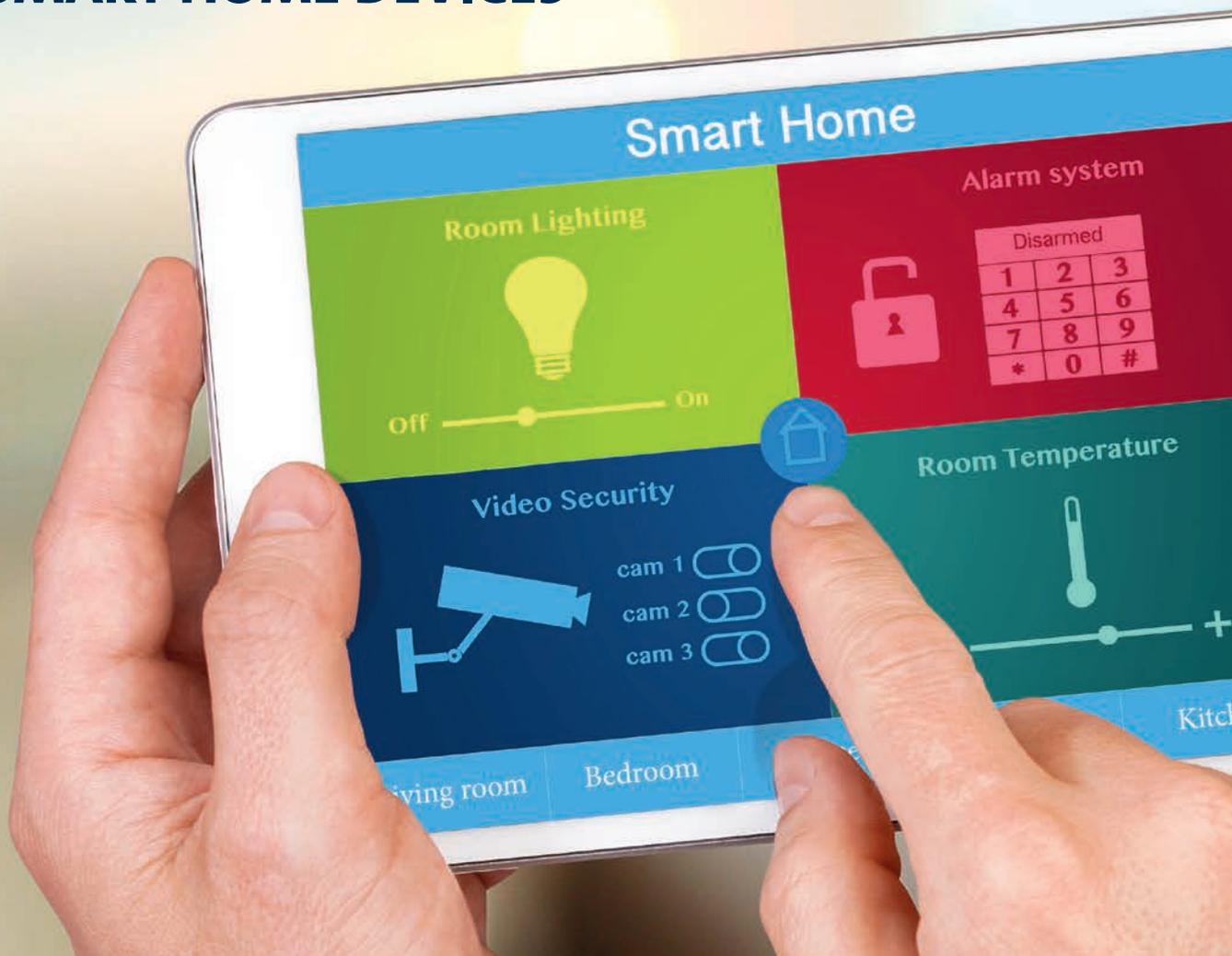


CONSUMER
TECHNOLOGY



ONE STEP AHEAD IN HOME AUTOMATION

**TESTING AND CERTIFICATION SERVICES
FOR SMART HOME DEVICES**





For over 120 years, UL has been advancing safety science in support of successful product launches. As a recognized and trusted certification brand for consumer technology, UL is uniquely positioned to keep up with the rapidly changing Smart Home automation industry. Addressing the importance of complying with applicable standards and interoperability early on helps facilitate a successful market launch and build a long-lasting excellent reputation for high-performance Smart Home products.

