The Testcenter facility 'LoRa® Test Lab' within IMST GmbH is recognized by the LoRa™ Alliance for testing in accordance to the LoRaWAN™ Specification V1.0.2

Report for Test of Conformance to LoRaWAN™ V1.0.2

for the Device

"LPN Tracker "

for the Customer

"Tracker.ch AG"

Dietmar Krebs

Yavuz Turan

5. September 2019

Administrative Summary

Location: IMST GmbH, Test Centre, Kamp-Lintfort, Germany
Responsible Test Engineer: Yavuz Turan, Dietmar Krebs

Subject: Test of Conformance to LoRaWAN™ Specification V1.0.2

Company and Contact Information:
Tracker.ch AG
Webereistrasse 47
CH-8134, Adliswil
Switzerland
Tested Device: LPN Tracker
Firmware version: V01.04.0001
Hardware version: REV03
End-device identifier: 70B3D5FFFEF3FDF2
LoRa Device Class: A
LoRaWAN Specification version: V1.0.2
Certification requirements: LoRa End Device Certification EU Version 1.5
Frequency band(s) tested: 868 MHz
Test Equipment: Test Software Version: 1.1.11
Semtech IOT SX1301 Starter Kit: Gateway software version 3.1.0
Packet forwarder software version 2.1.0

Test Result: PASS

Chief Test Engineer: Dietmar Krebs
                                Dept. Test Center

Date: September 5th, 2019

The Test Report, No. 6191166 has the following conclusion:

The device has PASSED the tests hereunder.

Responsibility: *Yavuz Turan*   Approved: *[signature]*
                Yavuz Turan   Dietmar Krebs
                Test Engineer   Quality Engineer

1 Description of the Device Under Test (DUT)

1.1 General

Item	Value
Product name	LPN Tracker
Kind of product	Tracking Device
Series (if any)	
Hardware Version	REV03
Firmware Version	V01.04.0001
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	☐ V1.0.1 ☒ V1.0.2
Output Power	Up to 25mW
Number / Type of Antenna(s)	1 / Fractus Chip Antenna
Antenna Gain	2 dBi

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_5" Chapter 3.
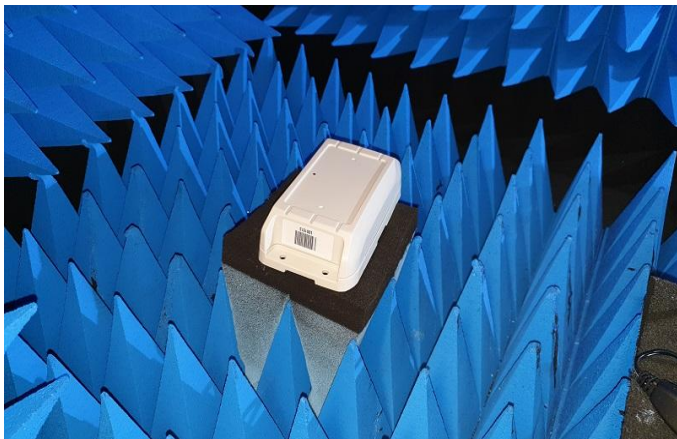
1.3 DUT Setup

Figure 1 DUT Setup

Applied Methods of Measurement

1.4 Protocol Testing according to LoRaWAN™ specification V1.0.2

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**
Di Channel Request Mac Command: **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
Link ADR Request Block: Yes
Di Channel Request: Yes
Range 6dB   Yes

Remarks: None.

Result: The device passed the test without limitations.