



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

"iO881A"

for the Customer

"IMST GmbH"

Jens Lerner Yavuz Turan

25th February, 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 EU)

Company and Contact Information: IMST GmbH Heinz Syrzisko Carl-Friedrich-Gauss-Str. 2-4 47475 Kamp-Lintfort Germany Tested Device: iO881A Hardware version: C100 Firmware version: V1.1 End-device identifier: 70B3D58FF003A0F1 LoRa 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: 868MHz Test Equipment: Test Software Version: 1.3.0 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: February 25th, 2022

The Test Report, No. 6220123 has the following conclusion:

The device has PASSED the tests hereunder.

Responsibility: Yavuz Turan

Test Engineer

Approved: Jens Lerner

Quality Engineer

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1 Description of the Device Under Test (DUT)

1.1 General

Item	Value
Product name	iO881A
Product Vertical(s)	Buildings, Cities, Home / Customer, Industry
Series (if any)	
Hardware Version	C100
Firmware Version	V1.1
Type of DUT	Module End Device/Sensor O 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)	External antenna
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

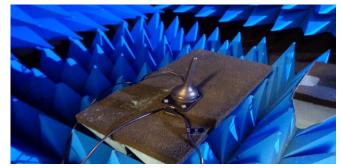


Figure 1 DUT Setup



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 (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:	Yes
SF7BW250 (DR6)	Yes
FSK50 (DR7)	Yes
Permanent Class C	No

Remarks: None

Result: The device passed the test without limitations.

