



A matter of smart connectivity

Navigating the Matter connectivity standard

Introducing Matter

A foundation for connected devices, Matter is a new, royalty-free standard for delivering reliable, seamless and secure connectivity. Supported by leading technology companies — including UL Solutions — through the Connectivity Standards Alliance (CSA), Matter increases and improves compatibility among smart home products, with security and privacy as fundamental design tenets.

Built on Internet Protocol (IP) and proven technologies, Matter enables communication across various manufacturers' smart home devices, mobile apps and cloud services. The standard also defines a set of IP-based networking technologies for device certification.

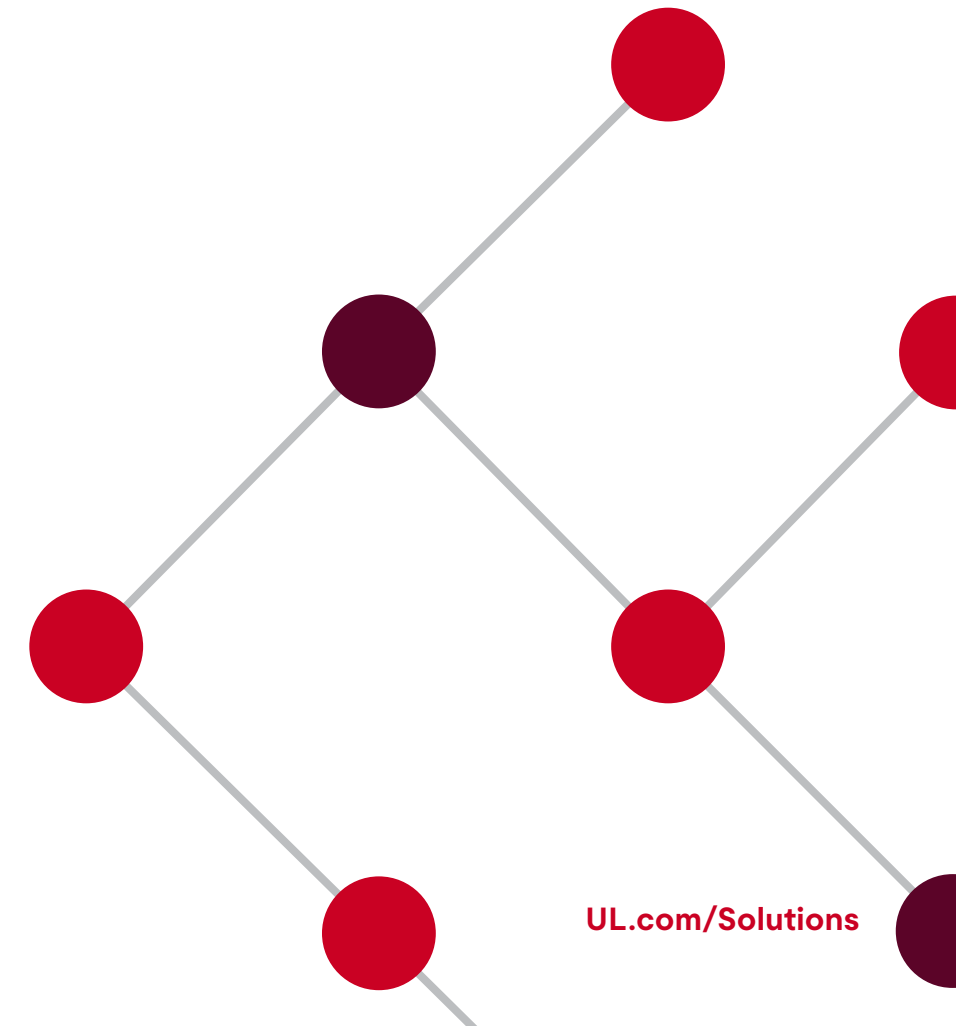
[Watch the CSA video for more on Matter](#)

Connectivity Standards Alliance (CSA)

CSA members include hundreds of companies that create, maintain and deliver open global standards for the Internet of Things (IoT).

Established in 2002, the CSA's global membership creates and evolves universal open standards for the products that transform the way we live, work and play.

Through the collective expertise of its members, robust certification programs and a full suite of open IoT solutions, the Alliance is leading the movement to enable all objects to simply, securely and seamlessly connect the world around you. The CSA launched the Matter working group at the end of 2019. UL Solutions joined the project in 2020.



