L&T SEMICONDUCTOR TECHNOLOGIES LIMITED

Smart Module Compliance & Certifications

Why they matter and how LTSCT ensures global market readiness?

In today's competitive electronics landscape, deploying a smart module is more than just integrating a modem, processor, or connectivity technology. Every connected product whether for industrial IoT, smart retail, automotive, or consumer devices must comply with stringent international certification standards to ensure safety, performance reliability, legal operability, and seamless market entry. Certification ensures that a product can interoperate and co-exist with other technologies within the ecosystem it operates in, enabling seamless integration without requiring redesign of surrounding system elements.

A pre-certified module allows customers to upgrade their system seamlessly by simply replacing older modules with newer ones significantly reducing re-engineering efforts.

Without the right certifications, product launches can be delayed for months, incur high re-testing costs, face shipment restrictions, or even be barred from major global markets.

Why compliance & certifications are critical?

Smart modules are core connectivity engines inside IoT and electronic devices. Because they transmit data wirelessly and interface with telecom networks and electrical systems, they must meet strict regulatory and technical certifications before they can be sold or deployed globally. Certifications validate that the module operates safely, legally, and reliably under approved standards.

Smart module certifications ensure the following:

Radio & Network Connectivity Compliance

Ensures wireless performance (LTE, 5G, Wi-Fi, NB-IoT, Bluetooth, GNSS) meets region-specific spectrum requirements. Also certifies that the product:

- Does not interfere with other devices in its operating environment
- Is immune to external disturbances and operates reliably

Examples of radio certifications

USA · Europe · UK

Brazil · Japan · China

Safety & Environmental Certifications

Guarantees product safety, environmental compliance, and component-level sustainability.

RoHS compliant

RoHS
Restriction of hazardous substances

REACH COMPLIANT

REACH
Chemical and environmental safety

IEC UL 62368-1

IEC / UL 62368-1
Electrical safety & fire protection

Carrier & operator approvals

Ensures modules operate on commercial telecom networks with proven functional and RF performance.

Required certifications include:

PTCRB

GCF Test Certify Connect

Telecom operator approvals

AT&T verizon T-Mobile vodafone airtel Jio

EMI / EMC stability

Validates electromagnetic compatibility to ensure:

- No harmful interference to other devices
- Immunity from industrial electronic noise
- Stable performance in harsh environments

Essential for industrial automation, electronics, and automotive-grade systems

Legal market access & faster commercialization

Certification determines whether products can be shipped, imported, installed, and connected across markets.

Lack of certification causes:

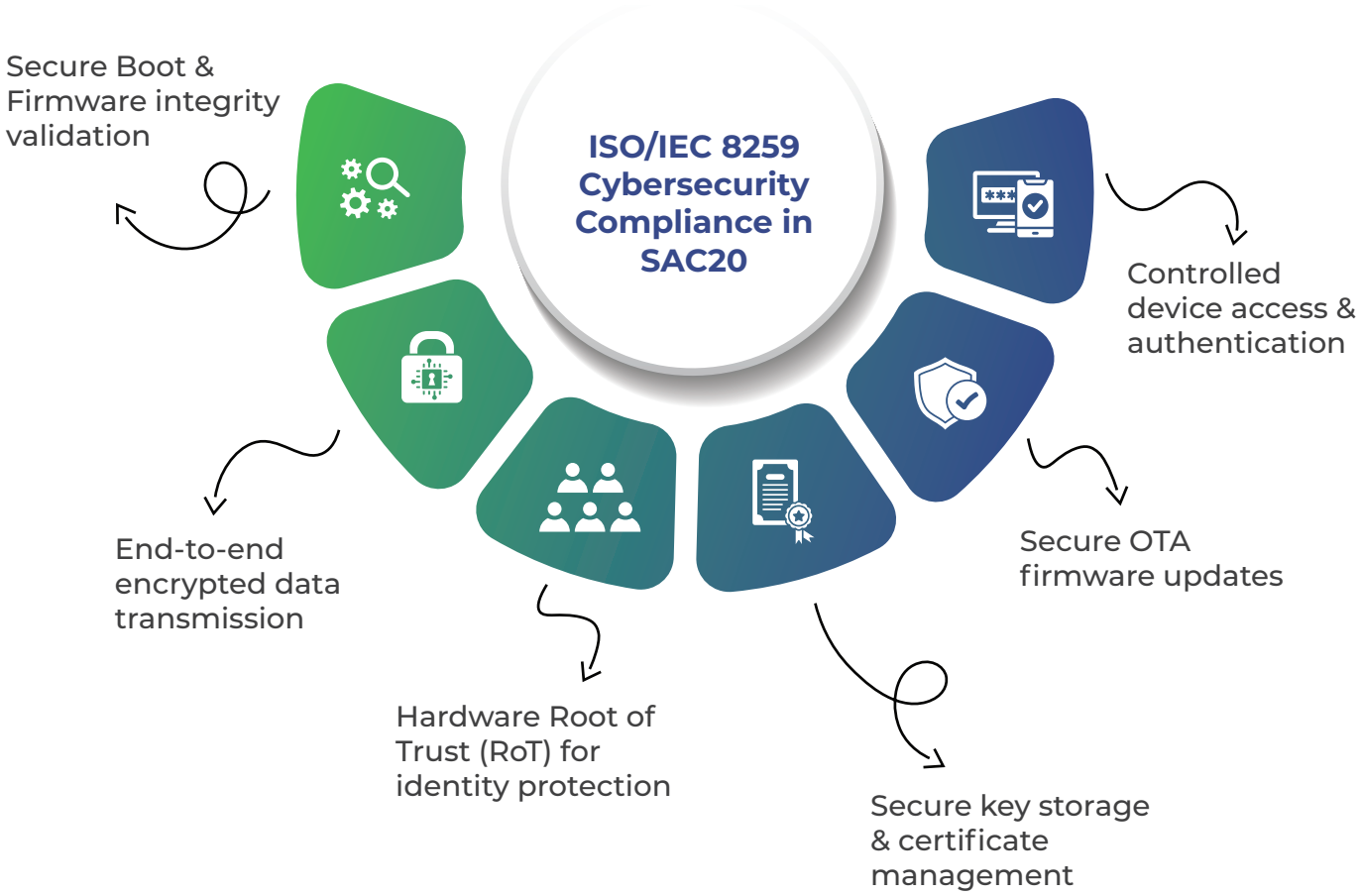
- Shipment holds at customs
- Rejection from telecom networks
- Loss of customer contracts
- Expensive redesigns and launch delays
- Typical delay for non-certified modules: 6–12 months

