



The Testcenter facility 'LoRa[®] Test Lab' within IMST GmbH is recognized by the LoRa[®] Alliance for testing in accordance to the LoRaWAN[®] Specification V1.0.4

Report for Test of Conformance to LoRaWAN[®] V1.0.4 Class A (EU868)

for the Device

“Link Essential”

for the Customer

“Somfy Activités SA”

Jens Lerner

Yavuz Turan

17th October, 2022

Administrative Summary

Location: IMST GmbH, Test Centre, Kamp-Lintfort, Germany

Responsible Test Engineer: Yavuz Turan, Jens Lerner

Subject: Test of Conformance to LoRaWAN® Specification V1.0.4 (Class A for EU868)

Company and Contact Information:

Somfy Activités SA

Viet Lam Nguyen

50 avenue du Nouveau Monde

74300 Cluses

France

Tested Device: Link Essential

Hardware version: PR 1.0.0

Firmware version: 3.0.2

End-device identifier: 0076B1000000D74F

LoRa Device Class: A

LoRaWAN Specification version: V1.0.4

Certification requirements: LoRaWAN 1.0.4 End Device Certification Requirements V1.6

Frequency band(s) tested: 868MHz

Test Equipment: LCTT v3.8.0_R1

2x IMST LGW (iC880A + Raspberry Pi): Gateway software version 5.0.1

Packet forwarder software version 4.0.1


Test Result: PASS


Quality Engineer: Jens Lerner

Date: October 17th, 2022

The Test Report, No. 6220245 has the following conclusion:

The device has PASSED the tests hereunder.

Responsibility: 
Yavuz Turan
Test Engineer

Approved: 
Jens Lerner
Quality Engineer

Copyright Notice & Disclaimer: No part of this test report may be reproduced without written permission of IMST GmbH. The test results herein only refer to the tested sample. IMST GmbH cannot be made responsible for any generalizations or conclusions drawn from the test results presented herein concerning further samples of the tested device. Modification of the tested sample(s) is prohibited and leads to invalidity of this report.

1 Description of the Device Under Test (DUT)

1.1 General

| Item | Value |
|-------------------------------------|--|
| Product name | Link Essential |
| Product Vertical(s) | Buildings, Cities, Environment |
| Series (if any) | Home / Consumer |
| Hardware Version | PR 1.0.0 |
| Firmware Version | 3.0.2 |
| Type of DUT | <input type="checkbox"/> Module <input checked="" type="checkbox"/> End Device/Sensor <input type="checkbox"/> others |
| Geographical area of operation | <input checked="" type="checkbox"/> Europe <input type="checkbox"/> USA <input type="checkbox"/> Australia |
| Operating frequency | <input type="checkbox"/> 433 MHz <input checked="" type="checkbox"/> 868 MHz <input type="checkbox"/> 915 MHz |
| Adaptive Data Rate (ADR) supported? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Optional data rates supported? | <input type="checkbox"/> DR6 <input type="checkbox"/> DR7 |
| Activation possibilities | <input checked="" type="checkbox"/> Over the air <input type="checkbox"/> by personalization <input type="checkbox"/> both |
| Test According LoRaWAN® Spec | <input type="checkbox"/> V1.0.1 <input type="checkbox"/> V1.0.2 <input checked="" type="checkbox"/> V1.0.4 |
| Output Power | 14 dBm |
| Number / Type of Antenna(s) | 1 Antenna PCB |
| Antenna Gain | Antenna passive |

Table 1 Device Information

1.2 DUT Modes of Operation

During the tests the device operated in the following modes:

- Test mode according to document “LoRa Alliance End Device Certification Requirements for All Regions Version 1.6” Chapter 2.

1.3 DUT Setup

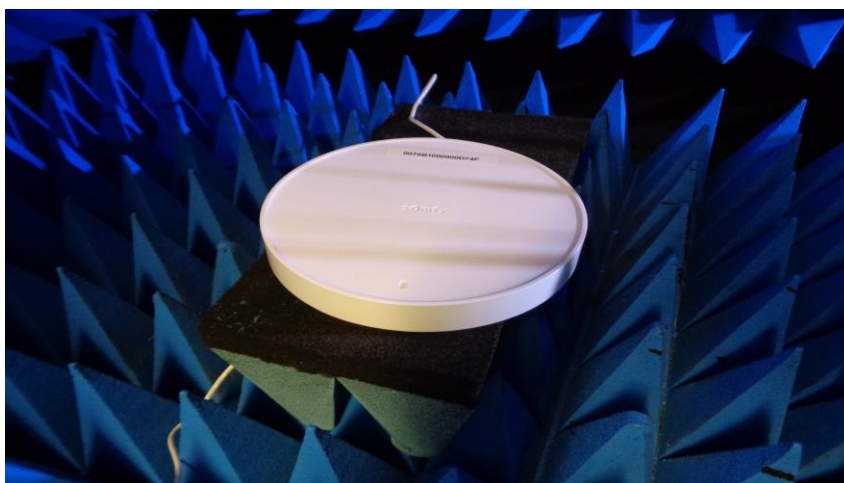


Figure 1 DUT Setup

Applied Methods of Measurement

1.4 Protocol Testing according to LoRaWAN® specification V1.0.4 (Class A device for EU868)

Detailed Test Results:

Test Mode Activation: **PASS**
Over the Air Activation: **PASS**
Cryptography: **PASS**
Downlink Sequence Number: **PASS**
Confirmed Frames: **PASS**
Device Status Request: **PASS**
New Channel Request: **PASS**
Di Channel Request Mac Command: **PASS**
RX Parameter Setup Request: **PASS**
RX Timing Setup Request: **PASS**
TX Parameter Setup Request: **PASS**
Link Check Request: **PASS**
Link ADR Request: **PASS**
Duty Cycle Request: **PASS**
Device Time Request: **PASS**
RX1 Window Test: **PASS**
RX2 Window Test: **PASS**
RX1 and RX2 Simultaneous Frames: **PASS**
RX Oversized Payload: **PASS**
Maximum Allowed Payload: **PASS**
Mac Commands: **PASS**
Multiple MAC Commands Prioritization: **PASS**
Device Deactivation: **PASS**

Supported Optional Features:

| | |
|---------------------------|-----|
| Adaptive Data Rate (ADR): | Yes |
| SF7BW250 (DR6) | No |
| FSK50 (DR7) | No |
| Permanent Class C | No |

Additional Tests By The Manufacturer:

Retransmission Back-Off for OTA devices only: **PASS**

Remarks: None

Result: The device passed the test without limitations.