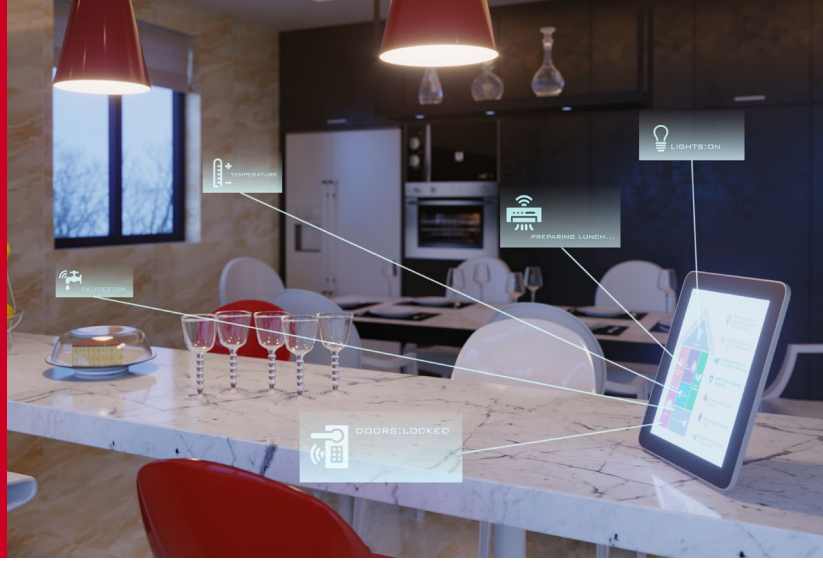
What is Thread?



Thread is a low-power mesh networking protocol designed for use with Internet of Things (IoT) devices in a wireless personal area network (WPAN), independent of other IEEE 802.15 mesh networking protocols. Thread is designed for the IoT to provide a secure and reliable connection for products used in homes and buildings. It is equipped with security functions to provide a layer of network security and includes energy efficiency improvements that allow the the application of the IEEE 802.15.4 MAC/PHY standard with excellent power efficiency. This protocol is open IPv6 based and supports device-to-device and device-to-cloud connectivity with seamless integration that extends the range of internet connectivity to low-power devices. With its ease of market entry, Thread helps with the global use of chips, stacks and other products.

Designed for IoT

- Low energy consumption - based on the power-efficient IEEE 802.15.4 MAC/PHY
- Security and reliability
- Consistently secure and reliable connection in the network
- Interoperability
- Expandability
- Use of proven standards

IP based

- Commonly available for all networks
- Comprehensive support
- Easy to develop
- Various applications can be selected
- Device-to-device and device-to-cloud connection possible

Seamless integration

- Seamless compatibility with existing networks
- Internet connection range can be extended to low-power devices without special conversion transformers
- Connection of Thread products to personal mobile devices is easy

Ease of market entry

- Various types of chips can be selected
- Thread certified chips and stacks availability
- Open specification
- Established certification program
- Simplified product development and reduced time to market

Thread certification process

Apply to the Thread Group

- Become a member of the Thread Group as a contributor or sponsor.
- Choose an Authorized Test Laboratory (ATL), such as UL Solutions, to test your product according to Thread specifications.
- Submit your certification. After you receive the Thread Certification ID (CID) from the Thread Group, submit it to the test laboratory along with two or more test samples, guide documents for product operation, and supporting devices, such as cables, that are required to operate the test device.

Testing

- The test is scheduled and performed by the ATL according to the Thread certification policy and procedure.
- ATL maintains comprehensive documentation of the testing.
- Upon successful completion of all relevant certification data, ATL submits the final test results for the product to the Thread Group for final review.

Auditing

- Thread Group reviews test results submitted by an ATL.
- Any questions related to the submitted test results will be forwarded to the ATL.

Approval

- If Thread Group requirements are met, Thread will issue a product certificate to the applicant within 10 business days of receiving the test results.

Application **Authorized test**

Thread certification authority

We are a global testing company

We are committed to the continuous development of various technologies that support the IoT ecosystem. Our global technical experts play an important leadership role in standard development activities such as OCF, Thread Group, Bluetooth® SIG, and Zigbee Alliance. UL Solutions is an ATL for the Thread Group's certification programs, with Thread ATL's in US, Europe and Asia. Our experts have been been working closely with the Thread Group since 2015, helping with the development of their testing and certification program.

Benefits of partnering with us

We are a leader in the field of IoT technology certification. Through this leadership in international committees such as Thread, OCF, Zigbee Alliance and FCC TCB Council, we support the regulation and implementation of IoT technology certification requirements. In addition, we offer comprehensive testing and certification services and can manage all testing and certifications for safety and smart connectivity. Our experts are also able to provide guidance on the latest testing requirements to consider when developing your product.

With pre-compliance testing, we provide knowledge and expertise in new and emerging interoperable technologies that can help you meet compliance needs. You'll receive support from a dedicated technical team and work with professionals that have extensive knowledge in complex and diverse IoT ecosystems.

Learn more about our Thread testing services or contact a UL Solutions representative at **UL.com/iop**.

UL Solutions

Safety. Science. Transformation.™

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CMIT23CS953557