Connected toys and children's products

UL Solutions helps you ensure that your innovations meet safety, security and performance standards

Connected toys and children's products are rapidly gaining traction in the marketplace. These products provide a more personalized experience for children and parents with the help of embedded software that can offer speech and image recognition, app integration, radio frequency identification (RFID) functionality and web searching functions.

Adopting science, technology, engineering and math (STEM) toys for children's skills enhancement is one of the key factors driving the demand for the connected toys and children's products market.

While offering exciting new potential for learning and entertainment, advanced toy technologies come with a host of risks, safety challenges, performance issues and regulatory requirements that may be new to manufacturers.

UL Solutions

Safety. Science. Transformation.™

Challenges in the toy and children's products industry

Retailers, brands and manufacturers looking to enter the global market with connected toys or children's products should consider the following before proceeding:

- Leveraging new technologies – What new technologies can you incorporate into your products?
- Safety and security issues – What are the potential safety hazards of charging the connected products?
- Benefits of integrating wireless technologies – How can wireless technologies such as Bluetooth® improve the interactivity of your connected toys or children's products?
- Specific absorption rate (SAR) exposure – How can you limit your products' SAR exposure to protect younger consumers?
- Cybersecurity – How secure are the connected toys and childrens products, or are there any risks for the connected devices or child?
- Certifications and market access – Do you need Federal Communications Commission certification for the U.S. market? How may the U.S. Consumer Product Safety Improvement Act (CPSIA) and Canada Consumer Product Safety Act (CCPSA) impact your children's product? How will EU Toy Directive or Radio Equipment Directive (RED) requirements affect you? Have you considered all the certification requirements you'll need to meet to legally sell wireless toys?

How UL Solutions can help

UL Solutions is a global leader in safety science and innovation and offers a comprehensive portfolio of services for toys and children's products. With globally recognized experience in electrical, electronic and wireless technologies, we can support the toy and children's products industry in identifying and understanding the measures needed to protect the youngest consumers when using connected devices.

We can help global retailers, brands and manufacturers worldwide overcome the challenges of integrating Wi-Fi, Bluetooth® and other radio technologies into toys and products for children and teenagers.

UL Solutions provides solutions for connected toys and children's products, including:

Product safety

e-Toys and technology products intended for children may have special product safety considerations, including requirements for rechargeable batteries, that may be best covered by multiple product safety standards, including IEC 62368-1, Audio/video, Information and Communication Technology Equipment – Part 1: Safety Requirements (and its UL 62368-1 and EN IEC 62368-1 equivalents), EN 71 series, Safety of Toys, and ASTM F963, Consumer Safety Specification for Toy Safety. UL Solutions has the expertise to collaborate with you and determine the most appropriate product safety standards for your product.

Electromagnetic compatibility (EMC) and radio testing

EMC testing determines whether a product's emissions are below specified limits defined for that type of product to help ensure that it does not cause harmful interference with other devices in its operating environment. EMC testing also determines whether a product operates as expected in its intended working environment with other operating products nearby.

Bluetooth® conformance testing

We can help you meet the mandatory Bluetooth® requirements for using the Bluetooth® trademark through qualification testing. Products with Bluetooth® also benefit from UL Solutions performance testing services, including our extended and customized interoperability (IOP) test program.

SAR testing

We measure the electromagnetic energy the human body absorbs when using wireless devices. The SAR test verifies that a device does not exceed the established radio frequency (RF) exposure limits for a particular country/region.

Global Market Access

Each global market has specific and often different requirements and regulations. Our Global Market Access team can guide you through your target market's requirements and support your product approval on time and within budget.

Performance testing

We offer interoperability and functionality testing services to help ensure that products connect, stay connected and work as intended. In addition, we offer comprehensive mobile app compatibility testing using our large library of devices. All programs are customizable and designed to improve the consumer experience and support our customers in protecting their brands.

We can provide over-the-air (OTA) antenna testing for devices with higher connectivity requirements to predict antenna performance of real-world wireless devices.

Cybersecurity rating

Connected toys are a potential minefield when it comes to security and privacy, and several countries/regions around the world are implementing strict regulations to protect children's personal data and information.

UL Solutions Internet of Things (IoT) Security Rating Program is based on the UL 1376, Methodology for Marketing Claim Verification: Security Capabilities Verified to level Bronze/Silver/Gold/Platinum/Diamond, UL MCV 1376* to determine the accuracy of marketing claims.

- It provides security due diligence according to standards, regulations and guidelines with differentiated levels of security assurance according to product types and standards.
- For consumers, it provides a verifiable marketing claim against the security capabilities evaluated to each level, making the products' security transparent and accessible to consumers, and educates the purchasing decision.
- For manufacturers and distributors, it provides a means to demonstrate the cybersecurity compliance and due diligence purposes and to differentiate products in the marketplace.

Products are assessed and rated according to five levels based on the implementation of security best practices, capabilities and compliance requirements:

Bronze – essential security capabilities: No default passwords, secure update mechanism, secure reset, secure communications, e.g., in accordance with NISTIR8259A and Walmart Connected Device Certification in accordance with CA and OR state laws, etc.

Silver – enhanced security capabilities: Access control, industry privacy best practices, product security maintenance, e.g., Design Light Consortium Cybersecurity Compliance requirements, etc.

Gold – advanced security capabilities: Stored and transmitted data security, secure out-of-the-box settings, mobile app security maintenance, e.g., EN303 645 certification, etc.

Platinum – extensive security capabilities: Known threats testing, malware protection, permanent log-in prevention

Diamond – comprehensive security capabilities: Malicious software modification detection, illegitimate access attempt protection, user data anonymization

*UL Solutions established the UL MCV 1376 methodology to align with global IoT cybersecurity frameworks such as California and Oregon IoT Bills (2020), U.S. Executive Order on Cybersecurity (2021) and U.S. IoT Cybersecurity Improvement Act (2020), EU GDPR and Cybersecurity Act (2019), EU RED, China National IoT Security Standard, Singapore CLS Scheme (2020), EU: ETSI EN 303 645, Walmart USA Product Safety and Compliance Standard, Alignment to Code of Practice for Securing Consumer IoT: TEC 31318:2021, etc.

To learn more about how UL Solutions can help, contact us at Toys@UL.com.

UL Solutions

RCP22CS806966