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

"Wireless Smart Meter Reading Module UM-2"

for the Customer

"BAYLAN Ölçü Aletleri Sanayi ve Ticaret Ltd. Şti."

Jens Lerner
Yavuz Turan

16th January, 2023

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:
BAYLAN Ölçü Aletleri Sanayi ve Ticaret Ltd. Şti.
Erman Baylan
10032. Sk. Atatürk Organize Sanayi Bölgesi No:16
35620 Çiğli / İzmir
Turkey
Tested Device: Wireless Smart Meter Reading Module UM-2
Hardware version: 220622HLF0100
Firmware version: V52/02
End-device identifier: 4100260000000000
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: January 16th, 2023

The Test Report, No. 6230026 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	Wireless Smart Meter Reading Module UM-2
Product Vertical(s)	Industrial/Hazardous
Series (if any)	A
Hardware Version	220622HLF0100
Firmware Version	V52/02
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	14 dBm
Number / Type of Antenna(s)	1 / Helical
Antenna Gain	1.5 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 Alliance End Device Certification Requirements for All Regions Version 1.6” Chapter 2.

1.3 DUT Setup

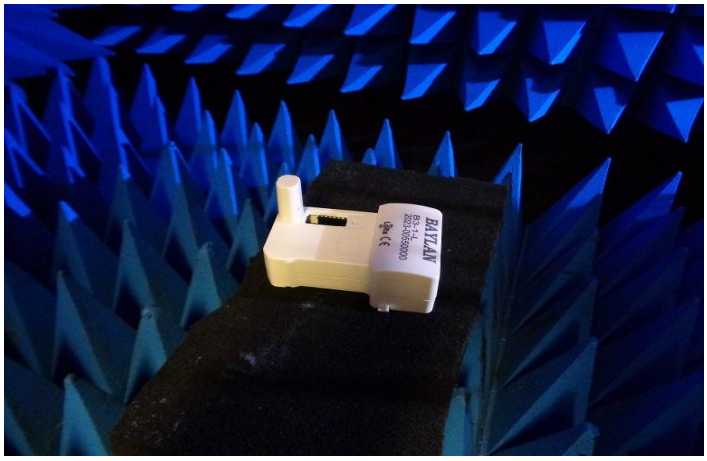

Figure 1 DUT Setup

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**
Activation By personalization: **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)	Yes
FSK50 (DR7)	Yes
LR-FHSS	No
SCHC	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.