WORLD LEADER IN SMART HOME TECHNOLOGY CERTIFICATION

UL provides testing and certification services and a far-reaching expertise in the standards needed for the wireless smart home. We provide testing on protocols like Zigbee and Bluetooth among many others – and are the first to offer testing for the networking technology, Thread.

We understand the ins and outs of the Smart Grid. The home of the future is interconnected but with one central control, so we also provide the testing to check interoperability, help ensuring products work with each other. In short, UL helps keep the ‘smart’ in future home automation.

UL – IN NEARLY EVERY HOME AROUND THE WORLD



BENEFITS OF WORKING WITH UL

EXPERTS IN SMART HOME TECHNOLOGY.

Through our leadership roles in international committees, we help define and drive Smart Home technology certification requirements.

EFFECTIVE PLANNING.

We are a single business who can manage all testing and certification needs for safety and smart connectivity.

TRUSTED ADVICE.

In addition to certification services, we offer expertise in emerging interoperability technology and design.

DEDICATED ENGINEERS.

You work with expert engineers who understand the complexity and diversity of smart home systems.

ENGAGED AND RESPONSIVE.

We work closely with you from the start, delivering qualified analyses for rolling out each product.

INDUSTRY LEADERS.

As the market leader in Smart Home technology certification, UL sets the bar with the most up-to-date knowledge



GETTING YOUR CERTIFIED PRODUCTS INTO HOMES

The idea of the Smart Home has rapidly moved from a concept to a reality over the last several years. And the expectations for revolutionizing homes and how we live in the future are high. Users want ease of use, streamlined functionality and above all cost savings – and all without lifting a finger of course!

Manufacturers need to be ready to understand the market demands, keep up with the latest technology and be certain their products are not only ready for market, but optimized to stand out from the rest. UL is a strong certification partner for Smart Home products that take advantage of the Internet of Things. We advise you on the compliance tests your diverse and complex products need, and then provide you with all regulatory testing at the same time and for any market, streamlining the whole process.

TECHNOLOGY PROTOCOLS

Smart Home automation systems use a range of networking protocols. UL is one of the leading labs that provide testing for all of them. Below is a selection:



BLUETOOTH

The global standard for easy and safe connectivity among many products & Bluetooth low-energy – provides the same connectivity but with reduced power consumption. UL labs facilitate the complete Bluetooth Qualification package – RF, Protocol and Profile – to all Bluetooth standards.



THREAD

THREAD is a new IP-based low-power wireless networking protocol especially for smart homes. UL was selected to develop a Thread certification process and is the first safety company to offer testing to customers.



WI-FI

Wi-Fi is essential for the Smart Home to connect a wide range of products to a single source, like the internet. UL is a fully accredited Wi-Fi testing facility authorized to carry out all testing related to the Wi-Fi Alliance, including pre-certification.



NFC

This wireless connectivity technology allowing for two-way interaction between devices. UL delivers testing to meet all NFC Forum requirements including specifications ISO/IEC 14443 and ISO/IEC 10373-6.



WIRELESS CHARGING (QI)

Qi is one of the most common technologies for power charging. UL supports you with achieving compliance to all local and international regulations.



ZIGBEE

ZIGBEE is the global standard based on IEEE 802.15.4 Wireless Networking Standard, it provides users seamless control over many devices. UL provides testing for all Zigbee Alliance certification standards.

UL OPENS THE DOOR TO GLOBAL MARKETS

Smart Home applications cover a wide range of devices including entertainment, home care, security and energy. UL helps manufacturers navigate the ever-changing landscape of regional and international certification requirements. Standards vary according to the device, the frequency it transmits, and the material used within the product. A one-source service provider like UL can streamline the process to help manufacturers get the certification credentials they need.

