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

for the Device

"iM980B-L"

for the Customer

"IMST GmbH"

Jens Lerner

Yavuz Turan

29th September, 2021

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 AU)

Company and Contact Information:
IMST GmbH
Heinz Syrzisko
Carl-Friedrich-Gauss-Str. 2-4
47475 Kamp-Lintfort
Germany
Tested Device: iM980B-L
Hardware version: B
Firmware version: V3.0
End-device identifier: 70B3D58FF000001A
LoRaWAN® Device Class: A
LoRaWAN Specification version: V1.0.4
Certification requirements: LoRaWAN 1.0.4 End Device Certification Requirement V1.4
Frequency band(s) tested: 915 MHz
Test Equipment: Test Software Version: 1.2
8x IMST LGW (iC980A + Raspberry Pi): Gateway software version 4.1.3
Packet forwarder software version 3.1.0

Test Result: PASS

Quality Engineer: Jens Lerner

Date: September 29th, 2021

The Test Report, No. 6210802 has the following conclusion:

The device has PASSED the tests hereunder.

Responsibility: Approved:

Yavuz Turan   Jens Lerner
Test Engineer   Quality Engineer

LoRa® Alliance

1 Description of the Device Under Test (DUT)

1.1 General

| Item	Value
Product name	iM980B-L
Product Vertical(s)	
Series (if any)	
Hardware Version	B
Firmware Version	V3.0
LoRaWAN® Device Class	A
Type of DUT	☒ Module ☐ End Device/Sensor ☐ others
Geographical area of operation	☐ Europe ☐ USA ☒ Australia
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 ☒ V1.0.4
Output Power	max. 19 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 Alliance End Device certification Requirements for All Regions Version 1.4" Chapter 2.

1.3 DUT Setup

Figure 1 DUT Setup

LoRa® Alliance
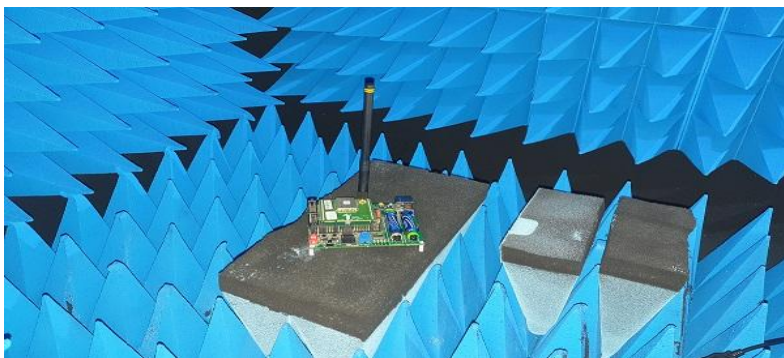
Applied Methods of Measurement

1.4 Protocol Testing according to LoRaWAN® specification V1.0.4 (Class A device for AU915-928)

Detailed Test Results:

Test Mode Activation (Over the Air Activation): **PASS**
Cryptography: **PASS**
Frame Sequence Number: **PASS**
Confirmed Packets: **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**
Uplink Datarate RX1 DR Offset Mapping: **PASS**
Packet Error Rate Rx1 MaxSize: **PASS**
Packet Error Rate Rx1 MaxSize: **PASS**
RX1 And RX2 Simultaneous Frames: **PASS**
RX Oversized Payload: **PASS**
Maximum Allowed Payload: **PASS**
Mac Commands: **PASS**
Mac Commands Buffer: **PASS**
Device Deactivation: **PASS**

Supported Optional Features:

Adaptive Data Rate (ADR):   Yes
Min TX Power: No
Permanent Class C   No

Remarks: None

Result: The device passed the test without limitations.