Strengthens Security & Trustworthiness

Modern smart modules operate in environments where data confidentiality, secure communication, and device integrity are critical. Increasing IoT adoption increases risks of cyberattacks, device hijacking, and data breaches—making cybersecurity compliance essential to protect both deployed devices and connected ecosystems.

ISO/IEC 8259 Cybersecurity Compliance in SAC20

LTSCT's SAC20 Smart Module incorporates built-in security aligned with ISO/IEC 8259, providing:



This ensures cybersecurity compliance and trusted operation across financial, industrial, and infrastructure IoT deployments.

How an integrated certified smart module accelerates product launch?

Using a pre-certified smart module massively reduces cost, time, and engineering effort during development. It allows OEMs to skip many stages of independent testing.

With Certified Module	Without Certified Module
Faster launch—weeks	Long certification cycle—months
Lower testing cost	High retesting and lab expenses
Reduced engineering effort	Complex RF & compliance iterations
Easy multi-region scalability	Multiple per-country testing
Lower business risk	Possible rejection or product recall
Dedicated on-site & remote engineering support	Seamless from concept to field rollout

How LTSCT smart module certifications add value?

LTSCT Smart Modules are designed to deliver plug-and-deploy readiness, backed by comprehensive global certifications required for mass production and market entry.

However, understanding the demands of different jurisdictions across the globe is a fundamental part of an IoT device's route to market and therefore organizations should familiarize themselves with the likely requirements of certification authorities from regulators to industrial conformance and carriers in each market they expect their device to be deployed in. In an ideal world this knowledge would be assembled early and incorporated into device design and development to ensure certification is straightforward and timely. However, there are ways to catch up once a device is ready for production, especially if pre-certified components are used and a certification agent with knowledge can help accelerate and simplify certification in markets across the globe.

Accelerated Time-to-Market

Customers can focus on product design and application software while LTSCT handles regulatory complexity.

LTSCT SAC20 Smart Module an India-designed powerhouse engineered for global reliability, long-term supply assurance, and smartphone-class performance. Built to empower OEMs to develop, differentiate, and deploy next gen connected solutions faster than ever before.

Key Enablers for Faster Deployment/SAC20

Using a pre-certified smart module massively reduces cost, time, and engineering effort during development. It allows OEMs to skip many stages of independent testing.

Feature	Description
Pre-certified RF module	Speeds compliance & global approvals
Proven BSP for Android & Yocto Linux	Field-validated for reliability
Pre-tested drivers & libraries	Shrink debugging timelines
Rapid Flash Utility	Enables scalable mass deployment
Dedicated on-site & remote engineering support	Seamless from concept to field rollout

ISO/IEC 8259 Cybersecurity Compliance in LTSCT SAC20

LTSCT's SAC20 Smart Module is designed with built-in security architecture aligned with ISO/IEC 8259 a globally recognized security standard for IoT devices. This ensures secure communication, device identity protection, and lifecycle security from manufacturing through field deployment.

Where LTSCT certified smart modules are used

Smart POS & Payment Terminals

Self-Checkout

Automotive telematics

Industrial automation

Industrial Handheld terminals & logistics tech

Surveillance and Smart Camera Systems

Conclusion

Smart module compliance is not optional; it is a business enabler. Choosing a certified smart module significantly reduces development risk, accelerates commercial readiness, and ensures product acceptance across global markets.

LTSCT Smart Modules deliver a fully certified, globally deployable platform that shortens product development cycles and ensures regulatory peace-of-mind. With strong certification support, customers can innovate confidently and scale faster.

Future. Made Together.

Building your next IoT or connected product?
Partner with LTSCT Smart Modules to accelerate certification, reduce cost and launch globally.
Book a technical discussion / sample evaluation request:

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