HOME AUTOMATION DEVICES

UL typically tests the following home automation components, among others:

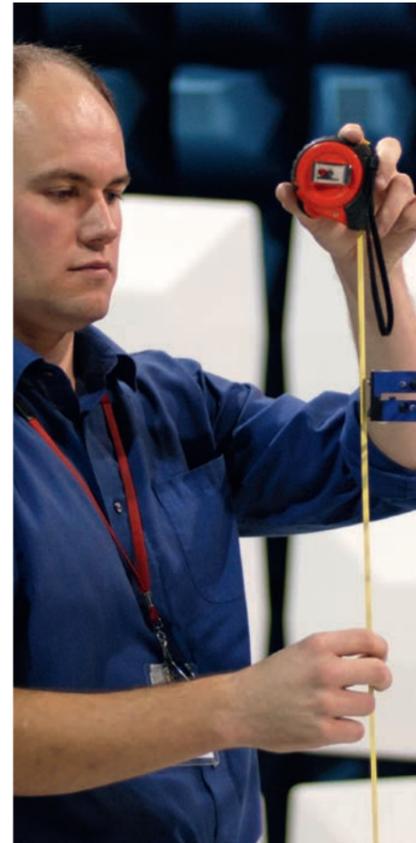
- **SENSORS:** to measure or detect things like temperature, humidity, daylight or motion.
- **CONTROLLERS:** such as a PC or a dedicated home automation controller, incl. interfaces for human-machine and/or machine-to-machine interaction
- **ACTUATORS:** such as motorized valves, light switches and motors.
- **WIRELESS PROTOCOLS/MESH NETWORK:** for communication that can be wired or wireless.
- **ROUTERS/BORDER ROUTERS:** a networking device between computer networks
- **HOSTS:** main or controlling computers

UL AND TESTING: EVERYTHING FROM ONE SOURCE

UL offers an extensive number of services covering all wireless protocols used across a variety of Smart Home devices. Our RF conformance testing includes:

PROTOCOL

verifies that the network protocols were properly implemented in your application or device and helps ensure interoperability.



PROFILE/ APPLICATION

protocols are developed to target an initial industry where the application/profile fulfills the actual necessities of the consumer. Simple examples are Hand free profile for Bluetooth.

MESH PERFORMANCE

tests to check this key attribute in any home network works without fault.

TECHNOLOGY PERFORMANCE

helping ensure that the device performs as expected.

INTEROPERABILITY CERTIFICATION

check that devices work with other networked products across a comprehensive range of scenarios.

OTHER KEY UL SERVICES

Did you know that UL can help you get your products market-ready right from the first phase of design? UL can help ensure your products not only function properly but are also safe and make a lasting positive impact on the customer "at home".

SAFETY TESTING

Evaluating the safety of home automation products involves many different tests to demonstrate compliance with the regulatory requirements. From EMC to SARs regulation, UL has got it covered.

PERFORMANCE TESTING

- M2M Approval
- Privacy and Data Security
- Energy Efficiency

USER EXPERIENCE AND USABILITY TESTING

- Human Factors Engineering (HFE)
- Usability evaluation and testing
- Product functionality & performance

ENVIRONMENTAL AND SUSTAINABILITY TESTING

Helping to take into consideration homeowners' concerns about chemicals and healthy materials.

GLOBALLY RECOGNIZED

In the fields of product safety, wireless interoperability, energy efficiency, biocompatibility and medical, UL's laboratories are recognized by the leading global regulatory organizations and their requirements including:

- IEC / IECCE
- American National Standards Institute (ANSI)
- FCC
- Wi-Fi Alliance
- Bluetooth SIG
- A2LA
- CTIA
- Qi / PMA / A4WP Wireless Charging Certifications
- Thread
- NFC
- Zigbee
- Qualcomm Quick Charge 2.0
- ENERGY STAR®
- California Energy Commission (CEC)
- UKAS
- SCC

With even more to follow soon:

- OIC
- Allseen
- IIC

IN STEP WITH FUTURE TECHNOLOGY

UL is also at the cutting edge of many new developments. For example, UL is the first to provide testing for the new wireless standard Thread.

If you don't see your needs here, tell us your challenges. We very likely already know what to do.



GLOBAL MARKET ACCESS

UL helps simplify multiple market compliance by bundling product tests and certifications to meet all the requirements of national and regional market standards. Regardless of your location, UL can provide a single streamlined process that reduces administrative and project management costs, creating faster access to global markets.

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