

LoRaWAN Certification Test Report

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Location: Etteplan Oyj, Jyväskylä Test Laboratory, Finland

Responsible Test Engineer: Sandro von Brandenburg

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Tested Device: Qalcosonic E3 Ultrasonic heating/cooling meter

Firmware version: 2.05

Hardware version: v05

End-device identifier: 00:00:00:00:03:00:76:65

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 Software Version: 1.1.11

Gateway Model: IMST Lite Gateway

Gateway Software Version: 5.0.1

Packet Forwarder Software Version: 4.0.1

Test Result: **PASS**

Detailed Test Results

Test Mode activation (ABP): **PASS**
Test Mode activation (OTAA): **PASS**
Test application functionality: **PASS**
Cryptography: **PASS**
Downlink Window Timing: **PASS**
Frame Sequence Number: **PASS**
Device Status Request: **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**
DIChannelReq command: **Yes**
6 dB transmit power range: **Yes**
LinkADRReq block: **Yes**
SF7, BW250 kHz: **No**
FSK, 50 kbps: **No**

Remarks: None.



Sandro von Brandenburg, Etteplan Oyj