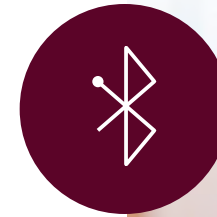
[UL.com/Solutions](https://ul.com/solutions)

Matter 1.4

Matter 1.4 was released on Nov. 7, 2024. Matter 1.4 introduces support for new device types, core enhancements and expansion of existing device types.

Matter 1.4 highlights:

- Enhanced Multi-Admin allows device vendors and platforms to improve the multi-ecosystem user experience, providing ways to automate experiences by enabling devices to automatically connect to multiple ecosystems with a single user consent.
- Introduction of Matter certifiable home routers and access points (HRAP) to make more reliable and interoperable home networks possible. Devices such as home routers and modems, access points, and set-top boxes can now be designed or upgraded to provide more robust support for Matter-based smart homes.
- Two new device types designed specifically for fixed in-wall smart home devices delivering electrical power to wired devices, such as in-wall switches for controlling lights, fans and other non-smart appliances.
- Core enhancements include: 1) Occupancy Sensing allows the existing sensor cluster to support sensing features like radar, vision and ambient sensing technologies. 2) Battery Powered Devices to introduce the optimization of battery life and communication for intermittently connected devices (ICDs).
- New support for energy management device types includes solar power, batteries, heat pumps and water heaters.
- Enhanced electric vehicle supply equipment (EVSE) support introducing user-defined charging preferences allowing users to choose optimal times for convenience and cost, building on the provisional features from prior versions.



Matter devices supported today are:

- Batteries
- Battery-powered devices
- Bridges
- Controllers
- Cooktops, vent hoods and ovens
- Door locks
- Energy management
- Heat pumps
- HVAC controls
- In-wall switches
- Laundry washers and dryers
- Lighting and electrical
- Microwave ovens
- TVs
- Robot vacuums
- Safety and security sensors
- Smoke and CO
- Solar power devices
- Water heaters
- Water management
- Window coverings and shades



UL Solutions has been a CSA-authorized third-party test house for Matter-enabled connected smart devices since the CSA launched Matter in October 2022. As an Authorized Testing Laboratory for Matter, UL Solutions offers Matter 1.4 certification testing and Rapid re-certification and training for Rapid re-certification. UL Solutions is also one of the few laboratories dedicated to connectivity certifications such as Bluetooth®, Matter, Thread, Wi-Fi and Zigbee.

Matter certifications

A Matter software component is an implementation of the Matter specifications. UL Solutions tests Matter software components that:

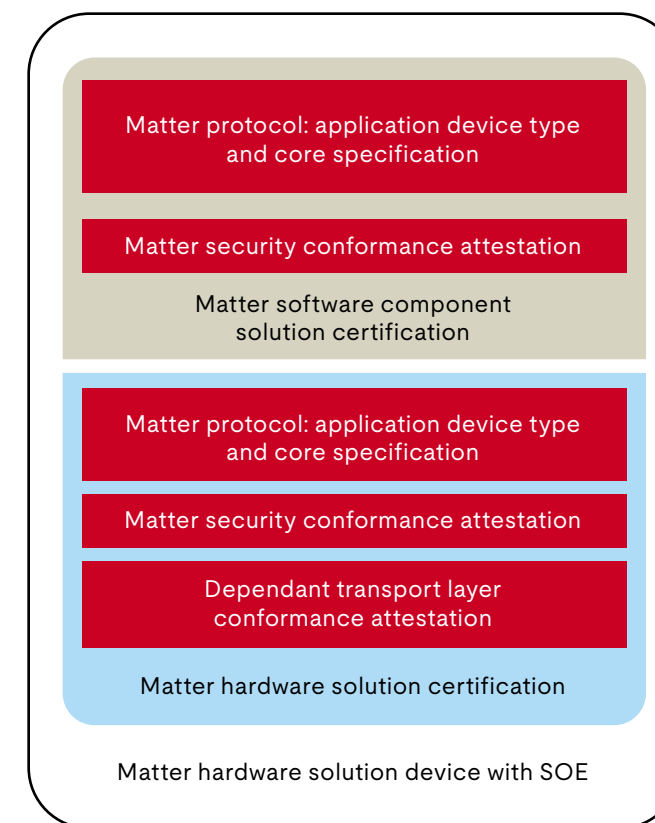
- Run within the context of a standard operating environment (SOE)
- Support certifiable functionality
- Are not attestable/commissionable Matter hardware devices

Matter hardware solutions submitted for testing are complete solutions. UL Solutions tests Matter hardware solutions (including cluster libraries and device types) that:

- Conform to interoperability specifications
- Support certifiable functionality

Components that qualify as both Matter software components and hardware solutions may be certified for both independently.

