The Testcenter facility 'LoRa® Test Lab' within IMST GmbH is recognized by the LoRa™ Alliance for testing in accordance to the LoRaWAN™ Specification V1.0.1

Report for Test of Conformance to LoRaWAN™ V1.0.1

for the Device

"SQUID"

for the Customer

"Ewattch"

Markus Ridder
Yavuz Turan

13. Jul. 2017

Administrative Summary

Location: IMST GmbH, Test Centre, Kamp-Lintfort, Germany
Responsible Test Engineer: Yavuz Turan, Markus Ridder

Subject: Test of Conformance to LoRaWAN™ Specification V1.0.1

Company and Contact Information:
Ewattch
Mr. Nicolas Babel
13 RUE MAURICE JEANDON, 88100 Saint des Vosges
France
Tested Device: Squid
Firmware version: 2.1
Hardware version: 1.3
End-device identifier: 70B3D54750120168
LoRa Device Class: A
LoRaWAN Specification version: V1.0.1
Certification requirements: LoRa End Device Certification EU Version 1.2
Frequency band(s) tested: 868 MHz
Test Equipment: Test Software Version: 1.1.10
Semtech IOT SX1301 Starter Kit: Gateway software version 3.1.0
Packet forwarder software version 2.1.0

Test Result: PASS

Chief Test Engineer: Markus Ridder
Dept. Test Center

Date: July 13th , 2017

The Test Report, No. 6171272 has the following conclusion:

The device has PASSED the tests hereunder.

Responsibility: Yavuz Turan
Test Engineer

Approved: Markus Ridder
Quality Engineer

1 Description of the Device Under Test (DUT)

1.1 General

Item	Value
Product name	SQUID
Kind of product	Sensor
Series (if any)	
Hardware Version	1.3
Firmware Version	2.1
Type of DUT	☒ Module / End Device ☐ Gateway / Concentrator
Geographical area of operation	☒ Europe ☐ USA
Operating frequency	☐ 433 MHz ☒ 868 MHz ☐ 915 MHz
Adaptive Data Rate (ADR) supported?	☒ Yes ☐ No
Optional data rates supported?	☒ DR6 ☒ DR7
Activation possibilities	☒ Over the air ☐ by personalization ☐ both
Test According LoRaWAN™ Spec	☐ V1.0 ☒ V1.0.1
Output Power	14 dBm
Number / Type of Antenna(s)	
Antenna Gain	

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 End Device Certification EU V1_2” Chapter 3.

1.3 DUT Setup

Figure 1 DUT Setup

Applied Methods of Measurement

1.4 Protocol Testing according to LoRaWAN™ specification V1.0.1

Detailed Test Results:

Test Mode Activation (Over the Air Activation): **PASS**
Test Application Functionality: **PASS**
Packet Error Rate RX2 SF12: **PASS**
Cryptography: **PASS**
Downlink Window Timing: **PASS**
Frame Sequence Number: **PASS**
Device Status Request: **PASS**
Mac Commands: **PASS**
New Channel Request: **PASS**
Confirmed packets: **PASS**
RX Parameter Setup Request: **PASS**
RX Timing Setup Request: **PASS**
Link ADR Request: **PASS**
Packet Error Rate RX1 Window: **PASS**
Packet Error Rate RX2 Window: **PASS**

Supported Optional Features:

Adaptive Data Rate (ADR): Yes
DR6 (SF7BW250): Yes
DR7 (FSK50): Yes

Remarks: None.

Result: The device passed the test without limitations.