



LORA SERVICES ENGINEERING, TESTING & CERTIFICATION

Test House | Systems House | Software House



LoRa, a low-power wide-area network technology, combines long range communications with low energy consumption. It is ideal for many Internet of Things (IoT) applications as it is safe and economical to use.

Members of the LoRa Alliance, a non-profit association, are working together to drive the success of the LoRaWAN™ specification.

Aim of the LoRa certification program is to guarantee interoperability and at the same time allow for technical flexibility to especially support those existing and upcoming IoT applications, that do not have to transport high data rates but benefit from aspects such as

- long range
- low energy consumption,
important for battery driven IoT devices
- low costs.

Since the LoRa technology enables the set-up of private, individually managed networks and public networks, it can be used for a large variety of IoT services such as:

- smart cities
supporting geo parking, smart metering etc.
- vending machines
informing e.g. when products are sold out
- container tracking
- pet tracking
- etc. ...

LORA ALLIANCE CERTIFICATION PROGRAM

The 7layers group, has been involved with the wireless industry since 1999. Not only do we offer wireless testing and certification for all important wireless technologies, we are also involved in the set-up of Smart Services and IoT applications. To meet the growing requirements for IoT device testing, 7layers is running LoRa Alliance authorized test laboratories.

7layers has been engaged in the LoRa technology from its 1st open house meeting in 2015 and now runs most experienced, independent, 3rd party authorized LoRa Alliance test labs in Europe, North America and soon in Asia.

Based on our experience we support LoRa module and end-device manufacturers in achieving LoRa certification in the most efficient way.

We are also involved in the development of further LoRa standards and updates, so that our clients benefit from our insight in the most recent LoRa developments. For special test purposes, we provide customized LoRa test set-ups.

LORA SERVICES AT A GLANCE

- LoRa Alliance certification testing
 - End-product and module functional protocol testing
 - Pre-certification testing for devices that don't yet fall under the LoRa certification program
- LoRa device regulatory testing
 - For the global market
- Customized LoRa test set-ups
- IoT / Smart Services set-up support
 - Requirements capturing, specifications development, benchmarking, consulting, test set-ups ...

LORA TEST AND CERTIFICATION SERVICES

The LoRaWAN™ Certification Program has been set-up to ensure that LoRa devices will be interoperable and function smoothly on LoRaWAN™ networks.

To gain LoRa certification, device manufacturers must be member of the LoRa Alliance and use an authorized LoRa certification test house like 7layers. Both end-devices and modules have to meet the functional requirements of the LoRaWAN™ protocol specifications. When testing has been completed, the results will be listed on the LoRa Alliance website and the respective certificate will be issued if the device is in-line with the certification program. Once issued, a certification is valid for the whole product life.

DEVICE CLASSES AND CERTIFICATION REQUIREMENTS

Depending on the way a LoRa device receives data, it is categorized as a Class A, B or C device. Device certification is currently based on differing regional certification requirements for Europe, North America, Korea and other Asian countries (AS 923MHz). Certification is version specific and requirements are evolving over time.

MODULE AND DEVICE CERTIFICATION

Modules and devices can be certified individually. Variants can also be defined, using the concept of “certification by similarity”.

Based on our experience, 7layers guides manufacturers so that they may use the best possible concept, adjusted to their special case.

PRODUCT UPDATES

Existing certifications continue to be valid, if the manufacturer can prove that the product update has not changed the LoRa hardware or software.

SPECIFICATION UPDATES

In case the LoRa Alliance issues a new specification version, vendors do not have to go through the certification process again. In some cases, however it might be prudent to do so, in order to ensure continuous end-user satisfaction. If in doubt, turn to the 7layers specialists.

ADDITIONAL MARKET ACCESS SERVICES

Radio performance is important for the success of any wireless device. Radiated power, sensitivity etc. are however not part of the LoRa certification program but are covered by regulatory requirements. At 7layers you can combine LoRa testing and certification services with regulatory testing and type approval handling, depending on your target markets.

REGULATORY TESTING

Depending on your target market, rules and regulations for type approval vary considerably. 7layers provides regulatory testing covering requirements of directives such as RED, FCC, ISED Canada etc. which you need to fulfill in addition to LoRa certification.

WORLDWIDE TYPE APPROVAL

We have years of experience with type approval handling for all countries in the world. From complicated, unregulated markets, markets that require in-country testing, to classical type approval or self-declaration – 7layers supports you in bringing your smart devices smoothly onto the global market.

CONSULTING FOR SERVICE PROVIDERS

Based on years of experience and up-to-date technology knowledge, 7layers supports smart services providers with a customized strategy for reliable, satisfactory IoT services.

Once established, our consulting, engineering, development and testing capabilities, will help to maintain and manage the defined IoT service levels.

Providers of Smart Services benefit from 7layers consulting and engineering support to set-up, maintain and manage their services according to pre-defined service levels.

ON-SITE TESTING

7layers has developed test solutions for many wireless technologies. In order to cover the test requirements for LoRa end-devices and modules, 7layers introduces customized on-site test set-ups, not just limited to LoRa certification testing but upgradeable to cover additional private requirements. The test set-ups are available for IoT services providers and device or module manufacturers on demand.

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