your kits can act like a Matter device, does you need another side or an application or to interact with it for testing? What would be that software?

Ecosystems like Google Home, Apple Home, Samsung SmartThings, and Amazon Alexa are ready to develop with today. They provide platforms and guides to build and test. If you use our dev kit with your own Matter sample apps, or use one of our many Matter sample apps that are provided in the Matter SDK for Simplicity Studio, then you can use a device like the Nest Hub and the Google Home app to test and control.

14

How does Silicon Labs help or what is/ are the Silicon Labs recommendation for managing operational certificates?

Operational certificates are generated per fabric when the device joins. A device will generate a public/private key pair and send a CSR (Certificate Signing Request) to the commissioner to be signed and returned. Our vault enabled parts generate and store the private key internally, which greatly reduces the chance an attacker can gain access to that private key.



15

What about devices, which are migrated to a Matter firmware? Can the DAC be provisioned during manufacturing in such cases?

Devices that are upgraded in the field to Matter would need a means to install a DAC onto the device, as well as install the Matter Passcode. This could be done in a couple different ways, though this is outside the Matter specification. Two examples: a device could use a manufacturer's own mobile App via Bluetooth Low Energy (LE), or the device could reach out to a manufacturer's cloud service to securely generate or download the DAC and private key.

16

Does CSA/Matter Spec allow devices to be updated to Matter via OTA if hardware is Matter compliant?

Yes, devices which meet security requirements and have sufficient resources available can be OTA updated to Matter. We already see examples of this for deployed devices in the field for both Thread and Wi-Fi device that can be upgraded to support Matter.

17

Are the PSA crypto APIs standard APIs from CSA?

PSA Crypto APIs are provided by ARM. We integrate them on our hardware to manage keys in the most secure way.

18

Currently Matter doesn't support revocation, so would we be able to perform revocation through over-the-air updates?

Silicon Labs supports field upgrade of manufacturing certificates if using our Provisioner Firmware component included embedded within the Production Firmware.

1. The specific details of how certificates are conveyed to the device are not standardized within CSA and thus would be up to the manufacturer to manage.
2. In other words, they would have to handle the communication mechanism to transfer the certificates to the device (Bluetooth LE, IP, etc.) and the generation of the unique data for each device (certificate, passcode, and discriminator).

19

Do your devices generate their own DAC private keys, or are they generated by the PKI and pre-encrypted with a Silicon Labs public key?

Silicon Labs devices have the flexibility to support injecting pregenerated DACs during manufacturing or by having the device generates its own Public/Private Key pair on-chip that a manufacturer can sign, and thus avoid having the private key ever leave the device. The choice of which method to use is up to the manufacturer based on the logistics and needs of their manufacturer process.

Furthermore, Silicon Labs has a Custom Part Manufacturing Service (CPMS) that can securely provision devices with Matter security material along with a device manufacturer's own material to make the manufacturing process secure and easier to deploy Matter based products.

How is Silicon Labs supporting Matter?

Silicon Labs has strong expertise in the wireless protocols supporting Matter (Thread, Wi-Fi, and Bluetooth), and offer a range of Matter-compatible silicon, software, as well as the development tools. We're driving Matter development forward as one of the largest code contributors in the GitHub, and we've been involved in the project from its inception. Starting in 2022, Silicon Labs has been integrating Matter as part of the Simplicity SDK and Simplicity Studio to provide the same level of best in class developer experience as for the other protocol stacks.

SILICON LABS | matter