For cases when a Matter solution supports both a Matter hardware solution and a software component solution running on an SOE, the Matter solution may be certified independently as a Matter hardware solution and a Matter software component solution, or the device may be certified for all functionality as a Matter hardware solution.

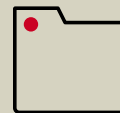


**1****Apply to the CSA**

- Become a CSA member as a Promoter, Participant or Adopter and request manufacturer ID.
- Complete development and choose an authorized test laboratory (ATL), such as UL Solutions, to test your product according to Matter specifications.
- Complete and submit an application for certification in the CSA certification tool/portal, which includes PICS, DoC, DCP attestation and certification fees.

**2****Testing**

- Tests are scheduled and performed by the ATL according to the CSA - Matter test plans, specifications, certification policies and procedures.
- The ATL maintains comprehensive documentation of testing.
- Upon successful completion of the relevant certification data, the ATL submits the final product test results to the CSA for final review.

**3****Auditing**

- The CSA reviews the test results submitted by the ATL.
- Questions related to the submitted test results are forwarded to the ATL.

**4****Approval**

- If submitted test results meet Matter specification requirements, the CSA issues a product certificate to the applicant within two to three weeks of receiving the results.

Matter dependent certification programs

Matter does not certify network and application layer solutions separately; the Matter hardware solution certification relies on dependent certification by Dependent Certification Programs (DCP).

Dependent certification provides a mechanism for a Matter hardware solution developer to attest to the certification of their products' connectivity capabilities (hardware and software) certification to the minimum Matter requirements for each of the different possible connectivity capability options. This allows for certification to be done by the integrated circuit (IC) device manufacturer, a module or platform manufacturer, or the actual Matter hardware solution manufacturer. Matter certification perspective can be inherited if — or when — it is used in instantiations that incorporate that externally certified dependent portion.

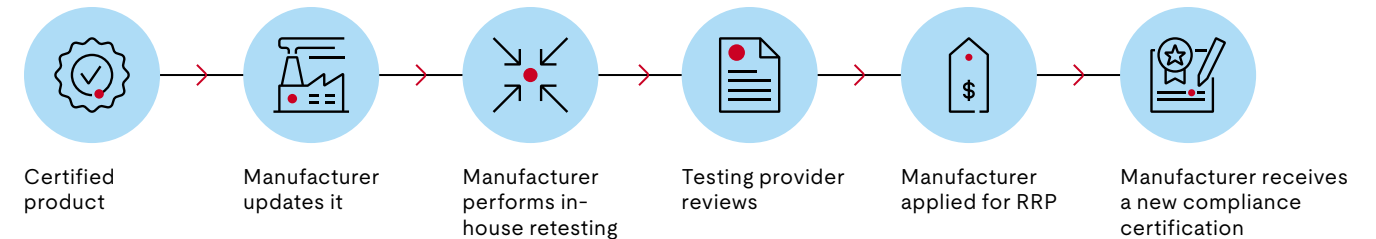
The following are the current DCP supported by Matter:

- Bluetooth SIG: Bluetooth LE v4.0 or later for an end product type (as defined by Bluetooth)
- Ethernet compliance – showing evidence of successfully passing self-defined and self-testing of IEEE Physical Media Attachment (PMA). See IEEE 802.3-2015 or later (Clause 40 for 1000Base-T, Clause 22/38 for 100BASE-T, and Clause 14 for 10Base-T) or later for a description of PMA
- Wi-Fi Alliance Certification Program – Wi-Fi 4 (802.11n) or later
- Thread Group Certification Program – Thread 1.3.0 or later

Compliance to the dependent certifications for each of the Matter hardware solutions supported connectivity capabilities is verified during the application process when seeking CSA certification of a new or revised/updated Matter solution.

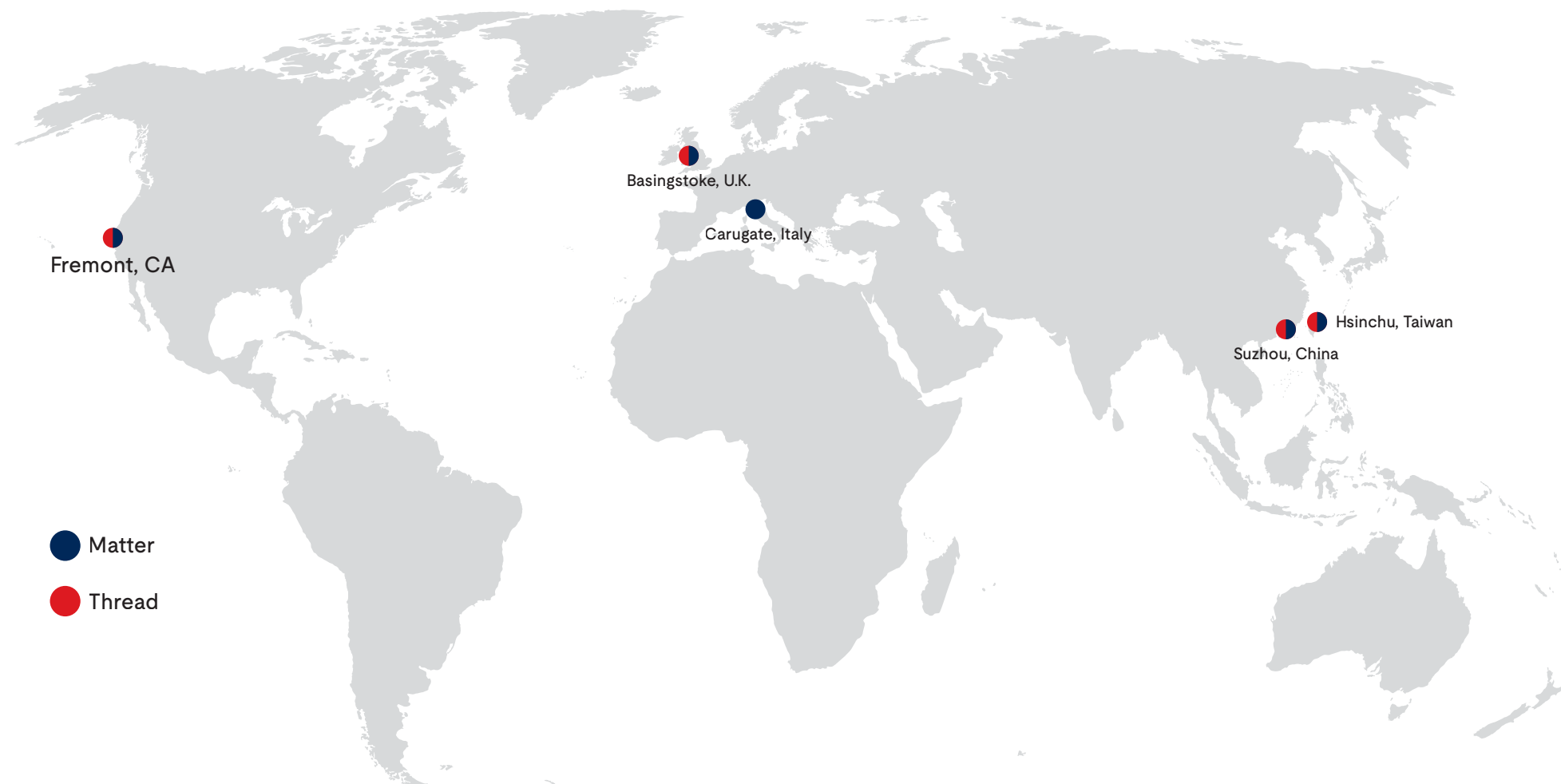
Rapid recertification program

The Matter rapid recertification program (RRP) was created to expedite the certification process by enabling qualified Alliance Members' own experts to perform product testing on their own premises while leveraging ATL's expertise to review and validate the results. These products include software components as well as hardware-based devices, and this program is solely applicable for product recertification, not for initial certification.



Our Matter and Thread testing locations worldwide

Covering Asia, Europe and North America



● Matter
● Thread